

Chapter 18

JOINT HEALTH SERVICES SUPPORT: OPERATIONAL PLANNING

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INTRODUCTION

Scenario: You are the unit surgeon of a 1,000-person ground combat unit. Your unit has been deployed to Country X for 8 months. Morale is high with the anticipation of going home in 4 months. The unit has had adequate rest and has not conducted a combat operation in the last 7 days. Your commander has just alerted the staff of an impending mission within the next 3 days to conduct a raid on a suspected enemy weapons cache located in a mid-size town in the mountainous region of the country. The road system near the town is primarily comprised of two major paved roads leading to the town with multiple secondary and tertiary unimproved gravel and dirt roads. The town is described as rectangular, blocked with numerous multilevel buildings, alleys, and courtyard; there are limited open spaces, lots, or fields within the town (Figure 18-1). The town road structure is accompanied by electric power poles and lines; road barricades and obstacles have been observed at various locations throughout the town. Population is less than 3,000. The enemy uses guerilla tactics, improvised explosive devices (IEDs), rocket-propelled grenades, and small arms. The enemy force is estimated to be 30 to 50 fighters. Intelligence suggests the enemy will provide heavy resistance to

defend the town as a strategic location for weapons smuggling and cache operations. The mission is expected to be conducted during darkness, with limited moon illumination; temperatures will range between 60°F and 85°F; there will be light winds, a 10% chance of rain, with ceilings expected to be at greater than 10,000 ft, and visibility greater than 7 miles. The executive officer has called together the staff to begin the planning process.

Planning is a team sport. A medical staff officer (MSO) is a member of a larger staff that will come together to develop a comprehensive operational plan for joint health services support (HSS). As a special staff officer to the commander, the medical officer is expected to be involved in the planning process as an expert in all things medical. Joint Publication 5-0, *Joint Operations Planning*, defines the joint operation planning process (JOPP) as “an orderly, analytical process, which consists of a set of logical steps to examine a mission; develop, analyze, and compare alternative Courses of Action (COAs); select the best COA; and produce a plan or order.”¹ Each service component has its own planning process that closely mirrors the JOPP;

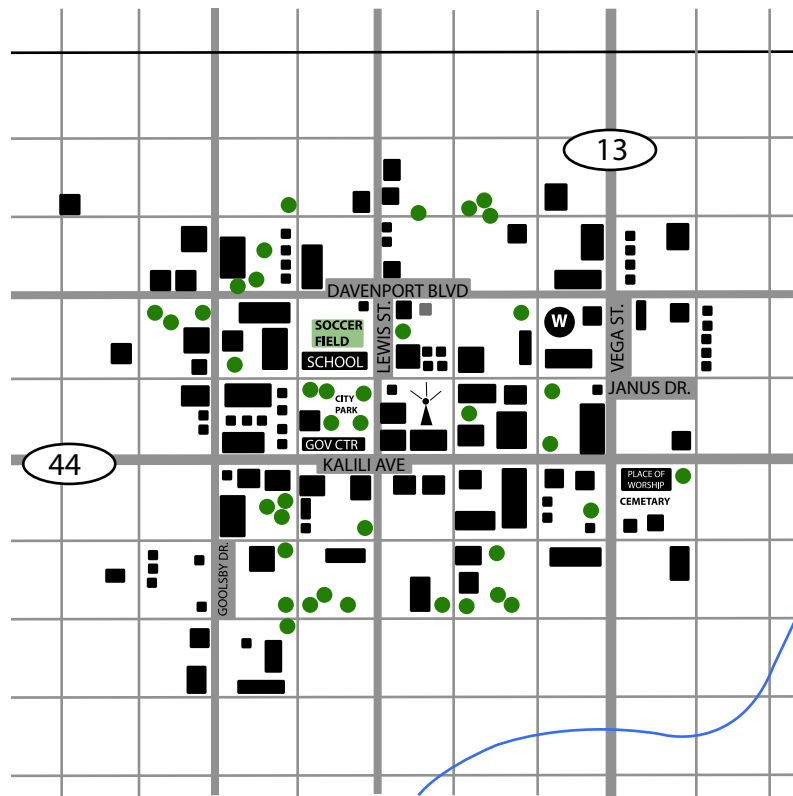


Figure 18-1. Notional town.

the Army uses the military decision-making process, while the Marine Corps uses the Marine Corps planning process (see **Resources**, below).

Although this chapter focuses primarily on tactical-level planning, the principles and processes are very much the same at the tactical, operational, and strategic levels—just from a different perspective. Strategic-level planning focuses on national policy and theater strategy, while the operational level links strategy and tactics by establishing operational objectives needed to achieve military end-states and strategic objectives.² Tactical planning involves the employment of tactics, techniques, and procedures and the arrangement of forces to achieve a military objective. At all three levels, MSOs are focused on many of the same key aspects, such as the mission, the operational area, the threats, the number and type of personnel involved in the mission, and the operational timeline. The major difference among these levels when planning HSS is the breadth and width of the plan. At the strategic level, the MSO focuses on determining the types and quantities of medical assets required to deploy in support of a theater strategy; at the tactical level, the MSO focuses on how best to employ medical assets on the ground to support a battle, engagement, or small-unit action in support of a specific military objective. The operational level ties tactical actions to strategic goals.

MSOs must have a solid grasp of their service’s planning process. Although each service may label specific steps of their planning process differently, the processes are essentially the same (Table 18-1 compares the JOPP and services’ planning processes). This chapter will provide a general overview of the key steps in the planning process and the accompanying medical actions.³ It is important to recognize that each step of the planning process has multiple sub-steps; for example the Army’s military decision-making process mission analysis step consists of 18 sub-steps. This chapter will not necessarily go into detail for each step, but leaves it to the reader to research their specific service’s planning doctrine for additional information and guidance.

