Military Medical Executive Education Review

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CNA

Approved for distribution: September 2007

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Contents

Executive summary

Today's military treatment facility (MTF) commanders and other senior military healthcare executives face unprecedented challenges. The Department of Defense (DoD) is responsible for managing a large and complex healthcare system. The Military Health System (MHS), one of the largest and oldest delivery systems in the United States, must execute twin missions. Sustaining a medically ready force and providing health services for those injured and wounded in combat remains its primary mission. Like its private-sector counterparts, DoD must also grapple with how to control costs and increase productivity while improving patient access, satisfaction, and outcomes for its traditional healthcare delivery system. The MHS serves over 2.2 million members in the Active, Reserve, and Guard components (including over 251,000 Service members deployed overseas), another 7 million family members, and retirees [1]. A vital part of our Nation's military readiness hinges on the ability of the MHS to provide and orchestrate top-quality medical and administrative care to the armed forces and their family members. Because over 9 million Americans rely on this system for their medical and public health needs, Congress, the media, and the general population continually scrutinize DoD's performance in this area.

Background

In 1992, Congress mandated that commanders of MTFs must possess certain executive competencies before assuming their command positions. In 1997 and 2001, Congress expanded these criteria to include prospective deputy commanders, lead agents, and managed care coordinators. In response to this congressional legislation, DoD and the Services established a joint medical executive skills development program (JMESDP) to meet their obligations to prepare MHS officers for their executive duties. The foundation of that program focused on a group of first 36, and later 40, executive competencies

that represent a unique skill set that military healthcare executives must possess.[1] The JMESDP includes a core curriculum outlining the behaviors that demonstrate competency achievement and established an array of medical executive education courses designed to enhance competency development.

Forty MHS medical executive core competencies

These competencies that represent the unique skill set military healthcare executives must possess are categorized under seven broad domains: (1) military medical readiness, (2) individual and organizational behavior, (3) health resources allocation, (4) health law and policy, (5) leadership and organizational management, (6) ethics in healthcare environment, and (7) performance measurement and improvement (see figure 1).

Figure 1.   Forty MHS medical executive core-competencies; categorized by domain

Military medical readiness	**Individual and organizational behavior**	**Health resources allocation**
•Medical doctrine •Military mission •Joint operations •Total force management •National disaster medical systems •Medical readiness training •Contingency planning	•Individual behavior •Group dynamics •Conflict management •Communication •Public speaking •Public and media relations	•Financial management •Human resources management •Labor-management relations •Materiel management •Facilities management •Information management and technology
Health law and policy	**Leadership and organizational management**	
•Public law •Medical liability •Medical staff by-laws •Regulations •External accreditation	•Strategic planning •Organizational design •Decision-making •Change and innovation •Leadership	
Ethics in healthcare environment	**Performance measurement and improvement**	**Note**:
•Ethical decision-making •Personal and professional ethics •Bioethics •Organizational ethics	•Quality management •Quantitative analysis •Outcome measures •Patient safety •Epidemiological methods •Clinical investigation •Integrated healthcare delivery systems	All of the Services have incorporated military education, job experience, and professional certification into their executive skills programs as a means to achieve competency.

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[1] The 40 executive skills competencies were developed jointly by the services with oversight provided through the Joint Medical Executive Skills Institute (JMESI), and working group coordination.

Predominant MHS officer career continuum

There is consensus that the best way to prepare MHS professionals for executive positions is through a continuous mix of broad-based experiences and duties, augmented by education and training courses. Other factors, such as military culture and individual self-motivation, also play important roles in leadership development. When military healthcare professionals first enter service, their duties are mainly focused on honing their primary specialty skills that the MHS requires for medical readiness and beneficiary care (e.g., as an orthopedic surgeon, operating room nurse, optometrist, or comptroller). At later stages in their military careers, DoD and the Services provide broadening opportunities to cultivate their administrative, management, leadership, and executive skills while maintaining their primary specialty expertise. Figure 2 displays the predominant military career path of an MHS officer and the types of experiences and factors that might shape and hone an officer's executive skills. The MHS officer accession pool and workforce is diverse and is composed of healthcare professionals from many different disciplines and specialties.

Figure 2.   Example of predominant MHS officer career continuum and experiences[a]

MHS officers start here by honing their specialty skills

MHS healthcare professionals are accessed into the Army, Navy, or Air Force as:
• Physicians (MC)
• Dentists (DC)
• Nurses (NC)
• Medical Services (MSC)
• Biomedical Sciences (BSC)
• Army Medical Specialist

Selected MHS officers end here with a wide-range of experiences

Paygrades: O-6, O-5, O-4, O-3, O-2, O-1

•Professional education
•Professional military education
•Specialized training (e.g. MHS conferences and leansixsigma)
•Career path/job experience/deployments
•Professional affiliation and certification
•Medical executive education courses
•Distance and e-learning
•Individual motivation
•Timing (external and internal events)
•Culture
•Personal growth and life-long learning

Primary focus of CNA study

Years of commissioned service: 2 4 6 10 16 20

a.   MHS officers are accessed into the military at different entry grade points based on their qualifying degrees and experiences. Individual career paths may also vary because of the philosophy of their particular Service, Corps, or specialty.

Ultimately, each Service's Surgeon General (SG) assigns MTF commanders, lead agent executives, and senior managed care coordinators on a "best qualified" basis through a series of promotion, selection, and screening board processes, but there are differences among the Services in management of the process.[2] Attainment of the 40 competencies does not guarantee selection for medical command or assignment to key executive positions. Although each Service's approach to cultivating senior healthcare executives is unique, there is general agreement that "best qualified" is based on progressive career accomplishments, formal civilian education requirements, professional military education, and broad leadership capabilities [2].

Policy questions considered

High-level policy-makers are becoming increasingly aware that DoD is using a wide array of medical executive education (MEE) courses to help military health professionals prepare for executive positions and meet required core competencies. The TRICARE Management Activity (TMA), within DoD, asked the Center for Naval Analyses (CNA) to help policy-makers better understand the following:

- What are the current objectives, structure, content, and magnitude of selected MEE courses?

- How are the three Services identifying and cultivating people with executive potential, particularly as it relates to MEE courses?

- What are the funding stream and costs for selected MEE courses?

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[2] The AF/SG recommends candidates for MTF commanders and other key positions; however, the AF/SG does not assign MTF commanders. The Air Force line maintains hiring authority and selects/assigns candidates from officers recommended via boarded process.

- How does DoD know if its MEE courses are successfully meeting desired training and development outcomes for future MHS leaders?

- What characteristics—skills, knowledge, abilities, and behaviors—do senior military healthcare executives need to effectively perform their duties?

Approach

Our overall approach in answering the questions posed by policymakers has four basic aspects. First, we began our study by organizing a multidisciplinary working group made up of subject matter experts (SMEs) from the Joint Medical Executive Skills Institute (JMESI), the Uniformed Services University of the Health Sciences (USU), the Army, the Navy, and the Air Force who are directly involved with administering or overseeing their selected MEE courses.[3] We designed, distributed, and collected data sheets from these SMEs to understand the background, literature, directives, structure, content, course objectives, student load and demographics, faculty composition, support staff, performance improvement measures, and costs (direct and indirect) for each of the selected MEE courses.[4]

Second, we conducted an extensive literature review of the pertinent congressional language, DoD and Service-specific policies and instructions, and appropriate civilian material to more thoroughly understand the intent, purpose, and context of the existing MEE programs. We also culled the literature to determine ways the private sector is approaching the task of preparing healthcare

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[3] We gratefully acknowledge the assistance of Dr. Rosemary Durica and her staff (JMESI); Dr. Galen Barbour and CDR Michael Corriere, MSC, USN (USU); Dr. Jody Rogers (Army); CAPT (Select) Patrick Malone, MSC, USN, and his staff (Navy); and MAJ Colleen Daugherty, BSC, USAF, and her staff (USAF).

[4] We gratefully acknowledge the assistance of Michael Spatz, M.D. and Mr. Walter Ruggles at TMA for their assistance in completing this study.

executives [3]. Appendix A provides a detailed account of our literature review analysis.

Third, based on our discussions with policy-makers and MEE SMEs, combined with our literature review analysis, we evaluated five MEE courses offered within the MHS:

- USU MedXellence

- Army Medical Department (AMEDD) Executive Skills

- Navy Advanced Medical Department Officers Course (AMDOC)

- Air Force Intermediate Executive Skills (IES)

- JMESI Capstone symposium.

We also evaluated components of the JMESDP, as a whole, and certain dimensions of JMESI's distance learning modules.

Fourth, we interviewed and met with SMEs at their respective course sites, along with other essential personnel who are involved in the program management, teaching, and funding for these courses. These site visits enhanced and clarified our understanding of the data and information we collected for analysis of the courses. Based on our literature review and interviews with SMEs, we also considered it essential to conduct interviews and meet with key people from selected civilian organizations and consulting firms, to gather their insights and experiences on how healthcare executives are being cultivated.

Findings and recommendations

Based on our collation and analysis of available data, interviews, and site visits, we offer the following findings and recommendations.

Findings

We find that DoD uses a multipronged approach in meeting the congressional mandate of preparing its military healthcare professionals

for senior executive MHS assignments through a combination of activities, including job experience, education, training courses, professional certification, and core competency development.

We find that the 40 MHS core competencies are vague and not easy to describe or evaluate precisely. Currently, no uniform standards and criteria for medical executive skill attainment exist beyond the general objectives and performance behaviors listed in the core curriculum.

We think that one of the most powerful determinants that might be affecting a senior military healthcare executive's behavior is the officer evaluation, promotion, and assignment system that is unique to each Service and not well integrated with JMESDP.

The importance, focus, and intent of the role MEE courses play in the cultivation and ultimate selection of senior MHS executives varies by each Service. Although the JMESDP program and MEE courses are funded to meet this congressional intent, we found it difficult to measure their success in meeting this mandate.

We find that cooperation among the three Services, USU, and JMESI must be enhanced to conserve resources, pool talents, identify best practices, make optimal use of emerging technologies, and achieve common, joint, outcomes. At a minimum, we think some consolidation of MEE courses and distance learning modules could occur.

With the exception of the Capstone course, it appears that some of the MEE courses are designed to train as many individuals as possible (i.e., officer, enlisted, civilian, and others) versus focusing on the congressional mandate, which is to validate that those officers specifically earmarked for senior leadership positions possess the requisite and unique skills to perform those executive duties.

Our review of the JMESDP shows that no formal proponent for medical executive skills exists at the DoD (Health Affairs/TMA) level, resulting in a lack of oversight and coordinated management of this key program. Because each of the Services has a varied philosophy on how to best cultivate and track competency attainment of its healthcare workforce for executive positions, assorted MEE

and distance learning courses are being administered with different objectives, student mix, frequency, and cost-effectiveness.

It appears that the main focus of the current MEE courses and competencies is based on the peacetime benefit mission. Senior MTF executives are increasingly being asked to lead deployable, in-theater medical asset units and to oversee the delivery of combat medicine care in potentially hostile environments. Moreover, MTF commanders must often manage their command's with depleted staff because their personnel must deploy to operational and humanitarian assignment missions. These emerging requirements for senior MHS healthcare executives are military unique and must be addressed through in-house training or professional development.

It is not transparent within the MHS that individual performance is linked to organizational outcomes. DoD wants the MHS to become a more performance-based and result-oriented culture. Both the MHS strategic plan and Quadrennial Defense Review (QDR) stress the importance of transforming the workforce into a joint medical force in which people are evaluated by a set of standardized performance measures and indicators. Our review revealed that the MHS needs to better align its leadership behaviors with its strategy to create a foundational purpose for JMESDP. Without this central focus, MEE courses might become ends in themselves. We think that the performance-based planning process initiative outlined in the QDR will provide a good structure for creating and operationalizing this linkage.

Our cost analysis shows that indirect costs associated with opportunity costs of students, and faculty, being away from their primary duties make up the largest component of total costs—75 percent. In other words, there is a direct correlation between the number of students enrolled in the course, the length of the course, and its indirect costs. Direct costs may be reduced by restructuring course schedules, relocation, and consolidation; reductions to indirect costs may be realized by reducing student and faculty course attendance, through, for example, increased use of distance learning modules for course delivery. An increase in distance learning components may also reduce the travel costs (direct costs) for students and faculty. We find that the current funding stream used to finance these courses is

confusing and might be causing unnecessary overhead charges for the USU MedXellence course.

A wide range of private-sector organizations are actively engaged in developing competency- and performance-based programs to help ensure that healthcare leaders and executives possess the right skills and behaviors. Many organizations are creating a strong link between leadership development and organizational performance through career track, versus just-in-time, training. They are taking a multidimensional approach to leadership development using a variety of learning techniques. Some are focused on how organizations build internal capacities to develop leadership. We see value in JMESDP leaders and private-sector organizations finding ways to learn from each other's experiences and research in their common quest to cultivate and prepare healthcare leaders to meet the demands of the 21st century.

Recommendations

Although, overall, we find that the MHS is satisfactorily meeting its obligation to prepare its workforce for senior executive positions today, we offer recommendations to strengthen its ability to meet this objective in the future:

- Senior MHS leadership at HA/TMA needs to identify a way to oversee the functions and activities of the JMESDP and JMESI (e.g., develop an appropriate forum or office), or else consider reinstating the Joint Medical Executive Senior Oversight Committee (JMESOC).[5]

- Formally designate JMESI as the proponent for the JMESDP. We offer no recommendation on the best geographical or organizational location of JMESI, but we recommend that as an agenda item for the JMESDP oversight function.

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[5] Army noted that in the absence of an active JMESOC, the Commanding General of AMEDDC&S, serving as Executive Agent for JMESI, has communicated JMESP/JMESI issues with HA/TMA.

- The current JMESI organizational structure includes a representative from each military Service. We believe that these representatives are crucial to readily address and effectively negotiate Service-specific issues in an open, cooperative, and transparent manner.

- As the JMESDP proponent, JMESI would be responsible for the following:

- Ensure that standards and criteria for executive/management skill development/achievement are integrated throughout not only the JMESDP but all appropriate levels in Service-specific education, training, and experience.

- Validate the pool of qualified senior MHS healthcare professionals who have achieved required core executive competencies to fulfill executive positions, in coordination with the Services.

- Determine the required number of student throughput for the MEE courses, based on projected inventory and billet requirements.

- Determine what patterns of knowledge, skills, abilities, and behaviors (i.e., competencies) MHS officers should demonstrate at the entry, mid-level, and senior levels to be considered for MTF command and other key positions.

- Prepare a gap analysis of the predominant MHS officer career path (knowledge, skills, abilities, and behavior) and likely experiences with the requirements needed to command an MTF or serve in other key MHS executive positions.

- Tailor and develop competency-based leadership learning programs that directly support and align with MHS's strategic goals. These programs and courses should augment likely gaps in competencies that an officer is not likely to acquire through experience and professional certification.

- Identify and develop curriculum that addresses the unique skills, knowledge, and behaviors required by senior MHS executives when managing deployable in-theater medical assets versus fixed MTF commands.

- Identify cost-efficient ways to better link leadership development to real-time organizational experiences, like the flux and potential decrease in MTF staff because of operational and humanitarian mission assignments.

- Find creative ways to reduce the amount of time officers spend away from their primary duty station and specialty to accomplish required leadership training and development. For example, JMESI has a robust distance learning program. There are currently 3,800 students enrolled in various modules and we think these modules can augment, and possibly replace, some of the existing face-to-face courses.

- Design and develop "joint" and Service-specific (when appropriate) medical executive skills curricula and distance learning modules.

- Develop a reliable and cost-effective tracking and monitoring system for executive competency attainment that will capitalize on existing Service-specific data systems being used today.

- Standardize definitions, criteria, and output measures used for MEE courses throughout the JMESDP.

- Allocate and manage JMESDP resources.

- Collaborate and communicate with USU, other federal organizations, and private-sector organizations (as appropriate) that are involved with leadership development activities.

- Design and administer survey instruments to executive incumbents to determine what competencies they think they need to perform their duties.

- Identify and distribute tools and techniques to MHS executives on *how* certain activities and processes within the MHS can be better examined and ultimately accomplished.

Organization of this report

A great deal of information was gathered, collated, and analyzed for this study. The main section of this report is in three parts:

- First, we present a brief historical perspective of how the MHS has changed to provide context for the relevance, emphasis, and importance of military medical executive development. Understanding and integrating all of the moving parts of this transformation and the MHS mission require a unique set of leadership competencies.

- Next, we highlight some of the most important aspects of selected MEE courses, including their intent, typical student mix, and costs. We also summarize relevant facets of the organization framework used to oversee JMESDP.

- Then, we provide insights and views from both a human capital perspective and the private-sector domain on imperatives for better preparing future healthcare leaders to meet the demands of the 21st century. [6]

Also included in this report are selected quotations and excerpts that we hope will inform the reader. In addition, the following appendices provide detailed accounts of the data collected and analyzed during the course of this study:

- Appendix A — Literature review

- Appendix B — USU MedXellence course

- Appendix C — Army AMEDD Executive Skills course

- Appendix D — Navy AMDOC

- Appendix E — Air Force IES course

- Appendix F — JMESI Capstone symposium

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[6] We gratefully acknowledge the assistance of Marie Sinioris and Joyce Anne Wainio (National Center for Healthcare Leadership (NCHL)) and Cynthia Hahn (American College of Healthcare Executives (ACHE)) for sharing their insights with us.

- Appendix G — HLA competency directory

- Appendix H —AAMA certification procedures.

> **"A leader is one who manifests direction, integrity, hardiness, and courage in a consistent pattern of behavior that inspires trust, motivation, and responsibility on the part of followers who in turn become leaders themselves."**
>
> **Warren Bennis, PhD.**
> **Journal of Healthcare Management Volume 43, #4-July/August 1998**

Historical perspective on MHS transformation

During the past 15 years, Congress has issued specific directions to DoD concerning the preparation of officers to command a military medical treatment facility, including their deputies, managed care coordinators, TRICARE lead agents, and senior members of lead agent staffs. This section of the report briefly highlights some of major shifts that have occurred within the MHS. These changes have affected the *conditions and nature of work* for military healthcare professionals, particularly those placed in senior executive leadership positions.

Background

In the past three decades, the MHS has undergone several transformations. The Reagan Administration achieved large budget increases in DoD, resulting in large billet increases within each of the military medical departments. *Readiness* was the focus of the 1980s, but the end of the cold war in the 1990s resulted in a deliberate downsizing of the military medical departments [4]. In the aftermath of the September 11th terrorist attacks and resulting conflicts, the balancing act between the readiness and peacetime missions of the MHS has intensified because of the increasing pressure to care for the sick and wounded in-theater and in MTFs, to control costs, and to develop a performance-based health management plan—while maintaining patient satisfaction and positive patient outcomes.

Reduced officer inventory and infrastructure

Because DoD relies on a single force to meet its dual mission support areas, it must cultivate a workforce that is dedicated to caring for patients, committed to continuous improvement in performance and productivity, and competent in both wartime and peace-

time settings. To attend to the sick and wounded in time of war, all three Services deploy in-theater medical assets and appropriately trained healthcare personnel. Military healthcare professionals must be prepared to deploy in harm's way and leave their families for extended periods. DoD has decreased its active duty MHS officer inventory by almost 23 percent, from 44,910 in FY 1991 to 34,793 in FY 2006 (see table 1). This reduced end-strength, coupled with the continuing twin missions of peacetime care and Force Health Protection, has placed additional stress and increased operational tempo within the active duty workforce.

The number of military medical centers and hospitals has also fallen since the 1990s, largely because of Base Realignment and Closure (BRAC) actions. In FY 1992, there were roughly 150 military inpatient facilities worldwide, compared with about 70 today [5]. [7] Senior healthcare professionals have less opportunity to command an MTF because of this reduced infrastructure.

Table 1.   MHS active duty officer inventory, FY 1991 and FY 2006[a]

Officer category	FY 1991	FY 2006	Percentage change
All officer personnel	44,910	34,793	-23
-Physicians	14,225	11,516	-19
-Dentists	4,736	2,917	-38
-Nurses	13,048	9,392	-28
-Medical Service	9,068	7,616	-16
-Biomedical Sciences	2,563	2,222	-13
-Army Medical Specialist	1,270	1,130	-11

Source: 2006 Defense Manpower Data Center, HMPDS Report

a.   Data exclude Veterinary Officers, and the FY 1991 Army Medical Specialist inventory includes Warrant Officers.

Evolution of the MHS benefit and organizational structure

The military healthcare benefit itself is a congressionally authorized program. Congress determines the level of the benefit but leaves actual implementation to DoD and the three Services [6, 7, 8]. Although the task of giving structure, shape, and definition to federal

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[7] There are also 411 medical clinics and 417 dental clinics within the MHS, in addition to a network of civilian providers.

policy empowers DoD during the implementation of the benefit, it is limited by readiness requirements, congressional mandates, and funding.

Since 1956, the peacetime mission of the military healthcare system has expanded significantly. The 1956 Dependents' Medical Care Act officially established a statutory basis for the availability of healthcare services to active duty dependents, retirees, and their dependents at MTFs. It also authorized the Secretary of Defense to contract with civilian healthcare providers for active duty dependents' medical care. Before that time, active duty members received first priority for healthcare at the MTF; their dependents were eligible for care on a space-available basis. The largest, major change to the benefit occurred under the Military Medical Benefits Amendments of 1966 when Congress enacted a number of provisions expanding both MTF- and civilian-provided health services. The covered services added under the act essentially provided comprehensive health service coverage for all military beneficiaries and broadened the authority of the Services to contract with civilian providers to supplement MTF healthcare through a program commonly known as CHAMPUS.

Until the 1990s, the military healthcare benefit consisted of two components. First, beneficiaries were eligible for care at MTFs. Most DoD-sponsored healthcare was provided this way. Second, beneficiaries who did not live near MTFs or could not be treated at a local MTF because of nonavailability of care could use civilian providers. On 14 December 1991, Program Budget Decision 742, Consolidation of Defense Health Program (DHP) Resources, brought under the control of the Assistant Secretary of Defense (Health Affairs) all medical resources except military personnel funds and resources in support of deployed medical units.

In the 2001 National Defense Authorization Act, Congress enacted a landmark addition to the benefit, beginning 1 October 2002, requiring that TRICARE be extended to all DoD Medicare-eligible beneficiaries. Before this legislation, when DoD retirees and their dependents became eligible for Medicare at age 65, they lost their eligibility to enroll in TRICARE Prime or to seek reimbursement of healthcare costs through TRICARE Extra or TRICARE Standard.

However, they were allowed to seek care and pharmacy refills from MTFs on a space-available basis.

The transition to TRICARE

As we previously discussed, until the mid-1990s, the military health-care benefit consisted of two components. First, beneficiaries were eligible for care at MTFs. Most DoD-sponsored healthcare was provided this way. Second, beneficiaries who did not live near MTFs or who could not be treated at a local MTF because of nonavailability of care could use civilian providers of their choice and have the majority of their expenses reimbursed under CHAMPUS. The funding for the MTF was channeled through each of the three Services individually, and the funding for CHAMPUS was channeled through DoD. High medical cost inflation through the 1980s and the early success of managed care in controlling costs in the private sector led DoD to test alternative healthcare delivery and financing mechanisms and to change the way it delivers its healthcare benefit.

In 1994, after a series of demonstrations and evaluations, Congress mandated DoD to develop and implement "a nation-wide managed healthcare program for the military health services system" [9]. The primary goals of TRICARE include improving access to and quality of care while keeping beneficiary out-of-pocket costs at or below what they would have been under the traditional benefit. Congress also mandated that TRICARE cost no more to DoD than what the traditional benefit of MTF care and CHAMPUS would have cost. TRICARE was implemented nationwide between 1995 and 1998. In accordance with Congress's direction, DoD modeled the TRICARE program on health maintenance organization (HMO) and other government types of plans offered in the private sector that are regionalized managed care programs.

Organizational structure

The Office of the Assistant Secretary of Defense (OASD) for Health Affairs (HA) reports to the Under Secretary of Defense for Person-

nel and Readiness (USD/P&R).[8] As a DoD organization, the MHS is composed of five entities: HA, TMA, and the medical components of the Army, Navy, and Air Force. HA issues policies, procedures, and standards for TRICARE and prepares the DoD healthcare budget.[9] TMA executes and manages the healthcare program of the military and ensures that the DoD policy on healthcare is implemented across the MHS. Three TRICARE Regional Offices (TROs) and two TRICARE Area Offices (TAOs) support the day-to-day functions of TMA. These five offices monitor and oversee the TRICARE program by working with healthcare providers who participate in TRICARE and communicate with beneficiaries. Medical divisions headed by an SG at the Army Medical Department (AMEDD), an SG at the Navy Bureau of Medicine and Surgery (BUMED), and an SG at the Air Force Medical Service (AFMS) spearhead military healthcare within each of the Services. The Services manage the medical workforce and operate the MTFs.

Strategic plan

The MHS strategic plan uses a balanced scorecard approach to define future success through a variety of performance indicators, including financial, beneficiary, internal business processes, and learning and growth. Currently, the MHS leadership is concentrating its resources and management efforts on achieving the following six strategic goals [10]:

1. Enhance the deployable medical capability, force medical readiness, and homeland defense, including humanitarian missions

2. Sustain the military health benefit through top quality patient-centered care and long-term patient partnerships with a focus on prevention

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[8] Information was gleaned from www.ha.osd.mil/ and from www.tricare.osd.mil.

[9] The FY 2006 budget for all DoD healthcare was $37.1 billion.

3. Provide globally accessible, real time, health information that enables medical surveillance and evidence based healthcare

4. Provide incentives to achieve quality in everything the MHS does (DoD wants to create a culture of continuous improvement and consistently do the simple things extremely well.)

5. Unleash the potential of our most valuable asset: Our people

6. Build and sustain the best hospitals and clinics and nurture a caring environment.

Conclusions

The next section of this report presents our analysis of selected MEE courses. We note the following trends from this analysis:

- The MHS has undergone significant change, and additional transformation appears to be on the horizon.

- The burden of executing and sustaining policy changes at the local MTF level falls on the shoulders of senior military healthcare executives.

- The focus on readiness in the 1980s was replaced in the late 1990s by productivity and patient outcomes. Today, military healthcare executives must concurrently focus on both the readiness and peacetime care aspects, including potential homeland defense requirements.

- The organizational structure, resource allocation, benefit, the administration of that benefit, and the MHS force structure (and infrastructure) designed to deliver that benefit continue to evolve.

- Despite the readiness constraint, DoD and the Service medical departments will need to commit increasing shares of their resources to meet the demands of their aging patient population, particularly in light of the recent TRICARE-For-Life legislation.

Based on major changes in the MHS landscape and noted trends above, it becomes clear why Congress wants assurances that DoD is properly preparing its military healthcare executives to serve in vital positions. We now turn our attention to the evaluation of JMESDP and selected MHS MEE courses.

<u>10</u> Attributes of High-Performing Hospitals
- Focus on customer service; the organization must be patient focused
- Create a culture that supports service quality and clinical quality
- Recruit and retain the right employees
- Align performance objectives with organizational goals
- Form multi-disciplinary performance improvement teams
- Train clinicians to work effectively in teams
- Motivate and reward staff
- Provide staff with the appropriate education and resources to do their jobs
- Foster innovation
- Monitor and report results

Source: Hospitals and Health Networks ® (H&HN) research, 2007

Summary of MEE courses

The medical executive education (MEE) courses we highlight in this section of the report represent one aspect of DoD's multi-pronged approach to prepare MHS healthcare professionals for prospective executive positions. As we discussed earlier, there is consensus that the best way to prepare MHS professionals for executive positions is through a continuous mix of broad-based experiences and duties, augmented by education and training courses. Other factors, such as military culture and individual self-motivation, also play important roles in leadership development.

Before we begin our evaluation of the MEE courses, it is important to understand the origin of DoD's executive skills development program because it is why the MEE courses exist in the first place.

Origin of DoD's executive skills development

As we have discussed, in response to the changing and more sophisticated MHS landscape, Congress began issuing specific directions to DoD in 1992 concerning the preparation of officers serving in key and senior executive positions.

Section 760 of the Floyd D. Spence National Defense Authorization Act 2001 states that:

> No person may be assigned as the commander, deputy commander, or managed care coordinator of a military medical treatment facility or as a TRICARE lead agent or senior member of the staff of a TRICARE lead agent office until the Secretary of the military department concerned submits a certification to the Secretary of Defense that such person has completed training described in subsection (a).

DoD Instruction 6000.15 sets forth the policy and assigns responsibility for how the MHS will meet Congress's mandate [11]. This directive formalizes the Joint Medical Executive Skills Development Program (JMESDP] and states that:

> The MHS will prepare officers to be MTF commanders and TRICARE lead agents through progressive series of career enhancing duty assignments and educational experiences to develop leadership skills and professional competencies.[10] The Military Departments will implement this policy within the context of their individual medical department personnel management policies and systems; however, none of the funds appropriated in this Act may be used to fill the commander's position at any military medical facility with a health care professional unless the prospective candidate can demonstrate professional administrative skills.

The JMESDP is the MHS program for improving the planning and the processes that enable medical department officers to gain and demonstrate executive skills competencies. The Secretary of the Army, through the Army Medical Department Center and School (AMEDDC&S), is designated the Executive Agent for the JMESDP. The Deputy Executive Director, TRICARE Management Activity, chairs the Joint Medical Executive Skills Oversight Committee (JMESOC)[12].[11] The JMESOC has membership from each of the military medical departments and USU. The Joint Medical Executive Skills Institute (JMESI)[12] executes the day-to-day business of the JMESDP and the decisions of the JMESOC, and its Director chairs a multidisciplinary working group made up of representatives from

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10. It is interesting to note that we could find no data or analysis that was used to determine the number of MHS officers that require MEE courses based on a substantiated requirement. A valid question for the future is whether any MEE courses that are not meeting the specific congressional intent should be expanded.

11. The JMESOC has not convened for almost 4 years.

12. JMESI was formerly known as the Virtual Military Health Institute (VMHI).

each Service, USU, and TMA.[13] Each Service has its own executive skills programs.

In 2002, the Deputy Executive Director at TMA issued a memo, *Joint Medical Executive Skills Operating Guidance*, that assigns responsibilities for the entities involved in the oversight, implementation, and maintenance of the JMESDP [13]. This guidance states that the JMESDP exists to ensure that senior military healthcare executives possess the requisite professional administrative knowledge and skills to efficiently and effectively manage DoD's healthcare system. It also delineates the responsibilities of the JMESDP to include [13]:

- Establish, maintain and periodically review a core curriculum of professional executive competencies to ensure DoD's prospective health managers are prepared to lead and manage the complexity of healthcare delivery in the Military Health System.

- Support and sponsor the development and delivery of education and training opportunities for military healthcare executives that achieve the objectives of core curriculum attainment and validation of healthcare executive competency.

- Develop and implement policies and processes for the standardization and documentation of competency attainment of DoD's healthcare executives. Ensure that the jointly developed standards for competency attainment are regularly updated and address: Service specific needs; various means and pathways towards achievement of professional certification (such as experience, advanced education, training courses and other professional credentials); and are at least as rigorous and comparable to private sector healthcare professional certification processes.

- Ensure that the focus and delivery of JMESP-sponsored executive medicine training opportunities foster competency achievement and complement the broader education and development objectives of the Services.

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[13] When CNA began this study in September 2006, this working group had not met since May 2003.

- Upon the recommendation of the Director, JMESI and agreement of the members of the JMESOC, allocate executive healthcare education resources consistent with the responsibilities of the Charter and JMESOC goals and priorities.

- Work collaboratively with military medical departments to: identify, review and update core healthcare management competencies; assess training needs; facilitate the delivery of healthcare executive education and training; recommend and establish policies and standards for certification of competent healthcare executives; and maintain sufficient documentation of the certification of healthcare executives to respond to the Secretary of Defense and higher authorities.

Selected MEE course evaluation

In response to the congressional mandate and DoD's guidance, JMESI, USU, and each of the Services developed medical executive training programs designed to develop and advance the competencies of future MHS executives. This section summarizes some key attributes of five MEE courses intended to improve the knowledge, skills, and abilities of MHS officers at varying stages of their military careers and improve their overall executive medical performance.[14] Although we compare certain attributes of these courses, we recognize that their objectives, design, and intent were not meant to be the same.

Table 2 presents the title of each course, year of origin, course location site and length, number of courses offered annually, and the number of competencies awarded to students at the completion of the course.

USU intentionally varies the location of the MedXellence course because it wants to afford people working in various geographical areas the opportunity to attend their course, and their current contractual arrangements with the Jackson Foundation preclude the

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[14] Detailed accounts of the data collected and analyzed for these courses are provided in appendices B through F of this report.

course being solely located at Bethesda, without substantially increasing the overhead they must pay to the Jackson Foundation.

Table 2. Overview of selected medical executive education courses

Sponsor and course name	Year began	Location	Length (days)	Frequency (per year)	Competencies (awarded)
Air Force (IES)	1992	Sheppard Air Force Base, Wichita Falls, TX	7 ½ to 9 ½[a]	Twice	23
AMEDD Executive Skills	1992	Sheraton Gunter, San Antonio, TX	5	Once	13
JMESI Capstone	1998	Doubletree Hotel, Arlington, VA	5	Three	N/A[d]
Navy AMDOC	2005	NMETC[b] Bethesda, MD	10	Eight	13
USU MedXellence	1992	Five different sites: • Keystone, CO • Honolulu, HI • Bethesda, MD • Orlando, FL • Germany[c]	5	Five	14

a. The Air Force used its preexisting Physicians and Management I, II, III (PIM) courses as the cornerstone for its executive skills. The IES course length varies based on Corps and the need for additional leadership training.
b. NMETC stands for Navy Medical Education and Training Command.
c. The site is in Garmisch-Partenkirchen, Germany.
d. JMESI Capstone course assumes students have already acquired all 40 competencies before attending course.

Course objectives

Congressional mandate requires each MEE course to stress competency attainment as part of its objective; the courses we evaluated approach this objective in varied ways.

Air Force IES

The goal of the Air Force IES course is to provide an intense training session to first-time healthcare executive team members. Students acquire tools, knowledge, and skills necessary for the effective performance of their executive duties while attending Corps-specific breakout sessions. It is the only course offered by the Air Force that

bridges the gap between initial management training and advanced leadership instruction prior to command.

AMEDD Executive Skills

The AMEDD Executive Skills course provides relevant training and information to those selected to serve as future Deputy Commanders of Army Medical Treatment Facilities (MTFs). The primary objective of the course is to provide just-in-time training, enhancing the student's leadership skills and providing key information to these people to help them more effectively perform their executive duties. AMEDD also sponsors a "pre-command" course intended to meet the needs of those Army officers selected to command both fixed and field medical facilities/units.

JMESI Capstone

The goal of the Capstone symposium is to provide officers selected or serving in command or senior executive positions with the real-world knowledge and information that will aid them in their day-to-day duties. JMESI hosts the course, designed to provide senior leaders of the MHS exposure to nationwide healthcare industry trends, to leaders in organizational change management, and to federal healthcare policy-makers who will offer participants a global view of how policies that affect the MHS are formed. Additional course objectives include (a) enhancing an understanding of TRICARE issues and policies, (b) providing tools for evaluating quality assurance, customer satisfaction, and metrics, and (c) developing the ability to discuss issues of retention and recruitment from the military and national perspectives. The Capstone symposium is not a competency attainment course. It is assumed that attendees already possess the 40 competencies before attending the course.

Navy AMDOC

The purpose of the AMDOC course is to prepare future healthcare executive officers as senior leaders, with the objective of providing them with an understanding of the "practice and business" of Navy medicine in both the operational and medical treatment or managed care facility, or for a position within a TMA setting.

Emphasis is placed on developing a "common" philosophy for Navy leadership roles, primarily for executive and commanding officers, through both the basic[15] and AMDOC course curricula. The Navy JMESP management staff said that this Navy philosophy grew from the fact that most senior Navy medical executive failures were not the result of a lack of knowledge in their specialty fields, but instead they occurred because officers had not been properly prepared for the unique requirements, job skills, and behaviors required for senior executive management positions.

USU MedXellence

The primary goal of the MedXellence course is to provide healthcare executives from all three Services a joint skills perspective of medical executive skills and programs, with particular focus on several TMA initiatives. The USU MedXellence staff state that "the primary objective of their course is the attainment of a critical few of the integrative competencies, by teaching them in a context of joint decision-making regarding complex, real-world situations." The focus of the course is to equip healthcare professionals with the knowledge and tools needed to integrate clinical and business decisions to improve healthcare delivery and population health.

Competencies

Congress and DoD policy-makers recognize that it takes a blend of specific skills, domain-unique knowledge, and a wide array of experiences to become an effective military healthcare executive. Although the military Services embrace the need for a competency-based approach to achieving this outcome, they vary in how they strive to meet this goal. What is a competency? The National Center for Healthcare Leadership (NCHL) offers us a working definition and a visual representation of the characteristics involved with competency in figure 3 [14]:

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[15] The prerequisite for taking the AMDOC is completion of the Basic Medical Department Officer's Course (BMDOC), an online course intended to introduce the practices and policies of the Navy Medical Department. Attendees may acquire up to 7 of the 40 competencies by attending BMDOC.

Any characteristic of a person that differentiates outstanding from typical performance in a given *job, role, organization or culture.* Competencies within individuals enable them to have outstanding performance in more situations and more often.

Figure 3.   Healthcare executive competency characteristics
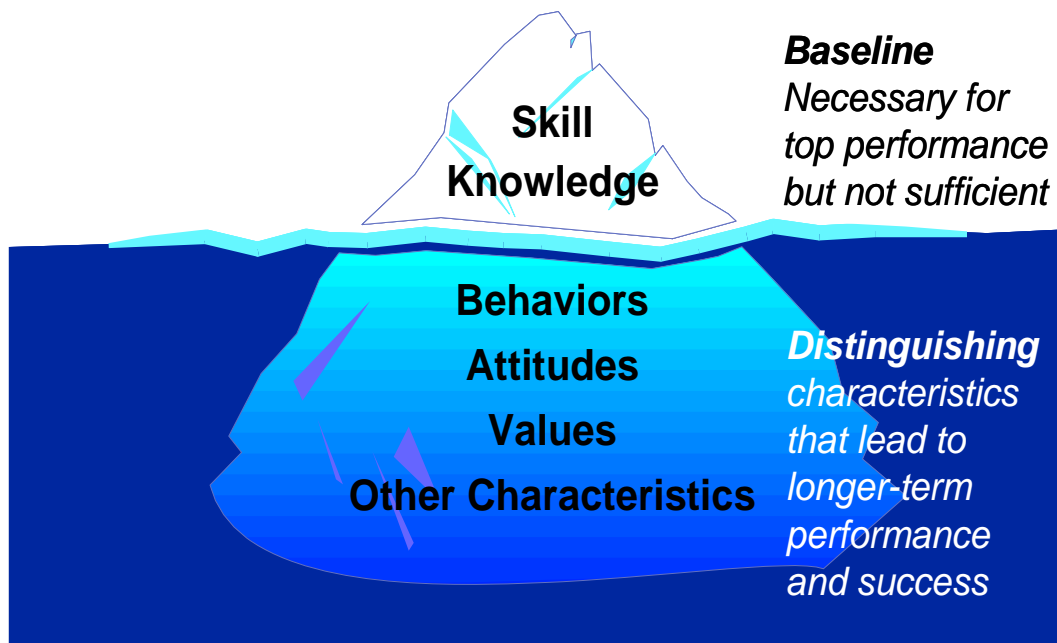
Source: 2007 National Center for Healthcare Leadership, based on model developed by the HayGroup.

We now look at the competencies offered by four MEE courses within the MHS. We exclude the Capstone Symposium course because the objective of the course is not about competency attainment. It is important to note here that students attending these selected MEE courses may have already attained the competencies offered by a particular course through a continuous mix of broad-based experiences and duties, augmented by other education and training courses. Table 3 provides a synopsis of the competencies that participants receive upon course completion. The longer Air Force IES course awards its graduates 23 competencies; the Army

and Navy each grant 13 competencies at the end of the week-long Army course or the 2-week Navy course. The USU MedXellence course provides 14 competencies through its week-long course.

Note that at least one of the four courses teaches 34 of the 40 competencies. All four courses give students competency attainment in financial management, and at least three cover decision-making, human resource management, leadership, medical liability, organizational design, patient safety, and quality management. Six competencies do not appear in any of these particular courses:

- Material management

- Facilities management

- Conflict management

- Bioethics

- Joint operations

- Clinical investigation.

"The top leadership competencies have not changed, but their priority has. Thinking strategically is more critical. Building teams and relationships is certainly more critical than it used to be because of technology, the need for virtual teaming, and working across geographies."

Source: Ninth House, Inc. *Leadership Development Practices of Top- Performing Organizations.* P.4 January 2006

Table 3. Competency attainment by course[a]

Air Force IES	AMEDD Executive Skills	Navy AMDOC	USU MedXellence
Decision-making	Change and Innovation	Contingency Planning	Decision-Making
External Accreditation	Communication	Ethical Decision-making	Epidemiological Methods
Financial Management	Contingency Planning	Financial Management	Ethical Decision-Making
Healthcare Delivery Systems	Decision-making	Human Resource Management	Financial Management
Human Resource Management	External Accreditation	Medical Doctrine	Integrated Healthcare Delivery Systems
Information Management/ Technology	Financial Management	Medical Liability	Leadership
Labor-Management Relations	Group Dynamics	Medical Readiness Training	Organizational Design
Leadership	Human Resource Management	Military Mission	Organizational Ethics
Medical Liability	Leadership	NDMS Management	Outcome Management
Medical Readiness Training	Medical Liability	Patient Safety	Patient Safety
Medical Staff By-Laws	Organizational Design	Public and Media Relations	Personal and Professional Ethics
Military Mission	Quality Management	Public Law	Qualitative and Quantitative Analysis
Organizational Design	Regulations	Total Force Management	Quality Management
Organizational Ethics			Strategic Planning
Outcome Measurement			
Patient Safety			
Personal and Professional Ethics			
Public Law			
Public Speaking			
Quality Management			
Regulations			
Strategic Planning			
Total Force Management			

a. The JMESI Capstone Symposium is not a competency attainment course; it is assumed that attendees already possess the 40 competencies prior to attending the course.

The frequency with which the four courses cover certain competencies is displayed in table 4.

Table 4.   Frequency of competencies taught

Competency	Frequency	Competency	Frequency
Change and Innovation	1	Medical Readiness Training	2
Communication	1	Medical Staff By-Laws	1
Contingency Planning	2	Military Mission	2
Decision-making	3	NDMS Management	1
Epidemiological Methods	1	Organizational Design	3
Ethical Decision-Making	2	Organizational Ethics	2
External Accreditation	2	Patient Safety	3
Financial Management	4	Personal and Professional Ethics	2
Group Dynamics	1	Public and Media Relations	1
Healthcare Delivery Systems	1	Public Law	2
Human Resources Management	3	Public Speaking	1
Info. Mgmt./Technology	1	Qualitative and Quantitative Analysis	1
Integrated Healthcare Del. Sys.	1	Quality Management	3
Labor-Management Relations	1	Regulations	2
Leadership	3	Strategic Planning	2
Medical Doctrine	1	Total Force Management	2
Medical Liability	3	Outcome Measurements	2

Eight competencies appear in the majority, or all, of the courses. Table 5 presents those most common competencies by course.

Table 5.   Most common competencies taught, by course

Competency	Air Force IES	AMEDD Executive Skills	Navy AMDOC	USU MedXellence
Decision-Making	X	X		X
Financial Management	X	X	X	X
Human Resource Management	X	X	X	
Leadership	X	X		X
Medical Liability	X	X	X	
Patient Safety	X		X	X
Organizational Design	X	X		X
Quality Management	X	X		X

Nomination/selection process

Course nomination and selection criteria also vary. Some are voluntary, and some require a selection process at the Service Surgeon General (SG) or Corps Chief level. Army officers are nominated through the Corps-Specific Branch Proponent Office (CSBPO), and

the Air Force nominates its officers through the Corps Development teams. The Navy's AMDOC is not a required course but is recommended once officers reach O-4. The MedXellence staff strives to select an equal number of attendees from each Service, but selection is also based on student interest and command support. Each SG nominates six senior grade officers, primarily in the grade of senior 06 and 07, to attend the JMESI Capstone course. Priority is given to new lead agents, commanders of larger facilities, command surgeons, and other key staff. Participation is limited to invitees.

Student load/demographics

The predominant student loads for the Air Force IES, AMEDD Executive Skills, and Navy AMDOC courses are from their respective Service health professionals:

- The average annual student load for the AMEDD Executive Skills course is about 54; its current student load is 60. Medical, Medical Service, and Nurse Corps officers make up 80 percent of the students.

- The Air Force IES course has the largest number of students per course, at 119, and allows senior enlisted members—called Group Superintendents—to participate with the officers.

- Although the Navy's AMDOC (the newest MEE course offered within the MHS) has the smallest student load, at 38, it is given eight times a year. Civilians and reservists may also participate in this course.

- The USU MedXellence course intentionally seeks out students from various organizations. The course is offered to officers, civilians, and enlisted personnel from all of the Services, but attendees are typically officers in the O-4 to O-6 paygrade range. On average, 40 to 45 students attend each course.

Table 6 summarizes available data on the student load and mix.

Table 6.   Student type by course

Student type	Army AMEDD[a]	AF IES[b]	Navy AM-DOC[c]	USU MedX-ellence
-Medical Corps	14.5	16	10	16
-Medical Service Corps	15	20	8	7
-Nurse Corps	13.5	20	10	11
-Dental Corps	6	25	6	3
-Group Superintendents (AF)[b]	—	20	—	—
-Biomedical Science Corps (AF)	—	18	—	1
-Medical Specialist Corps (Army)	1.5	—	—	
-Reservists (Army/Navy)	1.5	—	3	2
-Specialist Corps (Army)	1.5	—	—	—
-Civilian/Other	—	—	1	2
Total per course	**53.5**	**119**	**38**	**42**

a. Average student load based on two courses (FY 2004 and 2005)
b. Actual student load for one course in 2006. Group Superintendents are senior enlisted.
c. Actual student load for one course in 2006.

Table 7 shows the total number of students who attended the USU MedXellence course from 1998 to 2006, broken down by Service.[16]

Table 7.   USU MedXellence total student load
          by Service (1998-2006)

Service	Number
-Army	279
-Navy	406
-Air Force	267
-Other[a]	27
Total	**979**

a.   Other includes people from VA, HHS, etc.

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[16] USU MedXellence staff keeps outstanding records of its course attendees.

Competency and outcome measures

Outcomes of student educational interventions may include such common indicators as higher student achievement, knowledge gained, improved attitudes, greater employability, and better job performance. More generally, Cameron (1981) has identified nine broad dimensions of organizational effectiveness in institutions of higher education [15]. The nine dimensions involve four for *students:* educational satisfaction, academic, career, and personal development; two for *faculty and staff:* employment satisfaction and professional development and quality; and three for *organizations:* health, openness and community interaction, and ability to acquire resources (i.e., attract quality faculty and students, financial support). In terms of modeling student outcomes, clearly defined objectives must be stated in terms of anticipated changes in knowledge, attitudes, skills, and performance levels of the students. Success or failure of the program can be measured in terms of changes in these variables.

