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U.S. Army-Baylor University Graduate Program in Health Care Administration

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Perspective	1
MG George W. Weightman	
U.S. Army-Baylor Program Overview	3
A. David Mangelsdorff, PhD	
The U.S. Army-Baylor Program: 50 Years of Scholarship in Action	5
A. David Mangelsdorff, PhD, et al	
At the Crossroads: The U.S. Army-Baylor Program	10
LTC Shonna L. Mulkey, MS, USA	
Evidence-Based Outcomes	14
A. David Mangelsdorff, PhD	
Deputy Commander for Administration Community of Practice	18
Jody R. Rogers, PhD	
Factors Affecting Selection for Promotion to Lieutenant Colonel (05)	21
A. David Mangelsdorff, PhD	
Executive Competencies in Health Care Research: A Decade of Assessment	24
Kenn Finstuen, PhD/A. David Mangelsdorff, PhD	
Defining the Future of Army Dentistry	27
L. Darwin Fretwell	
Program Director Profiles	29
Also in this issue.....	
The Evolution of the United States Army Ambulance	37
CPT Joseph P. Edger, MS, USA	
Prioritizing Endemic Diseases	41
Charles W. Elliott	
AMEDD Dateline	
Wayne R. Austerman, PhD	48

JOURNAL

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Perspective

The Army-Baylor Program in Healthcare Administration

I am delighted to be afforded this distinct opportunity to reacquaint you with the proud accomplishments and bright future of our great Healthcare Administrators. As some of you may know, through an affiliation between the U.S. Army Academy of Health Sciences, San Antonio, Texas, and the Baylor University Graduate School, Waco, Texas, our Baylor students enrolled in the graduate program in healthcare administration will acquire a broad knowledge of the theories, concepts, and practices that directly effect the administration and organization of health care delivery, and a thorough knowledge of the managerial tenets and techniques fundamental to the effective administration of health care delivery with particular emphasis on the federal sector.

Today, more than ever, our health care personnel are challenged to develop requisite administrative skills to support a diverse medical staff while they focused on direct patient care.

The Graduate Program in Healthcare Administration is a 2-year program divided evenly between a didactic year and a residency year. Students take 60 credit hours of instruction during the didactic year covering a wide range of health care topics to include economics, financial management, strategic management, decision making, international health, bioethics, health care law, organizational theory, information management, and medical readiness to name but a few of the required courses. Over 70% of the program's full time faculty members and many of its adjunct faculty have earned doctorate degrees.

The catalyst was BG Joseph I. Martin, MC, who had returned home from World War II with strong convictions about the education and training needs of the Army Medical Department. Brigadier General Martin had witnessed the need for trained personnel who could relieve physicians of administrative functions such as resource management. As Commandant of the Medical Field Service School (MFSS) at Fort Sam Houston, Texas, BG Martin recommended to the Surgeon General that a suitable officer be selected for a degree program in Hospital Administration. This officer would then be assigned to the MFSS to start a similar program for the Army.

The program was initially conceived as a 3-week certificate of training program in 1947, but due to the large volume of educational material, it was expanded to a 20-week training

course just 1 year later. By 1949, it was again lengthened to 39 weeks. During these initial years of the program, Army officers were able to receive undergraduate college credit through the United States Armed Forces Institute and the University of Maryland.

The first graduates of the affiliated program received Master's degrees on 29 May 1953 at the Baylor Campus in Waco, Texas. The two degrees offered at that time included a Master of Hospital Administration and a Master of Science in Hospital Administration (the former involving a yearlong residency).

Diversity has always been a hallmark of the Army-Baylor Program, where men and women from the different services and departments of the Federal government unite to learn about the latest topics in health care administration. International students brought a unique flavor to the program during the period of heightened global conflicts in the 1950s and 1960s.

While the course was initially developed to educate senior Army Medical Administrators, the focus changed in the 1950s to address hospital administration topics in the Army, Navy, Air Force, and Veteran's Administration. Responsive to the needs of military medicine, the Army-Baylor Program changed its curriculum in 1966 to reflect the need to prepare middle managers for the changes in providing health care in the federal sector. New demands were placed on health care administrators with the implementation of the Dependents' Medical Care Act of 1956. This act defined eligible beneficiaries in the Military Health Services System and ensured that the dependents of active duty members would be provided care from civilian sources at government expense. This act also removed service-specific barriers to encourage cross-utilization of military hospitals regardless of service affiliation. The Army-Baylor Program offered a unique opportunity for health care administrators from different services to abandon myopic service-specific administrative concerns and adopt a broader understanding of how to manage a federal health system.

A joint service theme pervaded the federal health services



Major General George W. Weightman

system in the 1990s as it attempted to provide cost-effective and quality care to beneficiaries in an environment of depleted resources. Service boundaries began deteriorating as evidenced by the increasing number of resource sharing agreements between the Department of Veteran's Affairs and the Department of Defense. In 1993, the Army and Air Force integrated personnel for the first time to provide peacetime health care in a Joint Medical Care Facility at Landstuhl, Germany. The Defense Authorization Act of 1994 continued this joint-service trend when it inaugurated TRICARE, a system of managed care networks aimed at providing quality health care settings. Fortunately, the Army-Baylor curriculum continues to evolve as the health care landscape changes in both the civilian and military health care arenas.

Since its inception, more than 2,000 students have graduated from the Army-Baylor Program. The Army-Baylor

Program has or has had graduates in every state in the United States and internationally in Canada, Taiwan, Peru, Pakistan, India, Colombia, Iran, Egypt, Yugoslavia, Indonesia, Thailand, Japan, Jordan, Chile, Cambodia, Korea, Formosa, Ethiopia, Brazil, and Venezuela.

I am proud to say that our Program fosters a cooperative spirit where physicians, nurses, aviators, engineers, information systems managers, dietitians, and administrators share perspectives on health care problems and solutions. This environment encourages health care providers in various specialties to understand one another as they try to tackle health care issues together.

In the new millennium, our Army-Baylor Program will capitalize on the strength of its diverse class structure to address ever pressing and shifting issues in health care.

2004 Spurgeon Neel Writing Competition Winner Named

Colonel Thomas Munley, Executive Vice-President of the Army Medical Department Foundation, has announced that Mr Donald L. Parsons, Army Medical Department Center and School, has been selected as the winner of the 2004 Spurgeon Neel Writing Competition. Mr Parsons is a Curriculum Developer/Instructor in the Department of Combat Medic Training, Academy of Health Sciences.

Mr Parsons' article "*Battlefield Medicine: A Tactical Perspective*" appeared in the April-June 2004 issue of the AMEDD Journal. The panel of judges determined that the article best exemplified the history, legacy, and traditions of the Army Medical Department by providing a comprehensive look at the evolution of medical treatment in the battlefield environment.

Colonel Munley indicated that as the Neel Writing Award winner, Mr Parsons will receive a \$500 monetary prize and a specially-designed medallion, to be presented at an AMEDD Museum Foundation special event this spring.

U.S. Army-Baylor Program Overview

A. David Mangelsdorff, PhD†

This issue of the Journal provides articles from the 50 Year Symposium presented as part of the preceptor conference in May 2004 and narratives from some of the program directors who commented upon how the U.S. Army-Baylor University Graduate Program in Health Care Administration (HCA) had affected their careers.