This chapter is not intended to replace Department of Defense or service doctrine, but rather to provide a brief overview of the process and applicable resources. It is important to keep in mind that the planning process can be extremely time consuming; the reader should not assume from this brief introduction that the planning can be done quickly (although the services do have a process for planning in time-constrained environments). Lastly, to truly become comfortable with the planning process takes more than reading about it—it requires experience. *Take advantage of opportunities to be involved in the process; the more you practice, the better you will become.*

TABLE 18-1
SERVICE-SPECIFIC OPERATIONAL PLANNING

JOINT (JOPP) ¹	ARMY (MDMP) ²	NAVY (NPP) ³	MARINE CORPS (MCP) ⁴	AIR FORCE (JOPPA) ⁵
Planning initiation	Receipt of the mission	Mission analysis	Problem framing	Mission analysis
Mission analysis	Mission analysis			
COA development	COA development	COA development	COA development	COA development
COA analysis	COA analysis	COA analysis	COA war game	COA analysis
COA comparison	COA comparison	COA comparison and decision	COA comparison and decision	COA comparison
COA approval	COA approval			COA approval
Orders production	Orders production	Orders development	Orders development	Orders production
		Transition	Transition	

AFPP: Air Force planning process; COA: course of action; JOPPA: joint operation planning process for air; MCP: Marine Corps planning process; MDMP: military decision-making process; NPP: Navy planning process

1. Chairman of the Joint Chiefs of Staff. *Joint Operations Planning*. Washington, DC: JCS; 11 August 2011. Joint Publication 5-0.
2. Headquarters, Department of the Army. *Commander and Staff Organization and Operations*. Washington, DC: HQDA; May 2014. Field Manual 6-0.
3. Department of the Navy, Office of the Chief of Naval Operations. *Navy Planning*. Washington, DC: CNO; December 2013. Navy Warfare Publication 5-01.
4. Headquarters, Department of the Navy, US Marine Corps. *Marine Corps Planning Process*. Washington, DC: USMC; 24 August 2010. Marine Corps Warfighting Publication 5-1.
5. Headquarters, Department of the Air Force. *Operations and Planning*. Washington, DC: USAF; 4 November 2016. Doctrinal Annex 3-0.

THE PLANNING PROCESS

HSS planning is tethered to operational planning. Upon receipt of the mission, planning begins with a detailed analysis of mission variables; continues through the development, analysis, and selection of a course of action (COA); and proceeds to the production of orders. The approach to HSS planning and tactical planning is analogous to a method all healthcare providers are familiar with: the scientific method. The six steps of the scientific method—purpose/question, research, hypothesis, experiment, data/analysis, and conclusion—correlate to the MSO's approach to a mission or problem and plan development. Still another way to think about HSS planning is comparing it to a treatment plan for a patient. Most healthcare providers are familiar with the use of the "SOAP note"—Subjective, Objective, Assessment, Plan (Figure 18-2). The SOAP note provides the healthcare provider a methodical, standardized process for analyzing signs, symptoms, lab results, and imaging; assessing alternative diagno-

ses; and developing a patient treatment plan, including COAs that must weigh the patient's preferences, the outcomes of earlier steps, and the inherent risks of each COA. The military planning process provides the MSO that same orderly, analytical process to examine a mission and produce a plan or order.

A word about communicating: throughout the planning process, the MSO must actively communicate—with higher headquarters, with fellow staff officers, with adjacent units and organizations, and lastly, with subordinate units and organizations. Often, parallel planning is being conducted by higher, adjacent, and subordinate units. As more information becomes available and plans begin to form, information is shared. As the MSO progresses through the planning process, information is shared in an effort to provide the unit that will execute the mission the greatest opportunity for success. *Bottom line: communicate, communicate, and communicate.*

PLANNING INITIATION

Planning begins when a mission is directed (Exhibit 18-1). Upon receipt of the mission, the commander issues planning guidance, and the staff gathers planning resources: orders, current estimates or evaluations, maps, overlays, and graphics. The MSO must be involved early in the planning process. Failure to get involved early in the process could result in an incomplete plan; an unsynchronized plan; a plan that places the unit at an exceeding high risk, a risk that could have been mitigated if known earlier; or a plan that is directed rather than developed in partnership with the staff. The importance of establishing trust and credibility as a member

of the commander's special staff is discussed more fully in Chapter 14, Introduction to Health Service Support; these efforts are essential to the MSO's early and ongoing involvement in mission planning. Once guidance is received and resources are collected, the staff begins the most important step of the process: mission analysis. It must be emphasized, however, that HSS planning is an *iterative* process. New information, as well as further guidance from the commander, may cause the staff to revisit any step of the planning process. Additionally, at each step in the process, the staff should attempt to convert planning assumptions into facts.

MISSION ANALYSIS

Overview

The next step in developing the plan, at the strategic through tactical levels, is to conduct a thorough mission analysis. *Mission analysis is the most important step of the planning process.* For the healthcare provider, this can be equated to doing a total "work-up" on the patient, including a thorough history, physical examination, records review to find previous diagnoses and treatments, laboratory tests, and x-rays. Mission analysis begins with a thorough study of the higher headquarters' plan or order. Answers to following questions are critical to understanding the mission:

What is the higher commander's intent?

What is the concept of the operation?

What assets are available?

What is the timeline?

What is the area of operations?

The commander and staff conduct a mission analysis to better understand the situation and problem, and identify *what* the command must accomplish, *when* and *where* it must be done, and most importantly *why*—the purpose of the operation.⁴ Staff must then compile what is known about the situation, that is, what *relevant* facts have impact on the mission and what *valid*