The ideal outcomes to model in this study would be the level of competency achieved by students completing the course, or the improvements in job performance and skill level resulting from this intervention, based on the 40 core competencies required before assuming a command or leadership position in the military healthcare system. However, competency can be attained either at the knowledge and application levels based on the course content or through various methods of training, education, and experience. The selection of personnel may sometimes be subjectively determined by the Service Corps Chiefs (Navy, Army) or Squadron Commanders (Air Force). Furthermore, some students may already have attained all 40 competencies before taking a particular medical executive education course. In addition, improvements in job performance may not be easily measured because people would have to be in the same position before and after completing the course to track and evaluate changes in job performance. In the current military system, with personnel changing duty stations frequently, obtaining information on individual personnel, for purposes of evaluating subsequent outcomes from the intervention, would be challenging.

The 2002 Congressional Report lays out the historical development of the validation of the 40 core competencies by each of the Services and USU [2]. Currently, JMESI maintains an updated core curriculum (5th edition) that lists the competencies and the behavioral objectives for each competency, a course catalog listing the competency credit for each MHS course offered by DoD, and a community-of-practice website devoted to executive skills education. The Surgeons General of the Army, Navy, and Air Force have approved the Service programs for achieving competencies, and all Services have incorporated military education, job experience, and professional certification into their programs as a means to achieve competency. However, each Service differs in how it incorporates executive skills competency achievement into the career advancement and leader selection process [3]. This also presents challenges for developing a uniform outcome measure to evaluate and compare the level of competency achieved by students in the various medical executive education programs under study.

Due to the unavailability of a uniform measure of competency attainment, and the current inability to track and measure subsequent student outcomes upon completion of the courses, we adhere to the qualitative measures of competency attainment as defined by JMESI, USU, and each of the Services. To facilitate cost comparisons of each of the programs/courses, however, we chose to model two quantitative outcome variables for the medical executive skills courses reviewed in this study:

- Total throughput of students per course

- Total number of credit hours offered (total number of students multiplied by number of credit hours offered per student).[17]

Table 8 compares the summary information for each of the courses, including some of the factors (students, course length, etc.) used to compute the costs.

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[17] The Navy AMDOC had not been accredited at the time of this writing, so we assumed the same continuing education units (CEUs) based on course length.

Table 8.   Various dimensions of the MEE courses evaluated[a]

Course summary	AMEDD (Army)	AMDOC (Navy)	AF IES (Air Force)	USU (MedX)	JMESI (Capstone)
Faculty	21	33	60-70	20	25
Students/year	60	270	255	220	70
Student type	O-5/O-6	O-4/O-6	E-7/O-6	O-4/O-6	O-6/O-7
Course length	5 days	10 days	7.5 to 9.5 days	5 days	5 days
Course frequency	1/year	8/year	2/year	5/year	3/year
Number of competencies	13	13	23	14	n/a
Curriculum/content review	Annual	Annual	Annual	Annual	Annual
Group learning tools	Scenario-based	None	None	Case study	Staff ride
Learning outcome measures	None	Pretest/ posttest	None	Pretest/ posttest	None
Postcourse survey	Y	Y	N	Y	Y
Accreditation	Y	N	Y	Y	Y
Distance learning component[b]	Y	Y	Y	Y	Y
Tracking system	Y	Y	N	N	N
CEUs/continuing medical education (CMEs) awarded[c]	38/15	62	61.8/ 62.26	33.5	13/10.5
Other credits (AAMA/ACHE)[d]	N/A	N/A		N/A	27.5/ 26.5

a. The number of students per year may include non-DoD attendees, accounting for any differences between the previous student demographics reported in table 6, The number of students per year also represents maximum class size (e.g. the actual AMEDD student load for 2006 was 57; however, the course has space for 60 attendees).

b. AMEDD does not have a distance learning requirement but encourages attendees to use the JMESI distance learning modules to attain competencies they may be lacking.

c. Although the AMDOC course is not currently accredited, we assume 62 credit hours offered, as the course length is equivalent to the AF IES course. AMEDD Nurse Corps enrollees will receive 15 credit hours in 2007, but in the outyears the number of credits will revert to 38 as it was in 2006.

d. The JMESI Capstone offers CEUs (13), CMEs (10), AAMA (27.5) and ACHE (26.5) credit hours to attendees.

These outcome measures do not provide information pertaining to the degree of competency achievement, but they do acknowledge outcomes based on student enrollment and completion of accredited programs, and they facilitate the comparison of costs across the different programs.

Funding stream and course cost

This section shows the funding stream and costs for the five courses highlighted in this analysis. The cost analysis portion provides an assessment of the historical and current funding allocations and the resource costs associated with running these programs [16]. A sub-

stantial portion of the course costs are not part of the course budgets. These costs include the opportunity cost of resources involved—specifically, facility use and student/faculty time away from their primary duties. When we are unable to account for the actual resource cost, we substitute budget data as a measure of the estimated cost of the activity. Although budget data exist, they often do not include cost information on all the resources used, and they may not reflect the true costs of a particular resource. One objective of this study is to paint a detailed picture of how these courses are conducted and what alternative forms of delivery may improve cost efficiencies.

Appendices B through F (at the end of this report) detail the cost computations for each course, including assumptions and sensitivity analysis based on anticipated/desired program changes. Appendix F also includes a cost analysis of JMESI's distance learning modules.

Funding stream

Each year, the Office of the Secretary of Defense (OSD) forwards a budget request to Congress for the Defense Health Program (DHP), which supports worldwide medical and dental services to the active forces and other eligible beneficiaries. The DHP was created on 14 December 1991 to centralize funding and management of military healthcare (previously carried out independently by the separate Services). The goal was to trim duplication and foster more inter-Service cooperation. A 9 July 2001 memo from the Under Secretary of Defense for Personnel Readiness requires TMA to manage all financial matters of DoD's medical and dental programs.[18]

The Secretary of the Army (AMEDDC&S) is DoD's executive agent for the JMESDP. DoD established JMESI as special staff to the Commanding General (AMEDDC&S), Fort Sam Houston, Texas. TMA provides annual funding to the AMEDDC&S Comptroller to support the executive skills initiatives being conducted by JMESI,

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[18] The DHP Operations and Maintenance (O&M) funding is divided into seven major areas: In-House Care, Private-Sector Care, Information Management, Education and Training, Management Activities, Consolidated Health Support, and Base Operations.

USU, the Army, and the Air Force. In turn, the AMEDDC&S Comptroller provides instructions to the Army Headquarters in Washington, DC, and work to execute an annual transfer of funds to USU and the Air Force for their respective medical executive skills courses.[19]

The Navy medical executive skills program is not funded through JMESDP. Currently, TMA provides funds to BUMED, which in turn funds the NAVMED Manpower, Personnel, Training, and Education (NAVMED MPT&E) Command in Bethesda. The funding stream for the Navy AMDOC (and other training courses) falls under the Workforce Development directorate of NAVMED MPT&E.

Cost analysis

Our resource cost methodology requires that each program be thoroughly described in terms of the resources that are required to produce the outcomes that will be observed. The resources that we identified across all programs as contributing to the processes of course administration, management, delivery, and evaluation of student outcomes are listed below:

- *Personnel:* includes the value of administrative and management staff, information technology (IT) and facilities support staff, active military/DoD faculty, nonmilitary/contract faculty, volunteers, and the students taking the courses.

- *Nonpersonnel:* the value of facility use, equipment, supplies and materials, contract services (hotel, catering, etc.), travel and accommodations, and other nonpersonnel inputs associated with managing and delivering the course.[20]

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[19] The Army's Medical Department Executive Skills Course is funded locally through the AMEDDC&S Comptroller.

[20] Separate estimates for the cost of facility use were provided by the Services, USU, and JMESI and do not reflect any standardized assessment of the costs of facility by utilization. Also, in comparison, BOS costs (AF IES, AMEDD, JMESI) are lower than the true costs of square footage on military bases, for example.

The value of personnel resources is estimated by obtaining information on current salary and benefits and apportioning salary and benefits by the amount of time (full-time equivalents, or FTEs) that personnel spend engaged in activities related to the course. The following assumptions and parameters are applied to determine the costs of personnel and nonpersonnel resources, which appendices B through F describe in more detail:

- On an annual basis, 230 days per year is equivalent to a full-time-equivalent work year (1 FTE) for all faculty, staff, and personnel.

- Course length is based on a 5-day week. A 2-week course is actually a 10-day course.

- The 2007 Composite Rates (by Service) are used to determine annual salary and benefits for active military personnel by rank and paygrade.

- The 2007 General Schedule Salary Table is used to determine annual salary and benefits for nonmilitary/DoD personnel by GS level and salary step.

Personnel and nonpersonnel costs are rolled up into direct and indirect cost categories:

- *Direct costs* are the accounting costs for course administration, management, delivery, and evaluation activities.

- *Indirect costs* are the economic costs, or opportunity costs, associated with these activities: defined as the value of personnel (i.e., volunteers, students, military/nonmilitary/DoD faculty) and nonpersonnel (facilities, office space, classrooms) resources apportioned by the fraction of time spent, or utilized, in support of the course.

Table 9 provides a summary of the annual costs (FY 2007 dollars) for each of the medical executive education programs we evaluated.

Table 9.   MEE course cost comparison (FY 2007 dollars)[a]

Cost category	AMEDD[b] (Army)	AMDOC (Navy)	AF IES (Air Force)	USU (MedX)	JMESI (Capstone)
Total cost	332,152	2,872,485	2,534,162	1,486,998	617,928
-Direct cost	86,209	675,970	699,181	482,674	238,613
-Indirect cost	245,943	2,196,515	1,834,980	1,004,324	379,315
Total cost per student credit hour	154	171	164	204	552
-Direct cost	40	40	45	66	213
-Indirect cost	114	131	119	138	339

a.   The cost estimates are based on actual student throughput for 2006. Total student credit hours account for the different number of credit hours attained by different student types enrolled in the same course (e.g., AF IES enrollees - Nurse Corps receive 61.8 credits, whereas Medical and Dental Corps receive 62.26 credits per course).

b.   AMEDD cost estimates are based on all enrollees receiving 38 credit hours. Incorporating the policy change in 2007 that Nurse Corps now receive 15 credit hours, this will increase total cost per student credit hour (to $178); direct cost per student credit hour (to $46); and indirect cost per student credit hour (to $132).

Conclusions

DoD, JMESI, and the Services have made a concerted effort to meeting the congressional mandate of preparing its military healthcare professionals for command of MTFs and other senior executive positions. DoD developed a reasonable and effective organizational framework to guide JMESDP activities, but routine oversight and management of these activities have been lacking. No formal proponent for the JMESDP currently exists.

We find that the 40 MHS core competencies are vague and not easy to describe or evaluate precisely. Currently, no uniform standards and criteria for medical executive skill attainment exist beyond the general objectives and performance behaviors listed in the core curriculum.

Arrays of MEE courses exist within the MHS to help military healthcare professionals attain required core executive competencies and prepare them for executive duties.

Cooperation and collaboration among the three Services, USU, and JMESI need to be enhanced to better use resources, to assimilate talents, and to achieve common, joint outcomes.

The MHS—through the JMESDP—must align its MEE courses, competencies, and desired leadership behaviors with its strategic goals. The QDR provides a reasonable structure for creating this link.

Because the courses have different objectives, program lengths, attendees, and so on, it is difficult to conduct a comprehensive comparative analysis, but we offer the following general observations and considerations:

- We are not surprised that the cost per student/credit hours ($552) is greater for JMESI Capstone than for the other courses because its attendees are senior officers who have been selected to serve in senior executive positions. The costs of other courses vary between about $150 and $200 per credit hour.

- The total cost per student (per credit hour) measure, highlighted in green in table 9, presents a way to neutralize the course differences for cost comparison purposes.

- Indirect costs associated with opportunity costs of students and faculty being temporarily away from their primary duty site are the largest component of the total course costs— about 75 percent.[21] Direct cost may be reduced by restructuring schedules, relocation, and consolidation, but reductions in indirect costs can be realized only by reducing the number of students and faculty attending and delivering the course.

- The number of students enrolled in the course, the length of the course, and the program's indirect costs are directly correlated. Any strategy to reduce indirect costs must involve either a restructuring of course scheduling or alternative methods of course delivery (i.e., increased use of distance

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[21] We understand that the *implied opportunity* costs may overstate the *actual opportunity* costs because some faculty members continue to perform some of their primary duties while in transit to and from the medical executive skills course. However, some seepage from the primary duty productivity does occur.

learning and video teleconferencing) that would minimize the opportunity costs of spending time away from primary duty station (TAD). However, increased use of distance learning or video teleconferencing may also lead to greater direct costs for system support, facilities, IT support, and related technology costs.

- Consideration should be given to using more video teleconferencing instead of face time for faculty members.

- Although USU offers its course five times per year, the indirect costs are lower than those for AMDOC and AF IES because the course length is shorter. USU could reduce its total costs by altering some of its course locations.

Let's now turn our attention to how private-sector organizations and human capital experts are tackling competency development for healthcare leaders.

Future imperatives

The Military Health System faces tremendous human capital challenges today and in the years ahead to achieve its goals of transforming its workforce, the medical health system infrastructure, and the way it conducts business while sustaining the healthcare benefit. The MHS strategic plan outlines six goals in support of its mission and vision for medical transformation over the next 5 to 7 years [10]. One of the six MHS goals focuses on unleashing the potential of its most valuable asset—its workforce—to meet new demands. The MEE courses and distance learning modules are programs and resources that the MHS can use to further develop its workforce to meet these demands. The forthcoming section looks at the participation of military personnel in two private sector processes.

This section of the report also focuses on the human capital strategic goal because having a workforce with the right skill sets is the most critical element to achieving all the goals of the plan. MHS leaders have an opportunity to reassess their current strategy of building a competent workforce and, most important, competent leadership. The human capital imperative is to assess activities in place to develop MHS leaders and then implement strategies and action plans that build on existing strengths and effectively close gaps between the current state of the MHS and its transformed future state.

Private sector

The private sector recognized the need to develop a common set of core competencies for healthcare leaders, particularly after the Institute of Medicine released its report on the decline in healthcare quality. Professional healthcare associations—such as the American College of Healthcare Executives (ACHE) and the American Academy of Medical Administrators (AAMA)—and emerging healthcare leadership catalyst organizations—such as the National Center for

Healthcare Leadership (NCHL)—have identified their competency work as the critical link between healthcare system performance, patient care quality and safety, and leadership effectiveness.

NCHL—health leadership competency model

NCHL's mission is to be an industry-wide catalyst to ensure that high quality, relevant, and accountable health management leadership is available to meet the needs of 21st century healthcare.[22] Its focus is inherently rooted in the systems-based approach of organizational design, in which the competencies may be individually based, but the performance measures and outcome measures are primarily at the organizational level. The ultimate metric (assuming that all organizations within an industry adopt such a framework) is to assess industry-wide performance. There are three domains of the NCHL competency model (see figure 4):

- **Transformation**: Visioning, energizing, and stimulating a change that coalesces communities, patients, and professionals around new models of healthcare and wellness.

- **Execution**: Translating vision and strategy into optimal organizational performance.

- **People**: Creating an organizational climate that values employees from all backgrounds and provides an energizing environment for them (includes the leader's responsibility to understand his or her impact on others and to improve his or her capabilities, as well as the capabilities of others).

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[22] This subsection of the report is based on a 21 June 2007 meeting of the NCHL staff and CNA Study Team and on their briefing materials [14]. Additional information about NCHL is available at www.nchl.org.

Figure 4.   NCHL health leadership competency model

NCHL Health Leadership Competency Model

The NCHL model provides breakthrough research and a comprehensive database for defining the competencies required for outstanding healthcare leadership for the future.

TRANSFORMATION
Achievement Orientation
Analytical Thinking
Community Orientation
Financial Skills
Information Seeking
Innovative Thinking
Strategic Orientation

HEALTH LEADERSHIP

EXECUTION
Accountability
Change Leadership
Collaboration
Communication Skills
Impact and Influence
Information Technology
  Management
Initiative
Organizational Awareness
Performance Measurement
Process Management /
  Organizational Design
Project Management

PEOPLE
Human Resources
  Management
Interpersonal
  Understanding
Professionalism
Relationship Building
Self Confidence
Self Development
Talent Development
Team Leadership

NCHL is conducting national research and validating its competency model for healthcare leadership, with the goal of putting the competency model into practice.[23] Figure 5 provides an overview of the approach that NCHL is using to conduct its competency research. The competency model should have the following attributes:

- Reflect the skills and behaviors of high-performing, effective healthcare leaders in various stages of their career (entry, mid-level, and advanced) and across the disciplines of administration, medicine, and nursing

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[23] NCHL developed and is piloting Leadership Excellence Networks (LENS), a collaborative learning community of healthcare organizations and industry leaders dedicated to advancing leadership and organizational excellence within their organizations and in the field.

- Identify competencies deemed critical for transforming clinical and organizational performance

- Serve as the basis for assessing individual, team, and organizational performance, aligning human resource management and governance

- Provide the foundation for developing leaders in an organization, selecting learning interventions to fill gaps, and measuring outcomes across the continuum of learning.

Figure 5.   NCHL competency research approach

Strategic Interviews
What do the strategic objectives imply about critical competencies?

Focus Groups/ Expert Panels
What do we think outstanding performance looks like?

Documentation Review
What does existing information tell us about critical competencies?

Competency Model

Behavioral Event Interviews (BEIs)
What do outstanding performers do?

Benchmarking
What do other organizations consider to be critical competencies?

Surveys
What do others internal and external to the organization regard as critical competencies?

ACHE and the healthcare leadership alliance

As we have previously discussed, ACHE and DoD worked together to develop the current required competencies for military healthcare executives. ACHE is an international professional society of more than 30,000 healthcare executives who lead hospitals, health-

care systems, and other healthcare organizations [17].[24] Its goal is not to be an investigative or regulatory organization but to promote professionalism and continuing education among healthcare executives at every stage of their careers. The principles of ACHE involve four key values: integrity, lifelong learning, leadership, and diversity.

Membership

Membership in ACHE has two levels. The first level is "member." To apply for member status, candidates must have a minimum of a Bachelor's degree and an interest and commitment to the field of healthcare management. The next step in ACHE membership is to become an ACHE fellow (FACHE). Table 10 outlines the requirements for membership and FACHE status. To apply for fellow status, candidates must have at least 3 years' tenure with ACHE, 5 years of healthcare management experience, and references from three ACHE fellows. Following approval of their application, fellow candidates can sit for the Board of Governors examination (BOG Exam) in healthcare management. Approximately 68 to 70 percent of those who take the BOG pass it each year. The following knowledge areas are tested in the BOG:

- Governance and organizational structure

- Human resources

- Financial

- Healthcare technology and information management

- Quality and performance improvement

- Laws and regulations

- Professional and ethical

- Healthcare

- Management

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[24] This subsection of the report is based on ACHE's website [17] and a 21 June 2007 meeting between the ACHE staff and CNA Study Team.

- Business.

Through the Board of Governor's exams, certification requirements, recertification, and continuing education requirements, members of ACHE maintain a standard of lifelong learning that includes training opportunities, educational seminars, online modules, mentoring, and real-world experience. ACHE also holds an annual conference that draws over 4,000 participants.

Certification requirements

Table 10 presents the requirements to take the BOG exam and become an ACHE member and then the additional requirements to achieve FACHE status.

Table 10. ACHE membership and fellowship requirements

Requirements for membership and to take BOG Exam	Additional requirements to earn the FACHE credential
Master's or other advanced degree	Pass the BOG exam in healthcare management
Through 12/31/08, a Bachelor's degree is acceptable	Have 3 years' tenure as an ACHE member
A healthcare management position and 2 years of healthcare management experience	Have 5 years' healthcare management experience
If applying without a post-Baccalaureate degree, must have 8 years of experience by 12/31/08	If applying without a post-Baccalaureate degree, must have 8 years of experience by 12/31/08
Three references from fellows, including one structured interview	Complete 40 hours of CEU credit in the prior 5 years, 12 hours of which must be Category I (ACHE education) credit
Completed application, including payment of the $250 fee (application valid for 3 years)	Participate in healthcare and community/civic activities

CEU requirements and ACHE training opportunities

ACHE members are required to recertify themselves through continuing education credits every 3 years. To achieve this, they must

participate in a minimum of two healthcare activities and two community/civic activities and must complete 24 hours of continuing education since their last recertification. Half of the 24 credits must be Category I ACHE. Members who do not wish to fill the continuing education requirement may also retake the BOG exam. ACHE training opportunities include ACHE seminars, the Congress on Healthcare Leadership, and online and self-directed modules and assessments.

Competencies

ACHE, in conjunction with the other members of the Healthcare Leadership Alliance (HLA), spearheaded a competency development effort that resulted in the creation of the HLA Competencies, a list of over 300 skill-oriented competencies required for healthcare executive positions in the fields represented by the HLA member organizations. The HLA members are:

- American College of Healthcare Executives

- American College of Physician Executives

- American Organization of Nurse Executives

- Healthcare Financial Management Association

- Healthcare Information Management Systems Society

- Medical Group Management Association

- American College of Medical Practice Executives (the certifying body of the Medical Group Management Association).

The competencies themselves began with each association's job analysis. ACHE's job analysis survey is divided into ten knowledge areas, and executives are asked to look at the tasks listed under each area and identify those that are necessary for them to complete their day-to-day responsibilities. For the purposes of the HLA competency list, the HLA organizations used their knowledge areas to develop five key domains of competencies for the HLA competency directory. For each of these domains, each of the HLA member organizations proceeded to fill all gaps and to identify those skills that are required for members of their specific organizations. They divided the

last domain—business knowledge and skills—into these five sub-categories:

- Communication and relationship management

- Leadership

- Professionalism

- Knowledge of the healthcare environment

- Business knowledge and skills, which includes financial management, human resources, organizational dynamic and governance, strategic planning and marketing, information management, risk management, and quality improvement.

Potential uses for the extensive list include job descriptions, self-assessments, team assessments, and organizational analysis. Appendix G (at the end of this report) contains the November 2005 HLA Competency Directory Guide.

Military membership

Approximately 5 percent of ACHE's total membership come from the military Services and 10.6 percent of the attendees at ACHE's 2007 annual congress on healthcare leadership were from the military. Table 11 presents the total DoD ACHE affiliates for 1997, 2002, and 2007 (which includes both dues-paying and non-dues-paying members).

Note that, while the total ACHE membership is increasing, the DoD affiliation has deceased over the past decade from 7 to 5 percent of the total ACHE membership. After ACHE's annual congress, the Services hold a day of Service-specific sessions, incorporating what they have discussed during ACHE's congress into the Joint Service and Service-specific issues. Additional information about ACHE may be found at *www.ache.org*.

Table 11. Total ACHE membership, by Service affiliation (1997, 2002, and 2007)

Service	1997	2002	2007
Navy	741	592	563
Air Force	539	525	537
Army	831	716	648
Total DoD	2,111	1,834	1,748
Total ACHE membership	30,052	28,608	34,644
Percent ACHE total that is DoD	7.0%	6.4%	5%

American Academy of Medical Administrators (AAMA)

The AAMA was founded in 1957 as "an association of multi-disciplinary healthcare management at all levels and within all types of health organizations."[25] Its goal is to promote advancement in healthcare leadership excellence using individual relationships, multidisciplinary interaction, practical business tools, and active engagement.

Membership

AAMA's total membership consists of 2,300 hospital administrators from a variety of specialties and includes 775 military or public health service personnel. Military officers constitute about 34 percent of AAMA's total membership with representation from every Service, Army National Guard, Veterans Affairs, and the Public Health Service. The American College of Federal Healthcare Administrators (ACFHA) serves as the federal specialty group within AAMA. Among its many functions, ACFHA manages networking breakfasts and a Federal Day at AAMA's annual conference.

Table 12 breaks down the military membership by Service. Members of AAMA may achieve three main levels of credentials: the AAMA

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[25] We gratefully acknowledge the assistance of Nancy Anderson at AAMA, in gathering this information. Additional information was taken from AAMA's website at *www.aameda.org.*

certification, Fellow, and Diplomate. A member can be both certified and a Fellow (CFAAMA); however, the certified member (CAAMA) is not required to attain Fellow status. The requirements are under review. AAMA also has a group of specialty groups known as colleges that provide targeted leadership opportunities, education, contacts, and communications and information resources to members in those specialty areas. The colleges of AAMA are cardiovascular, contingency planning, healthcare information, small or rural healthcare, health plan management, oncology, and federal healthcare. The ACFHA includes all military representation in AAMA's membership.

Table 12. AAMA 2007 membership by Service

Service	Membership
Air Force	330
Army National Guard	5
Army	90
Coast Guard	5
Navy	245
Public Health Service	50
Veterans Affairs	25
No branch listed	25
Total	**775**

Table 13 provides the types of specialties represented within the AAMA membership.

Table 13. AAMA membership by specialty[a]

Specialty	Members
Cardiovascular administration	775
Contingency planning	450
Healthcare information administration	325
Health plan management	500
Oncology administration	275
Small and rural healthcare	275
Federal healthcare administration	775

a. Because members may select more than one specialty, totals add up to more than AAMA's total membership.

Certification requirements

There are no continuing education unit (CEU) requirements for basic membership renewals; however, CAAMA credential, CAAMA recredentialing, and Fellows require a certain number of CEU credits. These CEUs may be obtained through AAMA directly or through other qualified education providers.

Appendix H provides advancement opportunities within AAMA through examination and experience-based credentials. Specialty group fellow opportunities are available to AAMA members—specifically, cardiovascular, contingency planning, and managed care. For more information about AAMA, go to *www.aameda.org.*

Change, Adaptation, and Learning Model (CALM)

The MHS is going through a change process known as transformation. One of the primary tasks of military healthcare executives is to get people to work together in a systematic way. Like orchestra conductors, MTF commanders must direct the talents and actions of players to produce desired results. It is a difficult and complicated task under any scenario, but particularly when trying to get people to change [18]. Transformational changes typically generate uncertainty, fear, and resistance, which reduce workforce morale, focus, and performance.

CALM focuses on measuring and addressing organizational readiness to accept and respond successfully to transformational change.[26] CALM posits three dimensions of change:

- **Organizational Mindset** includes cultural coherence, organizational alignment, teaming, and the capacity for leadership change.

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[26] This subsection of the report is based on a 15 July 2007 meeting of CALM designers (Dr. Richard Adler and Dr. David Koehn) and the CNA Team Project Director and their briefing materials [19].

- **Personal Mindset** includes mental schema development, work preferences, learning capability, competency development, and personal and social competencies.

- **Infrastructure** includes business process reengineering, continuous process improvement, technology upgradeability, operational agility, and organizational adaptiveness.

CALM provides a low-risk environment to *test-drive critical decisions*, explore projected outcomes, and identify the most robust course of action (figure 6). We think that such tools as CALM would help MTF commanders better align their workforce to meet MHS's strategic vision.

Figure 6.   CALM process
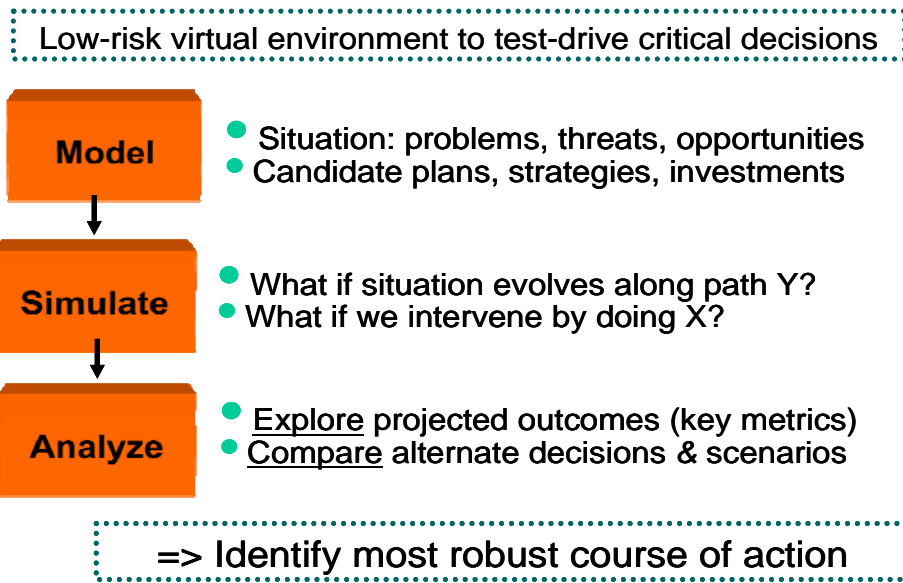
Source: 2006, DecisionPath, Inc., and DJ Koehn Consulting Services, Inc.

Lean Six Sigma

In addition to knowing *what* types of skills, knowledge, abilities, behaviors, and other characteristics are needed to successfully perform their executive duties, military leaders need to understand *how* certain activities can be better analyzed and accomplished with the help of tools—and they need to be provided such tools. The Lean Six Sigma program, originally developed for manufacturing operations, is being used by the Services [20]. Lean Six Sigma tools are

also being applied to government, front office, and service-oriented organizations. This program's intent is to provide executives with objective and data-driven tools and techniques to improve time, cost, and quality attributes. The "lean" facet of this program focuses on continuous process flow and the elimination of waste and non-value-added activities, while the "six sigma" portion concentrates on variation elimination and increasing the predictability and reliability of key processes, products, and services. We think that this type of training for MHS professionals is invaluable, but we believe that it should be coordinated under the auspices of JMESDP to ensure that it is integrated with other MEE training courses and online modules.

Management mistakes in healthcare

America's public is experiencing a widening *confidence chasm* in its healthcare delivery system and many do not think it is meeting their needs [21]. Today's healthcare environment places a great deal of emphasis on reducing medical errors and improving clinical outcomes, patient safety, and access standards. The MHS is equally committed to these goals. One area that has not received as much research or attention is executive error, or *management* mistakes, that can also tarnish a healthcare system or plan and a hospital's reputation. Mistakes in healthcare, whether clinical or administrative, are often characterized by a culture of shame, blame, and punishment.

Paul Hofmann and Frankie Perry write about management mistakes in healthcare and offer a variety of models to classify, identify, interpret, disclose, prevent, and correct executive errors. The authors explore the relationship between management and medical mistakes and describe ways to produce more positive outcomes [22]. They also discuss ways to distinguish between a *manager's* mistake and a *management* mistake, which is not always easy to determine.

In the aftermath of focused media attention on the plight of wounded military personnel in the MHS direct care environment (Walter Reed Army Medical Center (WRAMC), specifically), we think that the MHS—through its JMESDP—should consider adding this type of training to its executive curricula.[27] We believe that *MTF commanders require the skills to oversee the root-cause analysis of sentinel events*—both clinical and administrative—so their organization can quickly, thoroughly, and credibly engage in a self-reflective process that results in lessons learned for the entire MHS.

Human capital dimensions

MHS military leaders will need to effect process changes at all levels to build high-performance medical command teams, to create a highly trained and patient-focused frontline workforce, and to develop future leaders that champion change. They need to drive a performance culture that can withstand the highly fluid environment of its workforce. Specifically, MHS leadership needs to create work environments and processes that cultivate leadership development and align day-to-day job performance. Understanding and integrating all of the moving parts of this transformation and MHS mission require a unique set of leadership competencies. The MHS has been at the forefront of competency development for its military healthcare executives. JMESI and the three Services developed a core set of competencies for senior military medical leadership, in conjunction with ACHE, which incorporated core elements.

We highlight two human capital focus areas:

- First, we review the three Services' evaluation, promotion, and selection processes to gain insight into how:

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[27] In spring 2007, news stories first surfaced in *The Washington Post,* and later in other media, about deplorable living conditions in WRAMC's Building 18 and outpatient bureaucratic problems being experienced by Service members injured and returned from the war. Consequences of this scandal included the removal of the incumbent Secretary of the Army, Army Surgeon General, and WRAMC Commander.

- The review process links individual performance to organizational performance.

- Behaviors/accomplishments are evaluated and documented.

- Reviews inform developmental activities and can be used to facilitate a more joint and interdependent medical force under MHS transformation.

• Second, we identify potential gaps between current leadership development activities and the future state as laid out in the MHS strategic plan and QDR. This second part outlines a more systematic and competency-based model to identify, develop, and promote officers along their career paths.

Officer evaluation and promotion process

Since the officer evaluation reports align day-to-day performance and are a key element for promotion and selection, we reviewed them to understand how performance is evaluated [23, 24, 25]. We aim to better understand how this process linked into leadership development activities for those officers on the MTF career path. We grouped the performance criteria into three main areas: (1) performance factors, (2) mission/goal achievement, and (3) individual achievement/promotion recommendation.

Performance factors are focused on values, ethics, and possession of specified skills. All of the Services place a tremendous value on assessing the extent to which officers demonstrate such values and ethics as loyalty, discipline, dedication, and integrity. The Air Force added a qualitative rating of "Meets/Does Not Meet Standard" to this dimension of the evaluation.

To assess an officer's character and demonstration of leadership and professional attributes each Service includes an area to qualitatively assess the qualities they deem important. The Army rates and ranks possession (Yes/No) of specified leader attributes (mental, physical, emotional), skills or competence (conceptual, interpersonal, technical, and/or tactical), and leadership actions (influencing, operating, and/or improving). The Navy rates two performance

traits (leadership and tactical performance) using a scaled rating (Below/Meets/Greatly Exceeds standards). The Air Force rates job knowledge, leadership skills, organizational skills, judgment and decisions, and communication skills with a "Meets/Does Not Meet" standards rating.

Mission/goal achievement and accomplishments are focused on specific aspects of an officer's overall performance. The Air Force allows raters to provide narrative on an officer's impact on mission achievement and narrative on the officer's overall performance. The Army and Navy allow raters to comment on an officer's overall performance. The narrative is geared toward the officer's unit mission and predetermined individual goals and objectives.

Individual achievement and promotion recommendation documents an officer's potential for promotion to the next grade. The Army and Navy evaluations contain a section for promotion recommendations for each officer. The Army allows raters to provide narrative on an officer's potential for promotion and to identify unique professional skills or areas of expertise of value to the Army. In addition, the Navy includes a qualifications/achievements section to capture education, awards, and community involvement. The Air Force, however, prohibits promotion recommendations on the performance evaluation itself (though they do have a separate form to document promotion recommendations), but it does allow recommendations for assignment. In addition, each of the Services requires at least a 2nd level rater to concur on each officer evaluation.

The three performance evaluation areas contained in the officer evaluation report are a key component of promotion board decisions. The MHS needs to have a keen awareness of those intangible leadership attributes and skills that cannot be gleaned from documented performance reviews and assignment progression. For example, the report itself does not always provide enough information about a candidate to objectively assess his or her potential for promotion from a primarily clinical or specialty role to an administrative, management, and leadership role.

Potential gaps in JMESDP competency model

We think that the current JMESDP activities and practices need to be better linked to MHS's strategic goals and objectives. The QDR outlines a number of education and training initiatives focused on ensuring that leaders have the information required for successful mission performance in dynamic operations and beneficiary health-care environments. The draft MHS human capital strategic plan outlines four common themes in alignment with DoD and Service-level human capital policies [10].

- **Competencies and competency-based planning** to create a common framework across Services and components to promote understanding, produce measurable performance results, and fill competency gaps.

- **Performance-based and result-oriented culture** to produce performance-based management systems that align processes and systems and clearly link individual performance with organizational goals.

- **Interoperability** to foster greater agility and flexibility for the medical force and seamless transition between active duty and civilian resources.

- **Use of technology to improve efficiency** and to align technological capabilities with human capital processes and systems to manage information.

Update the MHS competency model

JMESI and the Services updated the MTF command competency model in 2005. A set of 40 competency criteria was identified. We think that the current MHS competency model should be re-evaluated to ensure a straight line of vision between it and MHS transformation efforts. Below we identify some specific actions that align with the initiatives and themes of the QDR and MHS human capital plan. These actions aim to strengthen the current JMESDP practices by building a systematic approach to identifying, developing, and promoting a diverse group of "high performers." In turn, these high performers would be better prepared to assume the MTF command and other key executive positions.

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The first step is to consider an updated competency model that can be implemented as a foundational assessment tool across the MHS. NCHL developed a robust competency model and is working with universities on curriculum development in healthcare administration. They are also piloting implementation programs in hospitals and hospital systems across the country. ACHE conducts job analysis research to update its widely used certification exam.

The next step is to implement the competency model by using it to identify, develop, and promote candidates through the MTF career path. Identifying officer candidates through competency and leadership assessment tools provides a way to create a potential pipeline of so-called high performers much earlier in their careers. Developing them through experiential and action-based learning and assignments, education and training, mentorship, and performance reviews "grows the bench" of candidates who are being purposely prepared for the MTF command role. Promoting them into leadership and command positions and better linking their jobs to MHS strategic goals and objectives build a powerful succession-planning model.

The MHS competency model needs to not only identify the competencies but also to:

- Describe the task and behavioral indicators that demonstrate the competencies and differentiate superior performers from average and poor performers

- Determine the most critical competencies needed at each level along the MTF career path: entry, mid-level, and senior level

- Incorporate future requirements of MHS and the MTF command position

- Build a uniform language to communicate job expectations and performance

- Provide tools to assess competency proficiency and leadership abilities and systems that support succession planning management

- Serve as a framework for performance review discussions and creation of individual development plans

- Serve as the primary evaluation and planning tool to focus training and education dollars on experiences that close competency gaps and help leaders better perform their jobs

- Serve as a model for other MTF command leadership positions

- Be a "living model," adaptable and flexible enough to reflect dynamic changes in military healthcare.

It is crucial that DoD and MHS senior policy-makers and military executive job incumbents be involved in this update process to identify the most critical competencies and those that may be currently missing from the model. The current model may need to more heavily address competencies in workforce planning and analysis, coalition building, business process improvement, accountability, and change management that are important during MHS transformation. Senior DoD policy-makers must speak to the emerging roles and future requirements for MTF commanders (and other key executive positions) to create the MHS competencies required to handle the emerging issues for the next 3 to 5 years. The MHS should consider engaging competency management experts, and private-sector healthcare leaders and associations, already involved in this process. Once the model is complete, it can be operationalized to better identify, develop, and promote military healthcare professionals into executive positions. We further describe some tangible steps below:

Identify future leaders with science-based assessment tools

The MHS competency model should help the individual Services identify and assess those healthcare professionals who meet appropriate proficiency levels and facilitate their movement along the military career path. Some competencies and leadership attributes are difficult to teach (or instill in a person). The competency model helps to match the performance criteria to the candidates who are the high performers and are demonstrating desired behaviors. To best identify candidates for MTF command, MHS needs to:

- Assess competency proficiency level of the highest perform-ing military health professionals to standardize the process and identify competency strengths and gaps in the medical command.

- Conduct leadership assessments of high performers. These assessments can range from 360-degree assessment and peer evaluations to science-based testing and supervisory assess-ments.

- Create individual development plans to address competency gaps and build the necessary leadership skills for each future leader. MTF senior leaders and managers will send a mes-sage to junior officers that they see the importance of invest-ing time and commitment to their development.

This is where succession planning begins. The Services would have assessed strengths and areas of focus for further development of in-dividual health professionals. Further, the MHS could determine whether these candidates should be placed on an executive career path.

Update MEE curricula

Training and education is a critical component of managing and adapting to change. As the MHS continues to evolve, the military health professionals' *conditions and nature of* work will also change. These professionals will need to learn new facts, new ways of doing things, and new ways of thinking to equip them for a new and very different MHS. The MEE courses are a vital link to augmenting a military health professional's career path, professional certification, and education in preparation for executive positions.

In January 2000, the General Accounting Office (GAO) published a report titled *Human Capital: Key Principles from Nine Private Sector Or-ganizations* [26]. The participating companies[28] all had central train-

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[28] The nine private-sector companies were Federal Express Corporation; IBM Corporation; Marriott International, Inc.; Merck and Company, Inc.; Motorola, Inc.; Sears, Roebuck and Company; Southwest Airlines Company; Weyerhaeuser Company; and Xerox Corporation.

ing sites or universities that provided training specifically targeted at assessing, developing, and maintaining those leadership characteristics among their current and future leaders. The JMESDP oversight process must continually evaluate the MEE course curricula to ensure that the students are provided the most useful and critical information needed to better perform their current and future positions. Where gaps are identified, the MEE courses should be revised to include proven methods, such as team-based projects and scenario-based learning that develop and expand leadership knowledge and skills. DoD makes significant annual investments in the medical executive skills courses, and it needs evaluation and process improvement plans in place to know if course objectives are being met.

Conclusions

There appears to be a growing consensus that better leadership is needed in healthcare, although there is much less agreement on the specific behavior, knowledge and skills required to improve performance. We find that the private sector and MHS are grappling with many of the same issues, and there are no *one size fits all* solutions. Executive and medical management skill development is a life long learning initiative.

MHS professionals are offered a wide array of courses—military unique and through professional affiliations—to help them hone required skills and competencies. However, one of the most powerful tools for affecting military healthcare professionals behavior is the officer evaluation, promotion, and assignment system that is unique to each Service and not well integrated with JMESDP. Whenever possible, evaluation should be linked to specific performance indicators. Performance indicators are categories of evidence to be used as a basis for judging competency attainment or criteria that can be used to distinguish competent from less than optimal performance.

Our major findings and recommendations are designed to strengthen and improve the foundational efforts of DoD, JMESI, USU, and the Services to better prepare military healthcare professionals for their 21st century executive responsibilities. The past dec-

ades have been unique and filled with many challenges. The future holds new challenges and opportunities for these various agencies to better work together to expand the pool of qualified healthcare executives. Through these combined efforts, the right leaders, with the right skills, will be in place at the right time to meet the continually evolving and expanding MHS mission.

Findings

We find that DoD uses a multipronged approach in meeting the congressional mandate of preparing its military healthcare professionals for senior executive MHS assignments through a combination of activities, including job experience, education, training courses, professional certification, and core competency development.

We find that the 40 MHS core competencies are vague and not easy to describe or evaluate precisely. Currently, no uniform standards and criteria for medical executive skill attainment exist beyond the general objectives and performance behaviors listed in the core curriculum.

We think that one of the most powerful determinants that might be affecting a senior military healthcare executive's behavior is the officer evaluation, promotion, and assignment system that is unique to each Service and not well integrated with JMESDP.

The importance, focus, and intent of the role MEE courses play in the cultivation and ultimate selection of senior MHS executives varies by each Service. Although the JMESDP program and MEE courses are funded to meet this congressional intent, we found it difficult to measure their success in meeting this mandate.

We find that cooperation among the three Services, USU, and JMESI must be enhanced to conserve resources, pool talents, identify best practices, make optimal use of emerging technologies, and achieve common, joint, outcomes. At a minimum, we think some consolidation of MEE courses and distance learning modules could occur.

With the exception of the Capstone course, it appears that some of the MEE courses are designed to train as many individuals as possi-

ble (i.e., officer, enlisted, civilian, and others) versus focusing on the congressional mandate, which is to validate that those officers specifically earmarked for senior leadership positions possess the requisite and unique skills to perform those executive duties.

Our review of the JMESDP shows that no formal proponent for medical executive skills exists at the DoD (Health Affairs/TMA) level, resulting in a lack of oversight and coordinated management of this key program. Because each of the Services has a varied philosophy on how to best cultivate and track competency attainment of its healthcare workforce for executive positions, assorted MEE and distance learning courses are being administered with different objectives, student mix, frequency, and cost-effectiveness.

It appears that the main focus of the current MEE courses and competencies is based on the peacetime benefit mission. Senior MTF executives are increasingly being asked to lead deployable, in-theater medical asset units and to oversee the delivery of combat medicine care in potentially hostile environments. Moreover, MTF commanders must often manage their command's with depleted staff because their personnel must deploy to operational and humanitarian assignment missions. These emerging requirements for senior MHS healthcare executives are military unique and must be addressed through in-house training or professional development.

It is not transparent within the MHS that individual performance is linked to organizational outcomes. DoD wants the MHS to become a more performance-based and result-oriented culture. Both the MHS strategic plan and Quadrennial Defense Review (QDR) stress the importance of transforming the workforce into a joint medical force in which people are evaluated by a set of standardized performance measures and indicators. Our review revealed that the MHS needs to better align its leadership behaviors with its strategy to create a foundational purpose for JMESDP. Without this central focus, MEE courses might become ends in themselves. We think that the performance-based planning process initiative outlined in the QDR will provide a good structure for creating and operationalizing this linkage.

Our cost analysis shows that indirect costs associated with opportunity costs of students, and faculty, being away from their primary du-

ties make up the largest component of total costs—75 percent. In other words, there is a direct correlation between the number of students enrolled in the course, the length of the course, and its indirect costs. Direct costs may be reduced by restructuring course schedules, relocation, and consolidation; reductions to indirect costs may be realized by reducing student and faculty course attendance, through, for example, increased use of distance learning modules for course delivery. An increase in distance learning components may also reduce the travel costs (direct costs) for students and faculty. We find that the current funding stream used to finance these courses is confusing and might be causing unnecessary overhead charges for the USU MedXellence course.

A wide range of private-sector organizations are actively engaged in developing competency- and performance-based programs to help ensure that healthcare leaders and executives possess the right skills and behaviors. Many organizations are creating a strong link between leadership development and organizational performance through career track, versus just-in-time, training. They are taking a multidimensional approach to leadership development using a variety of learning techniques. Some are focused on how organizations build internal capacities to develop leadership. We see value in JMESDP leaders and private-sector organizations finding ways to learn from each other's experiences and research in their common quest to cultivate and prepare healthcare leaders to meet the demands of the 21st century.

Recommendations

Although, overall, we find that the MHS is satisfactorily meeting its obligation to prepare its workforce for senior executive positions today, we offer recommendations to strengthen its ability to meet this objective in the future:

- Senior MHS leadership at HA/TMA needs to identify a way to oversee the functions and activities of the JMESDP and JMESI (e.g., develop an appropriate forum or office), or else consider reinstating the Joint Medical Executive Senior Oversight Committee (JMESOC).[29]

- Formally designate JMESI as the proponent for the JMESDP. We offer no recommendation on the best geographical or organizational location of JMESI, but we recommend that as an agenda item for the JMESDP oversight function.

- The current JMESI organizational structure includes a representative from each military Service. We believe that these representatives are crucial to readily address and effectively negotiate Service-specific issues in an open, cooperative, and transparent manner.

- As the JMESDP proponent, JMESI would be responsible for the following:

- Ensure that standards and criteria for executive/management skill development/achievement are integrated throughout not only the JMESDP but all appropriate levels in Service-specific education, training, and experience.

- Validate the pool of qualified senior MHS healthcare professionals who have achieved required core executive competencies to fulfill executive positions, in coordination with the Services.

- Determine the required number of student throughput for the MEE courses, based on projected inventory and billet requirements.

- Determine what patterns of knowledge, skills, abilities, and behaviors (i.e., competencies) MHS officers should demon-

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[29] Army noted that in the absence of an active JMESOC, the Commanding General of AMEDDC&S, serving as Executive Agent for JMESI, has communicated JMESP/JMESI issues with HA/TMA.

strate at the entry, mid-level, and senior levels to be considered for MTF command and other key positions.

- Prepare a gap analysis of the predominant MHS officer career path (knowledge, skills, abilities, and behavior) and likely experiences with the requirements needed to command an MTF or serve in other key MHS executive positions.

- Tailor and develop competency-based leadership learning programs that directly support and align with MHS's strategic goals. These programs and courses should augment likely gaps in competencies that an officer is not likely to acquire through experience and professional certification.

- Identify and develop curriculum that addresses the unique skills, knowledge, and behaviors required by senior MHS executives when managing deployable in-theater medical assets versus fixed MTF commands.