The U.S. Army-Baylor University Graduate Program in HCA started in 1947 as a 3-month course in the Department of Administration at the Medical Field Service School (MFSS) at Fort Sam Houston, TX, which awarded Certificates of Training in Hospital Administration. The course was expanded to a 20-week training program in 1949. In 1951, the MFSS hospital administration program became affiliated with the Graduate School of Baylor University in Waco, TX, making it the 11th graduate hospital administration program in the United States. In 1952, the program became accredited as a member of the Association of University Programs in Hospital Administration. The first graduates of the affiliated program received master's degrees in May 1953. In 1969, it became the U.S. Army-Baylor University HCA Program. In 1983, the curriculum was lengthened to 12 months (four semesters) for 60 graduate hours.

The U.S. Army-Baylor University Graduate Program in HCA is fully credentialed by the Association of University Programs in Hospital Administration, the Accrediting Commission of Education for Health Services Administration since the late 1960s, as well as being accredited as part of Baylor University through the Southern Association of Colleges and Universities. Though there are numerous training programs in health services, it is the only graduate program of HCA in the Federal system. Students participating include officers (active duty and reservists) from the Army, Navy, Air Force, Coast Guard, and civilian personnel from the Department of the Army and the Department of Veterans Affairs. The current curriculum consists of an academic program of 60 graduate hours over 12 months, followed by a 12-month residency at a medical treatment facility.

Analysis of alumni surveys and student biographies show that 17 graduates have reached the rank of general officer, 68 earned post-Baylor doctorates, and 17 of the 23 program directors are program graduates. A list of program directors are:

COL James T. Richards, MSC, MHA, PhD; TERM: Nov 1947 - Jan 1952 (Affiliation with Baylor University started in 1951)

COL Frederick H. Gibbs, MSC, MHA, LFACHA;
TERM: Jul 1952 - Jun 1956

BG William A. Hamrick, MSC, MPA, MHA, OD, LFACHA;
TERM: Jul 1956 - Jun 1959

COL Glenn K. Smith, MSC, MHA;
TERM: Jul 1959 - Sep 1961

COL Sam A. Edwards, MSC, MHA, PhD,
TERM: Sep 1961 - Jan 1967

COL John P. Valentine, MSC, MBA, DBA;
TERM: Feb 1967 - Aug 1969

COL Charles L. Eveland, MSC, MHA, PhD;
TERM: Aug 1969 - Jul 1974

COL Donald F. Callaghan, MSC, MHA, PhD;
TERM: Jul 1974 - Jul 1975

LTC Bob M. Inge, MSC, MA, MBA, DBA;
TERM: Jul 1975 - Sep 1977

COL Jack O. Lanier, MSC, MBA, MHA, DrPH;
TERM: Sep 1977 - Jan 1981

COL Thomas A. Janke, MSC, MS, PhD;
TERM: Jan 1981 - Jul 1983

COL Richard C. Harder, MSC, MHA, FACHE;
TERM: Jul 1983 - Sep 1984

COL Melvin E. Modderman, MSC, MBA, MHA, DBA,
FACHE; TERM: Sep 1984 - Jul 1988

COL Wayne B. Sorenson, MSC, MBA, PhD;
TERM: Jul 1988 - Jan 1990

LTC George J. Gisin, MSC, MHA, PhD;
TERM: Jan 1990 - Aug 1991

COL Paul P. Brooke, Jr., MSC, MHA, PhD;
TERM: Aug 1991 - Aug 1992

COL Ronald P. Hudak, MSC, JD, MHA, PhD, FACHE;
TERM: Aug 1992 - May 1994

COL Clarence E. Maxwell, MSC, MHA, PhD, RA;
TERM: May 1994 - Jun 1995

LTC Lee W. Briggs, MSC, MA, MHA, PhD, CHE;
TERM: Jun 1995 - Jan 1997

LTC Jody R. Rogers, MSC, MS, MHA, PhD, FACHE;
TERM: Jan 1997 - Jun 1999

LTC Charles F. Wainright III, MSC, MHA, PhD, FACHE;
TERM: Jun 1999 - Jun 2001

CDR Daniel G. Dominguez, MSC, MHA, PhD;
TERM: Jun 2001 - Aug 2003

LTC Shonna L. Mulkey, MSC, JD, MHA, PhD;
TERM: Aug 2003 - present

Program Directors in 1997



L-R: George Gisin, COL Ronald Hudak, Charles Eveland, LTC Lee Briggs, James Richards, COL Clarence Maxwell, Richard Harder, Wayne Sorenson.

Program Directors in 2004



L-R: Richard Harder, LTC Shonna Mulkey, Daniel Dominguez, Jody Rogers, Paul Brooke, Jr, COL Lee Briggs, Melvin Modderman, Clarence Maxwell, Wayne Sorenson.

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The U.S. Army-Baylor Program: 50 Years of Scholarship in Action

A. David Mangelsdorff, PhD†

Kenn Finstuen, PhD††

Rene Pryor†††

Commanders of military treatment facilities (MTFs) and leaders of the military health system (MHS) face major challenges managing financial uncertainty, organizational reform, readiness requirements, deployment operations, delivery of health services, and maintaining quality and access of health care for beneficiaries. The field of health care and the academic programs designed to prepare health care administrators long have been challenged to deal with demands of continual change.¹ The U.S. Army-Baylor University Graduate Program in Health Care Administration (HCA) has evolved over 50 years educating current and future leaders in the Federal sector.²⁻⁷ This article reviews the program history, admission requirements, the Joint Medical Executive Skills competencies and supporting body of executive skills research, summarizes demographic characteristics of the graduate students, describes student research, examines program outcomes research, and projects future directions.

Program History

The U.S. Army-Baylor University Graduate Program in HCA started in 1947 as a 3-month course in the Department of Administration at the Medical Field Service School (MFSS) at Fort Sam Houston, TX, which awarded Certificates of Training in Hospital Administration. The first class consisted of 40 students and a faculty of eight officers and one civilian. The course curriculum was designed by LTC James T. Richards who had completed a master's degree in hospital administration at Northwestern University under Malcolm MacEachern. Richards became the first program director at the MFSS. The course was expanded to 20 weeks in 1949, and in 1951, the MFSS hospital training program became affiliated with the Graduate School of Baylor University in Waco, TX, making it the 11th graduate hospital administration program in the country. The course was lengthened to 39 weeks, and in 1952, the program became accredited as a member of the Association of University Programs in Hospital Administration (AUPHA). The first graduates of the affiliated program received master's degrees in May 1953. In 1969, the name was changed to the U.S. Army-Baylor University Graduate HCA Program, awarding the master's of health care administration (MHA) degree through Baylor and the Army Medical Department's (AMEDD) Academy of Health Sciences at Fort Sam Houston. In 1983, the curriculum was lengthened to 12 months (four semesters) consisting of 60 graduate hours, maintaining the 1-year administrative residency requirement.²⁻⁷ While subject to numerous curricula and name changes, the program has always maintained the spirit of the program's motto "Scholarship in Action."

The U.S. Army-Baylor University Graduate Program in HCA is fully credentialed by AUPHA and the Accrediting

Commission of Education for Health Services Administration since the late 1960s, as well as being accredited as part of the Graduate School of Baylor University through the Southern Association of Colleges and Universities. Though there are numerous training programs in health services, it is the only graduate program for HCA in the Federal system. Students have included officers (active duty and reservists) from the Army, Navy, Air Force, Coast Guard, and civilian personnel from the Department of the Army and the Department of Veterans Affairs. The current curriculum consists of 60 graduate hours over 12 months followed by a 12-month residency at a MTF. A typical class has physicians, nurses, administrators, and other allied health professionals in attendance. The academic program is funded by the U.S. government. Since 1988, all students are issued a laptop computer for use during the didactic year. For more than 50 years, the U.S. Army-Baylor program has provided professional hospital and health care leadership around the globe for peace and wartime missions that have involved patient and casualty care from the Korean and Viet Nam conflicts to the Gulf wars, and humanitarian efforts around the world.