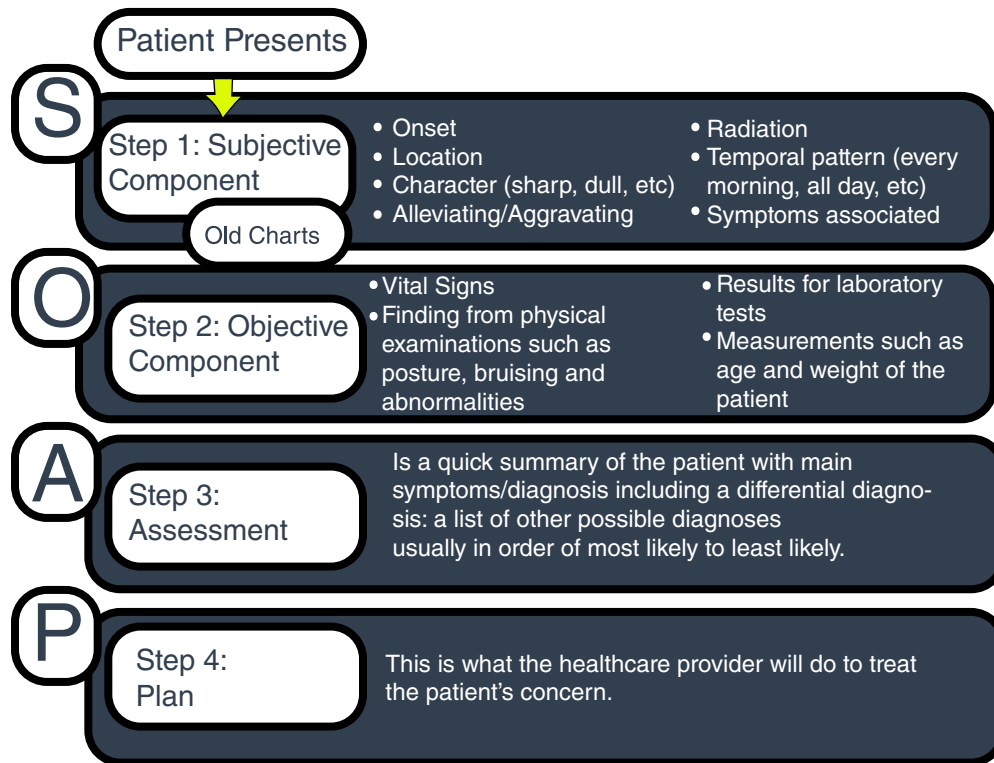


Figure 18-2. The medical “SOAP note” format.

planning assumptions can be made about the situation. What does the operational environment look like, including the enemy situation? What constraints, if any, are placed on the command? What resources are required to complete the mission, and what resources are available? How much time is allotted for planning? What is the duration of the mission? And finally, what tasks are required for success? Variables such as these—mission, threat, resources, and time, along with a thorough understanding of the problem and situation—provide the foundation for follow-on planning and are critical to the success of the mission. The Army and Marine Corps categorize mission vari-

ables for tactical planning as *Mission, Enemy, Terrain and weather, Troops and support available, Time available, and Civilian considerations* (METT-TC). Every mission must be adjusted for the realities of METT-TC.

Define the Operational Environment

This step requires the MSO to conduct a detailed analysis of the operational environment. The analysis of the operational environment includes evaluating the METT-TC variables *enemy, terrain and weather, and civilian considerations*. Depending on the mission and scope of the operation, it might also include evaluating variables such as political, military, economic, social, information, and infrastructure strengths and weaknesses. Each staff section assesses the operational environment from their perspective and develops what is referred to as “a staff estimate.” The MSO must assess the operational environment for those variables that can impact both the success of the *operational mission* (ie, what can impact the commander’s ability to accomplish the mission) as well as the *medical mission* (ie, what can impact the health of the troops and the healthcare team’s ability to accomplish their HSS mission).

EXHIBIT 18-1

PLANNING INITIATION

1. Alert the staff.
2. Gather resources.
3. Issue commander’s guidance.

Defining the many variables that frame the operational area is commonly referred to as *intelligence preparation of the battlefield*, or IPB. The medical equivalency is commonly referred to as *medical intelligence preparation of the operational environment* (MIPOE), or the *medical intelligence preparation of the battlefield*. It is through MIPOE that threats become known, and the MSO can begin to visualize their impact on the operational and medical mission. Depending on the level of consideration (tactical, operational, or strategic), intelligence used to identify the threat will probably originate from different sources; the strategic planning level will likely include national and geographic intelligence resources, whereas at the tactical level, local intelligence will most likely be heavily relied on to identify the immediate threat to the mission. The unit intelligence officer (S-2 or G-2) is a valuable resource for helping to define the operational environment. All available intelligence resources, including fellow staff officers and even units and personnel who have previously operated in the area, should be consulted to accurately describe the operational environment and identify the threats.

Enemy considerations include analyzing the type of enemy units involved (eg, mechanized, armor, light infantry, special operations, maritime, aviation); types and capabilities of equipment and weapon systems; and the enemy's strength, location, and probable COAs. These considerations should give the MSO insight into probable mechanisms of injury, and possibly when and how these injuries may occur. Furthermore, evaluating the enemy can provide insight into the threat and risk to medical assets, specifically medical personnel, ground and air ambulances, and treatment facilities.

Terrain considerations include assessing the operational environment for key terrain, avenues of approach, points of observations and fields of fire, obstacles, and areas that afford cover and concealment. A detailed analysis of the terrain should give the MSO insight into where casualties may occur, for example, near key terrain such as beachheads, river crossings, or choke points; on avenues of approach; or at obstacles. It should also highlight potential mobility corridors, evacuation routes, landing zones, and areas to establish treatment, in addition to possible hazards to personnel, equipment, and operations. The terrain analysis can also provide insight into the types of potential injuries (eg, urban terrain may yield more crushing injuries, electrocutions, or upper body gunshot injuries due to snipers, while mountainous terrain may yield more musculoskeletal injuries, cold injuries, and altitude sickness). Weather considerations include visibility, winds, precipitation, cloud



Figure 18-3. An MV-22 Osprey with Marine Medium Tiltrotor Squadron 161 prepares to land in southern Helmand province, Afghanistan, December 9, 2012. The Osprey was picking up coalition and Afghan government officials following a visit to a remote area. The officials were checking the status of a 6th Zone Afghan Border Police clearing operation. Photo by Sgt. John Jackson. Reproduced from: <https://www.dvidshub.net/image/797378/afghan-border-police-conduct-independent-clearing-operation-southern-helmand>.

cover, temperature, and humidity. These conditions can impact aviation and ground operations (Figure 18-3), the navigability of roads, and again, the types of potential injuries (eg, heat, cold, hypothermia). These three variables, enemy, terrain, and weather, provide extremely valuable pieces of the puzzle. When pieced together, they provide a fairly comprehensive picture of the operational environment and its impact on the operational and medical mission.