- Identify cost-efficient ways to better link leadership development to real-time organizational experiences, like the flux and potential decrease in MTF staff because of operational and humanitarian mission assignments.

- Find creative ways to reduce the amount of time officers spend away from their primary duty station and specialty to accomplish required leadership training and development. For example, JMESI has a robust distance learning program. There are currently 3,800 students enrolled in various modules and we think these modules can augment, and possibly replace, some of the existing face-to-face courses.

- Design and develop "joint" and Service-specific (when appropriate) medical executive skills curricula and distance learning modules.

- Develop a reliable and cost-effective tracking and monitoring system for executive competency attainment that will capitalize on existing Service-specific data systems being used today.

- Standardize definitions, criteria, and output measures used for MEE courses throughout the JMESDP.

- Allocate and manage JMESDP resources.

- Collaborate and communicate with USU, other federal organizations, and private-sector organizations (as appropriate) that are involved with leadership development activities.

- Design and administer survey instruments to executive incumbents to determine what competencies they think they need to perform their duties.

- Identify and distribute tools and techniques to MHS executives on *how* certain activities and processes within the MHS can be better examined and ultimately accomplished.

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List of Figures

List of tables

80

Appendix A: Literature review

The Center for Naval Analyses (CNA) conducted a literature review of both federal and civilian-sector materials. We provide synopses for selected references under each category. In each subcategory, the documents are listed in chronological order to show the establishment and evolution of the various topics from the creation of the core competencies through today.

Federal references

The federal references in this section include laws, Department of Defense (DoD) instructions, program guidance, program evaluations, and internal memos about the Joint Medical Executive Skills Program (JMESP). Each document helps to lay out the history of the JMESP and how the various programs have developed into what exists today. The documents are organized as follows: DoD/Service instruction, legislation, program guidance, program evaluation, and internal communications.

DoD/Service instruction

Department of Defense Instruction 6000.15. Department of Defense. April 19, 1999.

This is the DoD instruction that formalizes and continues the Joint Medical Executive Skills Development Program (JMESDP) within the Military Health System (MHS). It sets forth the policy that the MHS will prepare officers to be medical treatment facility (MTF) commanders and TRICARE lead agents through a progressive series of career-enhancing duty assignments and executive and educational experiences to develop leadership skills and professional competencies. The Army, through the Army Medical Department

Center and School (AMEDDC&S), is designated the Executive Agent for JMESDP.[1]

Chairman of the Joint Chiefs of Staff Instruction. Officer Professional Military Education Policy. December 2000.

This instruction from the Chairman of the Joint Chiefs of Staff lays out the policies, procedures, and responsibilities for professional military education (PME). The Chairman's vision is to ensure that the PME programs will incorporate technological advantages into the future PME. That vision provides the current Officer Professional Military Education Policy, the Policies for Intermediate- and Senior-Level Colleges, the PME review process and responsibilities, the Joint Professional Military Education, and the process for Accreditation of Joint Education.

Air Force Instruction 41-117. Medical Education: Medical Service Officer Education. April 23, 2001.

This instruction lays out the implementation of Air Force Policy Directive (AFPD) 41-1, "Health Care Programs and Resources." This directive establishes the responsibilities, procedures, and education requirements for the Air Force graduate medical education and the Air Force executive skills program.

Chapter 5 focuses on the implementation of DoD Instruction 6000.15, Joint Medical Executive Skill Development Program, and the need to track competencies. The three possible ways to obtain these competencies through the Air Force are through completion of military or civilian courses, experience or duty assignment, and external civilian certification.

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[1] The Navy's JMESP uses DoD Instruction 6000.15 as its governing guidance and does not have a separate instruction. The Army uses an internal decision memorandum to govern its program, and we cite this memo in the "internal communications" section of this report.

Army Regulation 600-100. Army Leadership. March 8, 2007

This document presents the Army's regulations on leadership development and maintenance in all aspects of the Service, including the medical corps. This updated version of the regulation, released in March 2007, presents the Army's revised stance on leadership and its reasoning behind the changes made. The major changes include an updated definition of leadership with the introduction of the term *Pentathlete* and the addition of the Army Values, Warrior Ethos, Soldiers Creed, and Civilian Creed. Other revisions are the inclusion of the Core Leader Competencies, updates to the levels of leadership, a section on the Leader Development model, and updates to various other portions of the original regulation.

DRAFT MHS Human Capital Strategic Plan: 2008-2013. May 2007.

The Medical Health System (MHS) Human Capital Strategic Plan 2008-2013 outlines six goals to achieve the MHS vision of "interoperable and agile—a total medical force that meets missions defined by the National Security Strategy requirements." The six goals are:

- Goal 1: Joint Governance

- Goal 2: Information Management

- Goal 3: Human Capital Lifecycle Management

- Goal 4: Performance-Based Management System

- Goal 5: Development of the Total Medical Force

- Goal 6: Adaptable Human Capital Solutions.

Competencies and capabilities, and training and education are specifically discussed within Goal 5 of the plan, which has a set of four objectives. Goal 5 stresses the need for the MHS to "educate, train, and develop the Total Medical Force to provide quality care while assuring interoperability." The interoperability component is designed to identify and standardize universal capabilities and competencies across the Total Medical Force, beginning with strategic job families, which is outlined in the first objective.

The second objective is to "identify, design and implement joint training programs to leverage common capabilities and efficiencies across the Services in alignment with Service-specific doctrine." It aims to improve resource management by identifying overlapping programs and infrastructure and creating Service partnerships that support centralization of skills and training.

The third objective is to "identify or develop degree and certification granting programs required to ensure mission requirements are met." The objective focuses on the need to build on the existing degree-granting programs within each of the Services and all partnerships with other private institutions to ensure that the Services recruit and retain individuals for critical positions.

The final objective is to "measure and evaluate the effectiveness of education and training policies, programs, and impact on Total Medical Force current and future capabilities." It stresses the need to assess the effectiveness and impact of the initiatives stated previously, and all other initiatives in the human capital strategic plan. Without some form of assessment, the plan stresses that the impact of the training and educational programs the services offer would be minimized.

These four objectives outline the training and education goal of the 2007 MHS Human Capital Strategic Plan and illustrate the impact that human capital management may have on the development and retention of officers in MHS.

Legislation

House Report 106-616. Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001. Section 731: Training in Health Care Management and Administration.

This report lays out legislation continuing the implementation of Section 715 of the National Defense Authorization Act for Fiscal Year 1996. The legislation reiterated Congress's continued interest in DoD preparing both MTF commanders and TRICARE managed care executives for their respective positions. The legislation is the result of the changing landscape and concern that personnel were

not being properly prepared before being assigned to duties requiring expert knowledge of the managed care environment.

House Report 106-945. Sec. 760. Enactment of Provisions of HR 5408, The Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001: Training in Health Care Management and Administration.

This report provides an amendment to the National Defense Authorization Act (NDAA) FY 1996, Section 715. Section A of the report reads: "No person may be assigned as the commander, deputy commander, or managed care coordinator of a military medical treatment facility or as a TRICARE lead agent or senior member of the staff of a TRICARE lead agent office until the Secretary of the military department concerned submits a certification to the Secretary of Defense that such person has completed the training described in subsection (a)." This amendment expands the scope of training in healthcare management and administration to include commanders, deputy commanders, TRICARE lead agents, a senior staff member of each lead agent office, and military treatment facility managed care coordinators.

Program guidance

Bureau of Medicine and Surgery. United States Navy. Military Health Care Executive Management Education Program. November 1994.

This booklet, produced by the Navy's Bureau of Medicine and Surgery (BUMED) lays out the various modules included in the Military Health Care Executive Management Education Program at the Naval Postgraduate School in Monterey, CA. The objectives of this program follow:

- Refine a manager's administrative viewpoint, which considers the effects of any one decision on the organization.

- Provide a thorough understanding of the precise tools associated with operations analysis and the economic consequences of any determination.

- Illuminate the meanings of working in managed care and lead agency environments.

Each of the modules listed in this booklet were taught by the NPS faculty listed at the end of the document. Continuing Education Credit Units (CEUs) were also available for each module.

Navy Executive Management Education (EME). EME Program: Launching in FY-95. 1995.

This document, a binder provided by Navy, contains a summary of the medical executive education program at the Navy at the time of its production, a catalog of the courses given, the DoD Competencies/NPS Module matrix, and an Executive Training Survey provided by the Systems Research and Applications Corporation (SRA).

Navy Executive Management Education (EME). CME/CEU Application Documentation. January 1996.

This binder, provided by Navy, contains various internal memos within Navy concerning Navy's response to the congressional mandate, the learning objectives and summary of the EME program at the Naval Postgraduate School, and the evaluation forms for the EME courses and faculty biographies.

Systems Research and Applications Corporation. Executive Skills Training Core Curriculum. Draft. June 1996.

This core curriculum was produced by SRA for the Army Medical Department Center and School at Fort Sam Houston, TX. This document is in response to a congressional mandate in 1992 that required that all MTF commanders have a way to "demonstrate the administrative skills" required to command an MTF.

Forty core competencies, identified by subject matter expert panels, are described individually within the curriculum. Each description is followed by a list of behavioral objectives that each commander must demonstrate to achieve the competency. A list of focus group participants is also provided.

Joint Medical Executive Skills Development Group. Joint Medical Executive Skills Development Program Core Curriculum. Third Edition. February 2000.

This is the third edition of the Joint Medical Executive Skills Program's Core Curriculum. This document was created by SRA International for the Virtual Health Military Health Institute and the Joint Medical Executive Skills Working Group.

As with previous editions, the core competencies are described individually, and a taxonomy is used to measure familiarity and understanding of the competencies; however, the names of each level were changed. The three levels of the taxonomy were changed from Familiarization, Basic Understanding, and Full Knowledge in the second edition, to Knowledge, Application, and Expert in this third edition.

Joint Medical Executive Skills Institute. Joint Medical Executive Skills Operational Guidance. January 11, 2002. https://jmesi.army.mil/charter.asp.

This document established the Department of Defense's Joint Medical Executive Skills Program. The program members include the Joint Medical Executive Skills Oversight Committee (JMESOC), the Joint Medical Executive Skills Institute (JMESI), and a working group. The membership and responsibilities of each member are laid out in the operational guidance. The Army serves as the Executive Agent; the Deputy Director, TMA, chairs the Joint Medical Executive Skills Board (JMESB). The JMESOC has membership from each of the military medical departments and the Uniformed Services University of Health Sciences (USUHS).

Joint Medical Executive Skills Institute. Joint Medical Executive Skills Program: Catalog of Executive Skills Educational Opportunities. Edition 4(a). 2003.

This Catalog of Executive Skills Education Opportunities was created to help medical executives in each Service understand the skills needed to take command of a medical treatment facility (MTF). The Department of Defense (DoD) developed a list of 40 competencies that every MTF commander must show in order to assume

command. Part I of the catalog lays out these competencies and the history behind them. Each competency can be obtained at three taxonomy levels: Knowledge, Application, and Expert. The final level, Expert, is primarily obtained through on-the-job experience.

In Part II, the courses provided by each Service (Army, Navy, and Air Force) and DoD are presented and described. Each description includes the objective, eligibility, length, modality, prerequisite, application, quotas, funding, obligation, evaluation of performance, credit given, institutional accreditation, and faculty.

Joint Medical Executive Skills Institute. *Joint Medical Executive Skills Program: Core Curriculum.* **Edition 4(a). January 2004.**

This is a revised version of the 4(a) edition from 2003. This core curriculum was created to help medical executives in each Service understand the skills needed to take command of a medical treatment facility. This revision provides a more in-depth description of each of the 40 competencies at the application and expert levels. The revision also focused on incorporating homeland security issues into required competencies.

Joint Medical Executive Skills Institute. *Joint Medical Executive Skills Program: Core Curriculum.* **Edition 5. August 2005.**

This is a revised version of the 4(a) edition from January 2004. This core curriculum was created to help medical executives in each Service understand the skills needed to take command of a medical treatment facility. The Core Curriculum Review team recommended changes to the competencies to reflect the current critical issues facing MTF commanders at the time. The clinical understanding domain was eliminated, as was the expert taxonomy level. The competencies contained in the clinical understanding were moving into the "Performance Measurement and Improvement" competency. The expert level taxonomy was eliminated because it was decided that the expert level of competencies can be obtained only within a leadership position.

Program evaluation

Inspector General, Department of Defense. *Executive Medical Education: Program Evaluation.* **June 1993.**

In June 1993, the DoD Inspector General (IG) conducted a qualitative program evaluation of each Service's Executive Medical Education Program for Military Medical Treatment Facility (MTF) Commanders within DoD and provided recommendations to improve effectiveness of existing programs. Each program was reviewed and analyzed to assess how many of the 40 core competencies it covered, if any.

The IG focused the evaluation on two key questions: (1) What program within the DoD (if any) meets the skill and knowledge criteria identified by the Assistant Secretary of Defense (Health Affairs) (ASD (HA))? (2) Should current DoD medical executive programs be continued, modified, and/or replaced with a DoD joint program, or discarded altogether?

The IG found four main issues with the current system. The first was the absence of existing DoD medical education programs that covered all of the core competencies. The existing programs either addressed only a few competencies or did not address them to the level of knowledge and application that is required for an MTF commander. The second issue was the lack of a validation process in DoD to track the attainment of core competencies. The third issue was that the core competencies were not being used as criteria for MTF command selection. The fourth issue was that the medical executive programs lacked centrally coordinated oversight.

The IG recommendation was a joint program, which would be the most effective and beneficial way to organize military medical executive education. This innovation would place the joint program under the ASD (HA) with the recommendation that all personnel interested in the program be permitted to participate. Further recommendations included the implementation of a career development program. This program would have a built-in validation process and be included in the command selection process. Oversight of this joint program would be under the ASD (HA) as well.

Systems Research and Applications Corporation. Competency Requirements for Military Medical Treatment Facility Commanders: Survey Results. Draft. November 14, 1994

This report was produced by SRA for the Army Medical Department Center and School (AMEDDC&S) during the early years of the executive skills programs. As the Joint Core Curriculum Working Group (JCCWG), brought together by AMEDDC&S, reviewed the competencies, it determined that any future educational program based on the competencies should include the experiences and suggestions of those currently in MTF commander roles. As a result, SRA was asked to conduct a series of telephone interviews. The series included a survey of current MTF commanders and a survey of former MTF commanders currently holding DoD medical positions. The final survey was of non-DoD healthcare executives and focused on what they considered to be the core competencies for a healthcare executive running a medical facility.

This report provides the results from each of the three surveys listed above. They look at the responses to which of the 34 competencies are considered the most important for the success of an MTF commander, which are not essential, and any that may be missing from the current 34.

The overall findings from the three surveys were that all of the competencies were essential for becoming an MTF Commander; however, general management, organizational behavior, and health resources allocation and management were considered the most important by the majority of those surveyed. Furthermore, some of the subjects interviewed felt that the competencies could be expanded to include such topics as leadership, the military mission, clinical knowledge, total quality management, personal and organization ethics, public and medical relations, customer relations, and public speaking.

Singer, Neil M. CBO Testimony on Restructuring Military Medical Care. National Security Division. Congressional Budget Office (CBO). September 12, 1995.

This testimony, by Neil M. Singer, the Deputy Assistant Director of the National Security Division of CBO, was presented in 1995 to the

Subcommittee on Civil Service, Committee on Government Reform and Oversight in the U.S. House of Representatives.

The testimony discusses the option of allowing military beneficiaries into the Federal Employees Health Benefits (FEHB) program. Mr. Singer describes the current military health system, the wartime and peacetime military medical mission, CBO's assessment of DoD's MHS reform plan, and the "potential savings from downsizing the military medical system in the United States to its wartime requirements."

The testimony also summarizes the main points from a CBO report published in July 1995 entitled *Restructuring Military Medical Care.*

Report to the Congress. DoD Executive Skills Training Program. Draft. July 1996.

This report was prepared by Systems Research and Applications Corporation for the Army Medical Department Center and School at Fort Sam Houston, TX. The report provided Congress with a comprehensive overview of the DoD Executive Skills Program, created in 1991 by congressional mandate.

Milestones mentioned in the report, since 1991, include the creation of 34 core competencies in 1992 through DoD study groups, the 1993 IG report analyzing the state of the overall DoD program, and the establishment of the Joint Medical Executive Skills Development Working Group in 1994.

Key actions taken by JMESDWG include creating a comprehensive curriculum development plan, producing a catalog of programs and courses that teach the competencies, and the creation of several focus groups that identified the behavioral objectives necessary for each competency.

Further actions taken by the Services included the creation of the Navy's "Course for Providers in Managed Care," the Air Force's senior executive training symposium, and the development of the USUHS Medical Executive Training Course.

Future goals mentioned in the report included the development of an executive skills tracking system that could be used by each Service to track every officer's attainment of competencies.

Virtual Military Health Institute. *2002 Congressional Report.* **March 2002.**

The Virtual Military Health Institute (now known as the Joint Medical Executive Skills Institute) presented this report to Congress as required by the National Defense Authorization Act of 2001, Section 760: Training in Healthcare Management and Administration.

The report provides a time line of the Joint Medical Executive Skills Program (JMESP) from its inception in 1992 through 2002. Key events include the creation of the 34, and then 40, core competencies in the late 1990s, the launching of VMHI's Web site in 2001, the publishing of the JMESP core curriculum, and the evolution and adaptation of distance learning into the JMESP. The report then reviews the progress each Service has made in response to NDAA Section 760.

All military departments report having databases to track competencies. The Army, Air Force, and USUHS provide training programs and report the development of distance learning; the Navy focuses on the continuum of learning during an officer's career. Another difference noted among the Services is that the 40 competencies do not ensure a medical command position in the Air Force.

The report next reviews the various civilian professional organizations that provide core competencies at the knowledge and/or application level:

- American College of Healthcare Executives (ACHE)

- American Academy of Medical Administrators (AAMA)

- American College of Physician Executives (ACPE)

- American Dental Association (ADA)

- American Health Information Management Association (AHIMA)

- American Nurses Credentialing Center (ANCC)

- American Society for Quality (ASQ)

- Healthcare Financial Management Association (HFMA)

- National Committee on Certification of Physician Assistants (NCCPA)

- National Association for Healthcare Quality (NAHQ).

The report concludes that the DoD JMESP programs continue to provide current, future, and potential medical executives with the skills required to fill an MTF commander position. Through the JMESP Oversight Committee, participant feedback, and continued review of the courses and their competencies, the program continues to provide knowledge- and application-level education on the 40 core competencies.

Serve, Support, Simplify: Report of the President's Commission on Care for America's Returning Wounded Warriors. July 2007.

In response to events at Walter Reed Medical Center in the spring of 2007, the President signed an executive order forming the President's Commission on Care for America's Returning Wounded Warriors. In the commission's first report, from July 2007, it recommends the following six steps to improve the military healthcare system with regard to wounded warriors and their families:

- Implement comprehensive Recovery Plans

- Restructure disability and compensation systems

- Improve care for people with post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI)

- Strengthen support for families

- Transfer patient information across systems

- Support Walter Reed until closure.

The last portion of the report includes discussion of these recommendations and what form the commission believes they should take. There is also a table of the six recommendation action steps

indicating whether Congress, DoD, and/or the VA should be involved in each specific step or substep.

Internal communications

Peake, James B. Major General, MC Commanding. Approval for the Army Medical Department Plan for Compliance with the 1991 DoD Appropriations Act and 1996 DoD Authorization Act. October 28, 1997.

This decision paper was sent to Lieutenant General Ronald R. Blanck, the Surgeon General, to obtain his approval of the Army Medical Department (AMEDD) program. This document serves as the Army's institutional instruction and develops the AMEDD plan, laying out two paths to obtaining the core competencies.

The first path is to obtain competency certification through attending military or civilian courses "that have been reviewed (for inclusion of the learning objectives listed for the 40 Executive Skills Competencies in the Common Core Curriculum), entered into the Joint Medical Executive Skills Training Database, and published in matrix form."

The second path is to obtain the competencies through experience or duty assignments. "The AMEDD Personnel Proponency Directorate (APPD) identified high frequency, key duty assignments and determined which competencies should be awarded upon completion of a successful tour of duty."

The plan recommends that professional certification and examinations not be used as paths to obtaining competency certification.

Kizer, Kenneth W., MD, MPH. Under Secretary for Health. Professional Accreditation for Medical Center Directors, Associate Directors, Chiefs of Staff, and Key Headquarters Staff. Department of Veterans Affairs. December 5, 1997.

This memo from Kenneth Kizer, the Under Secretary for Health at the Department of Veterans Affairs (VA), lays out key goals and current tasks that the VA had undertaken to enhance professional ac-

creditation for medical center directors and other medical executive professionals. The Kizer memo states:

> It is essential that individuals who are selected to serve in VHA executive leadership positions (e.g., Medical Center and Clinic Directors, Associate Directors, Chiefs of Staff, and Key Headquarters Staff) be subject to the same type of requirements as clinical care personnel. Through their participation in professional accrediting bodies, management can overtly and objectively demonstrate the possession of basic knowledge and skills needed to provide effective leadership to our facilities and programs, as well as demonstrate their commitment to on-going professional development to improve one's ability to manage in a rapidly changing and highly competitive environment.

> Therefore, the VHA Executive Resources Board (ERB), the Network Directors, and those Executive Leadership Councils or other groups designated as search committees shall strongly consider the possession of an appropriate professional certification as one of the distinguishing factors for selection into one of VHA's key administrative roles. This participation and certification will also be considered by the Office of the Under Secretary in recommending appointment of nominees by the Secretary.

Hackett, Karen L., FACHE, CAE. American College of Healthcare Executives (ACHE). April 30, 1999.

This letter was sent to the incumbent Deputy Assistant Secretary of Defense for Health Operations Policy from ACHE inquiring about the JMESP program. ACHE offered its support in updating JMESP on the competencies and communicated its desire to work closely with ASD (HA) to explore opportunities to expand the competencies based on ACHE's credential and professional development program.

Hackett, Karen L., FACHE, CAE. American College of Healthcare Executives. July 13, 1999.

This letter to the incumbent Deputy Assistant Secretary of Defense for Health Operations Policy from ACHE inquires about the JMESP program. ACHE states that its Board of Governors Examination now

covers more competencies than currently cited in JMESP policies and requests that they be included. A list of the additional competency areas and the related questions from the exam are attached to the memo.

The 18 military competencies that have already been aligned with the ACHE exam are the following:

- Facilities management

- Personal and organizational ethics

- Material management

- Information management

- Quality management

- Clinical performance improvements

- Regulations

- Leadership

- Managing change and innovation

- Alternative healthcare delivery

- Strategic planning

- Organizational design

- Decision making

- Public law (general)

- Medical staff bylaws

- Human resources management

- Process outcome

- Financial management.

The six additional competencies that ACHE would like JMESP to include in its policies as associated with the ACHE exam follow:

- Earned accreditation

- Individual behavior

- Group dynamics

- Public and media relations

- Clinical investigation

- Bioethics.

Each of these six competencies has been linked to four or more questions on the ACHE exam.

The following are the final two competencies that ACHE presents as aligned with questions on the ACHE exam:

- Patient rights (DNR)

- Patient rights (informed consent).

Each of these is aligned to two questions on the exam.

Medical Executive Skills Development Plan: USUHS Distance Learning Initiative to Deliver Medical Executive Skills Training DoD-Wide. Memo dated April 18, 2000.

USUHS's plan was forwarded to the Service Surgeons General for information purposes. This memo provides an overview of USUHS's current role in the competency-based medical executive education community, and its proposal for the development of a new, non-Service-specific distance learning initiative. USUHS argues that, since it provides education to all Services, it is the perfect location to house a Service-wide distance learning program. The funding that would be required for this program is presented, as well as its benefits. USUHS proposes having the Service-specific and non-Service-specific modules all housed at USUHS, making it a powerful educational resource for every Service.

Deputy Secretary of Defense J. Atwood. Administrative Skill Qualifications for Command of Medical Facilities. December 2001.

This memo was sent from the Deputy Secretary of Defense to the Secretaries of the Military Departments, the Chairman of the Joint Chiefs of Staff, the Assistant Secretary of Defense for Health Affairs, and the Assistant Secretary of Defense for Force Management and

Personnel. In the memo, Assistant Secretary Atwood assigned the Assistant Secretary of Defense for Health Affairs the task of assisting the Services in the implementation of Section 8096 of the Department of Defense Appropriations Act of 1992 and of strengthening the health services administration skills of those who command DoD medical facilities. The two main tasks given to ASD (HA) are to ensure that the Services have systems in place to demonstrate administrative skills and to provide Health Service Administration Training and Education.

Joint Medical Executive Institute. Decision: That JMESI Be the Proponent for MHS Executive Skills. June 2006.

This PowerPoint presentation, given to JMESI leadership in June 2006, provides an overview of both the current JMESI program and how it would propose bringing all other executive skills programs under its oversight.

The overview covers JMESI's roles, missions, the Capstone symposium, JMESI's goals and initiatives, and the resource implications of bringing all executive skills programs to Fort Sam Houston, TX.

The desired end state of this proposal would be that JMESI would ensure that the same level of executive skill competency is being achieved by all leaders of the U.S. military healthcare system, that there is a common tracking system for competencies, that best practices are being recorded and learned from, and that JMESI would aid the other Services not currently at Fort Sam Houston, TX (Navy and Air Force) to develop and refine their current executive skills programs.

Department of Defense. QDR#8 Summary/Overview. July 13, 2006.

This PowerPoint brief provides an overview of QDR#8. The overall goal of QDR#8, as it applies to competencies, is to "establish a process to directly link facility investments with performance goals articulated in strategic and business planning and enhance joint operations and interagency collaboration."

The QDR establishes the Planning Subcommittee as the working group that will work on linking facility investments and performance goals. The goals of the working group center on establishing the criteria to create this link and to ensure that there is consistency MHS-wide with regard to investment decisions, executive review, and approval of suggested investments.

The planning working groups also plan to "oversee the development and implementation of an integrated facility portfolio investment process for specified MILCON and MILCON funded UMC by 2008."

Department of Defense. The Military Health System Strategic Plan: A Roadmap for Medical Transformation. 2006.

This strategic plan, produced through a yearlong reevaluation of MHS, sets the direction for the next 5 to 7 years. It lays out the strategic vision of MHS, driving principles, how MHS leadership will employ these principles and values, the key MHS mission elements and MHS strategic goals, MHS strategy map, and Balanced Scorecard.

Military Health System Office of Transformation. QDR Medical Roadmap Implementation. July 13, 2006.

This PowerPoint brief provides an overview of the MHS Office of Transformation (MHS-OT), which is a "jointly staffed office chartered by DEPSECDEF to provide oversight/management in execution of the QDR."

The briefing highlights four focus areas: transform the force, transform the infrastructure, transform the business, and transform the benefit.

Garibaldi, Peter M., Colonel, Garrison Commander. Challenges Concerning the Base Operations A-76 Study and Resulting Reduction in Force (RIF) at Walter Reed Army Medical Center (WRAMC). September 2006.

This September 2006 memo from Col. Garibaldi to the leadership of WRAMC provides an outline of his concerns regarding base op-

erations at the medical center. This letter was included in the documents for the U.S. House of Representatives Committee on Oversight and Government Reforms investigations into events at WRAMC in 2007.

U.S. House of Representatives Committee on Oversight and Government Reform. Letter to Major General George W. Weightman. March 2, 2007.

This letter from the Committee on Oversight and Reform in the House of Representatives requests that Major General Weightman appear before the committee at a hearing on March 5, 2007. They also ask that Major General Weightman be prepared to respond to questions concerning an internal memo regarding WRAMC from September 2006.

General Accountability Office. DoD and VA Health Care: Challenges Encountered by Injured Service Members During Their Recovery Process. GAO-07-589T. March 5, 2007

This testimony was presented before the Subcommittee on National Security and Foreign Affairs, Committee on Oversight and Government Reform, House of Representatives, in March 2007.

GAO was asked to discuss concerns regarding DoD and VA efforts to provide medical care and rehabilitative services for Servicemembers who have been injured during OEF and OIF. The testimony addresses (1) the transition of care for seriously injured Servicemembers who are transferred between DoD and VA medical facilities, (2) DoD's and VA's efforts to provide early intervention for rehabilitation for seriously injured Servicemembers, (3) DoD's efforts to screen Servicemembers at risk for post-traumatic stress disorder (PTSD) and whether VA can meet the demand for PTSD services, and (4) the impact of problems related to military pay on injured Servicemembers and their families.

The testimony is based on GAO work issued from 2004 through 2006 on the conditions facing OEF/OIF Servicemembers at the time the audit work was completed.

Kiley, Kevin C. Lieutenant General, The Army Surgeon General. Walter Reed Army Medical Center Outpatient Care. March 5, 2007.

This testimony was given by Lt. General Kevin Kiley before the House Committee on Oversight and Government Reform's National Security and Foreign Affairs Subcommittee in March 2007.

Lt. General Kiley was asked to testify regarding reports on the conditions at the Walter Reed Army Medical Center (WRAMC). In his testimony, he discusses the conditions at WRAMC, the changes that have been made, and those that are being planned, as well as a commitment from the Army that it will improve its facilities, accountability, and administrative processes to ensure that the Army medical system sets high standards of excellence.

GAO-07-766CG. David M. Walker. *DOD's 21ˢᵗ Century Health Care Spending Challenges: Presentation for the Task Force on the Future of Military Health Care.* General Accountability Office. April 18, 2007.

This PowerPoint presentation was presented by the Comptroller General of the United States to the Task Force on the Future of Military Health Care in April 2007. It provides recommendations on what can be done to overcome the current spending challenges in DoD's health care program. GAO stresses that the "status quo" is not an option, and, though faster economic growth can help, it cannot solve the problems entirely.

The problems, as shown by Mr. Walker, are cost and inaction, and they are widespread across the TRICARE system. In fact, from FY 2000 to FY 2005, "DOD health care spending (primarily TRICARE) more than doubled." In FY 2005, health care spending also accounted for 7.5 percent of DoD's total discretionary budget, and it is expected to increase to 12 percent by FY 2015. TRICARE cost-sharing is also out of step with its public and private counterparts, and there has been no increase in TRICARE deductibles since 1995.

For these and other reasons stated in the report, Mr. Walker and the GAO presented a list of issues to Congress for their consideration when looking at the future of the DoD and VA health care programs; some of those issues are the following:

- How can the benefits, eligibility, and health delivery systems of DoD and VA be optimally structured to ensure quality and efficiency?

- What options are available to reduce spending growth through increased collaboration in, and integration of, health care delivery both within and between those two agencies?

- Should TRICARE provide financial incentives to encourage under-65 military retirees and dependents to obtain health care coverage when available through non-DoD sources?

- Should TRICARE cost-sharing requirements be brought into parity with those of other public and private payers?

Assistant Secretary of Defense. MHS Strategic Goals Memo DRAFT. 2007.

This memo from the Assistant Secretary of Defense for Health Affairs (ASD (HA)) accompanied the MHS strategic plan, published in 2006. The MHS strategic plan's set of strategic goals for the development of leaders within the military health system and this memo reiterate their importance to the ASD (HA) and the military as a whole. The ASD (HA) restates the strategic goals in the memo:

- Enhancing deployable medical capability, force medical readiness, and homeland defense, including humanitarian missions

- Sustaining the military health benefit through top-quality patient-centered care and long-term patient partnerships with a focus on prevention

- Providing globally accessible, real-time health information that enables medical surveillance and evidence-based healthcare

- Providing incentives to achieve quality in everything we do

- Unleashing the Potential of Our Most Valuable Asset: Our People

- Building and sustaining the best hospitals and clinics; nurturing a caring environment.

MHS Strategic Goals Brief. 2007.

This PowerPoint brief lays out the MHS strategic goals that were first developed in 2006. The tactical focus of each goal is provided. The strategic goals follow:

- Enhance deployable medical capability, force medical readiness, and homeland defense, including humanitarian missions.

- Sustain the military health benefit through top-quality patient-centered care and long-term patient partnerships with a focus on prevention.

- Provide globally accessible, real-time health information that enables medical surveillance and evidence-based healthcare.

- Provide incentives to achieve quality in everything we do.

- Unleash the potential of our most valuable asset: our people.

- Build and sustain the best hospitals and clinics; nurture a caring environment.

Civilian references

The following is a summary of research reports and articles dealing with issues related to medical executive education and graduate executive education programs. We grouped the various documents into five categories of analyses:

1. Organizational effectiveness of educational institutions

2. Cost-effectiveness of educational institutions

3. Distance learning programs in education

4. Military medical education programs

5. Competency research.

Organizational effectiveness

Cameron, Kim S. *Measuring Organizational Effectiveness in Institutions of Higher Education.* **Administrative Science Quarterly, Vol. 23, No. 4. December 1978: 604-632.**

Cameron's study of the organizational effectiveness of higher education institutions attempts to categorize effectiveness into nine dimensions of analysis:

- Student educational satisfaction

- Student academic development

- Student career development

- Student personal development

- Faculty and administrator employment satisfaction

- Professional development and quality of the faculty

- System openness and community interaction

- Ability to acquire resources

- Organizational health.

Cameron, Kim S. "Domains of Organizational Effectiveness in Colleges and Universities." *The Academy of Management Journal,* **Vol. 24, No. 1. March 1981: 25-47.**

Cameron states that organizational effectiveness may have a different definition in every organization and that current models and approaches to organizational effectiveness may be limiting in scope. In analyzing colleges and universities, Cameron suggests that the domain of activity in which the organization is operating should be considered as a determining factor in assessing organizational effectiveness. His study attempts to identify the major domains that typify colleges and universities and to assess the levels of effectiveness in each of those domains.

He conducts a cluster analysis to determine which of the original nine dimensions of organizational effectiveness, discussed in his ear-

lier work, could be grouped together based on underlying institutional characteristics. This leads to the identification of four types, or clusters, of institutions: external adaptation; morale; academic oriented; and extracurricular. The main implications of his results are that organizational effectiveness is a multi-domain construct and that the current models and approaches to organizational effectiveness fail to account for this complexity.

Baldwin, J. N. "Comparison of Perceived Effectiveness of MPA Programs Administered under Different Institutional Arrangements." *Public Administration Review,* **Vol. 48, No. 5, Sept.-Oct. 1988: 876-884.**

This study reports findings from a nationwide survey to record Master in Public Administration (MPA) directors' perceptions of program effectiveness related to the achievement of 17 specific goals. The results show that MPA programs administered by public administration departments and separate schools are perceived as being more effective than programs administered by combined departments.

The primary indicators of program effectiveness were the accreditation status and the size of full-time faculty. Also, the most effective MPA programs tend to be older, to be directed by full professors, and to have larger full-time faculties and a higher percentage of courses taught within their departments or divisions.

Lysons, Art. "Dimensions and Domains of Organizational Effectiveness in Australian Higher Education." *Higher Education,* **Vol. 20, No. 3. October 1990: 287-300.**

Lysons' study pulls from previous studies of organizational effectiveness in the United States and the United Kingdom to analyze the Australian higher education system. He finds that the effectiveness of Australian educational institutions can be categorized into four of the nine dimensions identified by Cameron (1981). The four dimensions are student personal development, staff satisfaction, organizational system openness, and organizational health. Lysons also discusses the dimension of organizational health, which may be applied to both the U.S. and Australian studies.

Using these four dimensions as a construct, Lysons develops a sub-taxonomy to measure individual universities' and colleges' levels of effectiveness. The taxonomy consists of the following nine criteria:

- Leader facilitation and support

- Professional development and quality of academic staff

- Student personal development

- Leader goal-directed orientation

- Immediate workgroup cooperation

- Friendliness and trust

- Ability to attract quality students

- Top-level workgroup cooperation, friendliness, and trust

- Ability to acquire extra financial resources.

Kenney, Steven H. "Professional Military Education (PME) in 2020." 1995.

This article was prepared for the Conference on Professional Military Education and Emerging Revolution in Military Affairs, at the National Defense University in Washington, DC. It was sponsored by the director of Net Assessment, Office of the Secretary of Defense (OSD). It predicts what will be required of PME in 2020 as military policy, technology, and healthcare policy evolve over time.

Kenney concludes that, to meet the requirements presented in 2020, the military must identify who will be educated, when this occurs over the course of an officer's career, and where this education will occur (distance learning or onsite classes). The key requirement to meet these needs is to adhere to the cutting edge technology that would be present. The educational programs of 2020 will have to respond to growing technology, personnel challenges, and constant fiscal constraints. Steps recommended for achieving this response are having working groups to recommend changes, constant review and monitoring of emerging technologies, and emphasis on quality improvements to the PME systems and community.

Lysons, Art; David Hatherly; David A. Mitchell. "Comparison of Measures of Organizational Effectiveness in U.K. Higher Education." *Higher Education,* **Vol. 36, No. 1. July 1998: 1-19.**

Lysons collected data from the past two decades on higher education in the United Kingdom and analyzed their organizational effectiveness using a set of measures referred to as dimensions. The main focus of the report is that, while a lot of research has been done on the internal validity of organizational effectiveness measures, the external validity has not gotten as much attention. By external validity, Lysons is referring to the ability to generalize findings on one particular group to other groups—in this case, in other countries.

He reiterates that, although the U.S. studies on organizational effectiveness have identified it as a multidimensional construct, and Australian studies have gone on to expand the research, there is still no way to generalize the validity of a study in one country to its validity in another.

Lane, Dorothy S.; Virginia Ross. "Defining Competencies and Performance Indicators for Physicians in Medical Management." *American Journal of Preventive Medicine.* **Vol. 14, No. 3. 1998: 229-236.**

Lane and Ross provide a history and final result of the efforts of the American College of Preventive Medicine (ACPM) to develop competencies and performance indicators for medical management. They cite a previous survey of physicians, which showed that 80 percent of physicians working as administrators believed that formal management training should be required. Of those, 22 percent believed that formal management training should be a requirement to get the position, and 62 percent believed that the training should be recommended. This need for training and performance metrics led ACPM to develop a set of competencies for physicians in administrative and managerial roles. These competencies were developed during meetings of the ACPM Graduate Medical Education Subcommittee, which sponsored "competency workshops."

The Bureau of Health Professions of the Health Resources and Services Administration (HRSA) also aided in the development

process. They funded the partnership between the preventive medicine residency program at the State University of New York (SUNY) at Stony Brook and the ACPM to develop the performance indicators for each of the competencies. The performance indicators are designed as measurements of the core competencies. The first set of performance indicators for the competencies was completed in 1994. That set was reviewed in 1996 by a working group of physicians representing the SUNY Stony Brook program and ACPM. The final list of competencies is delivery of healthcare, financial management, organizational management, and legal and ethical considerations.

Van Wart, Montgomery; Marc Holzer; Andrea Kovacova. "The Scope of Public Administration Continuing Education in Universities." *Public Productivity and Management Review.* **Vol. 23, No. 1. September 1999: 68-82.**

Van Wart et al. conducted an exploratory study to assess the effectiveness of university-based continuing education, focusing primarily on public administration programs. They compared programs based on size, types of training activities, accredited training programs, program structure and faculty/staff mix, and perceptions of the program importance.

They find that continuing education as a subfield in universities does not seem to have a clear self-awareness, is less affected by national academies and societies, and tends to lack uniform standards. It also appears that partnering with specific agencies, accrediting bodies, or other universities is limited. The authors identified three major patterns of structural arrangements of continuing education programs: as a separate unit, as a subordinate unit within an academic department, or as a function integrated into faculty and staff responsibilities. Having the activities integrated into faculty and staff responsibilities was more evident in smaller sized programs.

The personnel structures in programs vary from having large contingents of faculty assigned to training activities with a support staff, to large numbers of professional staff without much faculty direction. This research provides insight into the alternative structures and organizational design of university-based continuing education programs in public administration.

Alampay, Regina H.; Frank T. Morgan. "Evaluating external Executive Education at Dow Chemical: Its Impact and the Pygmalion Effect." *Perspectives on Practice, Human Resource Development International.* **2000: 489-98.**

Alampay and Morgan's 2000 study looked at Dow Chemical's university-based Executive Education Program for Future Leaders from 1996 to 1999. They discuss the methods that could be used to evaluate the $200 billion spent annually by the government and private industries on executive education. The majority of the studies done on these programs used only participants' reactions instead of learning, behavior, and organizational outcomes. To improve on the participant-reaction-only method, Alampay and Morgan incorporated learning and performance outcomes into their study of 51 managers in Dow's executive education program.

The sample of managers surveyed represented 75 percent of the total number of participants in 1999. The survey revealed that, although the number of participants was increasing and participants overall were satisfied with the program administration, they expressed concern about the outdatedness of the topics and thought the program was too long. Performance assessments of participants 3 years after they attended the program revealed an increase in the pay and level of management of the participants when compared with those who did not attend the program sessions. The study suggested that organizations should try to better match program objectives with the needs of participants and that program success may be reflected in such criteria as job satisfaction, organizational commitment, and employee turnover.

Crow, Stephen; Sandra Hartman; Steve Henson. "An Expedited Model for Health Care Administration Programs at the Graduate Level." *Journal of Health and Human Services Administration,* **Spring 2005: 377-413.**

The authors developed a theoretical model for healthcare administration programs at the graduate level. Their research evolved from a review of previous studies of healthcare administration programs, which prompted concerns that current training available to managers and executives in healthcare fields is typically too long,

too expensive, and involves too many prerequisites. In addition, the content of training is seen as too narrowly focused on performance of functions, rather than on attainment of management skills. Another concern is that accreditation standards for programs in health administration education do not reflect recent changes in the healthcare industry. Also, many competencies involving business skills that are desired by CEOs are not addressed. Examples of these competencies include the management and adoption of automation and technology into their management structure.

The authors conducted a curriculum and content review of several well-respected university graduate programs and developed a streamlined taxonomy for competencies in healthcare administration, based on a business-driven perspective of administration. They also found that many courses may have questionable value in terms of providing relevant leadership skills in the healthcare industry.

Public Health Consortium CME Advisory Committee. *Policy and Procedure Manual for Continuing Medical Education.* **Revised January 2006.**

In this manual, the Public Health Consortium Continuing Medical Education Advisory Committee lays out the policy and procedures for acceptance into CME Category I credit programs, which have oversight from the Public Health Consortium for CME. The mission of the committee is "to provide, with its partner organizations, quality CME of specific interest and usefulness for public health physicians in the state of Michigan." The Michigan State Medical Society's Committee on CME Accreditation grants accreditation.

Cost-effectiveness

Hand, Herbert H. "The Mystery of Executive Education: Effectiveness Requires Evaluation." *Business Horizons.* **June 1971: 35-38.**

Hand provides a brief overview of issues facing the evaluation of executive education. He identifies three major problems with executive education programs: defining their parameters, verbalizing the basic assumptions, and evaluating the results. He recommends that program success be based on clearly defined objectives related to

anticipated changes in knowledge, attitude, skills, and/or performance levels. Hand suggests that the cost of training programs should also consider the opportunity costs associated with "trainees" being off the job throughout the process.

Denton, J.; Nick Smith. "Alternative Teacher Preparation Program: A Cost Effectiveness Comparison." *Educational Evaluation and Policy Analysis.* **Vol. 7, No. 3. Autumn, 1985: 197-205.**

This article reports the results of a comparative cost-effectiveness study of two programs leading to secondary teacher certification. They provide examples of alternative strategies for computing costs and illustrate the need to consider both costs and outcomes to determine which alternative is most effective for a given cost, or how much it would cost to obtain a desired level of effect.

The important takeaway from this article is that both the choice of cost variables and the algorithms used for calculating costs influence the outcomes of the study in question and should be adjusted for student enrollment and other factors specific to the program (e.g., credit hours, program hours, contact hours).

Ohls, James; Linda Rosenberg. "A 'Building-up' Approach to Measuring Program Costs." *Journal of Policy Analysis and Management,* *Vol.* **18, No. 3. Summer 1999: 473-480.**

This paper uses the resource cost methodology to obtain program cost information, with an application to the Elderly Nutrition Program. The research discusses the validity of different sources for obtaining cost data.

The writers find that the use of budget and accounting data is usually inadequate for measuring costs and that cost-related information obtained from interviews may be of limited use. The authors' suggested methodology involves estimating resource use directly for the program components of interest and building up cost estimates based on the levels of resources used and unit costs. They stress the importance of obtaining information on staff time required to perform specific functions in order to obtain more accurate estimates of the costs of resource use.

Levin, H. M; Patrick McEwan. *Cost-Effectiveness Analysis: Methods and Applications*, 2nd **edition. Thousand Oaks, CA: Sage Publications. 2001.**

This book provides a systematic approach to the use of cost analysis in educational evaluation. Cost-effectiveness analysis can lead to a more efficient allocation of resources because it focuses on the relationship between costs and outcomes.

The approach consists of identifying the alternatives/programs, establishing effectiveness criteria of alternatives, establishing the costs associated with the alternatives, evaluating the distribution of costs and outcomes, and calculating and interpreting summary measures of cost-effectiveness. The approach to measuring costs involves identifying the full range of resources involved and valuing resources at their opportunity cost—the resource cost model.

Costs can be identified through review of program documents and interviews with select individuals responsible for the program. The criteria for effectiveness should reflect as closely as possible the main objectives of the program.

Distance learning

Rumble, Greville. "The Cost Analysis of Distance Teaching. Costa Rica's Universidad Estatal a Distancia." *Higher Education.* **Vol. 10, No. 4. July 1981: 375-401.**

Rumble's analysis of distance learning identifies the main drivers and the suitable measures of output for analysis of a distance learning university in Costa Rica. These measurements are then attributed to financial costs on a student-level basis, and cost projections are created. The case study used to show the utility of this system of cost analysis is the creation of the Universidad Estatal a Distancia (UNED) in 1977.

In contrast to campus-based universities, in which teaching costs are traditionally treated as variable costs directly related to the output of students, distance teaching universities incur significant startup costs in the preparation of course materials and course design. In

addition, for Web-based courses, the choice of media can be a significant cost factor that educators need to consider.

Turoff, Murray. "Costs for the Development of Virtual University." *JALN*. **Vol. 1, Issue 1. March 1997: 28-38.**

This paper deals with the cost analysis of the development of an academic program for 200 students in a distance-learning format involving students around the world. Turoff states that the cost would be less than the addition of a single classroom building on a college campus.

Turoff describes the resources needed to implement a virtual university and discusses the various costs that must be calculated. These include computer equipment costs, physical campus costs, non-faculty personnel costs, and faculty costs.

Rumble, Greville. "The Costs and Costing of Networked Learning." *JALN*. **Vol. 5, Issue 2. September 2001: 75-96.**

Rumble presents an analysis of the actual costs of distance learning systems. He assesses the validity of the perspective that educational technology can improve the efficiency of education through increases in productivity. He then provides a detailed methodology for costing out distance learning programs. Rumble discusses the framework for costing this type of program, taking into account such issues as the population of the course, the type of course, the logistical requirements (e.g., computers, space), tuition, and the length of the course. He defines a framework for the institutional costs of a fully developed e-education system to include the costs of developing e-materials, teaching and assessment of students online, Web site accessibility, administration of students online, information technology infrastructure and support, and institutional planning and management functions related to the program. His method advocates the systems approach for determining total program costs.

Wright, Tracy; Linda Thompson. "Cost, Access, and Quality in Online Nursing and Allied Health Professions." *JALN*. Vol. 6, Issue 2. August 2002.

Wright and Thompson present the time line of research, planning, and implementation activities and distance learning costs of the Northwest Technical College's Practical Nursing Program. By looking at the job market needs and the varying delivery methodologies, the authors lay out the successes of this type of distance learning program as well as the challenges that online training in the field of nursing presents.