Current Admission Requirements

Candidates must: (1) be employed by the Federal government and demonstrate leadership potential; (2) have completed a Baccalaureate degree or first professional degree from an accredited educational institution; (3) achieve a composite verbal and quantitative Graduate Record Examination (GRE) score of 1000 or a score of 500 on the Graduate Management Admission Test within the past 5 years; and (4) have earned a cumulative 2.7 undergraduate grade point average (GPA) on a 4.0 scale.

Joint Medical Executive Skills Development Program Competencies

What elements of academic courses and assignments should be incorporated into the professional development of MTF commanders and leaders? To address these concerns, the U.S. Congress in the Defense Appropriations Act of 1992, mandated that MTF commanders be required to demonstrate “professional administrative skills.”⁸⁻⁹ The Secretary of Defense for Health Affairs convened a Tri-Service Task Force in early 1992 to identify managerial competencies required to successfully command MTFs. The competencies (knowledge, skills, and abilities) identified in the joint medical executive skills development program are accepted in both private and military sectors. The set of competencies identifies basic skills that a potential MTF commander should possess before assuming command. The Surgeons General of the Army, Navy, and Air Force have approved the methods by which competencies may be acquired. Army officers achieve competencies through military education, graduate education, and progressive job experience. Navy and Air Force officers may also attain competencies through professional certification. Because career patterns (assignments, educational opportunities, and contingency operations experience) vary widely within and among the Armed Services, potential MHS leaders may not have fully achieved qualification in all specific competencies. The U.S. Army-Baylor University HCA program addresses all the required federal competencies.¹⁰

Executive Skills Research

In support of the Joint Medical Executive Skills Development Program, an ongoing research initiative was undertaken by the U.S. Army-Baylor program faculty in late 1992 to study and examine the executive skills, knowledge, and abilities projected to be required by both civilian and military health care professionals, managers, executives, and administrators. According to Delbeq, Van De Ven, and Gustafson, the Delphi method is an iterative feedback technique used to structure a group communication process for collecting and analyzing information from a group of experts.¹¹ To date, Delphi research studies have examined health care executive and administrative job requirements in both the civilian and federal sectors. Civilian studies have included fellows of the American College of Health Care Executives (ACHE), fellows of the American College of Medical Practice Executives – the professional development and credentialing arm of the Medical Group Management Association (MGMA), members of MGMA’s Society of Physician Executives, fellows of the American College of Physician Executives (ACPE), and American Pharmaceutical Association (APhA) graduates of the GlaxoSmithKline Executive Management Program for Pharmacy Leaders at the Wharton School, University of

Pennsylvania.¹²⁻¹⁸ Federal health care executive studies have included U.S. Army hospital commanders and deputies for administration, U.S. Army nurse administrators, U.S. Army Medical Service Corps (MSC) officers, U.S. Navy hospital administrators, U.S. Coast Guard health care executives, U.S. Army and U.S. Navy dentists, and Department of Defense (DOD) pharmacy executives.^{15, 19-29} Commanders need to stay current in their knowledge and skills about health care trends and developments.³⁰⁻³¹

Application of Healthcare Executive Competency Research to Program Curricula

Results from executive skills research have been, and continue to be, used to validate current U.S. Army-Baylor University HCA graduate program objectives and curricula. Other civilian agencies, such as ACHE headquarters in Chicago, MGMA’s Center for Research in Ambulatory Health Care Administration in Denver, the ACPE’s Journal of Medical Management administrative offices in Tampa, and most recently, the APhA in Washington DC have used results from the Army-Baylor Delphi studies to determine needs and topics for continuing HCA education, executive development, and professional conferences.¹²⁻¹⁸

Demographic Characteristics of Students

There have been 2,234 students in the HCA program between 1951 to 2001. The distribution includes 112 foreign military officers and 27 civilians. The U.S. military students (n=2100) have the following demographics: 82.1% male, 17.9% female; Branch of Service: 83.0% Army, 9.7% Air Force, 7.0% Navy and Marine Corps, 0.3% Coast Guard; 77.4% MSC, 13.6% Nurse Corps, 6.6% Medical Corps, 3.2% Specialist Corps, 2.0% Dental Corps, and 0.2% Veterinary Corps. The average student age is: 34.9 years old (SD 5.0), with an undergraduate GPA of 3.1 (SD 0.3), a composite GRE (verbal and math) average of 1105 (SD 124.2), and has at least 10.6 (SD 4.0) years of experience. The graduation rate is shown in Table 1. Program statistics are available on the Army-Baylor Alumni Club webpage (<http://www.txdirect.net/users/dmangels/bc00xx.htm>).

Student Research

The HCA research program focuses on scholarship in action by both students and faculty. Student research is conducted in numerous courses and in a capstone course in the fourth semester. Individual courses emphasize the direct involvement of students with management and consultative projects. In the Research Methods course (HCA 5311), students work in small groups examining problems of interest in health care settings. From the separate research sections, the best

Year Interval*	U.S. Army	U.S. Navy	U.S. Air Force	U.S. Coast Guard	Veteran's Administration	Other**
1951-68	469		64			42
1969-75	304		16		3	2
1976-82	200	20	17		1	
1983-89	183	23	18			
1990-95	181	50	16	2	3	3
1996-99	110	46	23	3	11	
2000-01	42	12	10	1	3	
Total	1489	151	164	6	21	47

Notes: Affiliation with Baylor University began in 1951; total 1,878 MHA degrees awarded thru 2003.

*Year intervals represent major milestones and changes to program.

**Other: Foreign National 37, Public Health Service 2, Civilian 3, Army Certificate 5.

Table 1. U.S. Army-Baylor University HCA Program MHA Degrees Awarded: 1951-2003

projects compete at the student research conference named in honor of J. Dewey Lutes (first Director General of the American College of Hospital Administrators – ACHA: now ACHE).^{6,7} Students vote on the most professional and creative projects. Winners are recognized by the McGaw Scholarship award. In the Consulting Practicum course (HCA 5390) in the fourth semester, students integrate the knowledge, skills, and tools learned in previous courses to help address management problems in local hospitals and commands. This capstone course permits students to integrate their knowledge into applied settings. The academic phase serves to assist students in developing their scholarship and problem solving abilities. In the residency phase (12 months), students conduct a graduate management project (GMP) to answer problems of concern to the institution. Faculty readers nominate the best GMP for consideration for the Boone Powell Award for Academic Excellence (named for Boone Powell, an early Army-Baylor program lecturer and advocate, past chairman of the ACHA, past administrator for the Baptist Medical Hospital System, and advocate of administrative residencies).^{6,7} The criteria for the Boone Powell award are: excellence in scholarship, intellect, and professionalism. Student research projects, J. Dewey Lutes winners, and selected GMPs can be viewed through the Army-Baylor Alumni Club page. In addition, many of the faculty executive skills research studies cited above have involved graduate student co-investigators.¹²⁻²⁹ Student GMPs are available in Stimson library at the AMEDD Center and School or through the Defense Technical Information Center.