Although this example is very simple, in the opening scenario of this chapter the enemy may be described as a well-armed enemy force of 30 to 50 fighters who predominantly use small-arms weapons and IEDs, and who employ guerilla-type techniques. The geographical environment is urban with a population of less than 3,000; it is rectangular blocked with numerous multilevel buildings, alleys, and courtyards; it has limited open spaces, lots, or fields; there are road barricades and obstacles; and power lines are strung throughout the area. Mountain ranges are to the north and east; open flat terrain to the south and west. Major improved roads run west to east and north and south through the town. A river runs from north to south through the town. The staff will analyze an actual operational environment in much greater detail in order to develop a comprehensive picture; this "picture" will be used for follow-on COA development, analysis, and comparison (Figure 18-4).

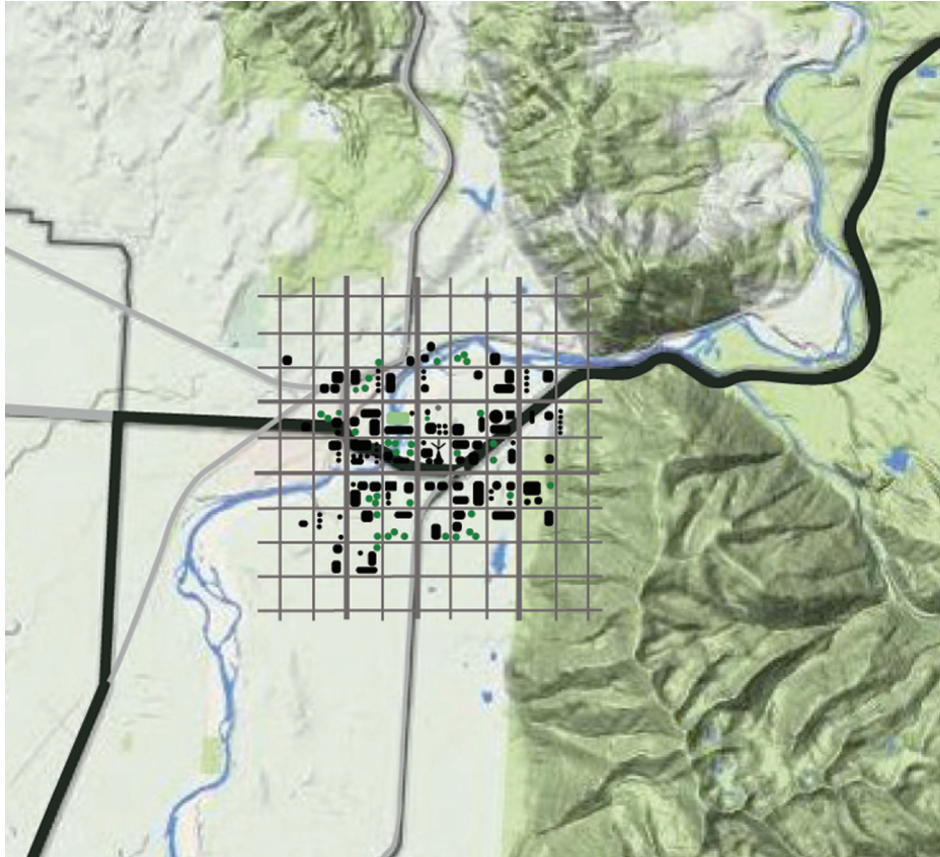


Figure 18-4. Notional town with the addition of major geographic terrain features.

Vignette 18-1. Air Force Captain Matthew Miller wrote about the challenges of flying in Afghanistan after returning from a four-month deployment there in 2007. His medevac unit, from Georgia's Moody Air Force Base, had lost three helicopters and seven crew members in the two wars. Enemy fire had been a factor in none of the Afghan crashes. "In Iraq, helicopter pilots face a greater prospect of being shot at by ground fire," Miller wrote. "In Afghanistan, the greatest threat is the terrain." He described flying in Afghanistan as "graduate level" piloting more challenging than cruising over the flatlands of Iraq. "It didn't take long to feel the perils of mountainous flying in Afghanistan," he added. "Between Iraq and Afghanistan, most helicopter pilots I've spoken to consider Afghanistan the more dangerous place to fly."⁵

Key to mission analysis is not only accurately defining the operational environment, but also interpreting how the environment impacts the mission. For example, the MSO may discover that the road structure near the objective is narrow, with multiple choke points. From this data point, the MSO may deduce that casualty evacuation will be slowed, or some areas may be impassable, and therefore alternative evacuation

routes will be needed. Again, it is important that the MSO not only accurately defines the operational environment, but just as importantly, translates that data into useful and meaningful information. *An inaccurate or incomplete mission analysis will sabotage the planning process and could very well lead to catastrophic results.*

Determine Specified, Implied, and Essential Tasks

A mission statement always consists of five parts: the *who* (organization to act), *what* (the task to be accomplished and actions to be taken), *when* (time to accomplish the task), *where* (the location to accomplish the task), and *why* (the purpose the task is to support).¹ Notice that the *how* is not addressed at this time. During the planning process, how the unit will accomplish the mission is conceptualized and analyzed after the staff has developed a full understanding of the tasks that must be accomplished, that is, the mission, the state of the operational environment, and the resources available. It is important for the MSO to have a thorough understanding of the tasks required for both medical and operational success.

A task is a clearly defined action or activity assigned to an individual or organization.¹ Tasks fall into three categories: *specified*, *implied*, and *essential*. A specified task is a task specifically assigned to a unit by its higher headquarters. An implied task is one that must be performed to accomplish a specified goal or mission, but is not stated in the higher headquarters' order. Implied tasks are typically derived from a detailed analysis of the operations order or plan, the operational environment, civil considerations, and other factors. An essential task, which can be either specified or implied, must be executed to accomplish the mission. Essential tasks are always included in the unit's mission statement.