The authors suggest that distance learning may be more cost-effective than traditional education delivery methods. They state that achieving economies of scale that lead to cost efficiencies is positively related to the number of students enrolled and negatively related to the number of courses offered. Significant cost factors include the choice of media, market research to increase student enrollment, and appropriate investment in technology infrastructure and support.

York, Joseph W. "Determining Costs and Benefits of an Online Graduate Program in Healthcare Education: Preliminary Findings." *JALN*. Vol. 6, Issue 2. August 2002: 38-44.

York presents an analysis of the Master of Health Professions Education degree at the University of Illinois' College of Medicine. This program now has an online track for the program, as well as its on-campus program. The concept behind offering this program online is that there are health professionals who cannot take the large amount of time to attend classes at the university, but who want to continue their education. The analysis shows that there is a lot of interest in this program (over 100 enrollments in the initial 6 semesters), and it remains financially viable. The success of the program has also led to the discussion of other departments offering an online track for their own degree programs.

Morgan, Brian M. "Is Distance Learning Worth It? Helping To Determine the Costs of Online Courses." Marshall University.

This paper and its accompanying Web site provide higher education institutions with a dynamic, real-time model for calculating the costs of developing and launching an online program for their universities. Morgan goes on to discuss whether these costs, incurred by launching the online program, are worth the benefits provided to the institution and the students. Studies at Marshall University's School for Extended Education show that retention rates for students who have taken online courses is close to 70 percent—just one of the benefits of their online program.

The costs for development and sustainment of an online course include technology, personnel, faculty, and the hidden costs of increased network traffic, need for evaluation, and the maintenance of the Web site itself.

Medical executive education

Baker, David P.; Sigrid Gustafson; J. Mathew Beaubien; Eduardo Salas; Paul Barach. "Team Training in Healthcare: A Review of Team Training Programs and a Look Toward the Future."

This paper reviews the evidence base for two categories of medical team training: simulator-based and classroom-based programs. The writers examine the purpose and strategy of each program and review the empirical evidence presented. For the majority of their classroom-based programs, their data come from a series of course observations, curriculum reviews, instructor interviews, and an independent assessment of participant reactions. They complete the report by providing recommendations on how medical team training may evolve in the future.

The recommendations made by the authors include looking to Crew Resource Management (CRM) and other domains where team training strategies have had real success. They point to the Navy's Tactical Decision Making Under Stress (TADMUS) model as providing participants with a set of useful lessons learned and tools that can be applied to healthcare.

They also recommend establishing a standard set of competencies that focus on teamwork-related knowledge, skill, and attitude. With regard to the structure of team-based training, they suggest that all three phases of comprehensive team training programs be present: Awareness, Skills Practice and Feedback, and Recurrency.

Thomas, Jane H. *Processes in Achieving Executive Skills Competency in the Military Health System.* **Amer Technology, Inc. September 2005.**

Amer Technology, Inc., produced this 2005 report on the medical executive skills programs for the Joint Medical Executive Skills Institute. The study examines two questions:

- To what extent is the Joint Medical Executive Skills Program (JMESP) meeting its intended purpose?

- What works well and what could be improved?

The study looked at JMESP and each Service's individual medical executive skills programs. The author divided the use of competencies in these programs into two categories: competencies attained through experience and those attained through education.

The study reviewed the use of distance learning in each program, as well as the focus of the courses and the tracking of competencies. Amer Tech, Inc., also discusses the source of funding for each program, the oversight provided by the JMESP oversight committee, and the use of marketing in each program.

Army

In the Army Medical Department's (AMEDD's) Executive Skills Program, AMEDD has identified the competencies that would be achieved in each job category. As an officer serves in different positions, those positions are credited with the pre-identified competencies. In education, the training and educational programs are mapped to single or multiple competencies; therefore, completing training in one program will credit the officer with the set of competencies identified in AMEDD's matrix. The Army courses are viewed as Service-specific; the Army has developed an SQL database to track officers' competencies as they are attained.

Navy

The Navy JMESP project goes one step further by including proficiency levels for each competency associated with a position. This means that though an officer may hold a specific leadership position, he or she must show a level of proficiency at that position to attain the competencies. For education, the Navy has assembled a course matrix that maps competencies to individual courses; here again, proficiency level is also tracked. The Navy's program differs from those of the Army and Air Force because it is viewed as a learning continuum, so the Navy does not sponsor its own set of executive skills courses. The Navy views attainment of the competencies as a career-long, dynamic endeavor.

The Basic Medical Department Officers Courses (BMDOC) and the Advanced Medical Department Officer Course (AMDOC) are the two courses in the Navy's learning continuum. Both result in the attainment of competencies, and the Navy is planning a third course for this continuum—the Executive Medical Department Officer Course (EMDOC). EMDOC was not operational at the time of the study.

The Navy uses a database to track the competencies of officers throughout their careers.

Air Force

The Air Force Executive Skills Program credits competencies through experience with taxonomy levels pulled from the Joint Medical Executive Skills Program Core Curriculum identified for each competency for each job experience. The competencies through education are similar to their experience competencies, and the Air Force developed a matrix of what taxonomy level would be achieved by completing each of the Service-specific courses offered by the Air Force Executive Skills Program. Also, the program does not have a current system to track competencies throughout an officer's career.

USUHS

The Uniformed Service University of the Health Sciences (USUHS) has a program in which all Services participate. The Medical Execu-

tive Skills Training Course (MedXellence) is a 4.5-day course that provides a number of core competencies in a TriService environment using distance learning, in-class lectures, and case studies.

Remarks/conclusions

One key comment made by Amer Tech is that, though each competency is mapped to educational achievements and job experience, the particular behaviors that are displayed are not. This means that someone who has attained a competency is assumed to possess all of the skills listed under that competency at a certain level, although they may not have truly achieved them all.

For distance learning, it was found that each Service and USUHS have incorporated distance learning into their programs, and JMESI has also developed online modules that covered 25 of the 40 competencies at the time of the study. Furthermore, it was found that JMESP has "been effective in preparing MHS officers for senior executive leadership" as a program.

American Management Systems (AMS). White Paper for Resource Requirements Development Project and Organizational Development for the Joint Medical Executive Skills Development Program Bureau of Medicine and Surgery. November 22, 1999.

This document, produced by AMS for the Navy, provides a brief history of the Navy's executive skills program since 1992 and lays out some areas that require attention, in order for the Navy to establish a comprehensive and quality executive skills program.

The history begins with the use of the formal curriculum already established at the Naval Postgraduate School, which was met with dissatisfaction from attendees. In 1999, the Navy adopted the Physicians In Medicine (PIM), which was created by the American College of Physician Executives. It was in seminar format and, again, was not well received.

So, when Congress reaffirmed the intent of the previous mandates, the Assistant Chief for Education, Training, and Personnel made certain requests of JMESP so that the Navy would be able to demonstrate its response to the congressional mandate.

The document goes on to list the requirements set forth by the Assistant Chief and to state the problem in each of the areas mentioned. Furthermore, it lays out objectives for the JMESP to ensure that each of the requirements is being met for the Navy leadership.

Defense Business Board. Report to the Secretary of Defense: Military Health System- Governance, Alignment and Configuration of Business Activities Task Group Report. September 2006.

This report provides the recommendations from the Defense Business Board (DBB) regarding the optimal way forward for the Military Health System in keeping with its vision and objectives.

The DBB task group was asked to provide an assessment that would give DoD an MHS governance framework in keeping with the Defense Enterprise Planning and Management Framework. They were also asked to identify the key best practices for the military healthcare mission.

The key recommendations were the following:

- Establish a unified command now.

- Use the existing governance framework.

- Adopt best industry practices for defense medicine.

Each recommendation is explained briefly in both the report and the PowerPoint presentation provided in the appendix.

Competency research

Lucia, Anntoinette D.; Richard Lepsinger. *The Art and Science of Competency Models: Pinpointing Critical Success Factors in Organizations.* **1999.**

This book focuses on the premise that the people in the organization are the true keys to success. The idea and practice of using competency models that identify the skills, knowledge, and characteristics needed to perform a job have been around for more than 30 years, but the global competition for talent has caused companies to take a fresh look at managing costs, process improvements,

changing business environments, and how those things affect the knowledge and skill sets needed by the employees. Competency models help organizations make decisions on selection and placement, succession planning, training, and development and are a means of measuring the investment in people against returns.

Fowlkes, Jennifer E.; Eduardo Salas; David P. Baker; Janis A. Cannon-Bowers; Renee J. Stout. "The Utility of Event-Based Knowledge Elicitation." *Human Factors.* **Spring 2000.**

This article focuses on event-based knowledge elicitation, which is defined as a component of knowledge acquisition "in which information pertaining to the reasoning and other thought processes needed to perform a job is obtained from a human source" and is event-based when the expert is "provided with known and controlled job situations," such as videos of various job scenarios.

In conducting a study of and for flight instructors and students, videos of flight instructors with students were shown and participants were asked to identify any critical "cues" they saw. Instructors, as expected, identified more cues than students. Furthermore, the study provides empirical evidence of the validity of the event-based knowledge elicitation process.

Shayne, Philip; Fiona Gallahue, MD; Stephan Rinnert, MD; Craig L. Anderson, MPH, PhD; Gene Hern, MD; Eric Katz, MD. *Reliability of a Core Competency Checklist Assessment in the Emergency Department: The Standardized Direct Observation Assessment Tool.* **The Society for Academic Emergency Medicine. 2006.**

This report provides the results of a study of the reliability of the Standardized Direct Observation Assessment Tool (SDOT) of the Council of Emergency Medicine Residency Directors (CORD). This tool is used to assess specific core competencies laid out by CORD specifically for emergency medicine (EM).

After presenting two videos—one of an average doctor-patient encounter and one of a weak encounter—to 33 EM faculty members, the study team had the faculty members assess the competencies of the doctors in each scenario using SDOT, which lists 26 expected behaviors. The faculty responses, as well as faculty demographic

data, were then used to develop a composite score for each core competency of patient care, medical knowledge, interpersonal and communication skills, professionalism, and systems-based practice.

The results of this study found that SDOT has good interrater reliability in both average and weak resident performance scenarios and that this reliability does not appear to be affected by the faculty members' academic experience or previous experience with the SDOT. That is to say, each of the faculty members produced similar rating results for the competencies shown in each of the videos, with higher competency marks for the first scenario across the board, when compared with the second weaker video. The study team also notes that they did not test the validity of the tool—just how persons with no previous experience with the tool would use it and whether the results would be similar for the two scenarios.

Lamoureux, Kim. "Leadership Development Is Not Leadership Training: An Organizational Maturity Model for Leadership Development." Bersin and Associates. July 20, 2006.

This PowerPoint presentation provides an overview of Bersin and Associates' WhatWorks program, their Leadership Development Maturity Model, best practices of high impact leadership development, and case studies to elaborate the previous points.

The presentation stresses the four stages of leadership development, as set out by Bersin and Associates, from inconsistent management training, to structured leadership training, focused leadership development, and, finally, strategic leadership development.

Lamoureux highlights six best practices of high leadership development:

- Apply a blended learning strategy.

- Define a set of leadership competencies.

- Establish programs for multiple levels of management.

- Align content with business strategy.

- Obtain strong senior management support.

- Integrate talent management processes.

Lamoureux, Kim. *Leadership Development Maturity Model: Executive Summary.* **Bersin and Associates Research Report. September 2006.**

This executive summary provides an overview of the Leadership Development Maturity Model developed by Bersin and Associates. The model places corporations into one of four levels of leadership development maturity. As their leadership development programs improve, companies move along the model, ending at Level 4. Level 1, Inconsistent Management Training, is the first step in a leadership development program. It is the least developed and, in these companies, the majority of leadership training is done through e-learning or management courses that are neither required nor strongly recommended. Level 2, Structured Leadership Training, is the point at which an organization uses a core set of competencies that it believes a leader in the organization must demonstrate. Level 3, Focused Leadership Development, takes the core competencies a step further and has more management involvement, customized programs, and succession planning. At Level 4, Strategic Leadership Development, executives take their own development seriously and are encouraged to do so by senior management. Succession planning is used consistently, at all levels of leaders, and program content is aligned with strategic priorities.

Several main actions taken by successful leadership development programs are also defined. They are (a) receiving strong senior management support, (b) defining a set of leadership competencies, (c) aligning content with business strategy, (d) establishing programs for multiple levels of management, (e) applying a blended-learning strategy, and (f) integrating talent management processes.

Bersin, Josh. *The Convergence of Learning and Performance Management: Has Talent Management Arrived?* **Bersin and Associates. October 2006.**

This report provides a discussion on "the convergence between Learning Management and Performance Management Systems" and the definition of a new category called Talent Management. The report looks at a review of 553 different organizations and the trends and implementation practices that each exhibits.

In the report, the age-old practice of Human Resources Management is defined as "corporate-wide human resource functions that require corporate-wide adoption, many [of which] are transactional in nature." Talent Management, however, is defined as "development and competency-centric functions, which focus on learning, development, management, and alignment of employees."

Further discussion in the report focuses on the increased use of electronic performance tracking programs that can be used for leadership development, competency tracking and management, and various other human resource uses.

Bersin, Josh. *High-Impact Learning Measurement: State of the Market and Executive Summary.* **Bersin and Associates. November 2006.**

This document summarizes the Bersin and Associates report, *High-Impact Learning Measurement.* The report lays out a series of best practices; seven steps that organizations can take to implement a practical, actionable, and affordable measurement program; case studies; and the tools and technologies that organizations can use to implement their measurement and competency tracking solutions.

Bersin, Josh. *High-Impact Learning Measurement: Best Practices, Models and Business-Driven Solutions for the Measurement and Evaluation of Corporate Training.* **Bersin and Associates. Executive Summary. November 2006**

This executive summary provides the introduction to Bersin and Associates' discussion of the impact of training programs and of the return on investment they show. Through the use of the Bersin and Associates Business Impact Model, they show how to evaluate executive training programs through nine specific measures, not given in the executive summary.

Bersin, Josh. *The Role of Competencies in Driving Financial Performance.* **Bersin and Associates. January 2007.**

This article discusses the role of competencies in various private organizations. Bersin discusses the fast-growing world of competency-based performance evaluation, and leadership development, and the various types of competencies that are used in the performance

management process. The three types of competencies cited by Bersin are values-based competencies, the core set of competencies that people must have to succeed in an organization, regardless of leadership role; leadership competencies, which are the skills required to become a manager in the company; and functional capabilities, which pertain to the execution of a particular job function.

The final section of the report provides a summary of findings from research done in 2005 and 2006 with a company called Success Factors. The industries reviewed in this study were financial services, high technology, industrial manufacturing, and retail. Each company studied had competency-based performance evaluation processes, and each was placed into the high-growth or low-growth company group.

The findings included the fact that the high-performance companies focused more on the "organizational capabilities." Further, they found that the performance management evaluation process and competency measurement were more aligned with the companies' goals and business strategies in successful, high-performance industries.

Huth, Karl David, PhD., Major, USAF. "Leadership Competencies for Financial Healthcare Executives—A Military Perspective." 18th Aeromedical Evacuation Squadron [AES], Kadena AB, Okinawa, Japan.

This article focuses on the need for a set of leadership competencies for financial healthcare executives. Citing the lack of competencies as a hindrance for financial healthcare executives, and the reason they continue on to other opportunities, Dr. Huth illustrates how vital a validated set of leadership competencies is to retaining financial healthcare executives. He uses the Air Force Medical Service (AFMS) as an example of a system without a set of leadership competencies for every career level. After illustrating the consequences of a lack of competencies, Dr. Huth presents a profile that would be applicable to financial healthcare leaders at all levels. He further stresses that the profile he presents is designed to improve leadership at all levels and, in turn, to encourage the creation of high-quality and high-performance financial healthcare executives.

Professional organizations and graduate education programs

The following is a list of just some of the many professional organizations and graduate education programs for medical professionals in leadership roles. A summary of each program's accreditation, membership, and/or degree program is included. The summary also includes the types of courses, manuals, and certifications offered by each organization.

Most of the professional organizations have accreditation that provides some of the 40 core competencies to military medical executives. The graduate education programs also incorporate some of the key core competencies listed in the core curriculum. Furthermore, some of the programs and organizations have competencies of their own that applicants must demonstrate before being accredited by the organization.

Types of manuals include the American College of Healthcare Executives' (ACHE) Reference Manual for people who will be taking the ACHE Board of Governors Exam in Healthcare Management. The American College of Medical Practice Executives (ACMPE) has a certification manual that lays out the requirements to obtain an ACMPE certification. ACMPE also provides the list of five general competencies for Medical Practice management in its Guide to the Body of Knowledge for Medical Practice Management.

The National Center for Healthcare Leadership (NCHL) also provided a number of documents for this literature review that outline its competency model and the current programs it is sponsoring. Among these is the Leadership Excellence Networks (LENS)—a program run by NCHL that provides assessments to participating healthcare facilities using NCHL's core competencies. The feedback form and development plans are also included in this section.

Accreditation Council for Continuing Medical Education (ACCME). http://www.accme.org/

ACCME identifies, develops, and promotes standards of quality for continuing medical education (CME). Physicians and other medical professionals use these standards to maintain and measure their level of competency in various knowledge areas. The accreditation

requirements include the ACCME essential areas and elements, which are ranked by non-compliance, partial compliance, compliance, and exemplary compliance. These elements follow:

- Parent organization

- Needs assessment

- Purpose and objectives

- Activity evaluation

- Program evaluation

- Organizational framework

- Business and management practices

- Disclosure and commercial support.

American College of Health Care Administrators (ACHCA).
http://www.achca.org/

This is a non-profit membership organization that provides education programming, certification in a variety of positions, and career development. For ACHCA's Professional Certification Programs, both educational and experiential qualifications are required for eligibility. ACHCA also offers a Nursing Home Administration Certificate and an Assisted Living Administration Certificate.

American College of Healthcare Executives (ACHE).
http://www.ache.org/

ACHE is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. It is a registered sponsor of professional continuing education with the National Association of Boards of Examiners of Long Term Care Administrators (NAB). ACHE is also registered with the National Association of State Boards of Accountancy (NASBA) as a sponsor of the continuing professional education (CPE) on the National Registry of CPE Sponsors.

ACHE offers certification as an ACHE Diplomate (CHE, or Certified Healthcare Executive) or Fellow (FACHE, or Fellow of the American College of Healthcare Executives). To achieve CHE certification, an applicant must have either a Master's degree and 2 years' healthcare management experience or a Bachelor's degree and 5 years' healthcare management experience, as well as 12 hours of either Category I (ACHE education) or Category II (non-ACHE education) credit within the last 2 years. Applicants must also provide evidence of participation and leadership in healthcare and community/civic affairs, two references, and evidence of a position in healthcare management with significant responsibilities.

American College of Healthcare Executives. *Reference Manual for the ACHE Board of Governors Examination in Healthcare Management.*

ACHE's reference manual provides an overview of the certification, as well as how to prepare for the Governors Examination in Healthcare Management. Topics covered include general requirements for Advancement to Diplomate, an overview of the Board of Governors Examination in Healthcare Management, how to prepare for the exam, review of the exam knowledge areas, study hints, mock questions, and sample tests. The knowledge areas covered by the exam are governance and organizational structure, human resources, finance, healthcare technology and information management, quality and performance improvement, laws and regulations, professionalism and ethics, healthcare, management, and business.

American College of Healthcare Executives. *A Comparison of Career Attainments of Men and Women Healthcare Executives: Findings of a National Survey of Healthcare Executives.* **Foundation of the American College of Healthcare Executives. Research Series No. 7. 2001.**

This document represents the third report in a series that compares the career attainments of male and female healthcare executives. The basis of the report is a survey done by ACHE of men and women healthcare executives, and this study is done every 5 years. The survey discussed in this report was taken in 2000 with 906 responses out of 1,601 ACHE affiliates selected.

The areas discussed in the survey, and thus in this report, include position, salary, satisfaction, education and experience, work/family conflicts, institutional factors, career aspirations, and attitude differences. The results from these areas were then compared with business executives to provide perspective in non-medical fields.

The conclusion states that the situation is such that it remains important to continue to study the differences between male and female healthcare executives, looking for discrepancies, inequalities, and so on. In fact, when discussing salary, the study found that the salary gap, with men earning more than women counterparts, has not narrowed in the past decade.

Recommendations are made for both the organizations and individuals along the same lines as the areas of study in the survey.

American College of Medical Practice Executives. *Certification Manual.* http://www.mgma.com/acmpe/certrequire.cfm

This manual provides a step-by-step description of the requirements for obtaining ACMPE certification. It shows the steps required to become a nominee to Certified Medical Practice Executive, to advancement to Fellow, and finally on to continuing education.

American College of Medical Practice Executives. *The ACMPE Guide to the Body of Knowledge for Medical Practice Management.*

ACMPE has created this overview of its five general competencies for Medical Practice management. Each competency is described briefly, and the final competency (i.e., technical and professional knowledge skills) is broken down into further detail. The five competencies are professionalism, leadership, communication skills, organizational and analytical skills, and technical/professional knowledge skills. The breakdown of the final skill, technical, and professional knowledge divides the competency into eight performance domains. For each domain, ACMPE provides the skills, tasks, and core knowledge that a medical practice executive gains throughout his or her career. The eight performance domains are the following:

- Financial management

- Human resource management

- Planning and marketing

- Information management

- Risk management

- Governance and organizational dynamics

- Business and clinical operations

- Professional responsibility.

American College of Physician Executives (ACPE).
http://www.acpe.org/acpehome/index.aspx

ACPE offers a Master of Medical Management (MMM), an Online Professional MBA with a Focus on Medical Management. The MMM degree blends on-campus sessions, independent study, and distance learning. It is offered at the following three universities: Carnegie Mellon, Tulane, and USC. The Online Professional MBA is offered through the University of Massachusetts, Amherst. The ACPE Graduate Degree curriculum also meets the education requirements for application to become board certified as a Certified Physician Executive (CPE).

Canadian College of Health Services Executives (CCHSE).
http://www.cchse.org

This organization offers the professional designations of Certified Health Executives (CHE) and Fellows (FCCHSE). The college's certification program is the only Canadian credential available to health service executives. Competencies required by CCHSE are leadership, communication, lifelong learning, consumer/community (responsiveness and PR), political and health environment awareness, conceptual skills, results management, competencies, and compliance to standards. The program is structured with an application process, which includes the entrance exam. After pass-

ing the entrance exam, applicants begin a self-directed learning component of the CHE program, which consists of two papers.

This is followed by the Maintenance of Certification (MOC) requirement. Applicants must earn at least five MOC Category I credits out of a total of 15 MOC credits before they can earn their CHE designation. Finally, CHE candidates are asked to evaluate the program, describe what they gained from it, and list the program's strengths and weaknesses and what changes they might suggest to improve it.

Harvard School of Public Health- MS Degree in Health Care Management (MHCM). http://www.hsph.harvard.edu/mhcm/

This is a 2-year program with an array of different course styles. There are 3 weeks per summer spent at Harvard, plus five 4-day weekends per year on the Boston campus. This is in addition to an average of 10 to 15 hours of work off campus involving worksite projects and homework assignments. The MHCM program also offers CME credit.

Healthcare Financial Management Association (HFMA). http://www.hfma.org

This is the leading membership organization for healthcare financial management executives and leaders. HFMA's certification programs lead to the designation of Certified Healthcare Financial Professional (CHFP) and Fellow of the Healthcare Financial Management Association (FHFMA). To take the CHFP exams, the applicant must be an HFMA member and successfully complete a core exam and one specialty exam. The specialty exams are accounting and finance, patient financial services, and financial management of physicians' practices or managed care. Both exams must be taken within a 2-year period. A minimum of 60 semester hours of coursework or 60 professional development contact hours are required. The CHFP and FHFMA must be maintained every 3 years by earning 90 contact hours in that time.

Healthcare Information and Management Systems Society (HIMSS).
http://www.himss.org

This society offers a certified profession in healthcare information and management systems (CPHIMS) certification. To qualify for the program, the applicant must have either a B.A. plus 5 years of information and management systems experience, or a graduate degree plus 3 years of associated information and management systems experience. CPHIMS is awarded to those who demonstrate eligibility for the certification program and who complete a qualifying exam.

Healthcare Management Executive Education Program at the Leonard Davis Institute (LDI) of Health Economics at the Wharton School (University of Pennsylvania)
http://www.upenn.edu/ldi/healthexec.html

Wharton/LDI offers a customized and open enrollment program targeted for healthcare executives. The individual programs range from 3 days to 3 weeks and also conduct internal programs for individual companies for their senior management teams. Programs offered include the following:

- Succeeding as an Executive

- Executive Management Program for Pharmacy Leaders

- Wharton CEO Program for Health Care Leadership

- Wharton Fellows Program in Management for Nurse Executives

- Wharton Executive Management Program for Academic Surgery Leaders

- Wharton Nursing Leaders of the Future.

Medical Group Management Association/American College of Medical Practice Executives. http://www.mgma.com

Medical Group Management Association (MGMA) operates two organizations: American College of Medical Practice Executives

(ACMPE) and MGMA Center for Research. It offers ACMPE board certification and the designation of Certified Medical Practice Executive (CMPE). To earn CMPE, a person must have at least 2 years of healthcare management experience, have two reference letters, pass objective and essay exams, deliver two presentations, and earn 50 continuing education hours. ACMPE board certification objectives and essay exams have been approved for VA education benefits. The ACMPE Fellowship is the highest level of distinction in the medical practice management profession. ACMPE members must have 50 hours of continuing education credit for the last 3 years.

National Association of Boards of Examiners of Long Term Care Administrators (NAB).
http://www.nabweb.info/Home/default.aspx

Members of NAB are the 52 state licensing boards and/or agencies that license long-term administrators. The association maintains the Nursing Home Administrators Licensing Exam (NHA) and the Residential Care/Assisted Living Administrators Licensing Exam (RC/AL) for participating board and agency use.

The NHA and RC/AL exams assess various competencies for each field and are required in all states. The exams are used by the participating state boards to license anyone who would like to become either a nursing home administrator or a residential care/assisted living administrator.

National Center for Healthcare Leadership (NCHL).
http://www.nchl.org/ns/index.asp.

NCHL is a not-for-profit organization that works to ensure that high-quality, relevant, and accountable leadership is available to meet the challenges of delivering quality patient healthcare in the 21st century. NCHL's goal is to improve health system performance and the health status of the entire country through effective healthcare management leadership.

National Center for Healthcare Leadership (NCHL). *Organizational Performance Measures 2005 Site Report- Sample Site Report.* **2005.**

This sample site report, produced by the National Center for Healthcare Leadership, lays out the NCHL's Leadership Development System. This system uses a balanced scorecard approach and divides the data and analysis by quarter. This report is part of the NCHL's Leadership Excellence Networks (LENS), a community of organizations committed to NCHL's leadership vision. The LENS Organizations Performance Measures include quality—outcome measures, quality—process measures, efficiency and financial measures, patient/customer/staff focused results, and social responsibility measures.

National Center for Healthcare Leadership (NCHL). *Organizational Leadership Development Plan: Planning Protocol.* **January 2007.**

This PowerPoint presentation provides an overview of NCHL's organizational leadership development plan (OLDP) and its planning protocol. The purpose of the OLPD is "to provide the organizational leadership development goals, actions, timelines, and accountabilities based on the composite assessment of leadership strength and opportunities for improvement which enhance the organization's ability to meet its key performance goals."

National Center for Healthcare Leadership (NCHL). *Core Competencies for Health Care Leadership in 21st Century. Draft.* **2007.**

This report provides the history and current status of the Core Competencies for Health Care Leadership in the 21st century, as set by the National Center for Healthcare Leadership. The efforts of NCHL have been to develop an evidence-based and behaviorally focused competency model, and the result is the list of 26 core competencies that all healthcare leaders should possess.

These competencies were developed through behavioral event interviewing, expert interviews, and analysis of benchmark data, concept formation, and model development.

This paper is still in draft form and is being developed by NCHL.

National Center for Healthcare Leadership (NCHL*). Individual Leadership Development Plan: A Guide to Using Your Leadership Assessment Feedback*. January 29, 2007.

This document is provided to healthcare facilities along with NCHL's assessment of their leadership skills training and use. This development plan provides sections for the healthcare facility to gain an understanding of their feedback, selecting target development areas and creating a development plan, as well as tracking ongoing development progress.

National Center for Healthcare Leadership (NCHL). "Leadership Excellence Networks." February 2007.

This PowerPoint presentation provides an overview of NCHL and its Leadership Excellence Networks (LENS). LENS is defined as "a collaborative network of healthcare organizations and industry leaders dedicated to advancing leadership and organizational excellence within their organizations and in the field."

The LENS participants, healthcare facilities across the country, use the "evidence-based approach to leadership development" and share their best practices with the other LENS participants. They also have benchmark leadership and organizational results as well as program co-development, continuous improvement, and evaluation in an environment of shared learning.

The LENS participants are also eligible for core and elective services, which cover the convening, networking, and shared learning. They may also participate in elective services, which include diagnostic tools and interventions.

Appendix B: Uniformed Services University of the Health Sciences MedXellence course

This appendix presents a course and cost summary for the MedXellence course of the Uniformed Services University of the Health Sciences (USUHS, also abbreviated as USU). The first section is an overview of the course origin, objectives, and student mix as described by the USU program management staff through completed questionnaires and site visit interviews. The second section outlines the approximate costs to the Department of Defense (DoD) to administer the current MedXellence course, including the assumptions, methodology, and data sources used in the analysis.

Course summary

Origin and location

In 1992, USU developed the Medical Executive Skills Course in response to the DoD Appropriations Act of that year. In 1995, the curriculum consisted of a medical executive course, a clinical leader's course, and a videoconference course that laid out current issues for medical executives. These three courses evolved into the week-long MedXellence program in 1997. It was originally conducted on the USU campus and then was offered at various locations outside the National Capital Region. The incumbent MedXellence course staff report that budget constraints, increased student interest in the course, and financial implications of conducting the course on the USU campus—because of existing contractual arrangements with the Henry M. Jackson Foundation—were the major reasons for deciding to take the course on the road. [1] Initially, USU attempted to

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[1] We will discuss the budget and funding stream for this course later in this appendix.

hold the course at various medical treatment facilities (MTFs) throughout the TRICARE regions, but this proved to be more difficult than anticipated because some sites struggled with meeting the infrastructure needs of the course (e.g., space capacity, computer availability, and high-speed Internet access limitations). It was with this in mind that the decision was made to move the courses from onbase sites to hotel and conference facilities near large MTFs that were also close to major transportation hubs to ease travel arrangements.

USU currently offers the MedXellence course five times a year at the following locations:

- Honolulu, HI

- Bethesda, MD

- Orlando, FL

- Keystone, CO

- Garmisch-Partenkirchen, Germany.

Courses are usually held at Armed Forces Recreation Centers (AFRCs) or acceptable "convention-capable" hotels that give government rates; courses are also held on site at the USU campus in Bethesda. The USU staff thinks that the geographical diversity has generated increased student demand for the course. For example, the USU staff report that the Air Force Surgeon General's Education and Training Director has approached them to "buy out" 15 slots for each course. For the 2006 Keystone course, 42 students who were on the course waiting list could not attend, and 47 students on the 2007 Honolulu waiting list could not attend the course in January.

Course objective

The primary goal of the MedXellence course is to provide health-care executives from all three Services a joint skills perspective of medical executive skills and programs, with particular focus on several TRICARE Management Activity (TMA) initiatives. The USU

MedXellence staff state that the primary objective of their course is the attainment of a subset of the required 40 competencies. Their course focuses on what they view as a critical few of the integrative competencies, by teaching them in a context of joint decision-making regarding complex, real-world situations. Table 1 lists the competencies in which 2006 graduates gained "knowledge" based on the Joint Medical Executive Skills Institute (JMESI) core criteria.

Table 1.   MedXellence course competencies

Competency	Competency
Decision-Making	Organizational Ethics
Leadership	Ethical Decision-Making
Organizational Design	Integrated Healthcare Delivery Systems
Financial Management	Quality Management
Personal & Professional Ethics	Outcome Management
Epidemiological Methods	Qualitative & Quantitative Analysis
Strategic Planning	Patient Safety

The MedXellence course strives to provide a joint perspective to its attendees through case studies, lectures, and interaction among course attendees from all three Services. In taking this joint (TMA) perspective, USU hopes to broaden the medical executive skills from the Service-specific domain to a broader DoD outlook.

Course description/curriculum

MedXellence is a weeklong course of instructor-led presentations, panel discussions, and a non-Service-specific case study conducted at the end of the week. Table 2 depicts the curriculum followed during the week. USU also includes "tools" sessions that review the current tools present in all Services that the medical executives may find useful in the course of their careers. During the case study segments, students are placed into small groups consisting of representatives from the various Services and, to the extent possible, with people from similar types of organizations (i.e., inpatient or outpatient facilities). The case study gives the students a chance to see what is done in each Service in different situations and enables them to work together in a Tri-Service environment.

Table 2. MedXellence curriculum

Sunday	Registration
	Course Introduction
	Case Study Introduction
Monday	American Healthcare
	Federal Healthcare
	Military Healthcare
	MTF Leadership
	The MHS Vision and Critical Initiatives
Tuesday	Business Planning
	Resource Management
	MHS Data and Epidemiologic Approaches to Population Health
	Team Time
Wednesday	Decision-making: Ethics, Efficacy, and Effectiveness Through the Retro-spectroscope
	Team Time
Thursday	Case Study Discussion
	Performance Improvement: Tools
	Performance Improvement: An Introduction to Lean Six Sigma
Friday	Leading in Joint Environment
	Course Wrap-up
	Posttest

Marketing

USU uses a variety of avenues to market its course and fill attendance rosters. It offers registration online, through its portal, and relies on word-of-mouth marketing from past participants to get the courses filled. The faculty coordinator reported that he routinely contacts the respective Service Surgeons General offices and/or Service educational personnel before a course, informing them of upcoming courses and the slots open to the specific Services.

Nomination/selection process

Although prospective students should be nominated by their supervisors, self-nominations are accepted and are often the norm. Of

course, all attendees must have the concurrence of their supervisors to attend. To better achieve a balanced student body for each course, the MedXellence staff selects nominees based on Service, rank, corps, and job title. Officers must have at least 2 years of service left to be considered for selection. Online registration for the course opens 90 or more days before the course is scheduled to start. Command approval is required because the travel, per diem, and lodging costs are covered by each student's command; attendees are away from their primary positions for a week.

The course administrator sends an acceptance email to students and their supervisors that includes logistical information so that the students can arrange for their travel and accommodations. Students are typically informed of their acceptance more than 80 days before the course begins.

Student load/demographics

The course is offered to officers, civilians, and enlisted personnel from all the Services, but attendees are usually officers in the O-4 to O-6 paygrade range.[2] The vast majorities of attendees have yet to be earmarked for senior MTF or TMA positions but are more likely to currently be serving in department head or director positions within these types of organizations. Typically, 40 to 45 students attend each course. Table 3 shows, by Service, the total number of students that attended the USU MedXellence course from 1998 to 2006.

Table 3. USU MedXellence course attendees by Service (1998–2006)

Service	Number of attendees
Army	279
Navy	406
Air Force	267
VA	3
Other	24
Total	979

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[2]   Personnel from Veterans Affairs, Public Health Service, Department of Transportation (Coast Guard), and Health and Human Services are encouraged to attend.

The majority of attendees in the past 8 years have been from the Navy (406). The next largest numbers of attendees were from the Army (279) and the Air Force (267). The remaining attendees have come from Veterans Affairs (VA) and other organizations

Prerequisites

There are two forms of prerequisites for the course: the attendees must complete the distance learning modules given through MedXellence's online portal, and they must take the pretest before arriving at the course location.[3]

Distance learning

The distance learning piece consists of 2.5 hours of required work before the course that assesses the student's knowledge of the issues to be covered in the course. Students also take a pretest that is designed to measure baseline knowledge of the subject material. In addition to the 2.5 hours of required course work, the students may also do an optional 2 hours of online work. The required online distance learning covers such topics as a MedXellence needs assessment, a session on medical executive data, a leadership survey, and a session on the complexity of science and healthcare systems. Optional topics covered are clinical investigations, styles of leadership, and executive summaries. Although it is possible to attend the class without taking the online component of the course, the USU program management staff emphasize to prospective students that their experience may suffer from their lack of preparation.

Pretest/posttest

The USU MedXellence course does have a pretest/posttest that every attendee must take before and after the MedXellence course. The preparatory survey and assessment of attendees is conducted via the MedXellence online portal. This assessment of the student's

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[3] Students must also have the approval of their supervisor and command to attend the course because the travel and per diem cost is borne by the command.

familiarity with the subjects is then passed on to the faculty who can tailor their presentations to best meet the students' needs. The pretest is used to shape the case study scenario as well. A posttest is given at the completion of the MedXellence course to assess how well the course met the needs of that specific group and to see whether individual student knowledge gaps were improved.

Program management staff

This course is run by a principal investigator, program manager, faculty coordinator, program analyst, and IT support staff at USU's campus in Bethesda. The first four positions are employees of USU; IT support consists of a full-time employee provided by the Jackson Foundation. The program manager position is vacant at present.

The principal investigator's responsibilities include course preparation, updates, content review, assessment of student feedback, and interaction with TMA program officials and faculty. He conducts recruitment of faculty through a screening interview consisting of a trial presentation and a critique session before selection. He also lectures and travels with the course.

The responsibilities of the faculty coordinator include student registration, faculty coordination, and logistics. The faculty coordinator also travels with the course to aid in its execution.

The program analyst is a part-timer whose initial responsibilities were to develop and maintain a survey designed to capture feedback from students 3 to 6 months after they complete the course.

The IT support staffer is a full-time employee provided by the Jackson Foundation. He holds a B.S. in Computer Science and assists the faculty coordinator with registration and faculty coordination, while performing his primary functions of day-to-day Web site maintenance, administration, and logistic management. He also travels with the course for offsite locations.

Faculty

Since the course is held at different locations each time, faculty members are flown in by the USU program to present for one day of the weeklong course. The faculty primarily consist of senior military medical executives from TMA, USU staff, and former senior-level policy-makers.

The principal investigator stressed that new faculty members are encouraged to attend the full 1-week course their first year to get a feel for the presentations, the case study, and how their part of the course fits in with the rest. USU also convenes a Faculty Day each year to review everyone's instruction methods, what has worked well, what can be improved, and any other general feedback collected throughout the year. The resulting lessons learned are then worked into the following year's curriculum.

The USU MedXellence staff makes a concerted effort to integrate current and previous leaders and decision-makers as course presenters. Students get an opportunity to directly interact with people who have served, or are serving, as program managers of important programs throughout the Military Health System (MHS). The course hopes to teach future leaders of the MHS how to better integrate the competencies with realistic problems.

Credit-hours

Attendees are eligible for approximately 33.5 hours of Category I credits given through the AMA Physician's Recognition Award or the same number of credit-hours through the Continuing Nursing Education Contact Hours. Attendees may also qualify for 33.5 hours of Category II continuing education credit through the American College of Healthcare Executives (ACHE). Category II credit is designated non-ACHE.

Performance review

USU conducts numerous course evaluation efforts throughout the year to measure faculty performance, student performance, and the overall success of the course. The pretests and posttests given to

students provide USU with an overall knowledge of how the course has helped the students learn during their week at MedXellence. Student questionnaires are used to get feedback on hotels, location, overall courses, individual faculty members, and presentations. The pretest information is used to inform the faculty of what concepts are well known to students so they can emphasize areas where there are knowledge deficiencies. The posttest results provide a way to capture differences in the level of student learning, relative to the pretest information, upon completion of the course. The case study is used as an application tool for evaluating how well students understand and retain the information delivered throughout the course. The intent of these measures is to evaluate the level of competency attained by the students as a result of taking the course, and not to specifically measure student proficiency in all of the 40 competencies in the executive skill set identified by the Joint Medical Executive Skills Institute.

The Faculty Day serves as a forum for faculty to provide feedback, for student feedback on faculty to be voiced, and for changes to be made.

Cost analysis

This section provides a cost synopsis of the MedXellence course, including the assumptions, methodology, and data sources used in the analysis. Our analysis captures the estimated *costs to DoD* for sponsoring the program, both direct and indirect.

Because the USU MedXellence course is offered five times per year (four in the continental United States (CONUS) and one outside CONUS (OCONUS)), we generate aggregated cost totals using five course locations—Honolulu, Bethesda, Orlando, Keystone, and Garmisch-Partenkirchen—to produce total annual course costs. For our analysis, we assess the costs of each location based on 2007 dollars, irrespective of the sequence of course iterations scheduled by the MedXellence staff. Using these numbers as the baseline, we develop alternative cost estimates based on three scenarios:

- Doubling of student load at selected locations

- Bypassing the expenses incurred as a result of contracting with the Jackson Foundation

- A combination of scenario 1 and scenario 2.

Funding stream

Each year the Office of the Secretary of Defense (OSD) forwards a budget request to Congress for the Defense Health Program (DHP) that supports worldwide medical and dental services to the active forces and other eligible beneficiaries. The DHP was created on 14 December 1991 to centralize funding and management of military healthcare (previously carried out independently by the separate Services). The goal was to trim duplication and foster more inter-Service cooperation. A 9 July 2001 memo from the Under Secretary of Defense for Personnel Readiness requires TMA to manage all financial matters of DoD's medical and dental programs.[4]

After Congress required DoD to establish a comprehensive program to prepare medical department officers to command military treatment facilities and serve as lead agents, DoD established the Joint Medical Executive Skills Program/Institute (JMESP) as special staff to the Commanding General, Army Medical Department Center and School (AMEDDC&S), Fort Sam Houston, TX.[5]

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[4] The DHP Operations and Maintenance (O&M) funding is divided into seven major areas: In-House Care, Private-Sector Care, Information Management, Education and Training, Management Activities, Consolidated Health Support, and Base Operations.

[5] In other words, the Secretary of the Army (AMEDDC&S) is DoD's executive agent for the Joint Medical Executive Skills Development Program mandated by Congress.

TMA provides annual funding to the AMEDDC&S Comptroller to support the executive skills initiatives being conducted by JMESI, USU, and the Army and Air Force.[6] The AMEDDC&S Comptroller provides instructions to the Army Headquarters in Washington, DC, to execute an annual transfer of sum to USU and the Air Force for their respective medical executive skills courses.[7]

Concept and measurement of cost

Cost-effective analysis refers to the evaluation of alternatives based on both their costs and their effects with regard to producing some desired outcome. When costs are combined with measures of effectiveness, we are able to evaluate programs to determine their relative effectiveness in maximizing outcomes (effectiveness) per level of cost or minimizing the costs per level of effectiveness. It is assumed that only programs with similar or identical goals can be compared and that a common measure of effectiveness can be used (across programs) to assess them.

Measures of cost-effectiveness

JMESI, USU, and Service program managers don't currently use a common measure of effectiveness for course or student outcomes. Ideally, we'd like to have a single measure of competency attainment—attainment of the competencies at the "knowledge" or application level. This type of measure would account for the competency level attained, as well as student throughput, and credit-hours awarded in relationship to the medical executive skill competencies offered by the course.

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[6] The Navy Medical Executive Skills Program is not funded through JMESP. TMA provides funds to the Navy Bureau of Medicine and Surgery, which in turn funds the NAVMED Manpower, Personnel, Training and Education Command in Bethesda. Neither the AMEDDC&S Comptroller nor the JMESI Manager is aware of how much the Navy receives for medical executive skills courses.

[7] The Army's Medical Department Executive Skills Course is funded locally through the AMEDDC&S Comptroller.

Because the medical executive skills courses offered by JMESI, USU, and the Services focus on a different, but not mutually exclusive, subset of the 40 competencies, it would be seemingly difficult to develop a quantitative measure of student outcome that can serve as a basis for universal comparison. Each course has developed a framework for evaluating student outcomes related to competency attainment that is unique to the structure and delivery of the course content (pretest/posttest, case study, scenario tool, etc.). To allow for analytical tractability and to facilitate the comparison of costs across programs, we have chosen to model two "intermediate" outcome variables for the medical executive courses reviewed in this study:

- Throughput of students per course

- Total number of credit-hours offered (total cost per student credit-hour offered) per course.

Concept of costs

Our analysis uses the economic definition of costs to include the direct costs and opportunity costs (indirect costs) of using existing resources for course administration, management, and delivery. This analysis includes activities involved in the development of course materials, updating and reviewing course content, course delivery, and the provision of after-course evaluation and feedback. These activities can be grouped into two broad categories:

- Administration and overhead costs
- Course delivery costs.

The direct and indirect resource costs under each of these categories are divided into personnel and nonpersonnel costs.

Administrative and overhead

Personnel costs in this category include the resource cost (direct cost) of people involved in administration, management, support services, and after-course activities.

Nonpersonnel resource costs in this category include supplies and materials, equipment life-cycle costs, software upgrades, and the opportunity cost (indirect costs) of facilities and infrastructure. The infrastructure used to support the program is valued at the cost per square foot, with the total cost proportioned according to the share of the facilities used in supporting the course (i.e., classrooms, offices, breakout rooms). Nonpersonnel costs also include the overhead rate charged by the Jackson Foundation for administrative course support, and staff training and development costs.

USU pays the Jackson Foundation 15 percent for offsite support and would be required to pay 51 percent for onsite support (Bethesda) if two or more courses are conducted onsite. The 51 percent includes a 15-percent indirect cost for administrative services (paperwork, payroll, accounting, etc.) and a 26-percent university use fee for utilities, building maintenance, and so on. The other 10 percent goes to the department chair. The Army Defense Contracting Agency predetermines the administrative fees and audits the Jackson Foundation annually.

Course delivery

Personnel costs in the course delivery category consist of the opportunity costs of military/DoD faculty and student attendees enrolled in the USUHS courses. Nonpersonnel cost includes the resources used to support faculty and student attendees, such as travel and per diem expenses and catering/IT support. Nonpersonnel costs also include the overhead rate charged by the Jackson Foundation for course delivery support.

Personnel costs in both categories (administrative and overhead/ course delivery) are allocated based on the person's total full-time-equivalent (FTE) hours devoted to the course per year and his or her adjusted annual salary and benefits. One FTE is considered to be equivalent to 230 days per year, or 1,840 hours per year.[8] The resource cost model also accounts for the "opportunity costs" for military/DoD faculty and student attendees. Most faculty members

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[8] Source: CNA study on nonavailability factors for active duty Navy physicians (Rattelman and Brannman, 1999).

travel to attend the course, and we assume they spend on average 3 full days in support of the course.[9] Both student and faculty opportunity costs are the indirect costs to DoD—valued in 2007 dollars at the salary and benefits of student, military and nonmilitary/DoD faculty for their time devoted to the course.

Determination of salary and benefits

The 2007 Composite Rates for each Service are used to determine both the direct and indirect costs, or opportunity costs, for personnel—staff, faculty, and students—valued at their salary and benefits apportioned for their time away from primary duties.[10] The Composite Rates are the sum of Basic Pay, Basic Allowance for Housing (BAH), Basic Allowance for Subsistence (BAS), incentives and special pays, Permanent-Change-of-Station (PCS) costs, pension and healthcare retirement benefits, plus benefits other than retirement. A summary of the salary and benefit calculations follows.

The sum of Basic Pay, BAH, BAS, and incentives and special pays is computed by Service and paygrade.