Program Outcomes

The impact of Army-Baylor HCA on the MHS was examined on some evidence-based educational outcomes for

the Individual (student), the Society (all Army MTFs), on the MHS, and other health care programs. *Individual* student outcomes track career development of classes from 1951 to 2001. Measures include: graduation, promotion rates, promotion rates to senior executive level (O5, lieutenant colonel), professional certification, advancement within professional organizations such as ACHE, American Academy of Medical Administrators, MGMA, and obtaining additional education degrees. Individual results are shown in Table 2.

Graduation rates: overall 83.8% graduated from Baylor Univ; U.S. military: 86.3% graduated

Promotion rates: 82.9% of U.S. military promoted (of which 12 promoted to general officers)

Promotion rates to O5: 68.9% of U.S. military attained O5 or higher

Educational degrees: 4.9% earned additional graduate degrees; 68 graduates earned post-Baylor doctorates

Professional organizations and certification: 61.0% of U.S. military

Advancement within professional organizations: 74.5% of U.S. military members earn diplomate or fellow status

Table 2. Summary of Individual Outcomes

The *Society* frame of reference was operationally defined as all of the 38 Army MTFs, where the dependent variables are: the Joint Commission Accreditation of healthcare Organizations (JCAHO) outcomes scores and the monthly DOD patient satisfaction scores in all Army MTFs. Army MTFs have similar constraints and resources; external assessments of evidence-based outcomes are standard practices. All the Army

Deputy Commander for Administration (DCAs) had earned master's degrees, so educational levels were considered comparable. The independent variables examined were: DCA's education (Baylor vs non-Baylor), MTF size (Clinic, Medical Activity, or Medical Center), and the year of inspection (between 1994 to 2001). The MTFs with DCAs educated through the Army-Baylor HCA program showed significantly higher JCAHO and patient satisfaction scores; Baylor DCAs were more likely to be assigned at Medical Centers. Comparable results were found for the monthly DOD patient satisfaction scores, that MTFs with Baylor trained DCAs had higher levels of satisfaction.³²

The impact of Army-Baylor alums and faculty on the MHS and other health care programs is most significant (Table 3 – U.S. Army-Baylor University Federal and National Healthcare Leadership. The table may be accessed at <http://www.txdirect.net/users/dmangels/bayfldr.htm>). Graduates have distinguished themselves at all levels of the MHS, in corps leadership roles, professional associations, and in international settings. In addition, the program has produced at least 68 graduates who went on to earn doctorates. Many of the doctoral prepared graduates returned to serve as Army-Baylor program directors (17 of 23) and faculty, then went on to hold senior leadership positions as deans, program directors, and/or faculty at other health care education programs in the U.S. and around the world.

Future Directions

Future directions include seeking partnerships to increase the value of the HCA program. New ventures include: a joint MBA/MHA with the University of Texas San Antonio, an international MBA, an executive management level program, leadership and communities of practice modules, and increased distance learning opportunities. The intent is to stimulate and sustain a passion for lifelong learning, leveraging information technology, to provide excellence in teaching, scholarship, research, and community service to the Federal health care system.

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At the Crossroads: The U.S. Army-Baylor Program

LTC Shonna L. Mulkey, MS, USA†

Introduction

In this article, I will present information and reflections on the history, current state, and future direction of the U.S. Army-Baylor University Graduate Program in Health Care Administration (the Baylor Program). My experience with the Baylor Program has been from several perspectives – as a student, a resident, a preceptor, the program administrator, a faculty member, and as program director. While I have seen the program from these diverse roles, I was not at all familiar with its early history until about a year ago, when long-time faculty member, Dr Dave Mangelsdorff, conceived the idea of hosting a Baylor 50 Year Symposium. He felt it was important to recognize and celebrate our 50th anniversary as an accredited program. He generated several strains of research to be presented at the Symposium, and began to market and publicize the event. He also solicited biographical information from a large number of distinguished Baylor graduates. The resulting compilation of personal stories is a living document that will hopefully be used as a resource to help preserve our rich history and inform our future decisions. I want to commend Dr Mangelsdorff for his insight, dedication, and dogged persistence in conceiving and realizing this event.

The Baylor 50 Year Symposium was conducted on 20 May 2004 in conjunction with the Annual Baylor Preceptor's Conference. Several of the articles published in this issue were presented at the symposium. Of the many historical items collected by Dr Mangelsdorff and posted to the Baylor (<http://www.txdirect.net/users/dmangels/startb50.htm>) website, one of my favorites is a fascinating account of the origin and early history of the program written in 1993 by our first program director, COL (retired) James Thomas Richards. I thoroughly enjoyed reading the essay and, from it, learned a great deal about the early beginnings of this great program. In the following section, I have summarized many of the most significant events found in COL Richards story. I am grateful to him, not only for his tenacity and dedication in initiating the Baylor Program, but also for having the foresight to record his story in such rich detail. If not for this record, certainly much would have been lost. We had hoped to honor COL Richards at the symposium, but it was not to be. He died at the age of 88, 6 months before the symposium. Having read his colorful essay, I feel certain he would have enjoyed the day immensely and would have truly appreciated the exchange of information and

ideas about the program he worked so hard to build, as I hope readers of the Army Medical Department (AMEDD) Journal will discover.

Early History

The Baylor Program has been a mainstay of the AMEDD for over five decades. It was created in 1947, the same year that the Army Medical Service Corps (MSC) was established. The program has produced more than 2,500 military health care administrators, approximately 77% of them MSC officers. Interestingly, the program owes its existence to the strength and insight of a Medical Corps officer, MG Joseph Martin.

According to COL Richards, when General Martin returned to the U.S. from Italy after World War II, he had definite ideas about the professional needs of Army physicians. He felt that medical officers needed better-trained support personnel who could handle the increasing number of administrative duties and foster an environment in which physicians could better pursue patient care. On his way to his new position as Commandant of the Medical Field Service School (MFSS), then BG Martin voiced his ideas to The Surgeon General and recommended that an officer be assigned to the MFSS to start an Army program in Hospital Administration with the goal of producing educated individuals who could handle administrative issues in the hospital environment.

During this period, hospital administration was an emerging field of study offered by only seven graduate programs in the U.S. Since the Army did not yet have an expert in the field, BG Martin recommended that a qualified officer be selected to attend one of these seven programs followed by an assignment to the MFSS to start an Army program. The officer selected was COL James Thomas Richards. An LTC at the time, Richards was sent to Northwestern University in Chicago where he completed his degree in February 1947. Lieutenant Colonel Richards then reported to Fort Sam Houston where he promptly established a 12-week course in hospital administration. The first iteration of the course was offered in November 1947. However, according to COL Richards, it quickly became apparent that they were attempting “to cram too much material into too compacted a period of time.” That practice might sound familiar to recent Baylor graduates. In the

following year, 1948, General Martin agreed to lengthen the course to 20 weeks. Along with lengthening the course, The Surgeon General gave approval for nurses to attend the Baylor Program. This fortunate event resulted in the admission of large numbers of nurses. Indeed, from 1947 to 1950, over 50% of the Baylor class was comprised of nurses. After only two iterations of the 20-week course, the program was lengthened to 39 weeks. Today, the didactic portion of the Baylor course is 53 weeks, followed by a 1-year residency. One of the most interesting parts of the story told by Richards is how the association with Baylor University came about.

Although the course was not originally affiliated with a university, an arrangement was made through the U.S. Armed Forces Institute with the University of Maryland for students to enroll in correspondence courses with similar content and thereby obtain college credit for some of the courses taken in the program. This arrangement was purely optional, but its existence gave LTC Richards the idea of trying to negotiate with a local university to confer college credit for the program. Lieutenant Colonel Richards approached several local universities to include St Mary's University, Trinity University, and Incarnate Word College. None had existing hospital administration programs and all turned him down.