In the introductory scenario example, due to the expected intensity of the fight, the commander of the ground combat unit has instructed his medical platoon leader to deploy a medical team to a forward position in proximity to the objective to provide responsive casualty care during the battalion raid. In this scenario, the specified, implied, and essential tasks are as follows:

- **Specified task:** "Provide treatment and evacuation in support of the battalion mission." This task is essential to mission success.
- **Implied task:** Conduct reconnaissance to determine the best location for the medical team in proximity to the objective. This task, although not specifically stated, is implied by the commander and should be inferred by the medical platoon leader to accomplish the above specified task.
- **Essential task:** "Provide treatment and evacuation in support of the battalion mission." This task is both specified and essential to mission success.

It is critical for the MSO to understand the mission tasked to their unit, to thoroughly review the operation order or plan to identify all specified medical tasks, as well as related implied tasks, and finally to be sure of the essential medical tasks. Many HSS tasks are found in the operation order or plan's paragraph 4 (administration and logistics) and the HSS annex (Exhibit 18-2). *It is critical to remember that the mission is the task, together with the purpose, that clearly indicates the action to be taken and the reason.*

During the mission analysis, the personnel officer and MSO begin to formulate an *approximate* casualty estimate. Although determining the casualty rate is the responsibility of the personnel officer; the MSO is responsible for patient estimates, which include only the medical casualties (patients) included in the

overall casualty rate.⁶ According to Army Techniques Publication 4-02.55, *Army Health System Support Planning*, "patient" is the generic term applied to a sick, injured, or wounded person who receives medical care or treatment from medically trained personnel. Once a casualty is treated by the first medically trained person (normally the combat medic, corpsman, or independent duty medical technician), he or she is no longer referred to as a casualty and is subsequently referred to as a patient. The casualty estimate is based on information derived from an analysis of the operational environment, specifically, from the enemy's capabilities, strength, and morale; the terrain and weather; and the unit's mission. The casualty estimate will be further refined during COA development and analysis, when specific operational plans with more defined troop employments and movements on the battlefield will be developed.^{6,7}

Vignette 18-2. The Naval Health Research Center (NHRC) developed the Joint Medical Planning Tool (JMPT), a computer-based simulation tool that models patient flow from the point of injury through more definitive care. It supports research, medical systems analysis, operational risk assessment, and field medical services planning. NHRC also developed the Medical Planners' Toolkit (MPTk), which consists of the Patient Condition Occurrence Frequency (PCOF) tool, the Casualty Rate Estimation Tool (CREstT), the Expeditionary Medicine Requirements Estimator (EMRE), and the Estimating Supplies Program (ESP). The PCOF tool provides baseline probability distributions for illnesses and injuries across a range of 33 military operations. The CREstT provides the capability to emulate the operational plan using a 180-day scenario to calculate battle and non-battle injuries and illnesses that are expected during ground military operations. The EMRE estimates operating room, intensive care unit, ward and bed, evacuation, and blood product requirements for in-theater hospitalization, based on a given patient load. The ESP uses scenario-specific patient streams created by CREstT and known medical supply inventories to estimate the total supply requirement for treating those patients.⁸

EXHIBIT 18-2

FIVE-PARAGRAPH OPERATION ORDER FORMAT

1. Situation
2. Mission
3. Execution
4. Administration and logistics
5. Command and signal

Identify Available Resources and Shortfalls

Once the MSO has defined the operational environment, identified the mission and tasks, and begun to develop a preliminary casualty estimate, they can begin considering the capabilities needed to support the mission. At the tactical level, this variable is sometimes referred to as *troops and support available*. When analyzing resources, the MSO should consider both medical and nonmedical personnel, equipment, supplies, and organizations available to support the medical mission. The MSO should also note the total number of personnel or troops involved in the mission,



Figure 18-5. Blackhawk helicopter for medical aero evacuation. The Task Force Marauder medical evacuation (medevac) company participated in a mass casualty exercise with the Role 3 hospital, December 23, 2017, in Afghanistan to practice and refine procedures in the event of a real-world emergency. Detachment 1, Charlie Company, 2-211th General Support Aviation Battalion (GSAB), MEDEVAC, Iowa National Guard, with Task Force Marauder partnered with the hospital, base emergency medical services, Polish special forces, US Air Force security forces, and US Army 82nd Airborne service members for the exercise. C Co, 2-211th GSAB (MEDEVAC) provided aerial transportation and en route medical care for simulated casualties before transporting the patients to the hospital for follow-on care. The purpose of the exercise was to test current practices and communication in a controlled environment. Task Force Marauder consists of soldiers from South Carolina National Guard, Illinois National Guard, and Iowa National Guard, as well as an active duty component, and provides aviation capabilities with AH64 Apaches, UH60 Black Hawks, CH47 Chinooks, and medevac assets in Afghanistan under the 3rd Combat Aviation Brigade while deployed. (US Army National Guard photo by Capt. Jessica Donnelly, Task Force Marauder.) Reproduced from: <https://www.dvidshub.net/image/4050146/task-force-marauder-participates-mass-casualty-exercise>.

sometimes referred to as the population at risk (PAR). The PAR data point is important for determining the number of medical resources required and the positioning of these resources in support of the operation. Along with determining the number of personnel involved in the operation, the MSO analyzes the type of personnel involved in the mission, as well as their operational and medical readiness, training readiness, morale, psychological state, nutrition, rest, and clothing and equipment.

The level of planning being conducted (strategic, operational, or tactical) will dictate the level of detail need in resource assessment. For example, tactical MSOs focus on the number of medics, ground ambulances, and tactical aeromedical evacuation in support of a specific operation, whereas strategic-level MSOs look at the number of hospital beds, surgical suites (operating room hours and intensive care beds), strategic aeromedical evacuation, and medical specialties available to support a theater strategy (Figure 18-5). HSS planning considerations (Exhibit 18-3) should be kept in mind during mission analysis. These considerations provide an excellent checklist regardless of the level of planning; however, not every consideration is applicable to every mission. For example, planning for support of a tactical mission such as a small unit raid probably does not require the MSO to plan specifically for pharmacy services, but an MSO at the operational level planning for a campaign must consider and plan for these services.