The accrual of pension and healthcare retirement benefits is computed as follows by Service and paygrade: pension (27.4 percent of Basic Pay), healthcare Medicare eligible (16.7 percent of Basic Pay), and pre-Medicare (12.9 percent of Basic Pay).[11]

Benefits other than retirement include life insurance, disability income, healthcare, statutory benefits (Social Security, Workers' Compensation, Unemployment), education benefits, personal legal services, Family Support Centers, and Morale, Welfare, and Recrea-

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[9] For the Army AMEDD Executive Skills course, where the majority of faculty is located on the base, we use 1 day as an estimate of their temporary additional duty (TAD).

[10] The 2005 Composite Rates by Service are adjusted to 2007 values using an adjustment factor of 3.1 percent.

[11] These rates are based on DoD Office of the Actuary.

tion facilities.[12] These are equivalent across the Services. PCS costs are also included in the calculations.

The annual salary and benefits for different personnel are their time away from primary duties, their paygrade and rank by Service, and the number of total active duty days per year (1 FTE). The number of FTE days is determined to be 252 days per year based on a 1999 CNA study on nonavailability factor for active duty Navy physicians. We subtract 22 days of nonavailability time (allowance for performing readiness and military-specific activities) to determine that 1 FTE annually is equivalent to 230 days per year.[13] We use this figure to apportion the share of a person's time that is devoted to the course on an annual basis. We multiply that share by the annual salary and benefit figures to determine the value of personnel resources associated with the course.

To determine the opportunity costs of nonmilitary faculty, we use the median "salary-step" by GS level from the 2007 General Schedule Salary Table.[14] If a person is qualified as a GS-11, for example, we use the median value for GS-11, which is the average of salary-step 5 and salary-step 6 (there are 10 salary-steps for each GS-level). We assume for all military and nonmilitary personnel that 1 FTE is equivalent to 230 days per year, with the exception of four faculty members, whose FTE value and prorated salary and benefits per course were provided directly by USU.

USU staff provided us with actual estimates of some faculty members' estimated time away from primary duty and their associated costs. We use these estimates in our faculty costs where appropriate.

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[12] Based on the CNA study, *The DoD Health Care Benefit: How Does It Compare to FEHBP and Other Plans?* by R. Levy, R. Miller, and S. Brannman, May 2000 (2005 dollars)

[13] Based on a 1999 CNA study, *Non-Availability Factors for Active Duty Navy Physicians,* by C. Rattelman and S. Brannman.

[14] We understand that the *implied opportunity* costs may overstate the *actual opportunity* costs because some faculty members continue to perform some of their primary duties while in transit to and from the medical executive skills course. However, some seepage from the primary duty productivity does occur.

For the rest of the faculty, we apportion their salary and benefits based on their Service rank and paygrade.

Data collection

Information on the above cost categories was gathered through completion of a preliminary questionnaire and followup interviews with the faculty coordinator, principal investigator, and other program staff.

Definition of cost categories and data sources

A. Direct costs

Nonpersonnel (administrative and overhead)

Administration and overhead includes any costs that are required to administer and manage the course on an annual basis, such as materials and supplies, software and hardware equipment, faculty and staff training and development, and an overhead rate charged by the Jackson Foundation for course support. For USU, annual nonpersonnel direct costs include staff training, development, and working group/conference attendance ($7,000), equipment life cycle ($10,000), software upgrades ($10,000), materials and supplies ($12,000), and the Jackson Foundation expenses of $5,580 at 15 percent of total annual nonpersonnel costs. Total nonpersonnel administrative and overhead costs are $44,850 on an annual basis.

Personnel (administrative and overhead)

A core staff at USU is engaged in the active management and administration of the MedXellence course. The personnel associated directly with the program are the following:

- **Principal Investigator**. For the principal investigator, we obtained FY07 salary and benefit information for the current principal investigator and apportioned that value for his time spent serving the course (0.1 FTE).

- **Program Manager** (vacant position).

- **Faculty Coordinator**. The faculty coordinator travels with the course and devotes approximately 20 hours per week (0.5 FTE) to the program.

- **IT Support**. The IT support staffer is a full-time employee of the Jackson Foundation (1 FTE) and provides IT support staff for the program.

- **Program Analyst**. The program analyst is a GS-9 civilian and devotes approximately 20 percent (0.2 FTE) of her time to the course. Her initial responsibilities were to develop and maintain a survey designed to capture feedback on student outcomes 3 to 6 months after completion of the course. This effort was complicated by high job turnover, low response rates, and lack of incentives on the part of former students/supervisors to provide the information requested. The program analyst still serves in this capacity; however, she does not regularly travel with the course and is not included in the travel and per diem costs for staff personnel.

Total personnel costs for administrative and overhead activities are estimated to be $181,374 on an annual basis, in 2007 dollars.

Nonpersonnel (course delivery)

The USU MedXellence course pays for catering and IT services and for faculty and staff travel and per diem. In an attempt to lower the "locational" costs, such as the use of hotels in major hub areas, a business decision was made in 2003 to use Armed Forces Recreation Centers (AFRCs) or acceptable "convention-capable" hotels that give government rates. This choice provided for lower prices for conference room rentals and beverage and snack service for breaks. The course is amenable to AFRCs because they have the equipment, space, and facilities to support the course. Moreover, student participation is higher at these locations because of their familiarity with and affinity to the amenities offered.

Information on catering/IT support costs was provided by the USU program staff. They provided a rate for catering/IT costs per course, which varies by location and the expected number of students and is usually negotiable from year to year. A doubling of the student load would double the catering/IT costs. The methodology

used to allocate catering/IT support costs was based on information provided by USU MedXellence staff for each location. The total annual cost for catering/IT services is estimated to be $64,000.

Faculty and staff travel and per diem costs are charged to the funds provided by the AMEDD Center and School to the USU at the direction of JMESI for the MEE purpose. These costs are relatively constant, as the same number of faculty and staff provide support to the course each year (roughly 19 faculty and 4 staff). Faculty are not compensated for the course and, on average, spend 3 days away from their primary duty (TAD) for each course being delivered. We used the following methodology to allocate faculty and staff travel and per diem costs per course.

USU provided the CNA research team with total aggregate numbers for both faculty and staff travel and per diem per course (e.g., the total aggregate cost for Hawaii is $45,000). We separate out the travel and per diem costs by first identifying per diem costs for each location based on current 2007 CONUS and OCONUS per diem rates for government employees. We apportion the maximum per diem rate for the 19 faculty and 3 USU staff members assumed to travel with the program for each course iteration: the faculty TAD is estimated at 3 days, while the staff TAD is estimated at 7 days.

Staff personnel are involved in all aspects of course delivery and devote full time to the course whether off site or on site. The residual (leftover) after backing out (subtracting) the computed per diem costs from aggregate total cost is the cost of travel expenses. In summary, we attempt to line-item travel and per diem costs, given the constraint that they should both sum to total cost numbers provided by USU MedXellence staff. Total faculty and staff travel and per diem costs are estimated to be $159,000 on an annual basis.

B. Indirect costs

Nonpersonnel (administrative and overhead)

Many military programs and education courses essentially get a free ride for use of infrastructure and facilities when they operate within a military base or are affiliated with DoD institutions through their Service chain. However, the use of these facilities still incurs a cost that must be recognized and accounted for. For example, office

space and classroom space are paid for by the base or military institution; that way, a particular program housed on the base does not have to pay a direct cost for using these facilities.

We attempt to capture these costs using total square footage as an estimate of space and multiplying that number by a cost-per-square-foot estimate.[15] The estimate for the cost of office space devoted to the USU course on a full-time annual basis is $3,976.

There are no indirect personnel costs associated with administration and overhead activities. Likewise, there are no indirect non-personnel costs associated with course delivery.

Personnel (course delivery)

On average, 19 faculty members devote their time to the Med-Xellence course. For retired military faculty and nonmilitary/non-DoD faculty, we do not include opportunity costs because we are interested only in the outlays (costs) borne by DoD. The same faculty members travel with the course to each location during the year, and most are based in the National Capital Region (Washington, DC, area). Active DoD faculty opportunity costs (salary and benefits prorated by time spent in the course) are relatively constant, averaging around $22,267 per course, for an annual total of $111,337.

Faculty responsibilities during the course, aside from lecturing, include participation in the annual Faculty Day and onsite mentoring with students during the day of their presentation (or sometimes later). For one day annually, usually during one of the course iterations, faculty receive student feedback, make suggestions on areas for course improvement, and are allowed to provide input to the curriculum review process. Faculty members do not receive extra compensation for these efforts.

The MedXellence program does not pay students to attend the course. All costs associated with having students attend the course

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[15] The cost-per-square-foot estimate for USU was provided by LCDR Corriere for the MedXellence program: number of square feet (office space) = 188; cost per square foot = $21.

are the responsibility of each Service (Army, Navy, and Air Force). The course is intended for senior MHS executives (O-4 to O-6). We obtain the student roster from the last 3 years and use the prior distributions to determine the average rank, paygrade, and Service affiliation of the student body for the upcoming year for each location.

In 2007, the MedXellence course expects to enroll the following numbers of students for each location: Honolulu (48); Bethesda (40); Orlando (45); Orlando (45); Garmisch-Partenkirchen (45). In 2008, they anticipate going to the above locations as well; however, one Orlando trip will be substituted for one Keystone trip. The Keystone course expects 40 students total. For cost modeling, our annual cost figures are based on one course at each different location in 2007 dollars.

Student opportunity costs (salary and benefits prorated by time spent in course) vary by location. The locations with the highest tri-Service opportunity costs for students were Hawaii ($198,432) and Germany ($185,345). The Service with the highest level of opportunity costs per location is the Army, spending over $122,259 in indirect costs for students to attend the course in Orlando. This is primarily because Army students make up over 70 percent of the student attendees for the Orlando courses.

The next section summarizes our findings and generates alternative cost estimates, for some locations, based on several excursions: one is the doubling of student load per course for Honolulu and Keystone, which will affect both the direct and indirect costs to the program. A second excursion will develop cost estimates based on the assumption that the Jackson Foundation no longer serves as a conduit/agent in the provision of administrative and overhead services for the MedXellence program. The third excursion will develop cost estimates resulting from both the doubling of student load for Honolulu and Keystone and eliminating the Jackson Foundation overhead expenses by changing the way the USU MedXellence program is administered.

Budget summary

Baseline estimates

We calculated estimates for each course location based on the data, assumptions, and calculations explained in the previous sections, in 2007 dollars. Table 4 provides the baseline estimate factors for each site based on one course per location, five courses per year, annual throughput of 218 students, Jackson Foundation charge of 15 percent, 33.5 credits per student, and total annual student credit-hours of 7,303. The total cost for five courses in each location per year comes to $1,486,998, with direct costs ($482,674) accounting for 32 percent of the total.

Table 4.   Baseline — MedXellence course costs (2007)

Cost summary	Total	Honolulu, HI	Bethesda, MD	Orlando, FL	Keystone, CO	Germany
# of students	218	48	40	45	40	45
# credit-hours per student	167.5	33.5	33.5	33.5	33.5	33.5
Total student credit-hours	7,303	1,608	1,340	1,507.5	1,340	1,507.5
# courses per year	5	1	1	1	1	1
Total cost ($)	1,486,998	334,944	241,129	286,614	295,028	325,307
Direct costs ($)	482,674	114,245	56,745	85,495	108,495	117,695
Indirect costs ($)	1,004,324	220,699	184,384	201,119	186,533	207,612
Total cost per student ($)	6,821	6,978	6,028	6,369	7,376	7,229
Direct costs ($)	2,214	2,380	1,419	1,900	2,712	2,615
Indirect costs ($)	4,607	4,598	4,610	4,469	4,663	4,614
Total cost per student credit-hour ($)	204	208	180	190	220	216
Direct costs ($)	66	71	42	57	81	78
Indirect costs ($)	138	137	138	133	139	138

Direct costs are further broken down into administrative and overhead costs ($181,374 for personnel; $44,850 for nonpersonnel,

which includes equipment, maintenance, supplies, etc.) and course delivery costs ($256,450) for nonpersonnel, which include travel, catering, and per diem costs. Our preferred measure of throughput is total student credit-hours offered (7,303). Using the ratio of total cost per student credit-hour, the average for all five courses is $204 per student credit-hour:

- Direct costs - $66

- Indirect costs - $138

- The Bethesda course site has the lowest total costs per student credit-hour ($180), while the locations with the highest total costs per student credit-hour are Keystone ($220) and Garmisch-Partenkirchen ($216).

Excursions

Excursion #1 (double student load in Honolulu and Keystone locations)

We then wanted to see the effect on costs when we alter the current business practice. The first excursion deals with estimating costs assuming that the course load, or student throughput, is doubled for Honolulu and Keystone. Table 5 shows that this change increases both direct costs (catering/IT) and indirect costs (student opportunity costs).

In this scenario, total costs increase to $1,884,196.[16] Total direct costs increase by 9 percent to $517,174, whereas total indirect costs increase by 36 percent to $1,367,022. For direct costs per student credit-hour, cost savings result in a decline of 21 percent (from $66 to $50). For indirect costs per student hour, the increase in total costs is spread over a greater number of students (indirect costs fall from $138 to $133). There is virtually no change to indirect costs

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[16]   Assume that the change in the number of courses for Honolulu and Keystone has a direct impact on catering/IT direct costs. However, there will be changes to the number of students and credit-hours offered (these are doubled), which affects both relative indirect and direct costs.

relative to student throughput, but the impact on direct costs is significant.

Table 5.   Excursion #1: Double MedXellence student load in Honolulu and Keystone locations (2007)

Cost summary	Total	Honolulu, HI	Bethesda, MD	Orlando, FL	Keystone, CO	Germany
# of students	306	96	40	45	80	45
# credit-hours per student	167.5	33.5	33.5	33.5	33.5	33.5
Total student credit-hours	10,251	3,216	1,340	1,507.5	2,680	1,507.5
# courses per year	7	2	1	1	2	1
Total cost ($)	1,884,196	550,626	241,129	286,614	476,544	325,307
Direct costs ($)	517,174	131,495	56,745	85,495	125,745	117,695
Indirect costs ($)	1,367,022	419,131	184,384	201,119	350,799	207,612
Total cost per student ($)	6,158	5,736	6,028	6,369	5,957	7,229
Direct costs ($)	1,690	1,370	1,419	1,900	1,572	2,615
Indirect costs ($)	4,467	4,366	4,610	4,469	4,385	4,614
Total cost per student credit-hour ($)	183	171	180	190	178	216
Direct costs ($)	50	41	42	57	47	78
Indirect costs ($)	133	130	138	133	131	138

Excursion #2 (baseline without Jackson Foundation)

As we've discussed in earlier sections, the current funding stream for the USU MedXellence course requires a reliance on the Jackson Foundation as a conduit/agent in providing administrative and overhead support to the program. This business practice results in a 15-percent charge to the program for administrative purposes, which affects direct costs. To isolate the cost effect of using the Jackson Foundation, we ran a second excursion assuming that USU MedXellence did not have to rely on this practice (see table 6). The direct costs are reduced to $443,374, with the difference ($39,300) between the baseline and the scenario without the Jackson Foundation showing up as reductions in nonpersonnel costs in the administrative and overhead and course delivery categories.

Table 6. Excursion #2: MedXellence course removing Jackson Foundation (2007)

Cost summary	Total	Honolulu, HI	Bethesda, MD	Orlando, FL	Keystone, CO	Germany
# of students	218	48	40	45	40	45
# credit-hours per student	167.5	33.5	33.5	33.5	33.5	33.5
Total student credit-hours	7,303	1,608	1,340	1,507.5	1,340	1,507.5
# courses per year	5	1	1	1	1	1
Total cost ($)	1,447,698	324,774	238,459	280,194	285,608	314,687
Direct costs ($)	443,374	104,075	54,075	79,075	99,075	107,075
Indirect costs ($)	1,004,324	220,699	184,384	201,119	186,533	207,612
Total cost per student ($)	6,641	6,766	5,961	6,227	7,140	6,993
Direct costs ($)	2,034	2,168	1,352	1,757	2,477	2,379
Indirect costs ($)	4,607	4,598	4,610	4,469	4,663	4,614
Total cost per student credit-hour ($)	199	202	178	185	213	209
Direct costs ($)	61	65	40	52	74	71
Indirect costs ($)	138	137	138	133	139	138

Excursion #3 (double student load in Honolulu and Keystone without Jackson Foundation)

This subsection provides a scenario that assumes (a) that USU MedXellence does not have to rely on the Jackson Foundation and (b) that the course load doubles at the Honolulu and Keystone locations. In other words, we *combine* the effects of modifying the current business practice of excursions #1 and #2. We see in table 7 that by concurrently increasing the student throughput and removing the Jackson Foundation overhead, the direct costs are reduced to $473,374, which is about $10,000 less than the baseline figure of their current practice.

Compare the direct costs for excursion #3 ($473,374) with direct costs for excursion #1 ($517,174). Doubling the course load and eliminating the Jackson Foundation reduces direct costs by $43,800, relative to the direct costs of doubling the course load under the

current arrangement. Compare the direct costs for excursion #2 ($443,374) with direct costs for the baseline scenario ($482,674). Eliminating the Jackson Foundation from the baseline scenario (current arrangement of five courses per year) reduces direct costs by $39,300. The amount of $43,800 represents cost savings to the program resulting from eliminating the Jackson Foundation overhead expenses while doubling the course load at the above locations. This option minimizes the direct cost per student credit-hour ($46) for all locations, as well as for both Honolulu ($37) and Keystone ($43) separately.

Table 7.   Excursion #3: Double MedXellence student load and eliminate Jackson Foundation (2007)

Cost summary	Total	Honolulu, HI	Bethesda, MD	Orlando, FL	Keystone, CO	Germany
# of students	306	96	40	45	80	45
# credit-hours per student	167.5	33.5	33.5	33.5	33.5	33.5
Total student credit-hours	1,0251	3,216	1,340	1,507.5	2,680	1,507.5
# courses per year	7	2	1	1	2	1
Total cost ($)	1,840,396	538,206	238,459	280,194	464,874	314,687
Direct costs ($)	473,374	119,075	54,075	79,075	114,075	107,075
Indirect costs ($)	1,367,022	419,131	184,384	201,119	350,799	207,612
Total cost per student ($)	6,014	5,606	5,961	6,227	5,811	6,993
Direct costs ($)	1,547	1,240	1,352	1,757	1,426	2,379
Indirect costs ($)	4,467	4,366	4,610	4,469	4,385	4,614
Total cost per student credit-hour ($)	180	167	178	186	173	209
Direct costs ($)	46	37	40	52	43	71
Indirect costs ($)	133	130	138	133	131	138

Conclusion

Isolating the costs (direct and indirect) of administering the USU MedXellence course allows us to evaluate and identify the cost effect of modifying the current business practices. For illustrative

purposes, we now know that, if the funding stream for the Med-Xellence course could be imbedded in the mainstream USU annual budget (reducing its reliance on the Jackson Foundation) and the course could be given five times a year on the Bethesda campus, the direct costs per course would be $54,075 (see table 6). Conversely, if we assume that all five courses are held at Bethesda and that the Jackson Foundation overhead expenses are charged to the USUHS MedXellence account, the direct costs per course increase to $63,153.[17]

Table 8 summarizes the total course costs for the MedXellence course as it is conducted today (baseline) and for the three excursions we conducted.

Table 8.   MedXellence total course cost summary—baseline and excursions (2007)

Cost summary	Baseline	Excursion #1	Excursion #2	Excursion #3
# of students	218	306	218	306
Total student credit-hours	7,303	10,251	7,303	10,251
# Courses per year	5	7	5	7
Total cost ($)	1,486,998	1,884,196	1,447,698	1,840,396
Direct costs ($)	482,674	517,174	443,374	473,374
Indirect costs ($)	1,004,324	1,367,022	1,004,324	1,367,022
Total cost per student ($)	6,821	6,158	6,641	6,014
Direct costs ($)	2,214	1,690	2,034	1,547
Indirect costs ($)	4,607	4,467	4,607	4,467
Total cost per student credit-hour ($)	204	184	198	180
Direct costs ($)	66	50	61	46
Indirect costs ($)	138	133	138	133

[17] With more than two courses on site, the Jackson Foundation rate will increase to 51 percent. The foundation charges are a pure add-on to direct costs, leading to a 17-percent increase in direct costs for the MedXellence program.

We find that the greatest cost savings arise when the MedXellence course size is doubled for select locations and the Jackson Foundation rate expenses are removed (excursion #3, table 7). Even though this practice increases total costs, it would lead to a reduction in costs per student credit-hour, which may be desirable from a program perspective. However, the extra costs must be weighed against the value-added to student productivity once they leave the course (for which we have no outcome measure). Without more accurate measures of student performance, after they have completed the course (in which it is hoped that they have attained additional competencies), we can only determine the costs relative to student throughput and the total number of credit-hours offered. We acknowledge that these variables are only "intermediate" outcome measures that do not directly capture program effectiveness in terms of competency attainment.

Appendix C: Army Medical Department (AMEDD) Executive Skills course

This appendix provides a course and cost summary for the AMEDD Executive Skills course. The first section provides an overview of the course origin, objectives, and student mix as described by the AMEDD program management staff through completed questionnaires and site visit interviews. The second section outlines the approximate *costs to the Department of Defense (DoD)* to administer the current AMEDD course, including the assumptions, methodology, and data sources used in the analysis.

Course summary

Origin and location

The AMEDD Executive Skills course was created in response to the 1992 DoD Appropriations Act. It began as a 2-week course held annually through the AMEDD Center and School (AMEDDC&S) at Fort Sam Houston in San Antonio, TX. In 2001, it was shortened to 5 days and continues to be held in San Antonio once a year. Most of the course is conducted at the Sheraton Gunter Hotel in downtown San Antonio, using its lodging and conference center facilities.

Course objective

The AMEDD Executive Skills course is designed to provide relevant training and information to individuals selected to serve as future Deputy Commanders of Army Medical Treatment Facilities (MTFs). The primary objective of the course is to provide "just-in-time" training, enhancing the students' leadership skills and providing key information to help them more effectively perform their executive duties.

Competencies

Although the AMEDD Executive Skills course awards competencies for attendance, course administrators assume that the attendees have a general knowledge of all 40 competencies before attending. At present, the course covers 13 of the 40 competencies, as shown in table 1.

Table 1.   AMEDD Executive Skills course competencies

Competency	Competency
Decision-Making	Contingency Planning
Leadership	Organizational Design
Medical Liability	Change and Innovation
External Accreditation	Regulations
Communication	Group Dynamics
Quality Management	Financial Management
Human Resources Management	

The Army integrates its competency database into the official Army Officer Record Brief (ORB)—a 1-page Army form that provides a summary of the officer's qualifications and career history.[1] The ORB is used by headquarters personnel for assignment purposes, and selection board members use it to gain a general impression of an officer's qualifications, experience, and career history. This process allows the Army to see where a person has achieved the competencies, and the Army believes the process does a good job of validating existing systems of merit and qualification. Competency tracking is available for all AMEDD Officers regardless of rank through the AMEDD Executive Skills database, although competency tracking is emphasized for senior AMEDD officers eligible to serve in senior AMEDD positions. The goal is to ensure that all senior executives are competent in the 40 competencies by the time they assume their new positions. The competencies are not used solely in the selection process of all three Service Surgeons General.

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[1] The ORB is produced from data stored on the Officer Master File at the U.S. Army Military Personnel Center. The ORB is a dynamic file, which is updated throughout the officer's career with new information.

Course description/curriculum

Table 2 shows the 2006 AMEDD Executive Skills course curriculum. It included sessions on finance and quality management, and it added half a day of leadership training (new for 2006). Historically, attendees went to the University of Texas for their leadership skills component; now a professor affiliated with the Studer Group comes on site.

The course is held with the entire group for 4 days. Day 5 is a breakout time for each corps (Medical, Nurse Corps, etc.) to update officers on corps-specific issues, such as promotion opportunities.

Table 2.   AMEDD Executive Skills course curriculum for 2006

Monday	Registration
	Welcome/Announcements
	AMEDDC&S Transformation
	Healthcare Leadership
	Law of War
	Preparing Your Hospital for Mobilization
Tuesday	Joint Commission on Accreditation of Healthcare Organizations (JCAHO) Update
	Hardwiring Excellence
Wednesday	Transport to Logistics Building
	Market Management in a Revised Financing Environment
Thursday	Rock Drill Site Day
	Commander's Expectation
	Executive Team Perspective
	Quality Management
	Scenario Training
Friday	Corps-Specific Breakout Sessions

In March 2007, the AMEDD course administrator reorganized the course agenda, as shown in table 3, to include four new sessions—MEB/PEB, UCAPERS, UBO, and Coding—in direct response to the Hospital Commanders attending the Pre-Command course at Fort Sam Houston.

The Pre-Command course is designed to prepare AMEDD commanders for their next commands. It is medical-specific, and issues discussed include U.S. Army training, personnel, logistics, and tactical doctrine (taken from the AMEDDC&S Website: AMEDD Pre-Command course description and agenda). The agenda shows the various other issues covered during the week. There are also two track days at the end of the course, which include corps-specific sessions. The 2007 student load was 68 commanders.

Table 3.   AMEDD Pre-Command course agenda

Monday	Registration
	Welcome
	Leadership - Expectations From the MEDCOM Commander
	AMEDD Business Practices/The Business of Healthcare
	Expectations of Your "DOC" - A Maneuver CDR's Perspective
	Command and Leadership Tips - How To Command
	Leading Change in the AMEDD
	Leadership Panel
Tuesday	Administrative Information and Course Scope
	MEDCOM Operations Update
	Challenges of Strategic/Operational Medical Leadership
	FORSCOM Update
	Leadership in the Current Operating Environment (COE)
	FRG Nuts and Bolts
	VETCOM/USACHPPM
Wednesday	Administrative Information and Course Scope
	Composite Risk Management and Safety Center Update
	PROFIS Management
	Legal Issues and Commanders
	FRG Simulation Exercise
Thursday	Combatives Introduction
	Administrative Information and Course Scope
	Creating Adaptive Leaders
	AMEDD OES
	NCO Development/Panel Discussion
	AT Level III
	National Security Personnel System
	Contractor Communications
	Managing Organizational Budgets

As stated earlier, comments and suggestions from attendees of the Pre-Command course often lead to new sessions in the AMEDD Executive Skills course.

Some of the changes to the 2007 AMEDD Executive Skills agenda are shown in the course curriculum in table 4. These include replacing the Law of War with Financial Management in the MTF and dividing the 1500-1700 session, previously entitled "Preparing Your Hospital for Mobilization," into four half-hour sessions on UCAPERS, Coding, Uniform Business Office, and a Panel Discussion. The JCAHO Update has been placed on its own day, and MTF Readiness has been given a half-day session, after a half-day of Hardwiring Excellence.

Table 4.   AMEDD Executive Skills course curriculum for 2007

Monday	Registration
	Welcome/Announcements
	AMEDD Overview
	Healthcare Leadership
	Financial Management in the MTF
	UCAPERS*
	Coding*
	Uniform Business Office*
	Panel Discussion
Tuesday	Hardwiring Excellence
	MTF Readiness
	Quality Management
Wednesday	JCAHO Update
Thursday	Human Resources Management
	Commander's Expectation
	Executive Team Perspective
	Disability System (PEB/MEB)*
Friday	Corps-Specific Breakout Sessions

*Sessions are new as of April 2007.

The addition of the physical evaluation board/medical evaluation board (PEB/MEB) session at the conclusion of the four full days is also new for this year; past years have concluded with the Rock Drill Site and a session of scenario training.

The addition of the disability component was a direct result of the events at the Walter Reed Army Medical Center (WRAMC).[2] The new components of the Army's disability system are designed to better inform the students on the MEB/PEB process, in direct response to the events surrounding WRAMC. Speakers were also informed of the need to be prepared for questions on WRAMC from attendees, and the Friday breakout session will also include much discussion on WRAMC.

Though the course administrator prefers not to change the agenda so close to the course, he wants the course to stress relevance more than anything, and the Army felt that the events surrounding WRAMC necessitated a response. This new agenda was used at the AMEDD Executive Skills course in April 2007.

Marketing

Because this course is designed for newly selected Deputy Commanders, the marketing for the course is essentially the selection of this new group of future MTF commanders. Once they are selected to become Deputy Commanders, or within a year of their taking command, they are required to attend the AMEDD Executive Skills course. Any other marketing for the course is done through the AMEDD Center and School.

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[2] In March 2007, news stories broke in *The Washington Post* and the *Military Times* newspapers that dozens of recovering vets were living in substandard conditions in an overflow facility outside the main Walter Reed Army Medical Center (WRAMC) campus, and that they and others faced miles of red tape while dealing with such issues as pay and benefits, lost records, medical evaluations, and a lack of first-line supervisors. The *Post* stories focused in part on "Building 18," a 54-room Army-owned facility across the street from the main Walter Reed campus, where nearly 70 recovering Servicemembers are being housed. The stories described some rooms in various states of disrepair, along with a rodent and cockroach infestation. As a direct result of these stories, the Secretary of the Army, Army Surgeon General, and Commanding General, WRAMC, were relieved of their duties.

Nomination/selection process

The Corps Specific Branch Proponent Office (CSBPO) handles the selection of attendees. Each corps selects students in the first, second, and third tier, with those in the first and second tiers having spent less than 1 year in the position. Those in the third year are further down the pipeline. The course administrator does not play any role in the selection process.

With regard to course popularity, the course administrator pointed to a high demand for the course, particularly from the Nurse Corps, and to a waiting list for some of the corps personnel.

Student load/demographics

The course is designed for newly selected Deputy Commanders who have just been selected or who have been in their position less than a year. The AMEDD course administrator indicated that typically, 95 percent of attendees have been selected for positions, and two or three attendees are a year or two away from taking command but are on that track. The course administrator requests that each corps (MC, NC, MSC) send at least 15 students.

Physicians are usually O-5s. Administrators typically comprise Majors and Lieutenant Colonels. Nurses are often at the O-6 level (Deputy Chief Nurses to Chief Nurse). These officers are all going to be O-6s in their new positions, serving as the right hand to the MTF commander.

AMEDD also invites a few dentists, allied health professionals (OTs, PTs, PAs), Reserve National Guard, and personnel from the Veterinary Corps. However, dentists and personnel from the Veterinary Corps are the least likely to enroll in the course because it is geared toward the DoD legislation primarily concerning physicians.

Tables 5 and 6 provide some descriptive data on attendees from 2003 to 2005. Table 5 gives the distributions of attendees by rank, while table 6 breaks out the attendees by corps.

Table 5.   Distribution of attendees by rank (2003—2005)

Rank	Number of attendees
COL	36
LTC	97
MAJ	26
CPT	1
Total	160

Table 6.   Distribution of attendees by corps (2004–2005)

Service	Number of attendees
Dental Corps	12
Medical Corps	29
Medical Service Corps	30
Medical Specialist Corps	3
Nurse Corps	27
Reservists	3
Specialist Corps	3
Total	107

Prerequisites

There are no prerequisites for this course.

Distance learning

The AMEDD Executive Skills course does not have a distance learning requirement; however, attendees are encouraged to use the Joint Medical Executive Skills Institute (JMESI) distance learning portal, especially as a way to gain those competencies that the officer is lacking before taking command. In past years, AMEDD staff attempted to develop their own distance learning modules, but found the JMESI programs to be more efficient and cost-effective.

Pretest/posttest

There is no pretest or posttest for this course.

Program management staff

The course administrator facilitates the course and is responsible for the management of faculty, review of course content and feedback, and related activities. The course administrator is supported by an IT support specialist and a program analyst, who maintains the database for attendees of the course.

Faculty

The faculty is staffed primarily from within AMEDD. The majority of military/DoD faculty is based locally on site at Fort Sam Houston (FSH) and comprises primarily healthcare administrators, physicians, or nurses in the Army. Subject matter experts from Washington, DC, are also invited to speak to students during the course.

Faculty members must submit bios and quality assurance information and must also fill out paperwork to demonstrate their qualifications. The course administrator decides whether to retain or dismiss current faculty.

Credit-hours

The AMEDD course may award 35 to 38 Continuing Medical Education (CME) credit-hours and 38 Continuing Education Unit (CEU) credit-hours. The CME credits are obtained through the Office of the Surgeon General (OTSG).

Performance review

Evaluations are conducted right after the course, and a review is conducted 6 months later. The feedback is used to adjust course content; for example, some suggestions that continually come up include the discussion of unions and financial management.

Changes made to the course usually involve a maximum of 20 percent change in structure or content, and the bulk of the course remains the same. Feedback from students regarding faculty is also collected and sent to faculty.

Cost analysis

This section provides a cost synopsis of the AMEDD Executive Skills course, including the assumptions, methodology, and data sources used in the analysis. Our analysis captures the estimated *costs to DoD*—both direct and indirect—for sponsoring the program.

The AMEDD Executive Skills course is offered at Fort Sam Houston in San Antonio, TX, and is managed from two offices within the FSH Leader Training Center (room 1404). No other infrastructure is required to support the course on site; however, the Sheraton Gunter Hotel in San Antonio provides rooms, facilities, and classroom space for the course attendees during the week. The course is given once a year, so our analysis is based on one course using 2007 dollars. Using these numbers as a baseline, we then develop alternative cost estimates on one scenario: increasing the student load and maintaining one course per year.

Funding stream

Each year the Office of the Secretary of Defense (OSD) forwards a budget request to Congress for the Defense Health Program (DHP), which supports worldwide medical and dental services to the active forces and other eligible beneficiaries. The DHP was created on 14 December 1991 to centralize funding and management of military healthcare (previously carried out independently by the separate Services). The goal was to trim duplication and foster more inter-Service cooperation. A 9 July 2001 memo from the Under Secretary of Defense for Personnel Readiness requires TRICARE Management Activity (TMA) to manage all financial matters of DoD's medical and dental programs.[3]

After Congress required DoD to establish a comprehensive program to prepare medical department officers to command military treatment facilities and serve as lead agents, DoD established the

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[3] The DHP Operations and Maintenance (O&M) funding is divided into seven major areas: In-House Care, Private-Sector Care, Information Management, Education and Training, Management Activities, Consolidated Health Support, and Base Operations.

Joint Medical Executive Skills Program/Institute (JMESP) as special staff to the Commanding General, Army Medical Department Center and School, Fort Sam Houston.[4] TMA provides annual funding to the AMEDDC&S Comptroller to support the Executive Skills initiatives being conducted by JMESI, USU, and the Army and Air Force.[5]

AMEDD staff indicated that the funding is primarily unconstrained and that the course administrator was thinking about having students take a 2-day course on hospital efficiency/leadership, which costs $60,000 for 2 days. This would require incremental staff to assist in administrative functions that class participants would be unable to perform for 2 days. Physicians would like to have a DCCS course; however, increasing the diversity of the student body requires increasing diversity of faculty while maintaining Service- and Corps-specific elements. This is an Army pre-command course, which is more like the JMESI Capstone course.

Concept and measurement of cost

Cost-effective analysis refers to the evaluation of alternatives based on both their costs and their effects with regard to producing some desired outcome. When costs are combined with measures of effectiveness, we are able to evaluate programs to determine their relative effectiveness in maximizing outcomes (effectiveness) per level of cost, or minimizing the costs per level of effectiveness. It is assumed that only programs with similar or identical goals can be compared and that a common measure of effectiveness can be used (across programs) to assess them.

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[4] In other words, the Secretary of the Army (AMEDDC&S) is DoD's executive agent for the Joint Medical Executive Skills development program mandated by Congress.

[5] The Navy Medical Executive Skills program is not funded through JMESP. TMA provides funds to the Navy Bureau of Medicine and Surgery, which in turn funds the NAVMED Manpower, Personnel, Training and Education Command in Bethesda. Neither the AMEDDC&S Comptroller nor the JMESI Manager is aware of how much the Navy receives for Medical Executive Skills courses.

Measures of cost-effectiveness

JMESI, USU, and Service program managers don't currently use a common measure of effectiveness for course or student outcomes. Ideally, we'd like to have a single measure of competency attainment—attainment of the competencies at the "knowledge" or application level. This type of measure would account for the competency level attained, as well as student throughput, and for credit-hours awarded in relationship to the medical executive skill competencies offered by the course.

Because the medical executive skills courses offered by JMESI, USU, and the Services focus on a different, but not mutually exclusive, subset of the 40 competencies, it would seem to be difficult to develop a quantitative measure of student outcome that can serve as a basis for universal comparison. Each course has developed a framework for evaluating student outcomes related to competency attainment that is unique to the structure and delivery of the course content (pretest/posttest, case study, scenario tool, etc.). To allow for analytical tractability and to facilitate the comparison of costs across programs, we chose to model two "intermediate" outcome variables for the medical executive courses reviewed in this study:

- Throughput of students per course

- Total number of credit-hours offered (total cost per student credit-hour offered) per course.

Concept of costs

Our analysis uses the economic definition of costs to include the direct costs and opportunity costs (indirect costs) of using existing resources for course administration, management, and delivery. This analysis includes activities involved in the development of course materials, the updating and reviewing course content, course delivery, and the provision of after-course evaluation and feedback. These activities can be grouped into two broad categories:

- Administrative and overhead costs

- Course delivery costs.

The direct and indirect resource costs under each category are divided into personnel and non-personnel costs.

Administrative and overhead

Personnel costs in the administrative and overhead category include the resource costs of people involved in administration, management, support services, and after-course activities. Nonpersonnel resources in this category include supplies, equipment, materials, and facilities used and expensed in support of the course. The opportunity cost of facilities and infrastructure is included in this category. The infrastructure used to support the program is valued at the cost per square foot, with the total cost proportioned according to the share of the facilities devoted to supporting the course (i.e., classrooms, offices, breakout rooms).

Course delivery

Personnel costs in the course delivery category include those involved in teaching the course and the students who are enrolled in the course. Nonpersonnel costs include the resources used to support faculty and student attendees for travel, per diem, and lodging expenses.

Personnel costs in both categories are allocated based on a person's total full-time equivalent (FTE) hours devoted to the course per year and his or her adjusted annual salary and benefits. One FTE is considered to be equivalent to 230 days per year, or 1,840 hours per year.[6] The resource cost model also accounts for the "opportunity costs" for military/DoD faculty and students. This is computed by determining their time away from primary duties in support of the course as a faculty member (3 days per course) or as an attendee (5 days per course). These are the indirect costs to DoD—valued in 2007 dollars at the salary and benefits of students and military faculty for their time devoted to the course.

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[6] Source: CNA Study, *Non-Availability Factors for Active Duty Navy Physicians,* by Rattelman and Brannman (1999).

Determination of salary and benefits

The 2007 composite rates for each Service are used to determine the indirect costs, or opportunity costs, for student and faculty time away from primary duties.[7] These composite rates are used to determine the value of faculty and student time, measured by their salaries plus benefits apportioned for their time devoted to the course. The composite rates are the sum of Basic Pay, Basic Allowance for Housing (BAH), Basic Allowance for Subsistence (BAS), incentives and special pays, Permanent-Change-of-Station (PCS) costs, pension and healthcare retirement benefits, plus benefits other than retirement. A brief description follows. The sum of Basic Pay, BAH, BAS, and incentives and special pays are computed and summed by Service and paygrade.[8]

The accrual of pension and healthcare retirement benefits are computed as follows by Service and paygrade: pension (27.4 percent of Basic Pay), healthcare Medicare eligible (16.7 percent of Basic Pay), and pre-Medicare (12.9 percent of Basic Pay).[9]

Benefits other than retirement include life insurance, disability income, healthcare, statutory benefits (Social Security, Workers' Compensation, Unemployment), education benefits, personal legal services, Family Support Centers, and Morale, Welfare, and Recreation facilities.[10] These are equivalent across the Services. PCS costs are also included in the calculations.

The variables needed to determine the opportunity costs for military faculty and students are TAD (default = 3 days for faculty; 5 days for students), paygrade and rank by Service, and number of active duty days per year, or FTE per year. The number of FTE days per

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[7] The 2005 Composite Rates by Service are adjusted to 2007 values using an adjustment factor of 3.1 percent.

[8] The Air Force does not include BAS. The average for the Navy and the Army is used as a proxy for Air Force BAS costs.

[9] These rates are based on DoD Office of the Actuary.

[10] Based on the CNA study, *The DoD Health Care Benefit: How Does It Compare to FEHBP and Other Plans?* by R. Levy, R. Miller, and S. Brannman, May 2000 (2005 dollars).

year is determined to be 8 hours per day, 21 days per month, for 12 months per year. This accrues to 252 days per year. We subtract 22 days of nonavailability time (allowance for performing readiness and military-specific activities) to determine that 1 FTE annually is equivalent to 230 days per year.[11] We use this figure to compute the opportunity costs, by paygrade, rank, and Service, for military personnel (faculty and students) normalized by the fraction of time per year they spend supporting, or attending, the course.

To determine the opportunity costs of nonmilitary faculty, we use the median "salary-step" by GS level from the 2007 General Schedule Salary Table. If a person is qualified as a GS-11, for example, we use the median value for GS-11, which is the average of salary-step 5 and salary-step 6 (there are 10 salary-steps for each GS-level). We assume for all military and nonmilitary personnel that 1 FTE is equivalent to 230 days per year.[12]

Data collection

Information on the above cost categories was gathered through completion of a preliminary questionnaire and follow-up interviews with the project manager and other program staff. These are described in more detail in the next section.

Definition of cost categories and data sources

A. Direct costs

Nonpersonnel (administrative and overhead)

Administrative and overhead costs include any nonpersonnel costs that are required to administer and manage the course annually.

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[11] Based on a 1999 CNA study, *Non-Availability Factors for Active Duty Navy Physicians,* by C. Rattelman and S. Brannman.

[12] We understand that the *implied opportunity* costs may overstate the *actual opportunity* costs because some faculty members continue to perform some of their primary duties while in transit to and from the medical executive skills course. However, some seepage from the primary duty productivity does occur.

For the AMEDD Executive Skills course, the costs for audiovisual equipment are estimated to be between $200 and $250 per year, and materials and supplies are estimated at $500 per year. The total annual cost for the materials and equipment is $750.

Personnel (administrative and overhead)

The course administrator, the IT support personnel, and the database manager devote their time and effort to prepare and manage the course. The core staff members are engaged in direct management and administration of the course, and their contribution is valued on an annual basis.

The course administrator is also a faculty member for the course and concurrently serves as a Visiting Associate Professor at Trinity University in San Antonio. He spends approximately 250 hours per year performing functions directly related to his duties as AMEDD Executive Skills course administrator. We obtain FY07 salary and benefit information directly from the course administrator, and apportion that value for his time spent serving in the above capacity (0.14 FTE).

The IT support person is an assistant from the Knowledge Management Division at AMEDDC&S. He provides IT support for 35 hours per week when the course is in session and 5 hours overtime annually.[13] We obtain FY07 salary and benefit information from the GS Schedule (GS-7) and apportion that value for his time spent supporting the course (0.23 FTE). The database manager is a contractor, and she spends 4 hours annually analyzing the database for attendees to the course. Her contract salary is $81,000 per year.

The total cost for administrative and overhead personnel is estimated to be $16,897 per year. This includes the course administrator, IT support, and database management personnel just mentioned.

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[13] We allocate his overtime, assuming that he is paid 1.5 hours' salary for each hour worked. Therefore, 5 hours of overtime equates to 5*1.5 hours of regular pay = 7.5 hours. Add to his regular hours of 35, and we get a total of 42.5 hours per year for the IT staff personnel. FTE = 42.5/1840 = 0.23 FTE.

Nonpersonnel (course delivery)

Nonpersonnel costs associated with course delivery are the faculty and student attendee travel and per diem costs. They also include the costs associated with using the facilities at the Sheraton Gunter Hotel in San Antonio ($2,500). The AMEDD staff stressed that the Sheraton hotel has proved to be a good choice for the course—an excellent location that is close to Fort Sam Houston and the Riverwalk in San Antonio. The hotel provides great facilities (i.e., classrooms and breakout rooms) and outstanding service to student attendees and faculty.

The course pays for both student and faculty travel. The total number of students enrolled in the course in 2006 was 58, of which 38 were off site. Local attendees do not receive per diem or travel expenses. The greater the number of offsite student attendees, the greater the travel and per diem costs. In 2006, the total travel and per diem costs for student attendees was $54,000. In 2006, the course paid travel expenses for three members of the faculty for a total of $1,610 in faculty travel costs.

Personnel (course delivery)

The personnel costs in this category are those associated with contracting for nonmilitary speakers. The program hires two civilian contract speakers per course. The total amount paid annually to the contract speakers is about $10,000 to $12,000 per year. The contract speakers are Dr. Kaplan and Dr. Strader. The faculty contract costs for 2006 were $10,452.

Dr. Kaplan teaches the hospital efficiency/leadership component of the course and is affiliated with the Studer Group. He also offers a 2-day seminar on hospital efficiency/leadership that costs around $60,000. The course administrator is entertaining the idea of enrolling students in the 2-day course, recognizing, however, that it would drive up the personnel contract costs considerably.

B. Indirect costs

Nonpersonnel (administrative and overhead)

The indirect costs included in the administrative and overhead non-personnel category are for use of the facility. The course is managed at the Leader Training Center in Fort Sam Houston in a single office. The office space is shared with activities other than the AMEDD Executive Skills course. The space is 89 square feet, and the cost per square foot is $3.89. The annualized opportunity cost for office space is valued at the share of time used in support of the course, which comes to $45 per year.

There are no indirect personnel costs allocated to the administrative and overhead category. There are no indirect nonpersonnel costs allocated to the course delivery category.

Personnel (course delivery)

The indirect personnel costs in this category include the value of faculty and student attendee time away from their primary duties. This is the opportunity cost of DoD resources associated with the course.[14] In 2006, 17 military/DoD faculty and 4 nonmilitary faculty supported the course. We assume that, on average, each faculty member devotes about 1 duty day away from normal job duties in support of the course. This includes both travel time and presentation time. The total costs to DoD (opportunity costs) for the 2006 faculty TDY for the course are estimated to be $15,948.

A total of 57 students were enrolled for the course in 2006. The student attendees for the 2006 course were distributed as follows: Medical Corps (13), Dental Corps (5), Medical Service Corps (15), Specialty Corps (3), Nurse Corps (13), and Reservists (3). Each student is eligible to receive 38 CME or CEU credits. Therefore, the total number of credit-hours per student for the 2006 course is es-

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[14] We understand that the *implied opportunity* costs may overstate the *actual opportunity* costs because some faculty members continue to perform some of their primary duties while in transit to and from the medical executive skills course. However, some seepage from the primary duty productivity does occur.

timated to be 2,166 (total number of students enrolled multiplied by credit-hours per student).

The total opportunity costs for all students in 2006 are estimated to be $229,951, assuming time away from primary duties of 5 days per year. The next section provides a summary of the cost estimates per student, and per student credit-hour, for the 2006 AMEDD Executive Skills course.

Budget summary

Baseline estimates

In the tables that follow, we summarize the direct and indirect course costs. The baseline estimates are based on the following factors: 1 course per year, throughput of 57 students per course, number of credit-hours per student (38), and total number of credit-hours offered (2,166). We do not distinguish between CME credit-hours and CEU credit-hours. Table 7 presents the baseline factors used in the baseline costs, broken out by specialty corps.

Table 7.   Baseline factors by specialty corps—AMEDD Executive Skills course (2006)

	Baseline factor		
Specialty corps	Number of students	Total student credit-hours	Number of courses
Medical Corps (MC)	13	494	
Dental Corps (DC)	5	190	
Medical Service Corps (MSC)	15	570	
Specialist Corps (SC)	3	114	
Nurse Corps (NC)	13	494	
Reserves	3	114	
Other	5	190	
Total	57	2,166	1

Table 8 presents the baseline estimates by total cost, total cost per student, and total cost per student credit-hour. The costs are then broken down into direct and indirect costs.