Then, in October 1948, a chance meeting occurred. Lieutenant Colonel Richards decided to have a drink at the Officers Club at Fort Sam Houston on his way home from work. Once inside, he recognized Dr Hardy Kemp, MD, sitting at the bar. Doctor Kemp had been one of his professors at the University of Texas in 1933 and the two had met again in 1942 in DC when Dr Kemp had served as a physician in the Army Reserves. Doctor Kemp informed LTC Richards that he was now Dean of the Graduate School at Baylor University School of Medicine in Houston and was visiting Fort Sam Houston as a consultant. Lieutenant Colonel Richards told him of his new position and also mentioned his attempts to obtain graduate college credits for students in the hospital administration program. Doctor Kemp thought he might be able to help. When Dr Kemp returned to Houston, he discussed the matter with the Dean of the Medical School, who felt that the affiliation would be more appropriate for the Waco campus. Doctor Kemp then discussed the issue with Dean Wilbur T. Gooch, PhD, Baylor University, at the Waco campus. Doctor Gooch was receptive to the idea and convened the Graduate School Faculty Board for a decision on the proposal. The board voted to approve the affiliation.

Lieutenant Colonel Richards was exultant about the success of the proposal but his happiness was short lived. He learned shortly thereafter that the idea was stalled within Army channels. However, according to LTC Richards, it is BG Martin who should again be recognized for his crucial support of the

program. Brigadier General Martin intervened and was instrumental in ultimately gaining the approval of the Army Surgeon General for the affiliation with Baylor University.

With the program up and running, the next step was to gain formal academic recognition. The seven pioneer graduate programs in hospital administration had come together in the late 1940s to form an Association of University Programs in Hospital Administration (AUPHA) and had established standards of excellence for the field of study. These programs included Harvard, Yale, Columbia, Northwestern, Chicago, Washington University, and Dartmouth College. In 1950, LTC Richards traveled to Chicago in the attempt to gain accreditation for the Baylor Program from AUPHA. Five of the seven member programs felt they did not know enough about the program to make a determination and so the request was denied. Lieutenant Colonel Richards learned the basis for their reluctance and set about correcting their lack of familiarity with the program. He asked several program directors of member schools to visit the Baylor Program over the next year and provide guest lectures to its students. In 1951, LTC Richards again applied for accreditation on behalf of the Baylor Program and, this time, accreditation was granted. Lieutenant Colonel Richards served as director of the program for five and a half years.

State of the Program

The civilian academic community, from its first successful accreditation in 1952 to its most recent one in 2002, has continuously recognized the strength of the Baylor Program. This past year, the U.S. News and World Report ranked it in the top 20 graduate masters of health care administration (MHA) programs in the nation out of more than 80 accredited programs. This ranking, along with its most recent 7-year accreditation rating, places the program in the top 10% of all MHA programs. While there are many reasons for the success of the Baylor Program, perhaps its most significant internal strengths are an annual influx of energetic and disciplined students, the dedication of its faculty, a group of experienced practitioners who serve as preceptors and program supporters, and a strong and involved alumni association. Externally, the program benefits tremendously from the outstanding level of resourcing and support provided by the AMEDD Center and School.

The Baylor Program is in the top tier of graduate programs in terms of its academic requirements and its rigor. The curriculum is strong but remains cutting edge only to the degree that the faculty retains their currency in the literature and the preceptors and AMEDD leaders remain committed to ensuring that it meets the needs of military practitioners. As with any graduate program, feedback from the field is essential to ensure the curriculum remains relevant. Unlike most programs, we

have a uniquely strong tie to our practitioners due to the formal military structure, the continuity of graduates and preceptors within that structure, and a very active and supportive alumni association.

I will highlight some of the curriculum successes that I think deserve to be mentioned. Based on faculty and practitioner expertise, the Baylor Program was one of the first MHA programs to create a core course in Managed Care more than a decade ago. It was also one of the first MHA programs to require a core course in Quality Management and has continuously required this core course for more than 15 years. Curriculum refinements and additions in the last 5 years, largely based on input from the field, include the following: inclusion of the TRICARE Basic Course, the TRICARE Financial Management Executive Program, and a Business Case Analysis Section into the core course in Managed Care. With the support of the U.S. Army Medical Command Quality Management Division, the program has added to the Quality Management course by including lectures on the two Institute of Medicine reports, "To Err is Human" and "Crossing the Quality Chasm," as well as lectures on Patient Safety, JCAHO, the systemic failures of the health system, and an applied training course in Root Cause Analysis.

The capstone course, Consulting Practicum, created more than 8 years ago, remains strong. It is designed to ensure that Baylor students have an opportunity to integrate and apply their knowledge to a practical problem in an actual health care setting under the guidance of both a project manager and a faculty member. Myriad organizations, including military, VA and civilian agencies, contribute to this course by submitting project proposals for specific issues that require academic research and analysis. If your organization is in the South Texas area and has a project proposal, we would seriously consider it as subject matter for the course. The Consulting Practicum course runs from late March to early June. Projects proposals for the course must be submitted no later than early March so that student groups can be selected and finalized well in advance of the semester. In addition to helping students solidify and apply their knowledge, this course is regarded as a community service opportunity.

Over the past 5 years, I have also become keenly aware of another strength of the program that I believe is somewhat unique. This is the existence of a select group of loyal supporters in the South Texas area who repeatedly offer their assistance to the Baylor students and faculty. These individuals support the didactic program by providing stimulating guest lectures, serving as adjunct professors and preceptors, hosting consulting practicum projects, and providing an integral link to the Texas health care community. They bring their experiences

as practitioners into the classroom and enrich the curriculum and the faculty in countless ways.

Future Directions

Finally, I would like to address several recent developments in the Baylor Program that signal possible new directions. In 2001, Baylor Program Director, CDR Dan Dominguez, gained approval from the Dean, AMEDD Center and School and the Dean, Graduate Studies, Baylor University, to initiate a trial dual track program. The initial dual program was designed to appeal to Army MSC officers who were from the Resource Management (70C) and Medical Logistics (70K) Areas of Concentration. In 2002, the dual track program was expanded to include officers in the Information Systems Management (70D) Area of Concentration.

This program allowed selected MSC officers, 70Cs and 70Ds, to receive two degrees in 2 years – both the traditional Baylor MHA degree and either an MBA degree (for 70Cs) or an MIS degree (for 70Ds) from the University of Texas at San Antonio (UTSA). All students would be required to attend the 1-year didactic portion of the Baylor Program. During the second year, the residency year, the 70C and 70D dual track students would remain in the San Antonio area and complete their residency requirements while also attending UTSA and completing a second degree. The selected 70K students would pursue a somewhat different course in the 70K Dual Track Program. For these students, after the didactic year, they would PCS to the Washington DC area and complete their residencies at Walter Reed Army Medical Center while also completing the 6-month long U.S. Army Medical Materiel Agency (USAMMA) course at Fort Detrick, MD. Both the Baylor MHA degree and the USAMMA course completion certificate would be awarded at the end of the residency year, assuming all academic requirements were met.

The intent of the dual track program was multifaceted. It was intended to increase overall enrollment in the Baylor Program and also enhance the learning experience of all Baylor students by attracting students from more diverse professional backgrounds into the program. Additionally, it was believed that it would produce better-trained, more functional 70Cs, 70Ds, and 70Ks due to the health care specific nature of the Baylor curriculum as well as the added military health system instruction provided in Baylor. This program was intended to provide additional knowledge and the second degree/certificate in the same amount of time with less cost than through traditional long-term civilian education and training.