EXHIBIT 18-3

HEALTH SERVICES SUPPORT PLANNING CONSIDERATIONS

- Threat identification
- Clinical capabilities
- Host nation support
- Medical intelligence
- Dental services
- Health services support (HSS) for returned US prisoners of war and detained persons
- HSS for detainees
- Preventive medicine and health surveillance
- Pharmacy services
- Prevention of stress casualties
- Medical logistics (MEDLOG)
- Patient movement
- Patient movement items
- Veterinary services
- Mass casualty situations
- Additional HSS considerations

Medical Resources

When assessing the medical resources available to support the operational mission, both medical assets that are organic to nonmedical organizations (eg, a medical platoon assigned to an infantry battalion), and specifically missioned medical organizations (eg, medical company, surgical company), must be considered. The full continuum of available resources to consider includes all personnel, medical organizations and their current capabilities, medical logistics, patient movement assets (both medical and nonmedical), patient movement items, and host nation assets. One method for this step is to take an inventory of HSS assets available and their capability across the continuum of care; eventually the MSO will compare this inventory with the capabilities needed to successfully support the mission to determine *medical support gaps*. The MSO must then communicate any known shortfalls, and the risks associated with these gaps, to higher headquarters.

During mission analysis in the introductory scenario, staff may have determined that due to the enemy's capability and tactics, there is a high probability the mission will generate trauma surgical casualties (remember, translate what is discovered during mission analysis into useful and meaningful information). For this mission, the healthcare provider would want to ensure that internal assets are available, equipped, trained, and positioned to support surgical casualties. Questions for the MSO to consider are: Do both medical and nonmedical personnel have the required medical supplies for the types of injuries they may encounter at the point of wounding (tourniquets, clotting agents, and compressed gauze)? Are personnel properly trained to treat these injuries? Additionally, the healthcare provider should ensure surgical assets are in a position to support the operation, both from a time/distance factor and the ability to readily accept casualties.

Conducting the analysis of *support available* provides the MSO with the information needed to support COA development, analysis, and eventual recommendation to the commander. If surgical assets are not in a position to provide timely support, the provider has identified a capability gap that must be mitigated. In this case a surgical asset might be temporarily relocated to provide timely support, or an evacuation asset could be relocated closer to the fight to provide a faster time from wounding to forward resuscitative surgery capability. A good technique is to trace the continuity of care from the unit to the next higher role of care. For example, a provider at a Role 1 aid station should trace a casualty from the

point of injury to Role 2 and a forward resuscitative surgical capability. This would entail identifying who will provide care from the point of injury to Role 2; evacuation methods from the point of injury to Role 2; the means to provide medical resupply; and the means to communicate throughout the medical continuity chain.

Vignette 18-3. During mission analysis for each of our operations [1st Battalion/505th Parachute Infantry Regiment in Fallujah, Iraq], the principles that we have detailed [prevention, proportion, preparation, portability, proximity, protection, and projection] . . . were taken into account. These principles were developed through our close interaction with our line commanders and battalion staff (in regular daily briefings, informal discussions during the planning process, and even over conversations at meal time). We were able to use their knowledge and experience in infantry operations and combine it with our medical knowledge and experience to develop medical coverage for the task force upon which both command and medical providers agreed.⁹

Time

Another critical resource to consider is *time available*. For most planning, time is not infinite. The MSO must consider, especially at the tactical and operational level, the amount of time required to prepare for mission execution. The MSO must ensure that those who will execute the mission are provided ample time to prepare. The typical rule of thumb at the tactical level is a 1:2 ratio of leaders to staff (ie, the MSO utilizes one-third of the time, leaving two-thirds of the time for subordinates to plan and prepare to execute the mission). Time, obviously, is the one resource that is nonrenewable; it must be used wisely.

Risk Management

Risk management is the process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk cost with mission benefits.² The medical planner should address the hazards associated with the operational environment, such as food- and water-borne illnesses, disease vectors, person-to-person transmission of disease, harmful animals and toxic plants, environmental risks, and likely battle and nonbattle injuries. The planner should also identify control measures that can be implemented to mitigate these hazards. Although the risk management process is fairly consistent among the services, each service has doctrinal publications that outline their specific process.^{6,10-13}

The mission analysis is completed with the commander issuing their initial intent, planning guidance,

and evaluation criteria that will be used during COA selection. Mission analysis will begin to bring HSS requirements into focus; while COA development and

analysis (war-gaming) will bring refinement to the HSS requirements. Joint Publication 4-02, *Healthcare Service Support*, fully discusses HSS considerations.³

COURSE OF ACTION DEVELOPMENT, ANALYSIS, COMPARISON, AND APPROVAL

Course of Action Development

Following mission analysis, staff begin developing COAs that meet the commander's intent and the stated mission. A COA is a potential *how* (proposed solution or method) to accomplish the assigned mission.¹ All COAs, along with supporting medical plans, must adhere to specific screening criteria to ensure validity: each COA must be *adequate, feasible, acceptable, distinguishable, and complete*.¹ A healthcare provider might equate this step to the treatment plan to cure or manage a patient's illness. COA development entails assessing the friendly versus enemy forces, generating options, arraying the forces, developing a broad concept, and finally, developing COA statements and sketches.

During COA development, the MSO applies the information learned from the mission analysis coupled with the operational COA to develop a *synchronized* medical support plan. It is important to understand that the mission analysis, to a great extent, determines the medical capability requirements. The operational COA further defines requirements, as well as driving the employment of the medical capability requirements in the form a medical support plan. At this point the MSO should reflect back on the principles of HSS (*conformity, control, continuity, proximity, mobility, and flexibility*; see Chapter 14), and the medical and HSS planning considerations, whether the plan is strategic or tactical. The MSO should begin overlaying medical support capabilities onto the operational plan and sketching out a medical support plan specific to each operational COA.

Furthermore, casualty estimates can become more refined during COA development. Lastly, the MSO has the responsibility to communicate any known medical support risks to the operational plan. The commander must know the risks a specific operational plan may pose to medical support capabilities, and the staff has the responsibility to mitigate risks as much as possible. The commander makes the final decision on whether to accept the risk or not for each COA as the final operational plan is selected.