Table 8. Baseline AMEDD Executive Skills course costs (2006)

Cost summary	AMEDD course (2006)
Total cost	$332,152
Direct costs	$86,209
Indirect costs	$245,943
Total cost per student	$5,827
Direct costs	$1,512
Indirect costs	$4,315
Total cost per student credit-hour	$154
Direct costs	$40
Indirect costs	$114

The total annual cost for the 2006 course is estimated to be $332,152 (direct costs, $86,209; indirect costs, $245,943), which accounts for the opportunity cost of both military faculty and students over the 5-day course. The total cost per student is $5,827 for 2006. Indirect costs account for over 75 percent of the total costs associated with the AMEDD Executive Skills course. A further breakdown of these indirect and direct costs, by personnel and nonpersonnel costs, is shown in table 9.

The preferred measure of throughput is total student credit-hours offered (2,166 annually). Using the metric of total costs per student credit-hour, the total annual costs are estimated to be $154 per student credit-hour (direct costs, $40; indirect costs, $114).

Table 9. AMEDD Executive Skills course cost—detail (2006)

Cost details	AMEDD course (2006)
Administrative & Overhead Costs (Direct)	$17,647
Nonpersonnel Costs	$750
Materials & Supplies	$500
Audiovisual Equipment	$250
Opportunity Cost of Facility Use	$45
Personnel Costs	$16,897
Program Director	$15,625
IT Support	$1,096
Database Support	$176
Course Delivery Costs (Direct)	$68,562
Non-Personnel Costs	$58,110
Hotel Rental/Catering	$2,500
Faculty Travel & Per Diem	$1,610
Student Attendees Travel (2006)	$12,600
Student Attendees Per Diem (2006)	$41,400
Personnel Costs	$256,351
Faculty (Contract Speakers)	$10,452
Opportunity Costs of Faculty	$15,948
Opportunity Costs of Students	$229,951

General thoughts

The AMEDD Executive Skills administrator is considering several alternatives, such as increasing class size, increasing the course length, and/or administering the leadership sessions through the Studer Group for $60,000 per session. This would also require the use of incremental staff to assist in administrative functions for the course off site. The details of the resources to be devoted to that effort have yet to be determined. An additional factor to consider is that funding for the course is apparently unconstrained. However, in general, the course administrator sees no real reason to change how

the course is currently being conducted. Going forward, continued increase in demand by corps (particularly Nurse Corps) attendees may put pressure on the administrator to increase the class size in the short run

Appendix D: Navy Advanced Medical Department Officer's Course (AMDOC)

This appendix provides a course and cost summary for the Navy's Advanced Medical Department Officer's Course (AMDOC). First, we present an overview of the course origin, objectives, and student mix as described by the Navy Joint Medical Executive Skills Program (JMESP) staff through completed questionnaires and site visit interviews. Second, we outline the approximate *costs to the Department of Defense (DoD)* to administer the AMDOC, including the assumptions, methodology, and data sources used in the analysis.

Course summary

Origin and location

The Navy does not sponsor an executive skills course as a part of Navy JMESP. The director of Navy JMESP has incorporated medical skills courses into the Navy continuum of learning that is based on a standardized framework for professional military education. This framework is used to prepare Naval Medical Department Officers for leadership positions within an environment of downsizing, budget decrements, increased operations tempo, and TRICARE For Life.[1] This common framework was approved by the Deputy Surgeon General in July 2002.

The Navy Leadership competency model emphasizes five core competencies: accomplishing the mission, leading people, leading change, working with people, and resource stewardship. On selection to O-5, each Navy Medical Department Officer receives a letter

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[1] Amer Technology, Inc., 2005. *Processes in Achieving Executive Skills Competency in the Military Health System.*

from the Navy Surgeon General about senior executive medical skills (see attachment 1 to this appendix). Currently, the learning continuum for Navy Medical Department Officers includes both the Basic Medical Department Officers Course (BMDOC) and the Advanced Medical Department Officers Course (AMDOC). The AMDOC was implemented in 2005 and was originally scheduled as a 4-week session offered six times a year. Due to budget cuts, the course was shortened to 2 weeks in 2006 and is offered eight times a year at the Navy Medicine Manpower Personnel Training and Education Command (NAVMED MPT&E)) in Bethesda, MD.

Course objective

The purpose of the AMDOC is to prepare future medical executive officers as senior leaders, by providing them with an understanding of the "practice and business" of Navy Medicine in both the operational and medical treatment or managed care facility, or in a position within a TRICARE Management Activity (TMA) setting. Emphasis is placed on developing a "common" philosophy for Navy leadership roles, primarily for executive and commanding officers, through both the BMDOC and AMDOC course curricula. The Navy JMESP management staff said that the Navy philosophy derived from the fact that most senior Navy medical executive failures resulted not from a lack of knowledge in their specialty fields but from improper preparation for the unique requirements (job skills and behaviors) of senior executive management positions.

AMDOC includes information on both Navy and Joint operations, with a tri-Service focus. The AMDOC management staff indicated that aspects of leadership development are embedded into the common philosophy described above. They stressed that executives are built within the Navy learning continuum and the competencies are "added on" to meet certification requirements from Congress.

The Navy's process for determining officer quality/competency was based on initial determination of what attributes a good CO/XO should possess, and these attributes were used in determining the body of knowledge necessary for the course. Prior to DoD instruction for competency certification, this knowledge was used to validate existing processes for career advancement and training.

The Navy JMESI staff interviewed stated that, in a sense, competencies have been added on in response to the DoD requirements, rather than the course being developed with teaching the competencies as the primary objective. To assess how competencies relate to experience and education, the Corps Chiefs review individual officer files; each Corps Chief determines the competencies achieved at the level of the individual.[2] Table 1 lists the competencies covered by AMDOC.

Table 1.   AMDOC course competencies

Competency	Competency
Military Mission	Public Law
Medical Doctrine	Medical Liability
Total Force Management	Financial Management
NDMS	Human Resource Management
Medical Readiness Training	Ethical Decision-Making
Contingency Planning	Public and Media Relations
Patient Safety	

Course description/curriculum

AMDOC is a 2-week course. Table 2 depicts the curriculum. The course is structured into the following units:

- Unit 1 – Organization Structure, Relationships, and Policies

- Unit 2 – Utilization and Management of Resources

- Unit 3 – World Events and Geopolitical Consciousness

- Unit 4 – Operational Policies, Procedures, and Strategies

- Unit 5 – Ethical, Legal, and Quality Elements of Healthcare.

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[2] Each officer community in the Navy Medical Department (e.g., Medical Corps (MC), Dental Corps (DC), Medical Service Corps (MSC), and Nurse Corps (NC)) has a Corps Chief who help promote the professional and career development of the community's constituents.

These unit lessons are interspersed throughout the 2-week course. For example, Monday of the first week may include lessons from Units 1, 2, and 4. The curriculum has been modeled after the Army course, and the original idea was to include an operations piece where students spend the day off site in Portsmouth, VA.[3] Due to budget cuts, the course has not been able to incorporate this event.

The Navy Surgeon General and Corps Chiefs determine the course content and engage in a curriculum review for all courses each year, including the assignment of competencies.

Table 2. AMDOC curriculum for the course held in December 2006

Day	Week 1	Week 2
Monday	Course Introduction	Reserve Integration
	Pretest Assessment	World Threat and Terrorism
	Future of Medicine	
	National Security Personnel Systems	
	Law and Conflict	
Tuesday	Strategic Environment	Media, Politics, Decision-Making
	Command and Control	Resource Strategies
	Contingency/Crisis Action Planning	Public Affairs
	Asia: Security Issues	HSS and USMC
Wednesday	Business Planning	Medical Lessons Learned
	Legal Aspects of Navy Healthcare	Joint Operations and Interoperability
	Shaping Enlisted Forces	Homeland Defense Strategies
	Corps Chiefs Breakout Sessions	Islamic Militancy
Thursday	Force-Shaping Tools	Budget Formulation and Execution
	Healthcare Contracting	Navy Medicine Strategies & Priorities
	Human Capital Strategy	Legislative Process & Healthcare Policy
	Joint Operations Integration	
	Clinical Risk Management	MHS Strategies & Policies
Friday	5VM Update	Medical Ethics & Decision-Making
	Preventive Maintenance and Prevention of DNBI/Combat, Ops Stress	Operational Capstone
		Closing Remarks
	Patient Safety	Posttest Assessment
		Receive Certification

[3] The AMEDD Executive Skills course spends 1 day off site at the Rock Drill Site where the students from the different Corps come together and engage in problem-based learning exercises as a team.

Marketing

The JMESP staff do not have a focused marketing strategy, nor do they imply that they need one. The course is selective training for Corps officers once they make O-4. AMDOC is not required before filling executive and command officer positions; however, the main benefit to students from taking the course is the attainment of the Service Designator (Additional Qualification Designator (AQD)).

The AQD can be seen as a "career-enhancement" qualification by senior leaders in the Navy and serves as a "promotion ticket" for those who complete the course. For this reason, the program management staff believe that the course markets itself. They also noted that almost 95 percent of people selected for O-6 had taken AMDOC, indicating that most Navy officers in the learning continuum appear to complete the course at some point in their career as they move up in rank.

Nomination/selection process

AMDOC is intended for Medical Department Officers (O-4s, O-5s, and some O-6s) who will be assuming command/leadership positions. Prospective students are selected by their Corps Chiefs: when Corps officers (MSC, DC, MC, and NC) achieve the O-4 grade level, they are eligible to take the course. The selection process occurs from the top down and with the final decision being made by the respective Corps Chief's office.

Student load/demographics

Attendees are a mix of Medical Department Officers (MSC, DC, MC, and NC) who are O-4s, O-5s, and O-6s. A portion of the class seats in the course are also set aside for civilian service personnel and reservists. Most AMDOC attendees have yet to be earmarked for senior MTF (CO or XO) or TMA positions, but they are more likely to be serving in department head or director positions within these types of organizations. Typically, 25 to 35 students attend each course, for a rough annual throughput of 200 to 280 students per year. Table 3 shows the total number and type of students that attended the AMDOC 720 courses in 2006.

Table 3. AMDOC 720 course attendees by Corps (2006)

Service	Number of attendees
Medical Corps	10
Dental Corps	6
Nurse Corps	10
Medical Service Corps	8
Reservists	3
Civilian	1
Total	38

Prerequisites

The prerequisite for taking AMDOC is completion of the Basic Medical Department Officer's Course. BMDOC introduces Medical Department Officers to the practices and policies of the Naval Medical Department and is only offered online. Attendees may acquire up to 7 of the 40 competencies by attending BMDOC.[4]

BMDOC is a 3-week online course and has about a 90-percent participation rate. There is no time limit on when students enroll in AMDOC after they have completed BMDOC. The JMESP staff indicated that they have thought about the idea of merging BMDOC and AMDOC; however, this is more of an idea than an actual initiative put forth by the staff.

Distance learning

The main distance learning piece consists of the BMDOC prerequisite for AMDOC which is operated through the USU Online portal.

Pretest/posttest

AMDOC does have a pretest/posttest that every attendee takes before and after the course, including a 6-month after-course survey. The pretest survey of attendees is conducted to assess student familiarity with the subject matter. This assessment is then passed on

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[4] The seven competencies are Military Mission, Military Readiness Training, Total Force Management, Human Resource Management, Labor Management Relations, Information Management, and Financial Management.

to the faculty who can tailor their presentations to best meet the students' needs. The posttest is given at the completion of the course to assess how well AMDOC met the need of that specific group, and to see whether the individual student knowledge gaps improved.

After-course survey/student critiques

Student critiques from each course are sent to the faculty about 1 month before teaching the course in order to adapt their content based on student critiques. The 6-month after-course survey is web-based, and the sample of respondents is generated by contacting students after they graduated.

The Navy global address list is used to track former students, and the objective of the survey is to determine what skills students may see as necessary in their current positions that they did not receive during the course. The survey includes open-ended questions to allow for student input. This input is compiled and sent to JMESP staff to incorporate the feedback into the course.

Program management staff

This course is run by a program director, an assistant director, an instructional systems specialist, and an administrative assistant at the Naval Medical Education and Training Command. This core staff is engaged in active management and administration of the course.

The program director's responsibilities include managing the budget and logistics for the course under the Workforce Directorate and suggesting changes to the course content based on feedback from student critiques and the survey compiled by the instructional systems specialist. The program director does not engage in faculty recruitment but is a part of the faculty instructing the course.

The program director is supported by an assistant director and an administrative assistant. As a part of the Joint Medical Executive Skills Program–Navy Project (JMESP), they manage information on the wide range of courses that may provide the competencies that individuals may be lacking. The development and operation of JMESP is a low-cost-impact program.

The instructional systems specialist assists in the curriculum/content review process, and she conducts the 6-month after-course survey. The survey does not change from year to year but may do so if the curriculum or content change. She compiles and summarizes the data and forwards this information to the program director.

Faculty

Thirty-three faculty members, on average, devote their time to teaching AMDOC. The majority of faculty is located in the Washington, DC, metropolitan area. For the 2006 course, 5 contract faculty and 28 military (active and/or retired) or DoD faculty were involved in delivering the course. The faculty primarily consists of senior Service medical executives from TMA, and current/former senior-level policy-makers. The contract faculty members are usually university-level professors and private-sector professionals.

Credit-hours

Attendees are eligible to receive continuing education credits from the American Academy of Continuing Medical Education (AACME). The program director is in the process of applying and certifying the actual number of credit-hours for the course. Although students receive the Service Designator (AQD) upon completion, it is currently their responsibility to determine how many credits they may be awarded for the course, and to apply through the various accrediting agencies to receive those credits.

For purposes of this study, and due to lack of data on credit-hours awarded to students in AMDOC, we assume that the students in the 2-week AMDOC will receive the equivalent amount of credit-hours per course that students enrolled in the 2-week Air Force Intermediate Executive Skills course receive. Both courses are equivalent in length and cater to the same student demographic (O-4s to O-6s) within their respective Service. The Air Force Intermediate Executive Skills course awards 62 credit-hours per student per iteration.

Performance review

The pretest and posttest provide information to the program director and faculty about specific areas of the course in which students may need more emphasis (pretest) and as an evaluation tool to gauge student learning outcomes on completion of the course (posttest). The 6-month survey is a more open-ended tool for students to indicate what skills they may be lacking in their current position, where having that material in the course would greatly improve their job performance. Program staff may consider incorporating this feedback into the course as part of the updated curriculum. Students are also allowed input through use of student critiques that are sent to faculty about 1 month before the course. Faculty members are encouraged to use this information and reformulate their lectures accordingly.

Cost analysis

This section provides a cost synopsis of the AMDOC, including the assumptions, methodology, and data sources used in the analysis. Our analysis captures the estimated *costs to DoD*—both direct and indirect—for sponsoring the program.

Because the AMDOC is offered eight times per year, we generate aggregated cost totals using a sample of four of the eight courses delivered in 2006 to produce annual course costs. We assume that each of the four courses is delivered two times per year, for a total of eight courses. The particular courses we chose to represent the annual AMDOC costs are AMDOC 640, AMDOC 710, AMDOC 720, and AMDOC 730. For our cost analysis, we assess the costs of each course based on 2007 dollars, assuming that each course is delivered two times per year, and aggregate the costs to obtain annual total cost for the AMDOC courses. It is assumed that the current structure and administration of the courses will remain consistent over the next 2 years. However, considerations on merging the BMDOC and AMDOC courses and determining the costs involved would be a likely scenario choice for future study.

Funding stream

Each year the Office of the Secretary of Defense (OSD) forwards a budget request to Congress for the Defense Health Program (DHP) that supports worldwide medical and dental services to the active forces and other eligible beneficiaries. The DHP was created on 14 December 1991 to centralize funding and management of military healthcare (previously carried out independently by the separate Services). The goal was to trim duplication and foster more inter-Service cooperation. A 9 July 2001 memo from the Under Secretary of Defense for Personnel Readiness requires TMA to manage all financial matters of the DoD's medical and dental programs.[5]

After Congress required DoD to establish a comprehensive program to prepare Medical Department Officers to command military treatment facilities and serve as lead agents, DoD established the Joint Medical Executive Skills Program/Institute (JMESP) as special staff to the Commanding General, Army Medical Department Center and School (AMEDDC&S), Fort Sam Houston, San Antonio, TX.[6] TMA provides annual funding to the AMEDDC&S Comptroller to support the executive skills initiatives being conducted by JMESI, USU, and the Army and Air Force.

The Navy medical executive skills program is not funded through JMESP.[7] TMA provides funds to the Navy Bureau of Medicine and Surgery, which in turn funds the NAVMED Manpower, Personnel, Training and Education Command in Bethesda. Neither the AMEDDC&S Comptroller nor the JMESI Manager is aware of how much the Navy receives for medical executive skills courses. The AMDOC is listed under the Workforce Directorate, and each course

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[5] The DHP Operations and Maintenance (O&M) funding is divided into seven major areas: In-House Care, Private-Sector Care, Information Management, Education and Training, Management Activities, Consolidated Health Support, and Base Operations.

[6] In other words, the Secretary of the Army (AMEDDC&S) is DoD's executive agent for the joint medical executive skills development program mandated by Congress.

[7] The Navy refers to its own executive skills program as the Joint Medical Executive Skills Program–Navy Project, not to be confused with the Joint Medical Executive Skills Program/Institute established by DoD.

under that directorate has a separate job order number. This directorate funds all travel, training, faculty and staff compensation, supplies, contract services, and other resources needed to support the course.

The course is currently funded through the Workforce Development Directorate budget at NAVMED (MPT&E). Previously, it was expensed from the Academic Directorate budget. The Navy JMESP receives its funds from TMA, separate from the executive skills funding stream budgeted for JMESI and the Army (as the executive agent for JMESI).

Concept and measurement of cost

Cost-effective analysis refers to the evaluation of alternatives based on both their costs and their effects with regard to producing some desired outcome. When costs are combined with measures of effectiveness, we are able to evaluate programs to determine their relative effectiveness in maximizing outcomes (effectiveness) per level of cost, or minimizing the costs per level of effectiveness. It is assumed that only programs with similar or identical goals can be compared and that a common measure of effectiveness can be used (across programs) to assess them.

Measures of cost-effectiveness

At present, JMESI, USU, and Service program managers don't use a common measure of effectiveness for course or student outcomes. Ideally, we'd like to have a single measure of competency attainment—attainment of the competencies at the "knowledge" or application level. This type of measure would account for the competency level attained, as well as student throughput, and credit-hours awarded in relationship to the medical executive skill competencies offered by the course.

Because the medical executive skills courses offered by JMESI, USU, and the Services focus on a different, but not mutually exclusive, subset of the 40 competencies, it would be seemingly difficult to develop a quantitative measure of student outcome that can serve as a basis for universal comparison. Each course has developed a framework for evaluating student outcomes related to competency

attainment that is unique to the structure and delivery of the course content (pretest/posttest, case study, scenario tool, etc.). To allow for analytical tractability and to facilitate the comparison of costs across programs, we have chosen to model two "intermediate" outcome variables for the medical executive courses reviewed in this study:

- Throughput of students per course

- Total number of credit-hours offered (total cost per student credit-hour offered) per course.

Concept of costs

Our analysis uses the economic definition of costs to include the direct costs and opportunity costs (indirect costs) of using existing resources for course administration, management, and delivery. This analysis includes activities involved in the development of course materials, the updating and reviewing of course content, course delivery, and the provision of after-course evaluation and feedback. These activities can be grouped into the two broad categories:

- Administrative and overhead costs

- Course delivery costs.

The direct and indirect resource costs under each of these categories are divided into personnel and nonpersonnel costs.

Administrative and overhead

Personnel costs in the administrative and overhead category include the resource costs of people involved in administration, management, support services, and after-course activities. Nonpersonnel resources in this category include supplies, equipment, materials, and facilities used and expensed in support of the course. The opportunity cost of facilities and infrastructure is included in this category. Basically, the infrastructure used to support the program is valued at the cost per square foot, with the total cost proportioned according to the share of the facilities devoted to supporting the course (i.e., classrooms, offices, breakout rooms).

Course delivery

Personnel costs in the course delivery category include costs for those involved in teaching the course and the students enrolled in the course. Nonpersonnel costs include the resources used to support faculty and students for travel, per diem, and lodging expenses.

Personnel costs are allocated based on the person's total full-time-equivalent (FTE) hours devoted to the course per year and adjusted annual salary and benefits. One FTE is considered to be equivalent to 230 days per year, or 1,840 hours per year.[8] The resource cost model also accounts for the "opportunity costs" for military/DoD faculty and student attendees. This is computed by determining their time away from primary duties in support of the course as a faculty member (3 days per course) or as an attendee (10 days per course). These are the indirect costs to DoD—valued in 2007 dollars at the salary and benefits of students and military faculty for their time devoted to the course.

Determination of salary and benefits

The 2007 Composite Rates for each Service are used to determine (a) the indirect, or opportunity, costs for student and faculty time away from primary duties[9] and (b) the value of faculty and student time, measured by their salaries plus benefits apportioned for their time devoted to the course. The Composite Rates are the sum of Basic Pay, Basic Allowance for Housing (BAH), Basic Allowance for Subsistence (BAS), incentives and special pays, Permanent-Change-of-Station costs, pension and healthcare retirement benefits, plus benefits other than retirement. A brief description follows.

The sum of Basic Pay, BAH, BAS, and incentives and special pays are computed and summed by Service and paygrade.[10]

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[8] Source: CNA study, *Non-Availability Factors for Active Duty Navy Physicians*, by Rattelman and Brannman, Apr 1999 (CME 059947400).

[9] The 2005 Composite Rates by Service are adjusted to 2007 values using an adjustment factor of 3.1 percent.

[10] The Air Force does not include BAS. The average for Navy and Army is used as a proxy for Air Force BAS costs.

The accrual of pension and healthcare retirement benefits are computed as follows by Service and paygrade: pension (27.4 percent of Basic Pay), healthcare Medicare eligible (16.7 percent of Basic Pay), and pre-Medicare (12.9 percent of Basic Pay).[11]

Benefits other than retirement include life insurance, disability income, healthcare, statutory benefits (Social Security, Workers' Compensation, Unemployment), education benefits, personal legal services, Family Support Centers, and Morale, Welfare, and Recreation facilities.[12] These are equivalent across the Services. PCS costs are also included in the calculations.

The variables needed to determine the opportunity costs for military faculty and students are TAD (default = 3 days for faculty; 10 days for students), paygrade and rank by Service, and number of active duty days per year, or FTE per year. The number of FTE days per year is determined to be 8 hours per day, 21 days per month, for 12 months per year. This accrues to 252 days per year. We subtract 22 days of nonavailability time (allowance for performing readiness and military-specific activities) to determine that 1 FTE annually is equivalent to 230 days per year.[13] We use this figure to compute the opportunity costs, by paygrade, rank, and Service, for military personnel (faculty and students) normalized by the fraction of time per year they spend supporting, or attending, the course.

To determine the opportunity costs of nonmilitary faculty, we use the median "salary-step" by GS level from the 2007 General Schedule Salary Table. If a person is qualified as a GS-11, for example, we use the median value for GS-11, which is the average of the salary-step 5 and salary-step 6 (there are 10 salary-steps for each GS-level).

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[11] These rates are based on DoD Office of the Actuary.

[12] Based on the CNA study, *The DoD Health Care Benefit: How Does It Compare to FEHBP and Other Plans?* by R. Levy, R. Miller, S. Brannman, May 2000 (2005 dollars).

[13] Based on 1999 CNA study, *Non-Availability Factors for Active Duty Navy Physicians,* by C. Rattelman and S. Brannman.

We assume for all military and nonmilitary personnel that 1 FTE is equivalent to 230 days per year.[14]

The foregoing numbers are the default figures used to calculate the opportunity costs of faculty and students. The AMDOC program director provided the research team with actual numbers on faculty hours (and salary and benefits) devoted to the course. Regarding these numbers, on average, each faculty member spends 1 to 4 hours teaching per course. We use these actual figures in our calculations.

Data collection

Information on the above cost categories was gathered through completion of a preliminary questionnaire and follow-up interviews with the program manager, assistant manager, and the instructional systems specialist.

Definition of cost categories and data sources

A. Direct costs

Nonpersonnel (administrative and overhead)

Administrative and overhead includes any costs that are required to administer and manage the course on an annual basis. For AMDOC, it includes materials and supplies used annually for course support. The cost estimate for materials and supplies is based on annual budget estimates obtained from the AMDOC program manager at $4,528 per year.

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[14] We understand that the *implied opportunity* costs may overstate the *actual opportunity* costs because some faculty members continue to perform some of their primary duties while in transit to and from the medical executive skills course. However, some seepage from the primary duty productivity does occur.

Personnel (administrative and overhead)

A core staff within the JMESP–Navy Project engages in the active management and administration of the AMDOC. The personnel associated directly with the program are the following:

- **Program Director**. We obtained FY07 salary and benefit information for the current principal investigator and apportioned that value for his time spent serving the course (0.6 FTE).

- **Assistant Director**. We obtained FY07 salary and benefit information for the current assistant director and apportioned that value for his time spent serving the course (0.8 FTE).

- **Administrative Assistant**. The administrative assistant performs basic administrative functions for the JMESP–Navy Project and devotes approximately 10 percent of her time to the AMDOC (0.10 FTE).

- **Instructional Systems Specialist**. The instructional systems specialist engages in curriculum/content review and the 6-month survey process. She spends approximately 1 percent of her time in support of the AMDOC (0.01 FTE).

Total administrative and overhead personnel costs are estimated to be $97,806 on an annual basis.

Nonpersonnel (course delivery)

The AMDOC budget pays for hotel contract services for attendees, student travel and per diem, and faculty travel and per diem costs. The cost estimates were provided by the program director based on the annual budget for FY05 and FY06. The hotel contract costs were $106,778 in FY05 and $188,085 in FY06. Student travel and per diem costs were $211,504 in FY05 and $344,507 in FY06. The increase in both hotel contract costs and student travel and per diem costs was a result of the addition of two more courses in 2006.

Faculty travel and per diem costs are covered in the AMDOC annual budget. These costs are relatively constant, and minimal, since most

of the faculty is stationed in the Washington, DC, metropolitan area. Faculty travel and per diem costs for FY06 were $9,563.

Personnel (course delivery)

The AMDOC pays contract faculty to lecture for the course during the year. About three to five faculty members per year are contract speakers. Faculty do not engage in curriculum review or provide feedback to incorporate into course content; however, they do receive student critiques and update their portion of the lecture accordingly. In FY06, the total cost for contract faculty was $31,840.

B. Indirect costs

Nonpersonnel (administrative and overhead)

Many military programs and education courses essentially get a "free ride" for use of infrastructure and facilities when they operate within a military base or are affiliated with DoD institutions through their Service chain. However, the use of these facilities still incurs a cost that must be recognized and accounted for. For example, office space and classroom space are paid for by the base or military institution; that way, a particular program housed on the base does not have to pay a direct cost for using these facilities.

We attempt to capture these costs using the total square footage as an estimate of space, and multiplying that number by a cost-per-square-foot estimate. The program director for the AMDOC did not provide actual numbers on the cost of facilities.[15] We were provided with estimates of office and classroom space of 1,775 square feet. Our cost estimate for use of facilities is $833 on an annual basis (prorated by the fraction of days per year the course is in session).

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[15] The cost-per-square-foot estimate for the AMDOC course was provided by the AMDOC program director: $1.35 per square foot; square footage = 1,775.

Personnel (course delivery)

On average, 28 military/DoD faculty devote their time to the AMDOC. For retired military faculty, and nonmilitary/non-DoD faculty, we do not include their opportunity costs because we are only interested in the outlays (costs) borne by DoD. Active DoD faculty opportunity costs (salary and benefits prorated by time spent in course) average around $5,005 per course, for an annual total of $40,038.

The AMDOC program does not pay students to attend the course (aside from travel and accommodation costs). All other costs associated with having students attend the course are the responsibility of each Service (Army, Navy, and Air Force). We obtained the student rosters from the last four iterations (AMDOC 640, AMDOC 710, AMDOC 720, and AMDOC 730) and used the student demographics and distribution in these courses to determine the average rank, paygrade, and affiliation of the student body. Since there are eight courses per year, we assume that each course (and associated student body demographic) is delivered twice per year. Each course is 2 weeks (10 days), so we assume that students spend a minimum of 80 days away from their primary duties attending the course.

Student opportunity costs (salary and benefits prorated by time spent in course) vary by the courses selected in the sample, based on the number and type of students enrolled in each course and differences in their rank and paygrade. The opportunity costs for each course follow:

- AMDOC 640 (35 students)—$272,704

- AMDOC 710 (29 students)—$238,554

- AMDOC 720 (38 students)—$303,618

- AMDOC 730 (33 students)—$262,946.

We double each of these course costs (and sum) to provide an estimate of the total student opportunity costs to attend the AMDOC on an annual basis. The next section summarizes our findings for the course.

Budget summary

Baseline estimates

We calculated estimates for each course location based on the data, assumptions, and calculations explained in the previous sections, in 2007 dollars. Table 4 provides the baseline estimate factors for each course, and on an annual basis, assuming (a) that each course is held twice annually (8 courses per year), (b) annual throughput of 270 students, (c) 62 credit-hours per student, and (d) total annual student credit-hours of 16,740.

Table 4. Baseline - AMDOC course costs (2007)

Cost summary	Total	AMDOC 710	AMDOC 720	AMDOC 730	AMDOC 640
# of students	270	58	76	66	70
# credit-hours per student		62	62	62	62
Total student credit-hours	16,740	3,596	4,712	4,092	4,340
# courses per year	8	2	2	2	2
Total cost	$2,872,484	$328,159	$393,223	$352,552	$362,309
Direct costs	$675,970	$84,496	$84,496	$84,496	$84,496
Indirect costs	$2,196,515	$243,663	$308,162	$268,055	$277,813
Total cost per student	$10,639	$11,316	$10,348	$10,683	$10,352
Direct costs	$2,504	$2,914	$2,224	$2,560	$2,414
Indirect costs	$8,135	$8,402	$8,124	$8,123	$7,938
Total cost per student credit-hour	$171	$183	$167	$172	$167
Direct costs	$40	$47	$36	$41	$39
Indirect costs	$131	$136	$131	$131	$128

The total annual cost for AMDOC comes to $2,872,484, with direct costs ($675,970) accounting for 24 percent of the total. Direct costs are further broken down into administrative and overhead costs ($97,806 for personnel costs; $4,528 for nonpersonnel costs) and course delivery costs ($31,480 for contract faculty personnel costs; $542,155 for nonpersonnel costs, including the hotel contract and travel and per diem expenses). Our preferred measure of throughput is total student credit-hours offered (16,740). Using the ratio of

total costs per student credit-hour, the average for all eight courses is $172 per student credit-hour:

- Direct costs, $40

- Indirect costs, $131.

Excursions

There are no excursions planned for the JMESP – Navy Project at this time. Discussions with the Navy JMESP and NAVMED MPT&E indicated that they are considering merging the BMDOC and AMDOC courses. In 2006, they were also considered developing an Executive Medical Department Officer Course (EMDOC) but as of this writing Navy has no current plans to develop a third course in their learning continuum.

DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY
2300 E STREET NW
WASHINGTON DC 20372-5300

21 August 2006

From: Chief, Bureau of Medicine and Surgery
To: Medical Department O-5 Selects
Subj: SENIOR EXECUTIVE MEDICINE SKILLS

Encl: (1) Medical Department Officer Career Track Training Resource List

| Attachment 1 to Appendix D |

Congratulations on your selection to Commander! This selection reflects your leadership, dedication and contributions to Navy Medicine. Today, Navy Medicine faces many diverse challenges around the world, from the Global War on Terrorism to meeting the needs of our beneficiaries here at home. Meeting these and future challenges requires visionary leaders who possess a strong set of senior executive medicine skills. For many of you, this journey will lead to future Executive Officer and Commanding Officer positions. Preparation for these roles begins today including an understanding of the Navy Leadership competency model, the Joint Medical Executive Skills Program, and Navy Medicine's alignment with CNO's strategic guidance. For all your future assignments the information gained from these and other leadership resources are career assets.

The Navy Leadership competency model is based on five core competencies: accomplishing the mission, leading people, leading change, working with people and resource stewardship. Details of the model can be found at https://wwwa.nko.navy.mil at the leadership tab. These competencies are important to provide purpose, direction and motivation to those you lead. The most important is communication skills (writing, speaking, listening) not only to build staff commitment to the organization's vision and philosophy, but to mentor and counsel those you lead.

The Joint Medical Executive Skills Program (JMESP) website, http://nshs.med.navy.mil/eme2/home.asp, provides information on the 40 competencies. "JMESP matrices" show which competencies are granted for various courses, Navy experience (positions held), education and affiliation with professional organizations. The site allows you to log in and set up your profile. Enclosure (1) lists a number of courses and websites where additional course information may be accessed.

Prior to your selection to Commander, your contributions were predominantly clinical or administrative. At the senior executive medicine level, your contributions impact Navy Medicine more broadly and require other skills, such as resource management, both human and financial. Human resource management is critical for senior leadership and involves working with all Corps and civilian Human Resource Offices. It involves all aspects of military law, civilian labor relations, and numerous processes with which you may not be familiar. Through senior leadership development, you learn how these and other factors impact your ability to meet your command's mission and ensure a higher level of customer satisfaction.

Mission accomplishment often means leading transformation through strategic planning and creative thinking. It's important to know the details of Navy Medicine's strategic view and transformational efforts as well as Seapower 21 and the CNO's annual strategic guidance.

Self-development is critical to your success as a senior medical executive and future Navy leader. Become familiar with important instructions (e.g., fitness reports, awards, physical readiness, etc.), CNO's recommended reading list and various military and leadership theories. Many of these are available through the BUPERS and NKO websites.

This only begins outlining resources and required executive skills development. As your senior officer journey begins, numerous resources are available: local command leadership, senior officers who are post-command, staff of your respective Corps Chief, and the many codes at the Bureau of Medicine and Surgery. These and other resources will assist in your success in steering Navy Medicine into the future.

D. C. ARTHUR
Vice Admiral, Medical Corps
United States Navy

Appendix E: Air Force Intermediate Executive Skills (IES) course

This appendix provides a course and cost summary for the Air Force Intermediate Executive Skills course. The first section provides an overview of the course origin, objectives, and student mix as described by the Air Force program management staff through completed questionnaires and site visit interviews. The second section outlines the approximate *costs to the Department of Defense (DoD)* to administer the current Air Force course, including the assumptions, methodology, and data sources used in the analysis.

Course summary

Origin and location

The Air Force Intermediate Executive Skills course is derived from the Air Force's Physicians and Management I, II, III (PIM) courses. The IES course—created in direct response to the 1992 DoD Appropriations Act—focuses on the attainment of competencies. It is a 7.5- to 9.5-day course administered through Sheppard Air Force Base in Texas but is being evaluated for possible relocation.

Course objective

The goal of the IES course is to provide training in knowledge and skills necessary for the effective performance of an executive team member serving in a medical treatment facility (MTF), a managed care position, or a TRICARE lead agent position. It is the only course offered by the Air Force that provides training intended to bridge the gap between initial management training and advanced leadership training received prior to command.[1] Currently, the

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[1] Taken from AF_CNA_MEE Question Matrix, September 2006.

course covers 23 of the 40 competencies. Table 1 lists the competencies that students attain by completing the course.

Table 1.   Air Force Intermediate Executive Skills course competencies

Competency	Competency
Military Mission	Total Force Management
Medical Readiness Training	Strategic Planning
Organizational Design	Decision-Making
Leadership	Public Law
Medical Liability	Medical Staff By-Laws
Regulations	External Accreditation
Financial Management	Human Resources Management
Labor-Management Relations	Information Management/Technology
Personal and Professional Ethics	Organizational Ethics
Public Speaking	Healthcare Delivery Systems
Quality Management	Outcome Measurement
Patient Safety	

Course description/curriculum

The Air Force IES course is a 7.5- to 9.5-day course, depending on the student attendees. The physicians (MC) and dentists (DC) stay on after the initial 7.5-day group course for 2 days of additional training, focused mainly on leadership. Nurses, Medical Service Corps members (MSCs), and remaining corps officers get leadership training earlier in their careers, so the additional days are not applicable to them.

The course is given twice annually, in the spring and fall, in order to provide the training to rising leaders before they go into their new positions or 3 to 6 months after they have taken on their new roles.

The Air Force management staff stressed that the curriculum of the course is ever changing and evolving in response to new programs, regulations, laws, and so on. New programs that have been included in the course over the past few years include SGH, SGMS, business planning, going to TRICARE, and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Air Force staff

indicated that business planning has gotten good reviews from the participants.

Furthermore, as shown in table 2, IES also provides corps-specific breakouts each day so that each corps can train its leaders on issues that are specific to that corps' field.

Table 2. Air Force Intermediate Executive Skills course curriculum 2006

Monday	Registration
	Opening Remarks
	AFMS Vision
	Core Competencies/JMESI
	AFMS Flight Plan and Force Development
	Military to Civilian Hiring Initiatives
	Corps-Specific Breakouts
Tuesday	GPM&HCI&PCO
	Path from Military to Civilian Billets
	AFMS Expeditionary Operations
	Corps-Specific Breakouts
Wednesday	Health Plan Management and Benefits
	Financial Management
	Programming
	Operations Medicine
	Corps-Specific Breakouts
Thursday	Clinical Quality/Patient Safety
	Medical Logistics/Facilities
	Medical Oversight
	Corps-Specific Breakouts
Friday	Education and Training
	VA/DOD/TRICARE
	Progressive Discipline
	Leadership Issues
	Corps-Specific Breakouts

Marketing

The IES course is specified as the course for squadron commander candidates and those who are on the track to becoming MTF commanders within the Air Force. Each corps operates its own selection and marketing strategy for its future leaders.

Nomination/selection process

All attendees are selected through their individual corps and specifically through their Corps Development teams. These teams guide officers on their career paths. They look at every officer and their trigger points (i.e., current position, future positions, and goals) and tell them what they should be doing to attain their goals. Air Force staff stated that within the Air Force, Corps Development is not a self-nominating process; the best officers are put forward and rise to the top.

Each corps has its own selection board of senior leaders, consisting of colonels and higher, squadron commanders, and chief nurses. For a person to be put before the board, he/she must have the endorsement of his/her senior leaders. However, Air Force staff did indicate that any lieutenant colonel select can apply or be nominated with his/her commander's endorsement.

The board looks at the applicant's experience in the Air Force and at the whole person when making the decision to send an applicant to the IES course. Once individuals are identified as squadron commander/chief nurse candidates, they are chosen to go to the IES course. Civil service employees can also attend IES now.

The Air Force staff indicated that those selected to attend have been identified as Servicemembers who will remain in the Air Force for an extended period of time, and this is why there is no leadership training of this kind before this point in their careers. The Air Force wants to know that the people in the course are going to use their new skills in the Air Force, and not leave shortly after they've gone through training.

Student load/demographics

Typically, two courses are held per year with 130 attendees per course. To be eligible for course attendance, Servicemembers must be or have been newly selected to be an SGA, SGB, SGD, SGH, SGN, SGP, or Group Superintendent. Also, new squadron commanders may be selected to attend the course. Tables 3 and 4 provide some breakouts of the fall 2006 student roster for the IES course. Table 3 shows the distribution of attendees by corps, and table 4 provides a breakdown by rank.

Table 3. IES attendees by corps – fall 2006

Corps	Number of attendees
Medical Service Corps	20
Medical Corps	16
Nurse Corps	20
Dental Corps	25
Group Superintendents	20
Biomedical Sciences Corps	19
Total	120

Table 4. IES attendees by rank – fall 2006

Rank	Number of attendees
Colonel	4
Lieutenant Colonel	60
Senior Master Sergeant	12
Chief Master Sergeant	9
Master Sergeant	12
Major	23
Total	120

The number of people selected depends on the force requirements. They look at positions open and select enrollees to fill those slots, including any unexpected openings. The current term for squadron commanders is 2 years per position, so there is no change in throughput of courses. However, should term length change, the throughput would increase or decrease depending on the situation.

Prerequisites

Prerequisites for IES consist of distance learning requirements; however, there are variations on what courses are required depending on which corps the attendee is from.

Distance learning

All attendees are required to take 5 to 10 distance learning modules on topics they need to know. Depending on their specialty, attendees will be required to take different modules.

All attendees are provided with a mandatory list as well as a list of modules that are "value added." These lists are selected by the corps, with the exception of such courses as patient safety, which is a module required for everyone attending IES. Beginning a month before the course, the Joint Medical Executive Skills Institute (JMESI) provides the Air Force management staff with a list of the distance learning courses their attendees have taken. These weekly reports are continued until 2 weeks after the course is held, and they serve as a mechanism by which the Air Force can assess attendees' preparedness for the course. All of the distance learning modules required for IES are run by JMESI.

With regard to development of distance learning modules, the Air Force relies on JMESI's program and does not provide input. During the course review, however, they may make suggestions.

Pretest/posttest

There is no pretest or after-course test for the Air Force IES course.

Program management staff

The Air Force IES program management staff consists of the program manager, assistant manager, program coordinator, and their support staff.

The program manager deals with the planning, preparation, and execution of the course each year as well as coordinating the selection of faculty and attendees.

The assistant manager handles the logistics of the course, including transportation and registration.

The program coordinator is involved in both the course development and curriculum content review, as well as dealing with the speakers participating in the course each year.

The program management staff also relies on various volunteers and other support staff at Sheppard AFB during the execution of the course.

Faculty

The IES faculty includes subject matter experts pulled from each Air Staff function to present during the course. The speakers are career staff selected by their Air Staff function to go to this course. They give the "how to" and day-to-day operations aspect. The program administrator serves as the conduit to SME presenters. She changes/revises the list in conjunction with Major Daugherty. They expect their presenters to come with a certain level and skill. Students provide critiques of each speaker, and a copies of their reviews are sent on to the faculty and their Air Staff Function. There are usually 60 to 70 speakers, and they all stay on base.

Credit-hours

Physicians and dentists receive 62.26 Category I credits, and Nurse Corps receives 61.8 credits. Medical Service Corps, Biomedical Sciences Corps, and Group Superintendents also receive 62.26 credit-hours per course.

Performance review

The IES management staff uses course critiques and after-course evaluations to monitor the success of the course. Changes are made to the curriculum depending on the comments made by prior attendees and based on the need to include sessions on any new programs within the Air Force.

Cost analysis

This section provides a cost synopsis of the Air Force Intermediate Executive Skills course, including the assumptions, methodology, and data sources used in the analysis. Our analysis captures the estimated *costs to DoD—both direct and indirect—*for sponsoring the program.

Funding stream

Each year the Office of the Secretary of Defense (OSD) forwards a budget request to Congress for the Defense Health Program (DHP) that supports worldwide medical and dental services to the active forces and other eligible beneficiaries. The DHP was created on 14 December 1991 to centralize funding and management of military healthcare (previously carried out independently by the separate Services). The goal was to trim duplication and foster more inter-Service cooperation. A 9 July 2001 memo from the Under Secretary of Defense for Personnel Readiness requires TRICARE Management Activity (TMA) to manage all financial matters of DoD's medical and dental programs.[2]

After Congress required DoD to establish a comprehensive program to prepare medical department officers to command MTFs and serve as lead agents, DoD established the Joint Medical Executive Skills Program/Institute (JMESP/I) as special staff to the Commanding General, Army Medical Department Center and School (AMEDDC&S), Fort Sam Houston, Texas.[3]

TMA provides annual funding to the AMEDDC&S Comptroller to support the executive skills initiatives being conducted by JMESI,

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[2] The DHP Operations and Maintenance (O&M) funding is divided into seven major areas: In-House Care, Private-Sector Care, Information Management, Education and Training, Management Activities, Consolidated Health Support, and Base Operations.

[3] In other words, the Secretary of the Army (AMEDDC&S) is DoD's executive agent for the joint medical executive skills development program mandated by Congress.

USU, and the Army and Air Force.[4] The AMEDDC&S Comptroller provides instructions to the Army Headquarters in Washington, DC, to execute an annual transfer of funds to the Uniformed Services University of the Health Sciences (USU) and the Air Force for their respective medical executive skills courses.[5]

Concept and measurement of cost

Cost-effective analysis refers to the evaluation of alternatives based on both their costs and their effects with regard to producing some desired outcome. When costs are combined with measures of effectiveness, we are able to evaluate programs to determine their relative effectiveness in maximizing outcomes (effectiveness) per level of cost, or minimizing the costs per level of effectiveness. It is assumed that only programs with similar or identical goals can be compared and that a common measure of effectiveness can be used (across programs) to assess them.

Measures of cost-effectiveness

JMESI, USU, and Service program managers don't currently use a common measure of effectiveness for course or student outcomes. Ideally, we'd like to have a single measure of competency attainment—attainment of the competencies at the "knowledge" or application level. This type of measure would account for the competency level attained, as well as student throughput, and credit-hours awarded in relationship to the medical executive skill competencies offered by the course.

Because the medical executive skills courses offered by JMESI, USU, and the Services focus on a different, but not mutually exclusive, subset of the 40 competencies, it would be seemingly difficult to

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[4]   The Navy medical executive skills program is not funded through JMESP. TMA provides funds to the Navy Bureau of Medicine and Surgery, which, in turn, funds the NAVMED Manpower, Personnel, Training and Education Command in Bethesda. Neither the AMEDDC&S Comptroller nor the JMESI Manager is aware of how much the Navy receives for medical executive skills courses.

[5]   The Army's Medical Department Executive Skills Course is funded locally through the AMEDDC&S Comptroller.

develop a quantitative measure of student outcome that can serve as a basis for universal comparison. Each course has developed a framework for evaluating student outcomes related to competency attainment that is unique to the structure and delivery of the course content (pretest/posttest, case study, scenario tool, etc.). To allow for analytical tractability and to facilitate the comparison of costs across programs, we have chosen to model two "intermediate" outcome variables for the medical executive courses reviewed in this study:

- Throughput of students per course

- Total number of credit-hours offered (total cost per student credit-hour offered) per course.

Concept of costs

Our analysis uses the economic definition of costs to include the direct costs and opportunity costs (indirect costs) of using existing resources for course administration, management, and delivery. This analysis includes activities involved in the development of course materials, the updating and reviewing course content, course delivery, and the provision of after-course evaluation and feedback. These activities can be grouped into two broad categories:

- Administrative and overhead costs

- Course delivery costs.

The direct and indirect resource costs under each of these categories are divided into personnel and nonpersonnel costs.

Administrative and overhead

Personnel costs in the administrative and overhead category include the resource costs of people involved in administration, management, support services, and after-course activities. Nonpersonnel resources in this category include supplies, equipment, materials, and facilities used and expensed in support of the course. The opportunity cost of facilities and infrastructure is included in this category. The infrastructure used to support the program is valued at the cost per square foot, with the total cost proportioned according

to the share of the facilities devoted to supporting the course (i.e., classrooms, offices, breakout rooms).

Course delivery

Personnel costs in the course delivery category include those involved in teaching the course and the students who are enrolled in the course. Nonpersonnel costs include the resources used to support faculty and students for travel, per diem, and lodging expenses. The AF IES course pays for travel, lodging, and per diem for all the faculty and student attendees.