Were these goals met? To date, 19 students have participated in the Dual Track Program. An analysis of the

enrollment data for the 3 years before and after the creation of the dual degree program reveals that overall enrollment in the Baylor Program increased by five students per year as a direct result of the dual track program. It is still too early to conduct outcomes studies that compare the performance capabilities of dual degree graduates with those of single degree graduates. However, from an academic perspective, there can be no doubt that professional diversity in the student body and faculty is a decidedly positive element. Classroom discussion and learning is enriched with the inclusion of additional perspectives. The inclusion of diverse officer groups in the program (for example, nurses, physicians, dentists, dieticians, pharmacists, and administrators) has long been recognized as one of its primary strengths.

The creators of the dual track program believed that this initiative could extend the benefits of the Baylor Program to a larger group of officers and that this, in turn, would help promote an even stronger Baylor Program in the future. As a trial program, the verdict is still out with regard to its fate. An

evaluation and determination as to its continuation must be completed no later than January 2005.

While the preservation of our traditions and strengths is essential to the continued success of the program, changes are inevitable, if only to ensure that we remain competitive with other MHA programs and continue to meet the needs of an increasingly complex health services environment. Much of this article has presented an outline of the unique history and strengths of the Baylor Program. I am convinced that it is one of the greatest assets of the AMEDD and it is my hope that after reading the evidence compiled in the articles written by Drs Mangelsdorff and Finstuen, you will come a step closer to sharing this belief.

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Evidence-Based Outcomes

A. David Mangelsdorff, PhD†

Introduction

Since 1951, the U.S. Army-Baylor University Graduate Program in Health Care Administration (HCA) has been preparing graduate students to assume leadership positions with federal health care organizations. The historical evolution of the U.S. Army-Baylor University HCA program has been described.¹⁻⁷ Several recent developments have shaped the modern Baylor HCA curricula: the joint medical executive skills competencies and evidenced-based health administration educational outcomes.⁸⁻¹²

What elements of academic courses and job assignments should be incorporated into the professional development of military treatment facility (MTF) commanders and leaders? In the Defense Appropriations Act of 1992, Congress mandated that MTF commanders be required to demonstrate “professional administrative skills.”⁸ The Secretary of Defense for Health Affairs convened a Tri-Service Task Force in early 1992 to identify executive competencies required of leaders to successfully command MTFs.⁹ The various competencies (knowledge, skills, and abilities) identified in the joint medical executive skills development program are accepted in both private and military sectors.¹³ The set of competencies identifies basic skills that a potential MTF commander should possess before assuming command. The Surgeons General of the Army, Navy, and Air Force have approved the methods by which HCA competencies may be acquired. The only academic curriculum addressing all the required Department of Defense (DOD) competencies is the U.S. Army-Baylor University HCA program.

Evidence-based methodologies are based on data, measurement, and outcomes.¹⁰⁻¹² Concern with evidenced-based health administration educational outcomes came to the forefront with the Association of University Programs in Healthcare Administration task forces starting in 1998, seeking to develop defined measures of educational outcomes. Griffith states: “it intends a systematic, outcomes-oriented, evaluation and improvement of the educational process.”¹⁰ Davidson and associates suggest a framework for evaluating the impact of health services management education.^{11,14} The elements include: environmental inputs, structure, process, outcomes, and recommendations. The long-term impact educational outcomes should be reflected in both the Individual (career advancement, increase in status) and the Society (high

performing organizations, healthier populations, satisfied consumers).

The U.S. Army-Baylor University HCA program provides a unique opportunity to assess the impact of an educational program on the military health system (MHS). Since the majority of the graduate students are military officers who serve in military health care facilities, tracking their career progression allows assessing the value added of the U.S. Army-Baylor University HCA experience in a variety of military settings in the MHS. The context of organization outcomes includes all the Army MTFs where U.S. Army-Baylor University HCA graduates execute their leadership skills. During the time from 1994 to 2001, all of the Army MTFs in the MHS (n=38) were examined by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). In a similar but shorter time frame (1997-2001), DOD patient satisfaction assessments were conducted. The purpose of this research is to assess the impact of an educational program on the MHS on some of the evidence-based educational outcomes for the Individual (student) and the Society (all Army MTFs).

Method

The current study examines some of the evidence-based educational outcomes of the U.S. Army-Baylor University HCA experience for the Individual (student) and the Society (Army MTFs). Individual student outcomes track career development of classes from 1951 to 2001. Measures include: graduation, promotion rates, promotion rates to senior executive level (O5, lieutenant colonel), professional certification, advancement within professional organizations such as: American College for Healthcare Executives (ACHE), American Academy of Medical Administrators (AAMA), Medical Group Management Association (MGMA), and obtaining additional education degrees. The Society frame of reference was operationally defined as all of the 38 Army MTFs, where the dependent variables are: the JCAHO outcomes scores and the monthly DOD patient satisfaction scores in all Army MTFs. All Army MTFs have similar constraints and resources; external assessments of evidence-based outcomes are standard practices (JCAHO inspections and satisfaction surveys). All the Army Deputy Commander for Administration (DCAs) had earned master’s degrees, so educational levels were considered comparable. Due to the

multivariate nature of potential interacting effects of various predictors, general linear model analyses were conducted to examine main effects and interactions. The method was primarily data exploration rather than controlling experimental assessment. The independent variables examined were: DCA's education (Baylor vs non-Baylor), MTF size (Clinic, Medical Activity, or Medical Center), and the year of inspection (between 1994 to 2001). It was hypothesized that MTFs with Baylor trained DCAs would receive higher JCAHO scores and higher patient satisfaction reports (main effects). It was also hypothesized there would be significant interactions with the effects being most noticeable in the larger MTFs (Medical Centers with Baylor DCAs).

Results

Individual Outcomes for graduate students in U.S. Army-Baylor University HCA program include: graduate successfully, promotion rates, promotion rates to senior executive level (O5, lieutenant colonel or greater), professional certification, advancement within professional organizations, and obtaining additional education degrees. Summary of individual outcomes includes for the students matriculating between 1951 through 2001 (n=2234) includes: program graduation rates: 83.8% graduated. Overall promotion rates indicated (82.9% of the U.S. military officers were promoted), of which 12 were promoted to the rank of general officer. Promotion rates to O5 or higher were 68.9% of U.S. military attained O5 or higher. Seeking additional educational degrees (4.9% earned additional graduate degrees); 68 graduates earned post-Baylor doctorates. Joining professional organizations and certification: 61.0% joined professional associations (ACHE, AAMA, and MGMA); advancement within professional organizations: 74.5% of members earned diplomat or fellow status. At the ACHE meetings in 1995, 1998, 1999, 2000, 2002, 2003, and 2004, the U.S. Army-Baylor HCA student chapters were recognized for the graduating classes with the greatest number of candidates advancing in professional credential status. Additional outcomes are available (Army-Baylor alumni page: <http://www.txdirect.net/users/dmangels/bc00xx.htm>).