Course of Action Analysis (War-Gaming)

Following COA development, the next planning phase is COA analysis. During this phase, the staff methodically examines each COA to determine more

precisely its advantages and disadvantages and the likelihood that it will achieve the mission. COA analysis is conducted through "war-gaming," in which the commander and staff visualize the plan set against the operational environment and enemy forces. War-gaming helps identify advantages and disadvantages, execution and coordination problems, operational gaps, points of decision-making, and contingencies. COA war-gaming can be conducted in various ways; the easiest and most basic is to war-game the plan by critical event or phase through a table-top method using the action, reaction, and counteraction moves of friendly and enemy forces. For the MSO, war-gaming is also an opportunity to analyze the COA for casualty-producing events and required HSS support.

Course of Action Comparison and Approval

Following COA analysis, the commander and staff conduct a COA comparison. Using the evaluation criteria identified during mission analysis and refined during COA development and analysis, they identify strengths and weakness and determine the best COA. Common methods for evaluating COAs include non-weighted, weighted, advantages/disadvantages, and pluses/minuses/neutral comparison matrices. COAs of friendly forces are not compared against each other; rather, they are independently compared against predicted enemy COAs, using agreed-upon evaluation criteria. The COA with the superior rating typically becomes the COA recommended to the commander.

Functional staff officers, including the MSO, conduct a COA comparison based on their respective functional areas and provide their recommendation as part of the overall COA comparison. Just as the operational staff compares COAs to identify the strongest one for a successful mission, the MSO compares them to identify the strongest in terms of medical support. It may be possible to use the same evaluation criteria for the operational and medical COAs, or they might require different criteria. The medical COA might use evaluation criteria such as proximity to the operational forces, casualty estimate, or ground evacuation routes. It is incumbent upon the MSO to honestly evaluate the medical support COAs and provide the commander with the best recommendation.

Once the commander approves an operational COA, the staff begin developing the orders or plan.

Planning Initiation

- Receive the Mission**
 - Alert the Staff
 - Gather Orders, Estimates, Maps, & Graphics
 - Seek Commander's Guidance

Mission Analysis

- Define the Operational Environment**
 - How does the Operational Environment affect HSS planning?
 - What HSS resources are needed to mitigate operational environment threats?
 - Begin thinking about the type of casualties and the number of casualties.
- Determine Specified, Implied & Essential Tasks**
 - What HSS tasks must be accomplished to support the unit's mission?
- Review Available Assets & Identify Resource Shortfalls**
 - What assets are assigned, attached or in support of the HSS mission?
 - What assets do you need to accomplish your mission?
 - Think about the operational environment, identified tasks, and potential types and number of casualties - review the HSS planning considerations – what is missing that is needed?
- Determine Constraints**
 - How do the constraints placed on the unit impact the HSS Plan?
 - What constraints do the Medical Rules of Engagement (MROE) place on the HSS mission?
- Identify Critical Facts & Key Assumptions**
 - What do you know to be true? What critical facts impact the HSS mission?
 - What assumptions must be made to bridge any gaps in factual data?
- Commander's Critical Information Requirement**
 - Is there any critical medical planning information that is key to the commander's decision-making?
- Information Collection Plan**
 - Is there any additional information that reconnaissance, surveillance or intelligence can assist you with planning?
- Begin Risk Management**
 - What hazards are associated with the Operational Environment?
 - Consider Food/Water-Borne, Vectors, Person-to-Person, Animals and Plants, Environmental, Non-Battle and Battle Injuries.
 - What control measures can be implemented to mitigate the hazards?
- Develop a proposed mission statement**
 - What is your unit's mission? How do you medically support it? Refer back to your specified, implied and essential tasks.
- Develop COA Evaluation Criteria**
 - Identify evaluation criteria that will be used to measure the relative effectiveness and efficiency of one COA relative to other COAs.

Course of Action Development

- Develop medical support options.**
 - Screening Criteria (Suitable, Feasible, Acceptable, Distinguishable, and Complete).
- Develop a broad, synchronized scheme of medical support.**
 - Begin to redefine casualty estimates.
- Array medical forces.**
- Prepare COA Statement/Sketches.**

Course of Action Analysis

- Conduct War-game.**
 - Identify advantages/disadvantages.
 - Execution & Coordination Problems.
 - Operational Gaps.
 - Points of Decision Making.
 - Contingencies.
 - Identify medical support risks to the operational plan.
- Identify casualty producing events.**
- Refine Casualty Estimates.**

Course of Action Comparison

- Use evaluation criteria to compare COAs against enemy COA.**
- Provide functional recommendation as part of overall COA comparison.**

Course of Action Approval

- Commander selects COA.**
- Issue Warning Order.**

Orders Production

- Translate COA into plan/order.**
- Synchronize plan/order.**
- Issue OPORD.**
- Conduct Rehearsals.**



Figure 18-7. Uniformed Services University of the Health Sciences students in planning exercise. Photograph by Thomas C. Balfour, Uniformed Services University.

Figure 18-6. Operation planning process reference guide.

EXHIBIT 18-4**KEY POINTS FOR THE MEDICAL STAFF OFFICER**

- Joint Publication 5-0 defines the joint operation planning process (JOPP) as “an orderly, analytical process, which consists of a set of logical steps to examine a mission; develop, analyze, and compare alternative COAs; select the best COA; and produce a plan or order.”¹
- The services have a planning process (MDMP, NPP, MCPP, JOPPA) that closely mirrors the joint operation planning process.
- It is important to have a solid grasp of your service’s planning process.
- The MSO must be involved early in the planning process.
- Mission analysis is the most important step of the planning process. An inaccurate or incomplete mission analysis will sabotage the planning process and very well could lead to catastrophic results.
- Mission analysis assists with identifying support gaps and drives HSS capability requirements.
- HSS planning considerations provide a “checklist” that the MSO can use during mission analysis and COA development.
- It is critical to reflect on the principles of HSS and HSS planning considerations when developing support plans, whether strategic, operational, or tactical.
- The MSP must be synchronized with the operational plan.
- It is important to use all available intelligence resources, including fellow staff officers, units, and personnel that have previously operated in the area, to accurately identify the operational environment and the threat.
- It is important for the MSO to have a thorough understanding of the tasks that are required for success and where and how medical assets can support the mission.
- The MSO must communicate vertically and horizontally throughout the planning process.
- Time is not infinite; remember the one-third to two-thirds rule.
- HSS planning is an iterative process. The MSO must be prepared to revisit any step of the planning process based on new information as well as guidance from the commander.
- The MSO has the responsibility to communicate any known medical support risks to the operational plan.
- Seek opportunities to be involved in the planning process. The more you practice, the better you will become.