Personnel costs in both categories are allocated based on the person's total full-time-equivalent (FTE) hours devoted to the course per year and his or her adjusted annual salary and benefits. One FTE is considered to be equivalent to 230 days per year, or 1,840 hours per year.[6] The resource cost model also accounts for the "opportunity costs" for military/DoD faculty and student attendees. This is computed by determining their time away from primary duties in support of the course as a faculty member (3 days per course) or as an attendee (9.5 days per course for MC and DC; 7.5 days per course for MSC, NC, BSC, and Group Support). These are the indirect costs to DOD—valued in 2007 dollars at the salary and benefits of students and military faculty for their time devoted to the course.

Determination of salary and benefits

The 2007 Composite Rates for each Service are used to determine both the direct and indirect, or opportunity, costs for management and administrative personnel, including student and faculty time away from primary duties.[7] The Composite Rates are the sum of Basic Pay, Basic Allowance for Housing (BAH), Basic Allowance for Subsistence (BAS), incentives and special pays, Permanent-Change-of-Station costs, pension and healthcare retirement benefits, plus

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[6] Source: CNA Study on Non-Availability Factors for Active Duty Navy Physicians – Rattelman & Brannman (1999).

[7] The 2005 Composite Rates by Service are adjusted to 2007 values using an adjustment factor of 3.1%.

benefits other than retirement. A summary of the salary and benefit calculations follows:

- The sum of Basic Pay, BAH, BAS, and incentives and special pays are computed and summed by Service and paygrade.[8]

- The accrual of pension and healthcare retirement benefits are computed as follows by Service and paygrade: pension (27.4 percent of Basic Pay), healthcare Medicare eligible (16.7 percent of Basic Pay), and pre-Medicare (12.9 percent of Basic Pay).[9]

- Benefits other than retirement include life insurance, disability income, healthcare, statutory benefits (Social Security, Workers' Compensation, and Unemployment), education benefits, personal legal services, Family Support Centers, and Morale, Welfare, and Recreation facilities.[10] These benefits are equivalent across the Services. PCS costs are also included in the calculations.

Other factors needed to apportion the annual salary and benefits for different personnel are their time away from primary duties (3 days for faculty; 7.5 to 9.5 days for students), their paygrade and rank by Service, and their number of total active duty days per year (1 FTE). The number of FTE days per year is determined to be 252 days per year based on a previous CNA study. We subtract 22 days of nonavailability time (allowance for performing readiness and military-specific activities) to determine that 1 FTE annually is equivalent to 230 days per year. We use this figure to apportion the share of a person's time that is devoted to the course on an annual basis. We multiply that share by the annual salary and benefit figures to determine the value of personnel resources associated with the course.

To determine the opportunity costs of DoD personnel, we use the median "salary-step" by GS level from the 2007 General Schedule

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[8] The Air Force does not include BAS. The averages for Navy and Army are used as proxies for Air Force BAS costs.

[9] These rates are based on DoD Office of the Actuary.

[10] Based on Levy et al., 2000 (2005 dollars).

Salary Table. If a person is qualified as a GS-11, for example, we use the median value for GS-11, which is the average of salary-step 5,and salary-step 6 (there are 10 salary-steps for each GS level). We assume that for both military and DoD personnel, 1 FTE is equivalent to 230 days per year.

Data collection

Information on the foregoing cost categories was gathered through completion of a preliminary questionnaire and follow-up interviews with the project manager and other program staff. These are described in more detail in the next section.

Definition of cost categories and data sources

A. Direct costs

Nonpersonnel (administrative and overhead)

Administrative and overhead includes any nonpersonnel costs that are required to administer and manage the course on an annual basis. For AF IES, the program manager contracts for audiovisual equipment and prepares informational CDs, handouts, and certificates for student attendees. The total annual cost for the materials and equipment is $8,000.

Personnel (administrative and overhead)

The program manager, assistant manager, program coordinator, and their support staff devote their time and effort to preparing and managing the course. This core staff is engaged in direct management and administration of the course, and their contribution is valued on an annual basis.

The program manager is involved in planning, preparing, and executing the course on an annual basis. She also coordinates the selection and processing of faculty with the Air Staff functional managers. She spends approximately 6 months of the year performing these functions. We obtained FY07 salary and benefit

information for the program manager (O-4) and apportioned that value for her time spent serving in the above capacity (0.5 FTE).

The assistant manager works the logistics of transportation and registration during the course, assisting the program manager in her functions. Her time spent in these activities is approximately 6 weeks per year (0.13 FTE). Her duties also include the coordination of volunteer personnel to assist with course preparation and support activities, such as catering.

There are 12 volunteers (E-6 level) who assist with registration, each working 4-hour shifts per course, for a total of 72 hours per year (0.039 FTE). Ten detail Airmen (E-1 level) provide food and catering services, each working approximately 100 hours per course, for a total of 2,000 hours per year (1.087 FTE for the total). These Airmen are supervised by 10 volunteers (E-6 level), each working 5-hour shifts per course, for a total of 100 hours per year. In addition, 1 volunteer assists with food service (E-6), averaging about 20 hours per course, for a total of 40 hours per year (0.02 FTE). Four volunteers (E-7, E-6, two O-5s) also serve on kitchen duty for approximately 8 hours each during the course.

The program manager and assistant manager are assisted by a group of support staff. The systems support personnel devote 48 to 55 hours per course (0.03 FTE), providing each attendee and speaker computer access on site. The facilities support staff devotes about 10 hours per course, for a total of 20 hours per year, and is responsible for resourcing the infrastructure to be used during the course. An audio technician is made available for 160 hours per year (0.087 FTE) to provide technical support. The lodging support staff consists of two people (E-5) who devote a total of 600 hours per year (0.326 FTE) to budget preparation and assisting the program manager with logistics and administration.

The program coordinator, who is located at Bolling AFB in Washington, DC, expends a total of 4 hours per year (0.002 FTE) supporting the course with curriculum, content review, and the speakers for the course. The Air Staff functional managers consist of 6 people who assist in the selection of faculty and the review of student critiques. They also evaluate the distance learning modules offered by JMESI to assess their relevance for the AF IES course, and

they make suggestions as needed. There are five functional managers at the O-6 level, and one at the E-9 level, who each devote 8 hours per year to these activities. Their total time is equivalent to 0.026 FTE hours per year.

The total cost for administrative and overhead personnel is estimated to be $187,582 per year. This includes the program manager, assistant manager, the functional managers and facilitator, and the support personnel mentioned earlier.

Nonpersonnel (course delivery)

Nonpersonnel costs associated with course delivery are the faculty and student travel and per diem costs. The Air Force attempts to maintain efficiencies in travel costs (e.g., rental car pooling for attendees), and actual expenses in this category are consistently lower than their estimated budget. The actual travel and per diem expenses for 2006 are reported in the preliminary analysis (table 5), as opposed to budgetary figures, to better reflect the true costs associated with travel and per diem coverage for the IES course. The total actual annual travel and per diem costs for two courses in 2006 is estimated to be $435,600.

The program pays for travel costs through the use of a voucher system. Attendees submit travel vouchers to be reimbursed for the actual costs of travel, which may deviate from the estimated budget. In 2006, the actual travel costs for student attendees were $337,255, compared with the budgeted amount for expected travel costs of $431,425. In the same year, the budgeted travel costs for faculty were $154,245, compared with the actual amount for expected faculty travel costs of $98,345. The program appears to overestimate their travel costs on an annual basis.

In the excursion following the preliminary analysis, the budgeted figures are used to compare the difference in estimated travel costs of locating the course at Sheppard AFB or Wright Patterson AFB. This scenario assumes that the course is relocated to Wright Patterson AFB in Ohio. The travel costs will vary by location due to differences in per diem rates, car rental rates, fees, and so on. Costs will also vary depending on where the attendees are coming from.

We compare the costs of relocating to Wright Patterson AFB to conduct the AF IES course going forward.

Personnel (course delivery)

The personnel costs in this category are those associated with contracting for non-military speakers. The program hires three civilian contract speakers per course. The total amount paid annually to the contract speakers is approximately $68,000.

Direct costs for the IES course include the salaries and benefits of management and administrative personnel associated with the course, the costs of materials and equipment, travel and per diem for attendees, and the costs of contracting for civilian speakers. The total direct costs for the Air Force Intermediate Executive Skills course in 2006 were $699,181.

B. Indirect costs

Nonpersonnel (administrative and overhead)

The indirect costs included in administrative and overhead category are for use of the facility. The course is held on Sheppard AFB and uses the classroom space for corps-specific breakout sessions in the second week of the course. The classroom space is shared with other courses on the base. The facilities used are one large auditorium, one small auditorium, and six breakout rooms. The costs per square foot and square footage of the facilities were provided by the program manager. The total costs for using the space during the 4 weeks devoted to the course annually are $1,046. This also includes the costs for office space for the program manager for 6 months during the year. The costs per square foot for all facilities are estimated at $0.92.

Personnel (administrative and overhead)

There are no indirect personnel costs allocated to the administrative and overhead category.

Nonpersonnel (course delivery)

There are no indirect nonpersonnel costs allocated to the course delivery category.

Personnel (course delivery)

The indirect personnel costs in this category include the value of faculty and student time away from their primary duties—the opportunity cost of DoD resources associated with the course.[11] There were 59 faculty involved in the summer course and 78 faculty involved with the fall course. On average, 65 to 70 faculty are present at the course and spend about 3 to 5 duty days away from their normal job duties, including both their travel time and presentation time. The total annual opportunity costs of faculty , valued at their 2007 salary and benefits, is estimated to be $330,170 ($145,530 for the summer course and $184,640 for the fall course).

Of the 248 students who enrolled for the course in 2006, 128 completed the summer course and 120 completed the fall course. The DC and MC students stay for an estimated 9.5 days—2 days longer than the other corps students. The summer course student population included both officers and enlisted personnel in Medical Corps (25), Dental Corps (24), Medical Specialty Corps (22), Biomedical Science Corps (17), Nurse Corps (27), and Group Superintendents (20). The distribution for the fall course was 16, 25, 20, 19, 20, and 20 students, respectively, in the different corps groups. The total opportunity costs for all students for the summer course is estimated to be $785,433, and $718,332 for the fall course. The next section provides a summary of the cost estimates per student per course, and per student credit-hour per course, as well as on an annual basis. It also provides a brief look into some of the cost differences associated with relocating the course to Wright Patterson AFB—primarily differences in travel costs.

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[11] We understand that the *implied opportunity* costs may overstate the *actual opportunity* costs because some faculty members continue to perform some of their primary duties while in transit to and from the medical executive skills course. However, some seepage from the primary duty productivity does occur.

Budget summary

Baseline estimates

We made estimates in 2007 dollars for each course location based on the data, assumptions, and calculations explained in the previous sections. Table 5 provides the preliminary estimates and the assumptions for each site based on one course per year at Sheppard AFB, annual throughput of 248 students, 61.8 credit-hours per student for Nurse Corps attendees, 62.26 credit-hours per student for all other attendees, total number of credit-hours offered of 7,960 for the summer course and 7,462 for the fall course.

Table 5.   Preliminary cost analysis

Cost summary	Total	Summer	Fall
# of students	248	128	120
Total student credit-hours	15,422	7,960	7,462
# of courses per year	2	1	1
Total cost	$2,534,162	$1,299,771	$1,232,391
Direct costs	$699,181	$368,285	$328,896
Indirect costs	$1,834,980	$931,486	$903,494
Total cost per student	$10,218	$10,154	$10,270
Direct costs	$2,819	$2,877	$2,741
Indirect costs	$7,399	$7,277	$7,529
Total cost per student credit-hour	$164	$163	$165
Direct costs	$45	$46	$44
Indirect costs	$119	$117	$121

The total cost for two courses per year comes to $2,534,162, with direct costs ($699,181) accounting for roughly 27 percent of the total. Direct costs are further broken down into administrative and overhead costs ($187,582 for personnel; $8,000 for nonpersonnel costs, which includes materials and supplies) and course delivery costs ($68,000 for contract faculty costs; $435,600 in nonpersonnel costs for travel and per diem expenses). Our preferred measure of

throughput is total student credit-hours offered (15,422) per year. Using the ratio of total costs per student credit-hour, the average for the summer and fall course combined is $164 per student credit-hour:

- Direct costs, $45
- Indirect costs, $119.

The direct costs for both student and faculty travel and per diem were $236,494 for the summer course and $199,106 for the fall course.

Excursion (move AF IES course to alternate location)

We wanted to see the impact on costs of relocating the AF IES course to Wright Patterson AFB in Ohio or Maxwell AFB in Alabama. Only Wright Patterson AFB has the necessary facilities and space to accommodate the course at its current size. For this reason, we provide an estimate of the costs associated with administration and delivery of the course at Wright Patterson AFB. The program manager and staff are looking to find locations with synergies that can accommodate the size of the course, provide the catering and supplemental needs of attendees, facilitate transportation logistics, and minimize travel expenses for students and faculty. We model only the impact on direct costs associated with differences in travel and per diem expenses for faculty and student attendees at the alternate location.

To simplify the analysis, we assume that the personnel resources required to relocate to administer and host the course at the new location are equivalent to the current resource costs of the program manager, assistant manager, and the support staff (logistics, systems, facilities, IT). Some of those personnel may not be able to relocate and would have to be sourced on site; at present, however, we do not have estimates of those costs at alternate locations. Accordingly, the direct cost for materials/supplies and the opportunity cost of the facility use are equivalent to their current costs at Sheppard AFB. The total estimated value for these resources, assumed to be constant, is $190,700. We also maintain that the opportunity costs for faculty and student attendees remain constant at $1,901,935 per

year (i.e. the number and composition of student and faculty attendees is unchanged).

As explained earlier, the actual travel costs differ from the budget estimates by $150,000: $585,670 for the 2006 travel estimates and $435,600 for the 2006 actual travel costs. For this excursion, we use the budget estimates in the analysis. We obtain budget estimates of travel and per diem costs for holding the course at Wright Patterson AFB and compare them with the budgeted costs for holding the course at Sheppard AFB. The notable difference is that the per diem costs and fees are higher at Wright-Patterson than at Sheppard. Table 6 compares the total costs for hosting the course at the different locations. The estimated travel costs at Wright-Patterson AFB are $623,508, compared with travel costs for Sheppard AFB, from budget estimates, at $585,670. This represents a 6-percent increase in direct costs associated with the relocation.

Table 6.   Cost comparison at alternate location

Cost summary	Sheppard AFB	Wright Patterson AFB
Total cost	$2,684,231	$2,722,069
Direct costs	$849,251	$887,089
Indirect costs	$1,834,980	$1,834,980
Total cost per student	$10,824	$10,976
Direct costs	$3,424	$3,577
Indirect costs	$7,399	$7,399
Total cost per student credit-hour	$174	$177
Direct costs	$55	$58
Indirect costs	$119	$119
Comparison of travel & per diem costs		
Nonpersonnel costs (budget)	$585,670	$623,508
Faculty travel	$111,385	$96,982
Student travel	$263,541	$229,375
Faculty per diem	$42,860	$57,052
Student per diem	$167,884	$240,099

The travel costs alone are greater at Sheppard AFB ($374,929) than at Wright Patterson AFB ($326,357). However, the per diem costs (includes per diem and rental costs for faculty and per diem, fees, and incidental costs for student attendees) are much higher at Wright Patterson AFB ($297,151) than at Sheppard AFB ($210,743). The net change in cost is $37,838, a positive net cost in relocating the course to Wright Patterson AFB, assuming all other costs remain constant. The catering and support costs are most likely to change depending on the arrangements at Wright Patterson. The program manager mentioned that the volunteer Airmen and support staff currently employed at Sheppard AFB are not available at Wright Patterson AFB; these functions would have to be outsourced. The travel costs alone are much cheaper with the relocation; however, those savings are more than offset by the higher per diem costs at Wright Patterson AFB. The result of relocating to Wright Patterson AFB, based on total costs per student credit-hour, is an increase in direct costs of $3 per student credit-hour

E-22

Appendix F: Joint Medical Executive Skills Institute (JMESI) and the JMESI Capstone symposium

This appendix provides a course and cost summary for the Joint Medical Executive Skills Institute (JMESI) Capstone course, or symposium, and the JMESI distance learning modules. The first section provides an overview of the program's origin, objectives, and student mix as described by the JMESI program management staff through completed questionnaires and site visit interviews. The second section outlines the approximate costs to the Department of Defense (DoD) to administer the current program, including the assumptions, methodology, and data sources used in the analysis.

Course summary

Origin and location[1]

JMESI developed the Capstone course to comply with the DoD Appropriations Act of 1992 and the 1996 National Defense Authorization Act (NDAA). Section 8096 of the first act states:

> None of the funds appropriated by this Act may be used to fill the commander's position at any military treatment facility with a health care professional unless the prospective candidate can demonstrate professional administrative skills.

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[1] Taken from the JMESI website: http://jmesi.army.mil/capstoneobj.asp.

Section 715 of the 1996 NDAA states:

> Not later than six months after the date of enactment of this Act, the Secretary of Defense shall implement a professional educational program to provide appropriate training in health care management and administration to each commander of a military medical treatment facility of the Department of Defense who is selected to serve as a lead agent....

The Capstone course is designed to be a pinnacle event for recently assigned senior military treatment facility (MTF) commanders, lead agents, and senior medical officers in key staff positions who will benefit from exposure to and familiarity with entities that shape the Military Health System (MHS). It provides participants exposure to the operations of the various organizations within DoD, pertinent congressional staffs, and the offices of the three Surgeons General. Attendance at the Capstone course will enhance the understanding of how national healthcare policies are formed—and by whom—and how they are implemented and put into operation. The Capstone course assumes that the participants have the 40 executive skill competencies adopted by DoD.

The Capstone symposium is hosted by JMESI and is held in the Washington, DC, area three times a year at the Doubletree Hotel in Arlington, VA. The hotel is within walking distance of the Pentagon. The course is 5 days long, including a leadership day trip to Antietam, MD.

Course objective

The goal of the Capstone symposium is to provide current commanders and senior Medical Department leaders with the real-world knowledge and information that will aid them in their day-to-day command duties at their own MTFs or key staff positions. The objectives of the course include giving attendees an enhanced understanding of MHS policy-making and of TRICARE Management Activity (TMA) issues and policies; providing tools for evaluating quality assurance, customer satisfaction, and metrics; and offering the opportunity to discuss issues of retention and recruitment from the military and national perspectives.

The Capstone symposium is not a competency attainment course. Attendees should have already achieved the 40 competencies before being selected for command. Competency "lessons learned" are exchanged as strategic communication among attendees and between speakers and attendees. The role of JMESI is to focus on "just in time" training.

During the course, students are introduced to senior policy-makers at the MHS level, including Deputy Directors at TMA, DoD's Assistant Secretary of Defense for Health Affairs (ASD/HA), Service Surgeons General, the U.S. Surgeon General, and other senior policy-makers. The focus of discussions is at the policy level. Students are able to ask the policy-makers who created a policy, how it was developed, and its intended goal. Furthermore, the policy-makers can provide the background on the policy so that students may return to a leadership position and be prepared to present the policy and/or program to their own staffs when asked.

Course description/curriculum

The Capstone symposium is the pinnacle training event for newly selected senior military healthcare commanders, lead agents, and senior medical officers in key staff positions. It provides attendees exposure to nationwide healthcare industry trends and invites key federal policy-makers to discuss current issues in the strategic formulation of healthcare policies. The course also attempts to bridge the information gap between senior line commanders and supporting medical corps who perform distinct, yet integrated, functions during deployments. One day of the course involves a staff/student ride to Antietam, where students get a tour of the battlefield and a historical lesson on the dynamic relationship between military line commanders and military medicine.

Table 1 shows the agenda for the November 2006 course and lists the speakers and/or presentation titles given on each day of the course. The ride to Antietam is a full-day trip.

Table 1.   Capstone symposium curriculum class #24, November 2006

Monday	Welcome, Introductions, and Administrative Announcements
	HA/TMA Organization and Mission
	Deputy Director, Deployment Health Support, TMA
	PEO, MHS - IM/IT
	OASD (HA) - Strategic Planning and Business Development
	Senior Advisor for Health and Medical Civil Support, OASD (HA)
	Professional Staff, House Armed Services Committee
	Operation Hope
Tuesday	TRICARE Benefit Development Deputy Chief Medical Officer, TMA
	Legislative Policy-Making and the Federal Executive
	Joint Staff Surgeon
	DASD, Clinical and Program Policy, OASD (HA)
	Civilian CEO Perspective
	Director for Program and Budget Oversight (HB&FP), OASD (HA)
	The Line Commander's Perspective
Wednesday	Leadership Ride - Antietam
Thursday	Army Surgeon General
	Acting U.S. Surgeon General
	Air Force Surgeon General
	Director, Medical Resources, Plans and Policy Division, Chief of Naval Operations
	Acting Under Secretary for Health, Veterans Health Administration
	Force Surgeon, USCG
Friday	Principal Deputy, OASD (HA)
	Principal Director for Manpower and Personnel, Assistant Secretary of Defense for Reserve Affairs
	Deputy Director, TRICARE Management Activity

Marketing

Selection for the course is done through selection boards under each Service's Surgeon General, so any marketing conducted would be through the selection process and through the JMESI Capstone website, which provides an introduction to the course, its objectives, and the future course dates.

Nomination/selection process

Each Surgeon General nominates six senior grade officers, primarily in the grades of senior 06 and 07, to attend this course. Priority is given to new lead agents, commanders of larger facilities, com-

mand surgeons, and other key staff. Participation is limited to those invitees only. JMESI centrally funds the attendance of nominees. While students may or may not be currently selected to command, they are typically on a long-term track to a command position. JMESI is not involved in the selection process for the course.

Student load/demographics

Approximately 24 to 26 senior leaders make up the list of attendees from each of the Services, as well as students from the U.S. Department of Veterans Affairs (VA), U.S. Coast Guard (USCG), TMA, U.S. Public Health Service (USPHS), and Health Affairs (HA).

Table 2 provides a breakdown of the Capstone course attendees by Service from 2004 through 2006.

Table 2.   JMESI Capstone attendees by Service, 2004 through 2006

Service	Number of attendees
Air Force	54
Navy	54
Army	54
OSD	25
Coast Guard	9
Public Health	9
Total	205

Distance learning and JMESI

JMESI also maintains a virtual campus to fill gaps in student education and attainment of competencies, and to serve as a refresher education training tool. Currently, there are 56 online modules covering 35 out of the 40 competencies. JMESI plans to have a total of 64 modules in place by the end of FY 2007 covering all competencies. The distance learning tool provides a means to address the challenges of achieving and maintaining competency by MHS leaders. Most modules are 1 hour in length, each covering only a limited set (1 to 3 competencies per course) of the executive skill

competencies. Students completing the modules receive either certificates of completion or credits, depending on the module/version taken. From 2005 to 2007, total enrollment in the distance learning program has increased from 775 to 3,033 students, indicating greater use of distance learning to fill education gaps and provide just-in-time training for the Servicemembers.

Attachment 1 lists the current distance learning modules offered by JMESI.

Over 80 percent of student applicants complete the distance-learning modules each year (e.g., January 2006 completion rate was 82 percent). The student enrollees include personnel from the Navy, Army, Air Force, Coast Guard, VA, USPHS, and some international students. Summary statistics for distance learning activity were provided by JMESI for January 2006 to January 2007. Over the year, there was a net increase of 3,698 students completing (enrolled students may complete more than one course) the accredited version distance learning modules, representing a 174-percent increase relative to the beginning of the year. Over the same period, the number of applications increased by 95 percent—from 6,207 applicants in January 2006 to 12,143 in January 2007.

Figure 1 shows the total number of student completions of the accredited version distance learning modules offered by JMESI from 2006 and 2007. Since students may complete more than one accredited version of the modules, the total number of completions is greater than the total number of actual student enrollments. As evidenced from the data, the Air Force is the largest user community completing the JMESI distance learning modules.

Figure 2 provides data on total enrollment by Service type from January 2006 to January 2007. The Air Force and VA community have seen the largest increase in total enrollments during 2006, with the Air Force having the largest total number of students enrolled (938) compared with other Services, as of January 2007.

Students are given the opportunity to assess the quality of the distance learning modules by completing a short survey/questionnaire on completion of the module. Completing the questionnaire is a requirement for students to receive academic credit(s).

Figure 1.   Total student completion of accredited distance learning (DL) modules by type

Student Completion of Accredited Version DL Modules by Service
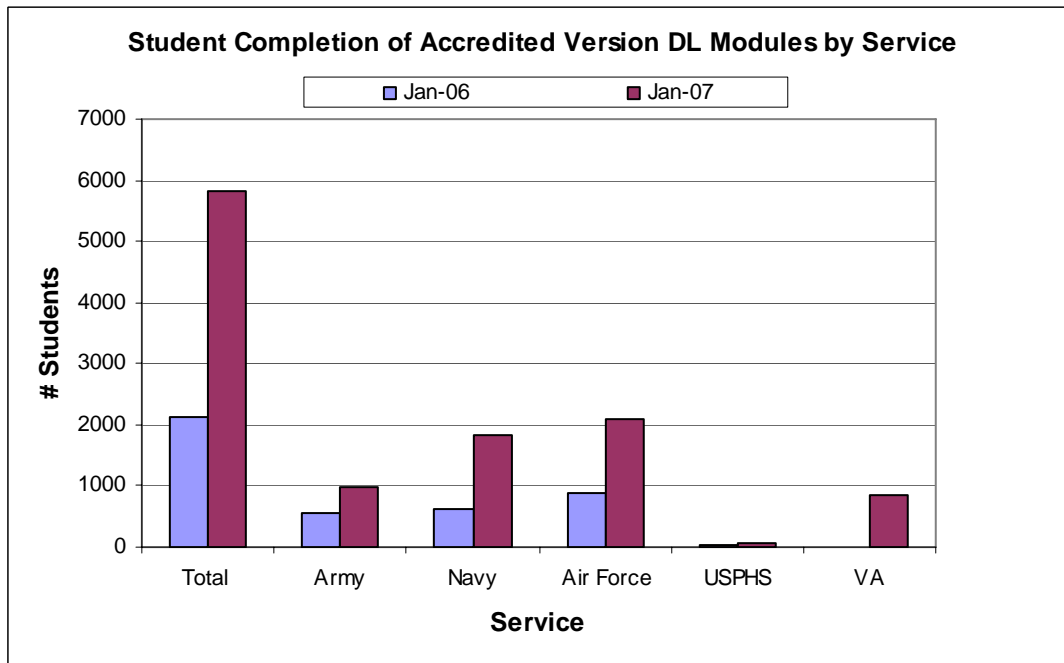
Figure 2.   Year-to-year enrollment statistics on JMESI distance learning module

2006 to 2007 Total Student Enrollment by Service
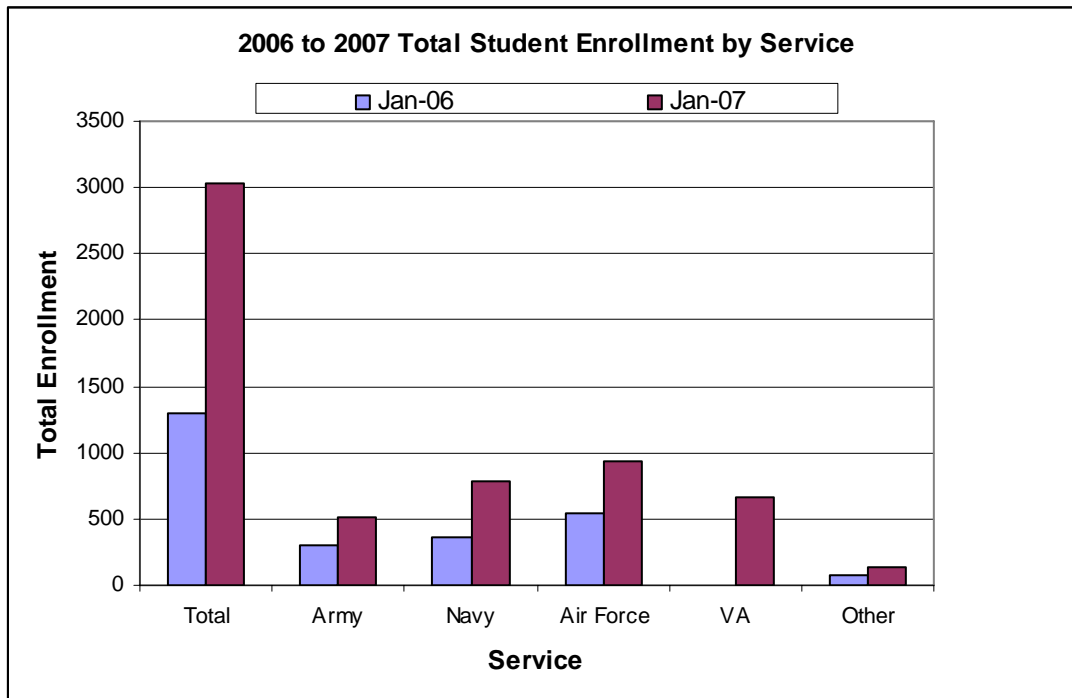
Prerequisites

The prerequisite for the Capstone symposium is that attendees must be selected through their Service's own selection board to attend. JMESI assumes that attendees have achieved all 40 competencies, so no distance learning or pretests/posttests are required.

Program management staff

The management and administration of JMESI operations (including distance learning modules) and the Capstone symposium are done by a core staff located in an office at Fort Sam Houston, in San Antonio, TX. The core staff personnel are the executive director, the registrar, two instructional systems specialists (research and quality assurance), one education technician, and a senior advisor. JMESI also employs contract services for IT support and the distance learning education developers (ADL – Advanced Distributed Learning) based out of Minnesota. Service liaison officers (Navy and Air Force) are also assigned to the JMESI staff.

JMESI maintains communities of practice for the Capstone symposium, the Oversight Committee (JMESOC), and the Working Group (JMESWG) through virtual meeting and discussion areas, library, precourse work, and contact information. The communities of practice, the Capstone symposium, and the distance learning modules are managed and facilitated by the core staff within the JMESI office at Fort Sam Houston. The senior advisor to the JMESI is also the program manager for the Capstone symposium.

Faculty

The Capstone symposium's speaker list includes such distinguished persons as the U.S. Surgeon General, the Surgeon General from each Service, the Assistant Secretary of Defense for Health Affairs, and members of the House/Senate Armed Services Committee. Presentations given in past Capstone courses covered such topics as the impact of change from Hurricane Katrina and the USNS *Mercy* mission to Indonesia.

The focus is team based with an emphasis on positive knowledge development. Each speaker is critiqued, and those critiques, as well

as the Capstone program manager's comments, are sent to the presenter. Course content may change based on critiques and feedback.

Credit-hours

Students are eligible to receive the following types of continuing education credits when they complete the JMESI Capstone course:

- Continuing medical education (CME)

- Continuing education unit (CEU)

- American Academy of Medical Administrators (AAMA)

- American College of Healthcare Executives (ACHE).[2]

JMESI goes through the Air Force Surgeon General to certify its CME credits.

For the distance learning program, JMESI is authorized to award 1.0 hour of preapproved Category II (non-ACHE) continuing education credit for each accredited version module toward advancement or recertification in the ACHE. In addition, continuing nursing education credits are approved and accredited by the American Nurses Credentialing Center's Commission on Accreditation, which awards 1.3 contact hours per module.

Performance review

Each speaker receives the critiques from the students along with the program manager's remarks following the course. For student feedback, a large email is sent out right after the course. Also, a review is conducted 3 to 6 months later. This review is web based, and JMESI typically receives replies from one-third of the emails (i.e., 9

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[2]   CME and Nursing Contact hour (CEU) credits are accredited by the U.S. Air Force Surgeon General's Office, which is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide CME for physicians and takes responsibility for the content, quality, and scientific integrity of the program. Also, Category II hours for administrators are accredited by the ACHE.

emails from 25 sent in the last mailing). The feedback form itself is large because of the CME and CEU credit requirements.

Examples of how critiques have changed the course include the addition of a discussion of "How government works" and the relationship between the military and Congress. IM/IT presentations were also added as a result of critiques.

Cost analysis

This section provides a cost synopsis of the JMESI Capstone course, including the assumptions, methodology and data sources used in the analysis. Our analysis captures the estimated *costs to DoD—both direct and indirect*—for sponsoring the program. The cost summary provides two alternative estimates of the JMESI operating costs: one summary computes the costs using current resources, and the other computes the costs using estimates of anticipated resource use based on future personnel hiring decisions.

Funding stream

Each year, the Office of the Secretary of Defense (OSD) forwards a budget request to Congress for the Defense Health Program (DHP) that supports worldwide medical and dental services to the active forces and other eligible beneficiaries. The DHP was created on 14 December 1991 to centralize funding and management of military healthcare (previously carried out independently by the separate Services). The goal was to trim duplication and foster more inter-Service cooperation. A 9 July 2001 memo from the Under Secretary of Defense for Personnel Readiness requires TMA to manage all financial matters of DoD's medical and dental programs.[3]

After Congress required DoD to establish a comprehensive program to prepare Medical Department officers to command MTFs and serve as lead agents, DoD established the Joint Medical Executive Skills Program/Institute as special staff to the Commanding Gen-

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[3] The DHP Operations and Maintenance (O&M) funding is divided into seven major areas: In-House Care, Private-Sector Care, Information Management, Education and Training, Management Activities, Consolidated Health Support, and Base Operations.

eral, Army Medical Department Center and School (AMEDDC&S), Fort Sam Houston, TX.[4] TMA provides annual funding to the AMEDDC&S Comptroller to support the executive skills initiatives being conducted by JMESI, Uniformed Services University of the Health Sciences (USUHS), and the Army and Air Force.[5] The AMEDDC&S Comptroller provides instructions to the Army Head-quarters in Washington, DC, to execute an annual transfer of funds to USU and the Air Force for their respective medical executive skills courses.[6]

Concept and measurement of cost

Cost-effective analysis refers to the evaluation of alternatives based on both their costs and their effects with regard to producing some desired outcome. When costs are combined with measures of effec-tiveness, we are able to evaluate programs to determine their rela-tive effectiveness in maximizing outcomes (effectiveness) per level of cost, or minimizing the costs per level of effectiveness. It is as-sumed that only programs with similar or identical goals can be compared and that a common measure of effectiveness can be used (across programs) to assess them.

Measures of cost-effectiveness

JMESI, USU, and Service program managers don't currently use a common measure of effectiveness for course or student outcomes. Ideally, we'd like to have a single measure of competency attain-ment—that is, attainment of the competencies at the "knowledge,"

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[4] In other words, the Secretary of the Army (AMEDDC&S) is DoD's ex-ecutive agent for the joint medical executive skills development pro-gram mandated by Congress.

[5] The Navy medical executive skills program is not funded through JMESP. TMA provides funds to the Navy Bureau of Medicine and Sur-gery, which, in turn, funds the NAVMED Manpower, Personnel, Train-ing and Education Command in Bethesda, MD. Neither the AMEDDC&S Comptroller nor the JMESI Manager is aware of how much the Navy receives for medical executive skills courses.

[6] The Army's Medical Department Executive Skills Course is funded lo-cally through the AMEDDC&S Comptroller.

or application, level. This type of measure would account for the competency level attained, as well as student throughput, and for credit-hours awarded in relation to the medical executive skill competencies offered by the course.

Because the medical executive skills courses offered by JMESI, USU, and the Services focus on a different, but not mutually exclusive, subset of the 40 competencies, it would seem to be difficult to develop a quantitative measure of student outcomes that can serve as a basis for universal comparison. Each course has developed a framework for evaluating student outcomes related to competency attainment that is unique to the structure and delivery of the course content (pretest/posttest, case study, scenario tool, etc.). To allow for analytical tractability and to facilitate the comparison of costs across programs, we have chosen to model two "intermediate" outcome variables for the medical executive courses reviewed in this study:

- Throughput of students per course

- Total number of credit-hours offered (total cost per student credit-hour offered) per course.

Concept of costs

Our analysis uses the economic definition of costs to include the direct and indirect (opportunity) costs of using existing resources for course administration, management, and delivery. This analysis includes activities involved in the development of course materials, the updating and reviewing course content, course delivery, and the provision of postcourse evaluation and feedback. These activities can be grouped into two broad categories:

- Administrative and overhead costs

- Course delivery costs.

The direct and indirect resource costs under each of these categories are divided into personnel and nonpersonnel costs. Where appropriate, we value the personnel and associated resources in

2007 dollars. For other estimates, such as hotel/faculty contract costs, we assume the cost in 2007 to be equal to its 2006 value.

Administrative and overhead

Personnel costs in the administration and overhead category include the resource cost of people involved in administration, management, support services, and postcourse activities. Nonpersonnel resource costs in this category include supplies, equipment, materials, and facilities used in support of the course, including the opportunity cost (indirect costs) of facilities and infrastructure. The infrastructure used to support the program is valued at the cost per square foot, with the total cost proportioned according to the share of the facilities used in supporting the course (i.e., classrooms, offices, breakout rooms).

Course delivery

Personnel costs in the course delivery category include contract faculty cost, the opportunity cost of military/DoD faculty, and the opportunity cost of student attendees enrolled in the Capstone course. Nonpersonnel cost includes the resources used to support faculty and student attendees, such as travel and per diem expenses, contract costs for hotel accommodations, and transportation and logistics associated with course delivery.

The infrastructure to develop and deliver asynchronous distance learning education programs includes basic technology of servers, wiring, LAN, WAN connections (bandwidth), computers, and software; information technology personnel; and software licensing.[7] We attempt to capture some of these costs related to JMESI distance learning programs. Since the infrastructure is owned and managed by the Knowledge Management Division (KMD) at U.S. Army Medical Department Center and School (AMEDDC&S), we understand that JMESI does not pay directly for the services. However, their use of the infrastructure should be valued at a particular cost.

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[7] T. Wright and Linda Thompson. "Cost, Access, and Quality in Online Nursing and Allied Health Professions." *Journal of Asynchronous Learning Networks (JALN)*. Volume 6, Issue 2. August 2002.

At the minimum, we would like to estimate the share of infrastructure costs for the server space required to house the JMESI distance learning modules and the IT personnel costs associated with maintenance and upkeep. More detailed information on the actual infrastructure costs for running the distance learning modules at KMD needs to be obtained to provide a more accurate estimate of these costs. In terms of relative space, however, the KMD server which houses the JMESI distance learning modules is 185 gigabytes (GB). To put the relative cost in perspective, the JMESI distance learning modules take up only 245 megabytes (MB) of space (less than a tenth of 1 percent) on the KMD server.

Personnel costs in both categories are allocated based on the person's total full-time-equivalent (FTE) hours devoted to the course per year and his or her adjusted annual salary and benefits. One FTE is considered to be equivalent to 230 days per year, or 1,840 hours per year.[8] The resource cost model also accounts for the opportunity costs for military/DoD faculty and student attendees. Since most faculty members are based in the Washington, DC, area, it is reasonable to assume that they spend, on average, 1 full day with the course.[9] Both student and faculty opportunity costs are the indirect costs to DoD—valued in 2007 dollars at the salary and benefits of student, military, and nonmilitary/DoD faculty for their time devoted to the course.

Determination of salary and benefits

The 2007 Composite Rates for each Service are used to determine both the direct and indirect costs, or opportunity costs, for personnel—staff, faculty, and students—valued at their salary and benefits apportioned for their time away from primary duties.[10] The Composite Rates are the sum of Basic Pay, Basic Allowance for Housing

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[8] Source: Cory Rattelman and Shayne Brannman. *Non-availability Factors for Active Duty Navy Physicians,* April 1999 (CNA Memorandum 059947400/Final).

[9] For the Army AMEDD Executive Skills course, where the majority of faculty is located on the base, we use 1 day as an estimate of their TAD.

[10] The 2005 Composite Rates by Service are adjusted to 2007 values using an adjustment factor of 3.1 percent.

(BAH), Basic Allowance for Subsistence (BAS), incentives and special pays, Permanent-Change-of-Station (PCS) costs, pension and healthcare retirement benefits, plus benefits other than retirement. A summary of the salary and benefit calculations follows.

The sum of Basic Pay, BAH, BAS, and incentives and special pays is computed by Service and paygrade.

The accrual of pension and healthcare retirement benefits is computed as follows by Service and paygrade—pension (27.4 percent of Basic Pay); healthcare, Medicare eligible (16.7 percent of Basic Pay); and pre-Medicare (12.9 percent of Basic Pay).[11]

Benefits other than retirement include life insurance, disability income, healthcare, statutory benefits (Social Security, Worker's Compensation, and Unemployment), education benefits, personal legal services, Family Support Centers, and Morale, Welfare, and Recreation facilities.[12] These are equivalent across the Services. PCS costs are also included in the calculations.

The annual salary and benefits for different personnel are their time away from primary duties, their paygrade and rank by Service, and the number of total active duty days per year (1 FTE). The number of FTE days per year (annual) is determined to be 252 days based on a previous CNA study. We subtract 22 days of non-availability time (allowance for performing readiness and military-specific activities) to determine that 1 FTE annually is equivalent to 230 days per year. We use this figure to apportion the share of an individual Servicemember's time that is devoted to the course on an annual basis. We multiply that share by the annual salary and benefit figures to determine the value of personnel resources associated with the course.

To determine the opportunity costs of DoD personnel, we use the median "salary step" by GS-level from the 2007 General Schedule Salary Table as the default. If a person is qualified as a GS-11, for example, we use the median value for GS-11, which is the average of

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[11] These rates are based on DoD Office of the Actuary.

[12] Based on Levy et al., 2000 (2005 dollars).

salary-step 5 and salary-step 6 (there are 10 salary steps for each GS level). We assume that, for both military and DoD personnel, 1 FTE is equivalent to 230 days per year. For the Capstone symposium faculty, we assume that most are GS-15 and salary-step 2, supported by recommendations from JMESI staff. For the rest of the faculty, we apportion their salary and benefits based on their Service rank and paygrade.

Data collection

Information on the foregoing cost categories was gathered through completion of a preliminary questionnaire and followup interviews with the executive director of JMESI and other program staff. These are described in more detail in the next subsection.

Definition of cost categories and data sources

A. Direct costs

Nonpersonnel (administrative and overhead)

Administration and overhead includes any nonpersonnel costs (supplies, equipment, materials, handouts, etc.) that are required to administer and manage the course on an annual basis. For the Capstone course, the costs for materials and supplies run about $200 per year. For distance learning, the modules are housed on a computer server in the Knowledge Management Division. We do not attempt to estimate the share of infrastructure costs for JMESI distance learning due to lack of more accurate data. However, we have obtained personnel cost estimates for maintenance and up-keep of the distance learning modules.

Nonpersonnel costs also include the materials and supplies to support daily JMESI staff operations (related to both Capstone and distance learning modules). Figures provided by JMESI staff place the cost of office materials and supplies at $36,000 per year.

Personnel (administrative and overhead)

The core staff—executive director, senior advisor, registrar, education technician, and other support staff—devote their time and effort to JMESI operations and in support of the Capstone symposium. These core staff members are engaged in direct management and administration of the program and the course, with their contribution valued on an annual basis. Currently, the executive director, senior advisor, registrar, and education technician positions are the only active and filled positions.

The two instructional systems specialist positions—research and analysis, and quality assurance—have yet to be filled. These resource requirements are based on JMESI's assessment of an increase in taskings related to its role as the proponent for the MHS Executive Skills education and training. Other manpower resources listed on the temporary duty assignment (TDA) are an O-5 Navy officer and an O-4 Air Force officer. The Navy officer is on deployment in Iraq, and the Air Force position recently changed duty stations. There is no guarantee that these positions will be filled in the short term. There is also no deputy director position at JMESI. It is intended to be filled by one of the Service personnel, but has been vacant for over 2 years.[13] We have included the two instructional systems specialist positions and their associated salary and benefits as part of the personnel costs going forward in an assessment of "expected" JMESI costs (see table 3 on page 25).

The executive director for the JMESI serves two roles, as the executive director and chief learning officer, and works full-time for the program as a GS-14. Concurrently, she spends approximately 42 hours per year supporting the Capstone symposium in one or more of the following activities: reviewing the agenda, scheduling, updating speaker lists, conducting short briefings, and the like. She also

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[13] As noted by the AmerTech Report 2005, the core staff of JMESI has been in flux since its inception. According to the operational guidance, the director (O-5/6) and the deputy director (O-3/4) positions are supposed to rotate between the Navy and the Air Force; however, GS personnel—not Navy or Air Force billets—currently make up those positions. Also, the chief learning officer is also the executive director at present, and there is no deputy director.

spends time reviewing and updating the content for the distance learning modules with the registrar. We obtain FY 2007 salary and benefit information for the executive director and apportion that value for her time spent serving in the capacities just described for both JMESI initiatives (0.977 FTE) and the Capstone symposium (0.023 FTE).

The education technician is a GS-7, and her duties are purely administrative. For the Capstone symposium, the job requires doing the travel orders for the attendees, making hotel arrangements for delivery of the symposium (conference rooms, catering, AV support, etc.), and general administrative functions. The education technician also travels to Washington, DC, once or twice a year to assist the senior advisor/program manager and to follow up on any administrative details. The rest of her time is spent in support of JMESI initiatives. This is a full-time position (1 FTE).

The registrar is a GS-12 position. He prepares and maintains the Capstone Community of Practice, analyzes the end-of-course critiques, deals with accreditation issues and award of CEU and CME credits, and occasionally travels to Washington for the symposium in support of the senior advisor/program manager. He is also involved in review of the distance learning modules and liaison with the contractor to ensure completeness. This person dedicates about 180 total hours in support of the Capstone symposium and spends the rest of his time in support of JMESI initiatives.

The computer servers for the distance learning modules are controlled and managed by the Knowledge Management Division at Fort Sam Houston. JMESI has free access to space on the server to house, maintain, and support their distance learning modules. A programmer (GS-9) from the KMD assists the registrar with uploading the modules twice per year once received from the contractor (Advanced Distributed Learning). The programmer spends approximately 96 hours per year in support and maintenance of JMESI distance learning technical infrastructure. The value of this service is an opportunity cost (indirect cost) for JMESI since the IT personnel contract is through the KMD.

The senior advisor to JMESI also acts as the facilitator for the symposium. He is a part-time contractor paid at the GS-15 level for 0.75

FTE hours. Capstone is one of two major duties on his contract, and he spends close to 1,200 hours per year in this role (0.65 FTE). He facilitates the course (including the trip to Antietam), selects faculty, invites subject matter experts (SMEs) to speak, and updates course content based on student critiques and feedback. His other duty involves serving as a senior advisor for the JMESI education continuum, where the rest of his total 0.75 FTE is allocated.

His work as a senior advisor involves reviewing competencies and assessing the life-cycle career path of officers based on attainment of competencies. Currently, JMESI does not track the competencies for all Services. This position requires a physician, dentist, or nurse; senior leadership experience in the military; a depth of knowledge, application, and experience in medical executive education; and experience in meeting, networking, and briefing senior leaders. He travels to the symposium three times per year.

Table 3 provides the total "expected" costs for administration and overhead in support of JMESI initiatives, estimated to be $432,216 on an annual basis. This includes the salary and benefits for the executive director, senior advisor/program manager, registrar, education technician, and the instructional systems specialists, and the nonpersonnel costs for materials and supplies.

In terms of the Capstone symposium, we estimate (based on portion of FTE hours devoted specifically to the symposium) total annual administrative and overhead personnel costs to be $83,208, or $27,669 per course. This includes the administrative and overhead personnel costs of $83,008 and the cost of supplies of $200 per year.

Nonpersonnel (course delivery)

As mentioned earlier, some of the JMESI core staff travel to assist in the delivery of the Capstone symposium each year. These travel costs are estimated to be $16,667 per year, based on figures provided by the JMESI staff.