Society (Army MTF) outcome measures include: JCAHO outcome scores and monthly patient satisfaction scores. The JCAHO scores for all of the 38 Army MTFs during the period 1994 to 2001 were examined as a function of the DCAs role (whether a Baylor graduate or not). Some MTFs were inspected up to three times. All the Army DCAs had earned master's degrees, so educational levels were considered comparable. The analysis considered the independent variables of: year of survey, size of MTF (Clinic, Medical Activity, or Medical Center), DCA (whether Baylor graduate or not), and covariates: time on station of DCA (months), and years of military experience of DCA at time of JCAHO inspection. There were no significant

effects for the two covariates (time on station or years of military experience). The General Linear Model analysis shows Army MTFs with DCAs who were Baylor graduates had significantly higher JCAHO scores: $F(1,97) = 28.30, P < .001$. There were significant interaction effects for year x size of MTF ($P < .001$), DCA x size of MTF ($P = .048$), and year x DCA x size of MTF ($P < .001$). The findings were most noticeable in the Medical Centers, with Medical Centers having Baylor DCAs receiving higher JCAHO scores. The model accounted for $R^2 = .652$. See article for details on the JCAHO scores.¹⁵

Frequently JCAHO scores in DOD MTFs exceed those in civilian health care facilities.¹⁶ For 1999, the overall grid scores for inpatient DOD facilities were 92.3 compared to civilian facility results of 90.7. Two Army MTFs received perfect 100 scores on their JCAHO inspections in 1998 and in 1999. Of the 4,900 inpatient facilities reviewed nationwide by JCAHO in 1999, less than 1% received 100 scores from JCAHO. Similar greater JCAHO scores were obtained in ambulatory DOD facilities than in civilian ambulatory clinics.

Individual patient satisfaction surveys from Army MTFs were examined on the monthly consumer satisfaction survey scores from January 1997 to September 2001 as a function of the DCA (whether a Baylor graduate) in command.^{17,18} The analysis considered size of MTF (Clinic, Medical activity, or Medical Center) and DCA (whether Baylor graduate) for several dependent measures. The dependent measures were: q3j "Overall quality of care and service received," q4 "Recommend provider to family or friends," q5 "How satisfied with medical care received at clinic," and q12 "Satisfied with clinic during this visit." The General Linear Model multivariate analysis findings for DCA showed significant main effects for size of MTF on all four dependent variables ($P < .001$) with Medical Centers rated highest satisfaction and for DCA for q5 ($P = .021$), with Baylor DCAs having higher satisfaction scores. Additional significant interaction effects emerged for all four dependent variables ($P < .001$), with the effects most noticeable in Medical Centers under Baylor graduates having highest satisfaction scores.¹⁵

Discussion

The Individual Outcomes demonstrate that the selection criteria used for program admission appear to be successful. More than 82.7% graduated successfully. More than 82.9% of U.S. military students earned at least one promotion, and more than 68.9% remain in the service to the executive rank of O5 (lieutenant colonel or higher). Of the 4.9% that pursued additional graduate educational degrees, 68 earned doctorates. More than 61.0% of students join professional associations: ACHE, AAMA, MGMA. At the ACHE meetings in 1995,

1998, 1999, 2000, 2002, 2003, and 2004, the U.S. Army-Baylor HCA student chapters were recognized for the graduating classes with the greatest number of candidates advancing in professional credential status.

For the Society (Army MTF) Outcomes, the JCAHO scores at the Army MTFs were informative. Military medical treatment facilities meet, and often exceed, civilian benchmarks. Army MTFs with Baylor DCAs had significantly higher JCAHO scores than non-Baylor DCAs during the period 1994 to 2001. Patient satisfaction scores also exhibited higher levels in MTFs with Baylor graduate DCAs, particularly in Medical Centers, though the effects appeared somewhat attenuated, perhaps due to the shorter time frame used.

The superior performance of the MTFs with Baylor DCAs may be a function of the large number of Baylor graduates in Army MTFs in senior positions mentoring and guiding the career progression of recent Baylor graduates. Baylor graduates network very effectively at professional meetings and use technology to effectively communicate and exchange professional and personal information. A recent formalization of the networking process has evolved with the DCA Community of Practice (Baylor DCA Community of Practice web page). This becomes a powerful resource for current HCA students and residents to observe how the senior leaders work and address problems. Involving students and residents in the Community of Practice exposes them to an expanded network of executives, faculty, and resources to help make decisions. Access to knowledge and best practices leveraged by technologies are the objectives.

One additional measure of a program's effect is the impact on other educational programs. Baylor program directors, faculty, and graduates have gone on to establish and lead other successful programs at institutions including: George Washington University, Trinity University, University of Houston Clear Lake, Arizona State University, Quinnipiac College, Virginia Commonwealth University, Robert Morris University, Our Lady of the Lake, Pittsburg State University, Texas State University, Nova Southeastern University, University of the Incarnate Word, Central Michigan University, Georgetown University, and Western Kentucky University. Senior leadership positions in American College of Healthcare Executives, Association University Programs in Healthcare Administration, American Academy of Medical Administrators, and the American Psychological Association have been notable.

A final statement about the program emphasizes internal and external assessments. Continued internal program assessments (curriculum reviews) and external reviews (Accrediting Commission on Education for Health Services

Administration program accreditations of 5 years in 1987, 8 years in 1993, and 7 years in 2001; six ACHE student chapter awards) attest to the strengths of the U.S. Army-Baylor University HCA program.

The MHS actively promotes the improvement of the health of its beneficiaries through wellness, prevention, and population health programs. Educating the shareholders (patients, beneficiaries, professional and support staff, senior leaders) and leveraging technology to share best practices for the administrators will help improve the quality patient care of the MHS and other health systems.

Conclusions

The evidence-based health administration educational outcomes of the U.S. Army-Baylor University curriculum are reflected in the Individual (career advancement, increase in status, high professional association membership), the Society (Army) measures (high performing organizations as reflected by JCAHO scores, satisfied consumers), and on other professional programs and organizations. The Army-Baylor University Program focuses on educating the future leaders of the Federal system. Continued internal program assessments (curriculum reviews) and external reviews (Accrediting Commission on Education for Health Services Administration accreditations of 5 years in 1987, 8 years in 1993, and 7 years in 2001; seven ACHE student chapter awards) attest to the strengths of the U.S. Army-Baylor University HCA program. Educating the MHS shareholders (patients, beneficiaries, professional and support staff, senior leaders) and leveraging technology to share best practices for all administrators (including non-Baylor graduates) will help improve the quality patient care of the MHS. Due to the nature of the closed Federal system (MHS, DOD, VA), we have capitalized upon that uniqueness in this study. Non-Federal institutions, because of the open system nature, are challenged to find measures that can capture the unique contributions of highly variable program curricula. Similar assessment techniques can be considered for civilian health care administration educational programs to systematically assess the impact of their curriculum using evidence-based outcomes and sharing the findings through available technology and communities of practice.

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Deputy Commander for Administration Community of Practice

Jody R. Rogers, PhD†

Introduction

The pace of change within industry, specifically health care, is daunting in its scope and complexity. Factors that make health care unique continue to evolve in strange and uniquely different ways making organizational leadership an extremely challenging and nearly impossible task. Changing payer, provider, and regulatory processes together with increased pressure to improve quality through better outcomes while also lowering costs and expanding services make management of health care organizations an extremely difficult endeavor.

Managing knowledge has become a critical skill for success for an organization seeking a competitive advantage in today's chaotic and fast-paced economy.^{1,2} The government is expected to increase spending on knowledge management to nearly \$1.3 billion by FY 08.³ The Army has also created an Army Knowledge Online website to facilitate the exchange of knowledge.⁴ Faced with a rapidly changing health care environment, increasing military missions, and decreasing resources, the Army Medical Department (AMEDD) also needs to enhance its knowledge management capability if it is to succeed in the decade ahead. A significant competitive advantage can be gained by an organization capable of maximizing the use of their intellectual assets in addition to efficiently managing their limited physical resources.