COA: course of action; HSS: health services support; JOPPA: joint operation planning process for air; MCPP: Marine Corps planning process; MDMP: military decision-making process; MSO: medical staff officer; MSP: medical support plan; NPP: Navy planning process
 1. Chairman of the Joint Chiefs of Staff. *Joint Operations Planning*. Washington, DC: JCS; 11 August 2011. Joint Publication 5-0.

The MSO’s role in the orders development process is to ensure the medical support plan is written into the operational plan, whether located in the operations order, plan, or supporting annex. Templates for orders, plans, and annexes can be found in joint and service component planning documents (see **Resources**). An operation planning process reference guide is provided in Figure 18-6, and key points for the MSO are list in Exhibit 18-4.

The processes and steps described above should be very familiar to students (Figure 18-7) and practitioners of the healing professions. As discussed earlier, clinicians will recognize the process of mission analysis,

COA development, COA comparison, and selection of an operational plan as parallel to what ideally occurs in caring for patients. In partnership with the patient, the clinician seeks to understand the health challenges facing the patient, to appreciate the patient’s desires in achieving optimal health, to use current scientific insights and best practices to develop potentially competing COAs in managing the illness (diagnosing and treating), and ultimately arriving at the optimal approach, tailored to the individual patient and clinical situation. Because of these parallels, medical professionals are well positioned to adapt their skills in critical thinking to the demands of battlefield operational planning.

RESOURCES

Policy and practice change over time. Doctrine, that is, published official guidelines and policies, will change in content, but military references will retain their numeric designation. Listed below are the ser-

vices’ primary planning documents and corresponding HSS or medical operations planning documents. They should be monitored over time for key principles and practices. In addition to doctrinal publications, MSOs

should review after-action reports, lessons learned, and scholarly articles to hone planning skills.¹⁴

Joint

- Chairman of the Joint Chiefs of Staff. *Joint Operations Planning*. Washington, DC: JCS; 11 August 2011. Joint Publication 5-0.
- Chairman of the Joint Chiefs of Staff. *Joint Health Services*. Washington, DC: JCS; 11 December 2017. Joint Publication 4-02.

Army

- Headquarters, Department of the Army. *Commander and Staff Organization and Operations*. Washington, DC: HQDA; May 2014. Field Manual 6-0.
- Headquarters, Department of the Army. *Army Health System Support Planning*. Washington, DC: HQDA; September 2015. Army Techniques Publication (ATP) 4-02.55.
- Headquarters, Department of the Army. *Risk Management*. Washington, DC: HQDA; April 2014. ATP 5-19.

Navy

- Department of the Navy, Office of the Chief of Naval Operations. *Navy Planning*. Washington, DC: CNO; December 2013. Navy Warfare Publication (NWP) 5-01.
- Department of the Navy, Office of the Chief of Naval Operations. *Naval Expeditionary Health Service Support Afloat and Ashore*. Washington,

DC: CNO; January 2008. NWP 4-02.

- Department of the Navy, Office of the Chief of Naval Operations. *Operational Risk Management*. Washington, DC: CNO; 2 July 2010. Operational Navy Instruction 3500.39C.

Marine Corps

- Headquarters, Department of the Navy, US Marine Corps. *Marine Corps Planning Process*. Washington, DC: USMC; 24 August 2010. Marine Corps Warfighting Publication (MCWP) 5-1.
- Headquarters, Department of the Navy, US Marine Corps. *Health Service Support Operations*. Washington, DC: USMC; 10 December 2012. MCWP 4-11.1.
- Headquarters, Department of the Navy, US Marine Corps. *Risk Management*. Washington, DC: USMC; 26 November 2014. Marine Corps Order 3500.27C.

Air Force

- Headquarters, Department of the Air Force. *Operations and Planning*. Washington, DC: USAF; 4 November 2016. Doctrinal Annex 3-0.
- Headquarters, Department of the Air Force. *Medical Operations*. Washington, DC: USAF; 29 September 2015. Air Force Doctrine Document 4-02.
- Headquarters, Department of the Air Force. *Risk Management (RM) Guidelines and Tools*. Washington, DC: USAF; 27 July 2018. Air Force Pamphlet 90-803.

SUMMARY

This chapter provides only an introductory exposure to the planning process and the accompanying HSS planning considerations. The best way to learn and to master the planning process is to actively engage in actual operational planning, but planners should first have a general understanding of their service's process—the steps, considerations, and functional (eg, medical) points of interaction with the warfighter. It is incumbent upon the MSO to acquire proficiency in planning. The documents listed in the **Resources** section should be a part of every healthcare provider's library, or accessible through the Internet; they should routinely be referred to when engaged in planning.

Additionally, healthcare providers must actively seek out opportunities to engage in planning, no mat-

ter the scope of the mission or size of the operation. Such opportunities include table-top exercises, mission rehearsal exercises, local field training exercises or events, mass casualty exercises, and deployments to national training centers. Another opportunity is participating in war-game scenarios with fellow staff officers; these interactions can be conducted over a cup of coffee and demonstrate that MSOs are a member of the team. Experienced personnel should be sought out for advice and mentoring. Finally, remember that no one should be "married to the plan"; once mastered, planning can be conducted slowly and deliberately or quickly and adeptly. Experience and proficiency in effective planning enhances adaptability in real-world events and is a key element to an MSO's success in protecting and caring for those in uniform.

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3. Chairman of the Joint Chiefs of Staff. *Healthcare Service Support*. Washington, DC: JCS; 26 July 2012. Joint Publication 4-02.
4. Headquarters, Department of the Army. *Commander and Staff Organization and Operations*. Washington, DC: HQDA; May 2014. Field Manual 6-0.
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