The Capstone course takes place three times per year in Washington, DC, at the Doubletree Hotel. The annual cost for the hotel contract in 2006 was $35,308, which provides for conference rooms, administrative room/convention center, equipment, and day meet-

ing planner packages for the attendees. The symposium also involves the staff ride to Antietam National Battlefield, for which the total transportation and facilitation costs were $12,939 in 2006.

The program also pays for student travel and per diem. The 68 attendees in 2006 represented an annual cost of $93,000 for student travel and per diem. In sum, total course delivery nonpersonnel costs for the Capstone symposium, based on 2006 actual costs, were $141,247, or $47,082 per course. Total nonpersonnel course delivery costs for the JMESI operations include only the travel costs for staff to attend the symposium each year ($16,667).

Personnel (course delivery)

The personnel costs in this category are those associated with contracting for nonmilitary/non-DoD faculty. No faculty members are needed to teach the distance learning modules offered by JMESI. Contract speakers for the Capstone symposium are paid via a convenience check from the JMESI budget, and there are usually only two contract speakers per iteration (six per year). The total amount paid annually to the contract speakers in 2006 was approximately $13,708, or $4,569 per course.

Total direct costs for the JMESI initiatives (including the distance learning modules) and the Capstone symposium are estimated to be $448,883 and $238,163, respectively. This includes both personnel and nonpersonnel direct costs associated with these activities.

B. Indirect costs

Nonpersonnel (administrative and overhead)

The indirect costs included in the administrative and overhead category are for the facility use. The office space required for day-to-day operations for JMESI staff is 845 square feet. The office is located on the campus of Fort Sam Houston, in San Antonio, TX.

The cost per square foot, provided by JMESI staff, is $3.68 per gross square foot. Our estimate for the office space use (full-time) for JMESI staff functions turns out to be $3,257.62, which includes an adjustment factor of 1.0476.

Personnel (administrative and overhead)

The indirect personnel costs are the opportunity costs for the programmer from the KMD. His responsibilities are to assist the registrar with uploading the distance learning modules twice per year and performing routine maintenance. The annual cost for the programmer is his annual salary and benefits (GS-9 level) apportioned by the number of hours devoted to his responsibilities (0.52 FTE) for a total opportunity cost of $3,072 per year.

Nonpersonnel (course delivery)

This subsection includes the costs of infrastructure to deliver the JMESI distance learning modules. We do not have estimates of the infrastructure costs associated with distance learning through the KMD, so we can't provide a cost estimate at this time for the JMESI distance learning modules. The following information would be required: the costs of a new server (185 GB); the life span of the new server (3 to 5 years); and depreciation. This cost should be amortized over the estimated life of the server to estimate the its annual costs. Other costs to consider would be the bandwidth charges, other hardware, and software applications and licensing costs.

The indirect personnel costs in this category include the value of faculty and student attendee time away from their primary duties. There are no full-time academic staff associated with the Capstone course. Most faculty members are based in Washington, DC, and serve as presenters at the symposium. The faculty members (25 per course) include Service Surgeons General, the U.S. Surgeon General, senior Health Affairs/TRICARE Management Activity staff, senior line officers, civilian medical professionals, and other high-ranking military/nonmilitary/DoD personnel who spend approximately 1 day with the course.

For military faculty, we use the 2007 Composite Rates to determine salary and benefits; for DoD personnel, we use GS-15 (step 2) level to determine salary and benefits, apportioned by their time devoted to the course. The total opportunity cost for Capstone symposium faculty is estimated to be $46,445 annually, or $15,482 per course.

Indirect costs for students are the opportunity costs for attending the Capstone symposium and taking the distance learning modules.

Most of the distance learning modules are 1 hour or less in length, and student time to complete them varies. We do not consider these opportunity costs in our analysis. However, student attendees for the symposium spend, on average, 15 days per year away from their primary duties (three courses per year).

In 2006, 68 students enrolled in the Capstone symposium: Air Force (18), Navy (18), Army (18), OSD (8), Coast Guard (3), and Public Health (3). The attendees are all rated at the O-6 level for their respective Service. We use the 2007 Composite Rates to estimate their annual salary and benefits, apportioned by the value of time spent in the course. The annual indirect cost for student attendees (based on 2006 demographics) is $332,871, or $110,957 per course.

The next subsection presents a summary of our findings, accounting for the number of students and number of credit-hours offered by the Capstone course and the distance learning modules. For simplicity, we assume that most JMESI initiatives (excluding Capstone) focus on providing medical executive skills and training for military and nonmilitary/DoD students, primarily through the medium of distance learning. Although each Service maintains its own executive skills courses, JMESI offers the distance learning courses as a supplement to these Service-specific initiatives, as well as a just-in-time training tool to assist in competency attainment.

The beneficiaries are the students who enroll in and complete distance learning modules to satisfy prerequisites and competency requirements, obtain continuing medical education and continuing education units, or obtain certification/recertification as a result. Figures 1 and 2 (presented earlier in this appendix) provide summary statistics on student completion of accredited versions of distance learning modules and total enrollment by Service in the distance learning program from January 2006 to January 2007.

Statistics on distance learning student throughput were provided by the JMESI registrar. Each module is accredited for 1 hour of pre-approved Category II (non-ACHE) continuing education credit and 1.3 hours of nursing education contact hours.[14] Students who are

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[14] For simplicity in computation, we assume that each distance learning module is accredited for only 1 hour of continuing education credits.

enrolled may complete more than one accredited course online, so the number of students completing the accredited version could be greater than the enrollment figures. From January 2006 to January 2007, there was a net increase of 3,698 student completions of the accredited version of the distance learning modules (Army – 432; Navy – 1.195; AF – 1,207; USPHS – 15; VA – 849).

For our cost summary purposes, the total number of student credit-hours completed in the accredited version is estimated to be 3,698. With each distance learning module offering 1 credit-hour per completed module, we assume that the total number of student credit-hours offered per year by the JMESI program is 3,698.

The next subsection provides the summary results of the cost analysis for JMESI operations (including the distance learning costs) and the Capstone symposium on an annual basis.

Budget summary

Baseline estimates

As mentioned, we provide separate cost estimates for the JMESI operations (including distance learning modules) and the Capstone symposium based on three assumptions: the Capstone course meets 3 times per year, annual throughput of students is 68, and total student credit-hours offered are 1,120. The total student credit-hours were computed based on the total type and number of students and the associated number of credit-hours offered per type of attendee (CME = 10.5 hours, CEU = 13 hours, AAMA = 27.5 hours, and ACHE = 26.50 hours). We apportion the total student throughput by the percentage of students obtaining the different types of accredited hours from each course in 2006. We then sum up to get the total credit-hours offered for the Capstone course in 2006.[15] As

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[15] For example, assume that 10 students obtained CME credits and 5 obtained CEU credits in a sample of 15 students. If we have 100 students, we can assume that 66 percent (10/15) of those students will obtain 10.5 hours each of CME credits, and 34 percent will obtain 13 hours each of CEU credits, for total credit-hours offered/obtained of 1,135, where 1,135 = 66 students * 10.5 + 34 students * 13.

explained earlier, the throughput of the distance learning modules is estimated at 3,698 total student credit-hours for 2006 and 2007.

JMESI expected costs

The annual "expected" total cost of JMESI operations per year (including distance learning modules) comes to $455,213, with direct costs ($448,213) accounting for most of the total costs for JMESI (see table 3). The expected costs assume that JMESI goes forward with its decision to hire a Quality Assurance Specialist and a Research and Analysis Specialist in the coming year. The difference between cost estimates in tables 4 and 5 is primarily the difference in personnel costs based on expected and current operational staff.

Direct costs for JMESI operations are further broken down into administrative and overhead costs ($396,216) for personnel, $36,000 for nonpersonnel costs (for materials and supplies), and course delivery costs ($16,667 in nonpersonnel travel costs for JMESI staff). The total indirect costs for the JMESI operations are $6,330—the opportunity cost of facility use (office space) and the KMD programmer's annualized salary and benefits in support of the distance learning program.

The annual total cost for the Capstone symposium is estimated to be $617,479, with direct costs ($238,163) accounting for less than 40 percent. Direct costs for Capstone are further broken down into administrative and overhead costs ($83,008 for personnel; $200 for nonpersonnel costs for materials and supplies) and course delivery costs ($141,247 in nonpersonnel costs for hotel contract, staff ride, and student travel and per diem; $13,708 in personnel costs for contract faculty). The total indirect costs are $379,315, which consist of the opportunity costs for faculty and student attendees for the Capstone symposium on an annual basis.

Our preferred measure of throughput is total student credit-hours offered per year (1,120 hours – Capstone symposium; and 3,698 hours – distance learning modules). Using the ratio of total costs per student credit-hour, the average for JMESI operations (using distance learning credit-hour throughput) is $123 per student credit-hour, and the average for the Capstone symposium is $552 per student credit-hour:

- JMESI operations

  — Direct costs, $121

  — Indirect costs, $2

- Capstone symposium

  — Direct costs, $213

  — Indirect costs, $339.

Table 3.   JMESI expected operations and Capstone symposium costs

Cost summary (2006 - 2007)	JMESI total	Capstone total	Capstone per course
# of students	3,698	68	23
Total student credit-hours	3,698	1,120	373
# of courses per year	n/a	3	1
Total cost	$455,213	$617,928	$205,826
Direct costs	$448,883	$238,613	$79,388
Indirect costs	$6,330	$379,315	$126,438
Total cost per student	$123	$9,081	$9,081
Direct costs	$121	$3,502	$3,502
Indirect costs	$2	$5,578	$5,578
Total cost per student credit-hour	$123	$552	$552
Direct costs	$121	$213	$213
Indirect costs	$2	$339	$339

Table 4.   JMESI current operations and Capstone symposium costs

Cost summary (2006 - 2007)	JMESI total	Capstone total	Capstone per course
# of students	3698	68	23
Total student credit-hours	3698	1120	373
# of courses per year	n/a	3	1
Total cost	$310,939	$617,479	$205,826
Direct costs	$304,609	$238,163	$79,388
Indirect costs	$6,330	$379,315	$126,438
Total cost per student	$84	$9,081	$9,081
Direct costs	$82	$3,502	$3,502
Indirect costs	$2	$5,578	$5,578
Total cost per student credit-hour	$84	$552	$552
Direct costs	$82	$213	$213
Indirect costs	$2	$339	$339

Excursions

No excursions are scheduled for JMESI operations or the Capstone course. The calculation of JMESI expected operations costs in table 3 assumes that the currently vacant positions (the quality assurance specialist and the research and analysis specialist) will be filled in the future with personnel at the appropriate GS salary level.   The total costs for JMESI operations, assuming new staffing hires, is expected to be $455,213.

The total current operating costs for JMESI are computed in table 4. These calculations are based on current staffing levels at JMESI. This gives a total direct cost of $304,609 (including nonpersonnel administrative, overhead, and course delivery costs), and $82 per student credit-hour offered (distance learning) for JMESI's current operations in support of its initiatives, outside the Capstone symposium costs. The total cost, both direct and indirect, for JMESI's current operations is $310,939 on an annual basis.

Table 5.   Attachment 1 to Appendix F: JMESI distance learning modules[16]

Bioethics One: Concepts and Principles	Group Dynamics Two: Fundamentals	Medical Staff Bylaws
Bioethics Two: Applications	Human Resources	Medical Liability
Change and Innovation One: Overview and Tools	Human Resources Two: Staff Development	Medical Readiness Training
Change and Innovation Two: Implementation and Evaluation	Information Management One: Strategies	National Disaster Medical System One: Overview
Clinical Investigation	Information Management Two: Issues and Challenges	National Disaster Medical System Two: Planning and Applications
Conflict Management One: Principles	Individual Behavior	Organizational Design
Conflict Management Two: Negotiation	Individual Behavior Two: Critical Thinking and Learning	Organizational Ethics
Contingency Planning One: Disaster Preparedness	Integrated Health Systems One: Overview	Outcomes Measurement One: Fundamentals
Decision Making	Integrated Health Systems Two: Marketing and Population Health	Outcomes Measurement Two: Applications
Effective Communication	Joint Operations/Exercises	Performance Improvement
Epidemiology One: Principles and Tools	Joint Operations Two: Applications	Personal Professional Ethics
Epidemiology Two: Applications	Labor Relations One: Principles	Public Law One: Overview
Ethical Decision Making	Labor Relations Two: Applications	Public Law Two: Due Process and Patient Rights
External Accreditation One: Overview	Leadership One: Behavior and Styles	Public Relations: Concepts and Principles
External Accreditation Two: Preparation and Findings	Leadership Two: Case Study	Public Speaking
Facilities Management One: Regulations and Standards	Leadership Three: Team Leadership	Quality Management One: Quality Management
Facilities Management Two: Principles	Leadership Four: Project Management	Quality Management Two: Patient Safety
Financial Management One: Concepts and Regulations	Leadership Five: Valuing Diversity and Culture	Quantitative Analysis
Financial Management Two: Applications	Leadership Six: Stress Management	Strategic Planning One: Assessment
Financial Management Three: Cost and Utilization Management	Leadership Seven: Service Excellence	Strategic Planning Two: Implementation
Financial Management Four: Business Case Analysis	Leadership Eight: Coaching, Counseling, and Mentoring	
Group Dynamics One: Fundamentals	Materials Management	

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[16] Taken from the JMESI Distance Learning Website.

Appendix G: Healthcare Leadership Alliance (HLA) Competency Directory

						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 1: Communication and Relationship Management	Knowledge of	Labor relations strategies		Staff	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Knowledge of	Organizational structure and relationships		Organization	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Knowledge of	Principles of communication and their specific applications (crisis communication, alternative dispute resolution, etc.)		Methods, models	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Knowledge of	Public relations		Methods, models	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Build collaborative relationships	Develop	Interpersonal relations	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Build effective physician and administrator leadership teams	Develop	Groups, teams	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Communicate organizational mission, vision, objectives and priorities	Communicate	Vision, goals	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Create, participate in, and lead teams (formulating team objectives, scope of work, roles; team building, etc.)	Develop	Groups, teams	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Demonstrate effective interpersonal relations (e.g., integrity; trust; diplomacy; negotiation skills)	Execute	Interpersonal relations	Core	X	X	X	X	X

HLA Competency Directory

HLA Competency Directory										
						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
Domain	Knowledge/ Skill	Competency	Skill Area	Key Words	Core/ Specialty	ACHE	ACMPE	AONE	HFMA	HIMSS
Domain 1: Communication and Relationship Management	Skill	Demonstrate effective written, oral communication, and presentation skills	Execute	Presentations	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Develop and maintain academic relationships	Develop	External relations	Specialty		X	X	X	
Domain 1: Communication and Relationship Management	Skill	Develop and maintain medical staff relationships	Develop	Staff	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Develop and maintain relationships with vendors	Develop	External relations	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Educate physician owners on the importance of investing in their practice's future through such means as retained earnings versus annual distribution of profits (cashing out)	Train	Physicians	Specialty		X			X
Domain 1: Communication and Relationship Management	Skill	Facilitate conflict and alternative dispute resolution	Facilitate	Problem solving	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Facilitate group dynamics, process, meetings and discussions	Facilitate	Groups, teams	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Function as an in-house consultant	Provide service	Staff	Specialty		X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Identify and utilize human and technical resources to develop and deliver communications	Integrate	Resources	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Identify stakeholder needs/expectations	Analyze	Needs	Core	X	X	X	X	X

HLA Competency Directory										
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
						ACHE	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 1: Communication and Relationship Management	Skill	Practice and value shared decision making	Execute	Decision making	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Prepare and deliver business communications, including meeting agendas, presentations, business reports, and project communication plans (e.g., status reports, minutes, kick-offs)	Execute	Presentations	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Present results of data analysis to decision makers	Communicate	Data	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Provide and receive constructive feedback	Facilitate	Interpersonal relations	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Provide internal customer service	Provide service	Staff	Core	X	X	X	X	X
Domain 1: Communication and Relationship Management	Skill	Use factual data to produce and deliver credible and understandable reports (e.g., financial; compensation; productivity) to physicians	Develop	Presentations	Core	X	X	X	X	X
Domain 2: Leadership	Knowledge of	Leadership styles/techniques		Methods, models	Core	X	X	X	X	X
Domain 2: Leadership	Knowledge of	Personal journey disciplines		Methods, models	Specialty			X		
Domain 2: Leadership	Skill	Gain physician buy-in to accept risk and support new business ventures	Facilitate	Decision making	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Adhere to legal and regulatory standards	Be accountable	Regulation	Core	X	X	X	X	X

						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
HLA Competency Directory										
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 2: Leadership	Skill	Advocate and participate in healthcare policy initiatives (e.g., uninsured crisis; medical malpractice; access to healthcare; patient safety)	Advocate	External factors	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Anticipate and plan strategies for overcoming obstacles	Think strategically	Problem solving	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Anticipate the need for resources to carry out initiatives	Think strategically	Needs	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Assess the organization, including corporate values and culture; business processes and impact of systems on operations	Analyze	Organization	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Champion solutions and encourage decision making	Promote	Decision making	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Create an organizational climate that encourages teamwork	Develop	Culture	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Create an organizational climate that facilitates individual motivation	Develop	Culture	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Develop external relationships	Develop	External relations	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Encourage a high level of commitment to the purpose and values of the organization	Promote	Vision, goals	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Establish a compelling organizational vision and goals	Develop	Vision, goals	Core	X	X	X	X	X

HLA Competency Directory										
						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
Domain	Knowledge/ Skill	Competency	Skill Area	Key Words	Core/ Specialty	ACHE	ACMPE	AONE	HFMA	HIMSS
Domain 2: Leadership	Skill	Establish an organizational culture that values and supports diversity	Develop	Culture	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Explore opportunities for the growth and development of the organization on a continuous basis	Develop	Organization	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Foster an environment of mutual trust	Develop	Culture	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Hold self and others accountable for organizational goal attainment	Be accountable	Vision, goals	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Incorporate and apply management techniques and theories into leadership activities	Integrate	Methods, models	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Plan for leadership succession	Develop	Staff	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Promote and manage change	Manage	Decision making	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Promote continuous organizational learning/improvement	Develop	Organization	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Represent physician interests in negotiating and managing relationship with hospitals, insurance companies and others (e.g., fair market value of services; on-call coverage of specialists)	Advocate	Physicians	Core	X	X	X	X	X
Domain 2: Leadership	Skill	Support and mentor high-potential talent within the organization	Develop	Staff	Core	X	X	X	X	X

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						HLA Competency Directory				
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 3: Professionalism	Knowledge of	Organizational business and personal ethics		Ethics	Core	X	X	X	X	X
Domain 3: Professionalism	Knowledge of	Professional roles, responsibility and accountability		Standards	Core	X	X	X	X	X
Domain 3: Professionalism	Knowledge of	Professional norms and behaviors		Standards	Core	X	X	X	X	X
Domain 3: Professionalism	Knowledge of	Professional societies and memberships		Resources	Core	X	X	X	X	X
Domain 3: Professionalism	Knowledge of	Professional standards and codes of ethics		Ethics	Core	X	X	X	X	X
Domain 3: Professionalism	Knowledge of	Time and stress management techniques		Self	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Conduct self-assessments	Learn throughout life	Self	Core	X	X	X	X	X
Domain 3: Professionalism	Knowledge of	Conflict-of-interest situations as defined by organizational bylaws, policies, and procedures		Ethics	Core	X	X	X	X	X
Domain 3: Professionalism	Knowledge of	Ethics committee's roles, structure, and functions		Ethics	Core	X	X	X	X	X
Domain 3: Professionalism	Knowledge of	Patients' rights and responsibilities		Patient, families, community	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Acquire and stay current with the professional body of knowledge	Learn throughout life	Resources	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Adhere to ethical business principles	Be accountable	Ethics	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Advocate for patients, families and communities	Advocate	Patient, families, community	Core	X	X	X	X	X

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Domain 3: Professionalism	Skill	Advocate with physicians for the importance of hiring professionally trained and certified administrators and supporting their professional development	Advocate	Staff	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Balance professional and personal pursuits	Manage	Self	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Contribute to professional knowledge and evidence	Provide service	Resources	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Educate physicians on the standards required for competent performance by their administrative staff	Train	Physicians	Specialty		X			X
Domain 3: Professionalism	Skill	Mentor, advise, and coach	Provide service	Interpersonal relations	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Network with colleagues	Develop	Interpersonal relations	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Participate in community service	Provide service	Patient, families, community	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Participate in continuing education and career planning	Learn throughout life	Resources	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Practice due diligence to carry out fiduciary responsibilities	Execute	Ethics	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Serve as the ethical guide for the organization	Promote	Ethics	Core	X	X	X	X	X
Domain 3: Professionalism	Skill	Uphold and act upon ethical and professional standards	Execute	Ethics	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Community standards of care		Standards	Core	X	X	X	X	X

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Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Regulatory and administrative environment in which the organization functions (e.g., antitrust; Stark I and II; accreditation; organized labor)		External factors	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Role of non-clinical professionals in the healthcare system		Staff	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	The interrelationships among access, quality, cost, resource allocation, accountability, and community		External factors	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	The patient perspective		Patient, families, community	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Workforce issues		External factors	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Corporate compliance laws and regulations (physician recruitment, billing and coding practices, antitrust, conflict of interest, etc.)		Regulation	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Educational funding for healthcare personnel		Resources	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Funding and payment mechanisms of the healthcare system		External factors	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Global healthcare issues, trends and perspectives (aging population, insurance costs, malpractice crisis, etc.)		External factors	Specialty	X	X	X		X

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Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Governmental, regulatory, professional, and accreditation agencies (e.g., CMS; JCAHO; NCQA) related to healthcare delivery		Regulation	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Healthcare and medical terminology		Standards	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Healthcare economics		Methods, models	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Healthcare technological research and advancements		External factors	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Interaction and integration among healthcare sectors		External factors	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Legislative issues and advocacy		Regulation	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Managed care models, structures, and environment (e.g., group, staff, IPA, PPO)		Methods, models	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Nursing, physicians, and allied health professionals' roles and practice		Staff	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Organization and delivery of healthcare (e.g., acute care, ambulatory care, medical practice, ancillary services)		External factors	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Socioeconomic environment in which the organization functions		External factors	Core	X	X	X	X	X

HLA Competency Directory

HLA Competency Directory										
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Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Staff perspective in organizational settings (e.g., frame of reference by discipline and role; orientation)		Staff	Core	X	X	X	X	X
Domain 4: Knowledge of the Healthcare Environment	Knowledge of	Standards applicable to information integration and interoperability		Standards	Specialty			X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Basic statistical analysis		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Broad systems connections--potential impacts and consequences of decisions in a wide variety of situations both internal and external		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Evidence-based practice		Outcomes	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Facilities planning		Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Inventory control systems		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Project management		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Purchasing procurement		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Systems theory		Systems	Core	X	X	X	X	X

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Domain 5: Business Knowledge and Skills	Knowledge of	Systems thinking		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Analyze and design the improved or new business practice and clinical processes (e.g., process mapping; flow diagramming)	Develop	Policies, procedures	Specialty		X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Analyze the current way of doing business and clinical processes (e.g., process mapping, flow diagramming)	Analyze	Policies, procedures	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	skill	Anticipate cause and effect relationships	Think strategically	Problem solving	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Champion systems thinking (e.g., breaking down silos; integrating parts; big picture)	Promote	Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Collect and analyze data from internal and external sources relevant to each situation	Analyze	Data	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Conduct needs analysis, identify and prioritize requirements	Analyze	Needs	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Define the problem or opportunities	Execute	Problem solving	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Develop work plans	Execute	Planning	Core	X	X	X	X	X

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Domain 5: Business Knowledge and Skills	Skill	Discriminate between important and unimportant aspects of business and clinical situations as a basis for sound decision making	Execute	Decision making	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Identify alternate processes and potential solutions	Execute	Problem solving	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Identify how a system design accommodates business processes	Analyze	Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Perform audits of systems and operations	Analyze	Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Prioritize or triage as necessary to ensure critical functions are repaired, maintained, or enhanced	Execute	Problem solving	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Promote and apply problem-solving philosophies (e.g., CQI, TQM, QA, QM)	Promote	Problem solving	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Recommend knowledge-based solutions and courses of action that will enhance the practice's ability to satisfy the needs of physicians, staff, patients and other external stakeholders	Execute	Problem solving	Specialty		X	X	X	X

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Domain 5: Business Knowledge and Skills	Skill	Seek information from a variety of sources (e.g., benchmarking; articles; colleagues; list-serves; Web) to stay current with market and industry test and evaluation	Research	Data	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Asset management, including investments, equipment, etc.		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Basic business contracts (e.g., legal and financial implications) and contract negotiation		Contracts	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Comparative analysis strategies (e.g., indicators; benchmarks; systems; performance)		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Knowledge of	Management functions (e.g., planning; organizing; directing; controlling)		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Allocate time and resources effectively in a small physician practice environment of limited resources (e.g., priority setting; outsourcing; decision making; entrepreneurism)	Manage	Resources	Specialty		X	X		X
Domain 5: Business Knowledge and Skills	Skill	Assess organizational perception of systems effectiveness and departmental effectiveness	Analyze	Outcomes	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Demonstrate critical thinking and analysis	Execute	Decision making	Core	X	X	X	X	X

HLA Competency Directory										
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Domain 5: Business Knowledge and Skills	Skill	Develop requests-for-information and requests-for-proposals	Develop	Proposals	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Manage vendor contracts (draft contract elements, negotiate terms, monitor contract cost, schedule and performance)	Manage	Contracts	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Measure quantitative dimensions of systems and departmental effectiveness	Analyze	Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills	Skill	Organize and manage the human and physical resources of the practice to achieve input, buy-in and optimal performance	Manage	Resources	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Cost accounting		Accounting	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Financial analysis (e.g., ratio analysis; cost-benefit analysis; cost-effectiveness analysis; vertical analysis; horizontal analysis)		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Financial planning methodologies (e.g., strategic planning; strategic financial planning; operational planning; budgeting; capital budgeting)		Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Financial statements		Accounting	Core	X	X	X	X	X

G-16

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Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Outcomes measures and management (e.g., ROI; cost-effectiveness analysis [CEA]; cash flow analysis and testing)		Outcomes	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Reimbursement principles and techniques, including rate setting and contracts		Reimbursement	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Tax accounting		Accounting	Specialty		X		X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Prepare and manage budgets, including annual operating budgets, project budgets and capital budgets	Manage	Budgets	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Capital budgeting principles		Budgets	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Fundamental productivity measures (e.g., hours per patient day; cost per patient day; units of service per man-hour; PMPM)		Outcomes	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	How physician services are reimbursed (e.g., RBRVS; Medicare Part B; managed care negotiated fees; usual and customary charges)		Reimbursement	Core	X	X	X	X	X

HLA Competency Directory										
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Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Operating budget principles (e.g., fixed vs. flexible, zero-based)		Budgets	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Relationship between physician productivity and the cost structure in a medical practice		Outcomes	Specialty		X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	Revenue cycle and accounts receivable management processes (e.g., EOB; charge capture; insurance billing)		Accounting	Specialty		X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Knowledge of	The system of financial checks and balances required to mitigate risk of embezzlement in smaller, cash-intensive physician practices		Systems	Specialty		X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Analyze financial reward versus risk	Analyze	Risk	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Analyze, anticipate and address the practice's cash flow needs (e.g., co-pay collection; short- and long-term projections; lines of credit)	Analyze	Needs	Specialty		X	X	X	
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Apply financial planning methodologies to organizational objectives	Integrate	Planning	Core	X	X	X	X	X

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Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Conduct valuation of physician practice as a basis for buy-in and buy-out agreements	Analyze	Data	Specialty		X	X		X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Determine when to use cash, accrual or blended forms of accounting	Integrate	Accounting	Specialty		X		X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Develop accounting and financial control systems	Develop	Accounting	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Develop and manage material procurement and payment systems	Develop	Systems	Specialty		X		X	
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Develop and use performance monitoring metrics (e.g., balanced scorecards; benchmarking)	Integrate	Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Develop coding and reimbursement policies and procedures	Develop	Reimbursement	Specialty	X	X	X	X	
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Develop reconciliation systems for third-party payor reimbursement	Develop	Reimbursement	Specialty		X		X	
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Establish business relationships with financial advisors	Develop	External relations	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Establish fee schedules for physician services	Develop	Reimbursement	Specialty		X		X	
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Facilitate investment planning, management and compliance	Facilitate	Planning	Specialty		X		X	

HLA Competency Directory

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Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Formulate strategies for new equipment purchases in an environment of undercapitalization (e.g., physician retained earnings; capital budgeting; depreciation)	Develop	Resources	Specialty		X	X		
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Integrate physician productivity data into the practice's budgeting process	Integrate	Data	Specialty		X	X		
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Maintain compliance with tax laws and filing procedures	Be accountable	Regulation	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Negotiate third-party contracts	Negotiate	Contracts	Specialty	X	X		X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Provide stewardship of financial resources	Be accountable	Resources	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Structure and negotiate buy-in and buy-out agreements for physician practices	Negotiate	Contracts	Specialty		X			X
Domain 5: Business Knowledge and Skills: A. Financial Management	Skill	Track costs to responsibility centers and physician providers (e.g., physician productivity data)	Analyze	Data	Specialty		X		X	
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Compensation and benefits		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Employee satisfaction measurement and improvement techniques		Staff	Core	X	X	X	X	X

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Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Motivational techniques		Interpersonal relations	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Organizational policies and procedures and their functions		Policies, procedures	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	The need for and/or desirability of outsourcing		Needs	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	The varying work environments in which staff work		Staff	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Worker safety, security and employee health issues (e.g., OSHA; workplace violence)		Staff	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Define staff roles, responsibilities, and job descriptions	Develop	Staff	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Manage departmental personnel processes, including performance appraisals; incentives; staff recruitment, selection, and retention; training and education; coaching and mentoring	Manage	Policies, procedures	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Components of a benefits package to attract and retain physicians (e.g., time off; CME allowance; coverage policies)		Physicians	Specialty		X			

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Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Human resources laws and regulations (e.g., labor law; wage and hour; FMLA; FLSA; EEOC; ERISA; workers' compensation)		Regulation	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Job classification systems		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Physician compensation and income distribution models		Methods, models	Specialty		X			
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Staffing methodologies and productivity management (e.g., acuity-based staffing; flexible staffing; fixed staffing)		Staff	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Knowledge of	Workforce planning for a physician practice (e.g., staffing ratios; structures; requirements for technical proficiency and reporting relationships for a medical practice)		Staff	Specialty		X	X		
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Create monitoring systems for licensure, credentialing and recertification	Develop	Systems	Specialty		X	X		
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Develop and implement policies and procedures with physicians to address physician behavioral and burnout issues (e.g., peer review; counseling; re-alignment of specialty and practice)	Execute	Policies, procedures	Specialty	X	X	X		

HLA Competency Directory

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Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Develop and manage employee performance management system (e.g., staff development; assessment; training; discipline)	Develop	Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Develop contingency plans to mitigate the loss to the practice of a high productivity physician (e.g., staff coverage; key man insurance)	Execute	Planning	Specialty		X			
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Develop effective physician recruitment and retention programs	Develop	Physicians	Specialty	X	X			
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Develop employee benefit and assistance plans	Execute	Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Engage in workforce planning (e.g., recruitment; selection; retention; succession planning)	Develop	Staff	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Evaluate and manage employee efficiency and productivity	Analyze	Outcomes	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: B. Human Resources	Skill	Facilitate retirement planning, management and compliance	Facilitate	Planning	Specialty		X			
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Organizational dynamics, political realities, and culture		Culture	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Principles and practices of management and organizational behavior		Methods, models	Core	X	X	X	X	X

						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Components of effective succession planning in a physician practice (e.g., seniority and transition of leadership responsibilities; impacts on call coverage and compensation; recruitment and developing new physicians; structuring buy-in agreement)		Planning	Specialty		X			
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Corporate structures for physician practices and their legal ramifications (e.g., PC; LLC; partnerships; sole proprietorships)		Organization	Specialty		X			
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Dynamics of working for physician owner/providers and their impacts on such functions as decision-making, policy formulation, disciplinary procedures, and accountability		Culture	Specialty		X			
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Impacts of physician generational, gender and cultural orientation differences (e.g., financial; lifestyle) on the practice		Physicians	Specialty		X			
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Implications of a group versus a solo mentality as a cultural driver in physician practices (e.g., orientation to shared resources and aligned systems versus autonomy of practice and decision making)		Culture	Specialty		X			

HLA Competency Directory

HLA Competency Directory										
Domain	Knowledge/ Skill	Competency	Skill Area	Key Words	Core/ Specialty	Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
						ACHE	ACMPE	AONE	HFMA	HIMSS
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Organization theories and structures (complex adaptive systems), such as span of control; chain of command; interrelationship of organizational units		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Role and functioning of the board of directors and other components of the governing structure		Groups, teams	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Knowledge of	Various roles and responsibilities of physicians in a medical practice (e.g., provider; owner; managing partner; president of the board; medical director)		Physicians	Specialty		X			
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Skill	Build trust and cooperation between/among stakeholders	Develop	Interpersonal relations	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Skill	Construct and maintain governance systems	Develop	Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Skill	Document and implement policies and procedures	Execute	Policies, procedures	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Skill	Evaluate and improve governing bylaws, policies and processes	Analyze	Policies, procedures	Core	X	X	X	X	X

HLA Competency Directory										
						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)					
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Skill	Facilitate physician understanding and acceptance of good business management	Train	Physicians	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Skill	Facilitate the creation and maintenance of an effective system of physician governance	Facilitate	Policies, procedures	Specialty		X			
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Skill	Manage the performance of subsystems in a manner that optimizes the whole-- synergy	Manage	Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: C. Organizational Dynamics and Governance	Skill	Interpret and integrate federal, state and local regulations/laws	Integrate	Regulation	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Business plan development and implementation processes		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Business planning, including business case and exit strategy development		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Characteristics of strategic decision support (e.g., planning; marketing; modeling; forecasting)		Decision making	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Crisis and disaster planning		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Factors that contribute to successful joint ventures between physician practices and hospitals (e.g.,		External factors	Specialty		X			

HLA Competency Directory										
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Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
		new physician recruitment; on-call coverage of specialists)								
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Healthcare system services		External factors	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Implementation planning (e.g., operation plan; management plan)		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Marketing plan development		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Marketing principles and tools (e.g., competitive and market research and data analysis; sales; advertising)		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Organizational mission, vision, objectives and priorities		Vision, goals	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Knowledge of	Strategic planning processes development, and implementation (scenario planning, forecasting, etc.)		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Construct and manage an effective physician referral system	Develop	Systems	Specialty		X			

Domain	Knowledge/ Skill	Competency	Skill Area	Key Words	Core/ Specialty	Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
						ACHE	ACMPE	AONE	HFMA	HIMSS
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Develop a proposal that includes a benefits realization statement and recommended approaches and solutions	Develop	Proposals	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Develop and monitor departmental strategic and tactical objectives	Execute	Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Develop business plans for ancillary services (e.g., sources of capital; core operations and legal structure; billing; staffing)	Execute	Planning	Specialty		X			
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Evaluate whether a proposed solution aligns with the organizational business plan	Analyze	Proposals	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Manage projects and/or resources (e.g., assess resources requirements; conduct risk assessment; assess business value; develop implementation strategies)	Manage	Resources	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Participate in organizational strategic planning	Facilitate	Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Plan for business continuance in the face of potential disasters that could disrupt service delivery	Execute	Planning	Core	X	X	X	X	X

						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Promote and demonstrate the value that physician practices bring to the hospital and the community	Promote	Physicians	Specialty		X			
Domain 5: Business Knowledge and Skills: D. Strategic Planning and Marketing	Skill	Pursuing and establishing partnerships and strategic alliances	Develop	External relations	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Application software (e.g., spreadsheets; e-mail; word processing)		Technology	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Characteristics of administrative systems/programs (e.g., financial; scheduling; on-line purchasing; productivity; human resources)		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Characteristics of clinical systems/programs (e.g., electronic medical records; medical decision support; diagnostic information systems)		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Confidentiality principles and laws (e.g., credentialing; intellectual property; peer review)		Regulation	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Data analysis, including manipulation of, understanding of, and ability to explain data		Data	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Electronic education and information resources and systems		Resources	Core	X	X	X	X	X

The title "HLA Competency Directory" spans the top of the table.

HLA Competency Directory										
						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Health informatics (e.g., coding; communication standards; data standards)		Standards	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Information systems continuity (e.g., disaster planning; recovery; backup; sabotage; natural disasters)		Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Information systems planning and implementation (includes service architecture; technology life cycles; obsolescence)		Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Information technology (e.g., e-commerce; Internet; Intranet)		Technology	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	IT systems selection criteria and review		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Physician practice management IT systems (e.g., billing; referral/authorization; claims processing; electronic medical records; prescription writing; productivity; transcription)		Systems	Specialty		X			
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Principles of database and file management		Data	Specialty	X	X	X		X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Privacy, confidentiality and security requirement for information management (e.g., HIPPAA; Medical Records)		Regulation	Core	X	X	X	X	X

HLA Competency Directory										
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Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Role and function of information technology in operations		Technology	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	Testing and evaluation activities of IT systems		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Knowledge of	The changes in information systems and technology trends		Technology	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Analyze problem reports for trends	Analyze	Data	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Conduct demonstrations, evaluate and select healthcare IT systems (e.g., clinical documentation; patient records; patient billing; patient monitoring; reimbursement related)	Analyze	Systems	Specialty	X	X	X		X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Conduct information systems needs analysis	Analyze	Needs	Specialty		X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Ensure accuracy and integrity of data	Be accountable	Data	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Ensure compatibility of software, hardware, and network components that encourage user acceptance	Be accountable	Technology	Specialty	X	X	X		X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Ensure staff is trained to use information systems	Train	Staff	Core	X	X	X	X	X

						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Evaluate results of a system security/privacy effectiveness assessment	Analyze	Outcomes	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Forecast technical and information needs of an organization	Think strategically	Needs	TBD					X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Identify potential misuse of IT systems and security/privacy issues (security/privacy, security/privacy effectiveness)	Integrate	Problem solving	Specialty		X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Install and manage healthcare IT systems (e.g., clinical documentation; PACs; patient records; patient billing; patient monitoring; reimbursement related)	Manage	Systems	Specialty		X	X		X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Integrate IT systems that support decision making	Integrate	Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Link the information technology plan to the business plan	Integrate	Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Monitor IT systems sustainability, reliability, and maintainability (e.g., performance upgrades; patches)	Analyze	systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Monitor and adjust IT system capacity as needed	Manage	Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Oversee database systems management and maintenance	Manage	Data	Specialty		X	X		X

HLA Competency Directory

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Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Participate in determination of information systems selection criteria and review team	Facilitate	Decision making	Specialty					X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Promote and apply analytical tools to optimize IT systems function	Analyze	Systems	Specialty					X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Recommend policies and procedures for information systems management (e.g., security; acquisition of software and hardware)	Facilitate	Policies, procedures	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: E. Information Management	Skill	Select a method to assess IT system security, privacy and effectiveness	Analyze	Methods, models	Specialty					X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Compliance with regulatory agencies and tax status requirements		Regulation	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Components of a physician employment contract with the practice (e.g. divestiture of assets; restrictive and non-compete clauses ; buy-sell agreements)		Contracts	Specialty		X			
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Contingency planning (e.g., emergency preparedness)		Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Corporate history and record-keeping procedures		Policies, procedures	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Credentialing, medical malpractice, and professional liability		External factors	Core	X	X	X	X	X

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Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Personnel and property security plans and policies		Policies, procedures	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Professional resource networks for risk-related activities		Resources	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Risk assessments and analyses (e.g., at-risk financial activities)		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Risk management principles and programs (e.g., insurance; education; safety; injury management; patient complaint)		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Risk mitigation (e.g., insurance; outsourcing; disaster recovery)		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Risks related to personnel management		Staff	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Risks related to quality management and patient safety		Patient, families, community	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Specific application of federal laws (e.g., Stark and Anti-trust) to structure and manage physician-hospital relations		Regulation	Specialty		X			
Domain 5: Business Knowledge and Skills: F. Risk Management	Knowledge of	Conflict resolution and grievance procedures		Policies, procedures	Core	X	X	X	X	X

						Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 5: Business Knowledge and Skills: F. Risk Management	Skill	Anticipate and mitigate the impacts associated when physicians split off from the practice (e.g., maintaining multi-specialty mix of service; patient base)	Manage	Outcomes	Specialty		X			
Domain 5: Business Knowledge and Skills: F. Risk Management	Skill	Establish patient, staff and organizational confidentiality policies	Develop	Policies, procedures	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Skill	Maintain compliance with government contractual mandates	Be accountable	Contracts	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: F. Risk Management	Skill	Plan for business continuance in the face of potential disasters that could disrupt service delivery	Execute	Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	Clinical pathways and disease management		Methods, models	Specialty	X		X	X	
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	Customer satisfaction principles and tools		Patient, families, community	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	Data collection, measurement and analysis tools and techniques (e.g., root-cause analysis; process analysis; workflows)		Data	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	Medical staff peer review and disciplinary process		Physicians	Specialty	X	X	X		
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	National quality initiatives, including patient safety		External factors	Core	X	X	X	X	X

HLA Competency Directory

Domain	Knowledge/ Skill	Competency	Skill Area	Key Words	Core/ Specialty	Core and Specialty Competencies Relevant to the Professionals Represented by the HLA Organizations (X indicates relevancy)				
						ACHE	ACMPE	AONE	HFMA	HIMSS
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	Patient communication systems		Systems	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	Quality improvement theories and frameworks		Methods, models	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	Quality planning and management		Planning	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	Training and certification (e.g., industry standards; ISO-9000)		Standards	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Knowledge of	Utilization review and management regulations		Regulation	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Skill	Construct and maintain systems to support the efficient flow of patient care data to and from primary care physicians and referral specialists	Develop	Systems	Specialty		X			
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Skill	Develop and implement process improvement programs for clinic operations	Develop	Resources	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Skill	Develop and implement quality assurance and patient satisfaction programs	Develop	Resources	Core	X	X	X	X	X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Skill	Develop clinical pathway structure and function	Develop	Policies, procedures	Specialty	X	X	X	X	
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Skill	Develop efficient patient flow systems (e.g., scheduling; reminders; no shows)	Develop	Systems	Specialty		X	X	X	X

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Domain	**Knowledge/ Skill**	**Competency**	**Skill Area**	**Key Words**	**Core/ Specialty**	**ACHE**	**ACMPE**	**AONE**	**HFMA**	**HIMSS**
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Skill	Monitor and evaluate a physician's practice's ability to achieve its intended outcomes as a basis for modifying and improving systems and processes	Analyze	Outcomes	Specialty	X	X	X		X
Domain 5: Business Knowledge and Skills: G. Quality Improvement	Skill	Support development and implementation of clinical standards, guidelines, and protocols	Facilitate	Standards	Specialty		X	X		

The table title row reads: **HLA Competency Directory**

Appendix H: American Academy of Medical Administrators (AAMA) Certification Procedures

AAMA Advancement is an experience-based credential in general healthcare administration and in various specialties of this multifaceted profession. To note the differences, requirements, qualifications, and maintenance for each, please see the table that follows.

Advancement Options Available Through the American Academy of Medical Administrators (AAMA)

Examination-Based Credentials	Overview	Requirements	Qualifications	Maintenance	Staff Contact
CAAMA – Credentialed Member of the American Academy of Medical Administrators	Time-limited credential indicating knowledge of the recognized Body of Knowledge in healthcare administration as established by the American Academy of Medical Administrators (AAMA).	Earned by an examination based on specified Body of Knowledge in healthcare administration, as defined by AAMA.	Requires current management position in the healthcare field, active AAMA membership, and a baccalaureate degree with four years of healthcare-related management experience or a master's degree with one year of healthcare-related experience. Options available for student members and for transferring exam-based credential from an allied healthcare association.	Requires continuous AAMA membership and triennial demonstration of continuing professional development.	Director of Education 847/759-8601 **info@aameda.org**
Experience-Based Credentials	Overview	Requirements	Qualifications	Maintenance	Staff Contact
FAAMA – Fellow of the American Academy of Medical Administrators	FAAMA is a membership category in the AAMA that verifies professional achievement in healthcare administration.	Demonstration of professional development and service in healthcare administration through *one* of the following paths: • Original fellowship thesis of graduate school quality • Three case studies • Documentation of formal education, continuing education, organizational and professional service personal achievement	Requires active two to four years of AAMA membership (see FAAMA application for full details), six years' experience in healthcare management or education, and attendance at one AAMA Annual Conference.	Requires continuous membership in AAMA.	Director of Membership 847/759-8601 **info@aameda.org**
Diplomate – Diplomate in Healthcare Administration	Diplomate status is available only to AAMA Fellows. This is not an award or membership category, but a status. The title of Diplomate is bestowed to indicate achievement of true excellence within healthcare administration.	Demonstration of professional development and service in healthcare administration through *one* of the following paths (must be a different path than applicant took to achieve Fellow): • Original fellowship thesis of graduate school quality • Three case studies • Documentation of formal education, continuing education, organizational and professional service personal achievement	Requires active AAMA membership, and achievement of FAAMA.	Requires continuous membership in AAMA.	Director of Membership 847/759-8601 **info@aameda.org**

Advancement Options Available Through the American Academy of Medical Administrators (AAMA)

Experience-Based Credentials *(continued)*	*Overview*	*Requirements*	*Qualifications*	*Maintenance*	*Staff Contact*
FACCA – Fellow, American College of Cardiovascular Administrators (a specialty group of AAMA)	Verifies professional achievement in cardiovascular administration.	Earned by demonstrating professional development and service in cardiovascular administration through one of the following paths: • Original fellowship thesis of graduate school quality • Three case studies Documentation of formal education, continuing education, organizational and professional service personal achievement	Four years' ACCA/AAMA membership, six years' experience in cardiovascular management, and attendance at one ACCA/AAMA national conference.	Requires continuous membership in ACCA/AAMA.	Director of Membership 847/759-8601 **info@aameda.org**
FACCP – Fellow, American College of Contingency Planners (a specialty group of AAMA)	Verifies professional achievement in healthcare contingency planning.	Earned by demonstrating professional development and service in healthcare contingency planning through one of the following paths: • Original fellowship thesis of graduate school quality • Three case studies Documentation of formal education, continuing education, organizational and professional service personal achievement	Four years' ACCP/AAMA membership, six years' experience in healthcare contingency planning, and attendance at one AAMA Conference including the ACCP Program Track in the past four years.	Requires continuous membership in ACCP/AAMA.	Director of Membership 847/759-8601 **info@aameda.org**
FACMCA – Fellow, American College of Managed Care Association (a specialty group of AAMA**)**	Verifies professional achievement in managed care administration.	Earned by demonstrating professional development and service in healthcare contingency planning through one of the following paths: • Original fellowship thesis of graduate school quality • Three case studies • Documentation of formal education, continuing education, organizational and professional service personal achievement	Four years' ACMCA/AAMA membership, six years' experience in managed care management, and attendance at one AAMA Conference, including the ACMCA Program Track in the past four years.	Requires continuous membership in ACMCA/AAMA	Director of Membership 847/759-8601 **info@aameda.org**
Combined Credentials	*Overview*	*Requirements*	*Qualifications*	*Maintenance*	*Staff Contact*
CFAAMA	Designates an AAMA member who has achieved *both* a Credentialed member, American Academy of Medical Administrators (CAAMA), and Fellow, American Academy of Medical Administrators (FAAMA).	See CAAMA and FAAMA above.	See CAAMA and FAAMA above.	See CAAMA and FAAMA above.	See CAAMA and FAAMA above.

CRM D0016545.A2/Final

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