Knowledge management involves the management of explicit and tacit knowledge. Although identifying, codifying, and retrieving explicit knowledge can obtain great value, arguably, the greatest value of knowledge management is in an organization's ability to capture tacit knowledge involving a specific responsibility.⁵

The rapid evolution in the scope of responsibilities of the military treatment facility (MTF) Deputy Commanders makes this position an ideal candidate for the development and testing of an effective knowledge management tool. The position of Deputy Commander for Administration (DCA) was chosen to test the effectiveness of a popular knowledge management tool, called a community of practice (COP), in order to help DCAs perform their jobs more efficiently and effectively. The DCAs were chosen because they exhibited several key symptoms of need. These symptoms included increased feelings of overwork, increased search costs (the cost of having to find solutions to specific problems) decreased decision cycles, and

the over-riding need to address "burning platform issues" quickly and effectively. An excellent example of burning platform issue was the need to develop standard operating procedures to address the security needs for MTFs following the 9/11 attack.

The COPs are groups of people who come together to share and to learn from one another face-to-face and virtually. Communities are held together by a common purpose; they contribute to a body of knowledge and are driven by a desire and need to share problems, experiences, insights, templates, tools, and best practices. Communities deepen their knowledge by interacting with fellow community members on an ongoing basis.⁶

Internet-based COPs have grown in popularity and usefulness within the business community over the past few years. Companies such as Chevron, Siemens, Hewlett-Packard, Xerox, and American Management Systems have created virtual COPs to enhance the exchange of knowledge within their corporations.⁷ The Army has also recognized the need and importance of COP as a knowledge management tool. Specifically, COPs have been found to be an efficient tool for knowledge exchange and for just-in-time learning.⁸ Within the military, a popular COP is "Company Commander" designed to share knowledge and to enhance competency among Company Commanders.⁹

The intent of this Internet-based COP is to provide a means for DCAs to codify, store, and share knowledge among administrators in order to enhance the value of their contributions to the organization. The fact that an increasing number of new DCAs appear to be younger and more inexperienced than in the past, makes this project all the more important.

This article discusses the goals and steps taken to establish the COP and will conclude with a discussion of the good and bad aspects of the COP and its potential future as a knowledge management process within the AMEDD.

Goals of the COP

Several goals were associated with this project. Primary goals included increasing DCA productivity and efficiency through the exchange of best practices among all DCAs,

providing a virtual mentoring process for new DCAs, reducing isolation among DCAs by enhancing opportunities for collaboration, and providing a centralized repository for information and knowledge specific to the function and responsibilities of a DCA. The ultimate goal of the DCA COP was to change the organizational culture toward a knowledge-based business approach. This goal is consistent with the Chief of Staff and Secretary of the Army's directive to "transform itself into a network-centric, knowledge-based force."¹⁰ This COP is a significant first step for the AMEDD in meeting this goal.

Expectations and Desired Behavior

The ability to retrieve information quickly in order to solve problems without having to conduct an extensive search (reducing search costs) is an extremely valuable cost saving tool. The DCA COP was designed to function as a "one stop" location for administrative information that can be used to solve problems quickly and to create new knowledge. The information contained in this COP will benefit all DCAs regardless of level of experience. Since DCAs will provide the information contained in the COP, the value of the COP will be determined by the amount of participation by each DCA. The DCAs must provide information to the COP so it can be used to create new knowledge by other DCAs. In addition, DCAs will then be encouraged to use this COP as their first source of information when solving problems. The DCAs are expected to access this COP daily, to share best practices, and to review input from other DCAs as a means of confirming the veracity of this input from their perspective.

Timeline for DCA COP

The concept of a DCA COP was first discussed with the DCA community during the U.S. Army-Baylor University Graduate Program in Healthcare Administration Preceptor's conference in Mar 01. Although the concept was understood, it wasn't until October that the DCA Consultant, COL Jimmie Sanders, formally requested a COP be established for all 45 AMEDD DCAs. It is believed the motivation behind the COP was the events of 9/11 and the chaos that ensued from this event. The decision was made to test the COP with the eight DCAs in the Southeast Region first and then to invite the remaining DCAs to join the COP after the test period ended.

A face-to-face meeting was arranged with the DCAs in the Southeast Region in early October. The concept of a COP was discussed and plans were made to formally launch a test COP beginning in Jan 02. The website was finalized and tested, ground rules were established, and the final plan formalized from Jan through Apr 02. The COP was made available to all DCAs in May 02.

Results

The initial test measures of hits/month, conversations/month, messages/month, and documents posted or downloaded/month were very positive during the test period. Almost all DCAs within the Southeast Region were eager participants in the COP. Valuable documents were shared with each of the DCAs using the COP and several problems were solved efficiently and effectively using the COP. Success stories included enhanced force protection planning at MTFs, clarification of confusing transcription services and on-call and standby pay policies, enhanced data quality management procedures, and solutions to persistent pre-deployment physical problems. In addition, extremely informative documents/policies/procedures were shared among the DCAs in an effort to reduce search costs and to enhance DCA efficiency. The consensus among the Southeast Region DCAs was that this was a worthwhile effort and ready for all DCAs.

All DCAs were asked to join in May 02. The results were less than expected. Almost immediately, the volume of hits stayed the same or dropped slightly despite the number of members in the COP having increased substantially. Utilization remained slow throughout the rest of 2002 and slowed to almost no use by May 03. The website was eventually shut down early in 2004 pending further guidance on how to significantly increase utilization.

Lessons Learned

Despite being theoretically sound, the concept of the COP never caught on among DCAs. Several members of the COP provided explanations for its failure in interviews during the last months of activity. A significant reason was the lack of trust among the members of the COP. Good communication requires a high level of trust among all parties involved. A sufficiently high level of trust was present during the initial phases of the COP when DCAs from the Southeast Region only were involved. As a result, Southeast Region DCAs did use the COP to solve problems, share information, and post messages. When all DCAs were invited to join, the trust level dropped significantly resulting in an unwillingness to communicate among all members of the community. Other reasons provided included a lack of understanding of the need for members to add documents or start conversations, an unwillingness to take the time to learn how this new tool could be used to a DCAs benefit, and a failure to create sufficient value in a short amount of time that would have motivated DCAs to use the website more often.

Another possible explanation for the COPs ineffectiveness was the decision to not establish consequences for non-participation. The goal was to establish sufficient value such that

DCAs would willingly participate in the COP. Unfortunately, creating value took more time than originally planned. As a result, the ability to motivate DCAs to use the COP was severely limited.

Another important though subtle reason for the COP's ineffectiveness may also have been the fact that the DCAs have not yet established a culture of sharing. This problem is not peculiar to DCAs only.¹¹ The reasons for this culture of not sharing are beyond the scope of this article, however, establishing a culture of sharing will be necessary before a COP can be successful.

Conclusions

In theory, a COP is an outstanding knowledge management tool that has the potential to be an extremely valuable source of information (American Productivity and Quality Center, 2002). To be effective, a COP must quickly accomplish several goals. Value must be created quickly in order to demonstrate usefulness. Despite several initial success stories, a sufficient degree of value was not established fast enough to motivate DCAs to use the COP. Trust among all members must be established as quickly as possible as well. This can best be accomplished with a day of face-to-face meetings with all members present. It is imperative that all members know each other fairly well, build a level of trust, and learn the benefits of the community.

Additional goals include the ability to share hard to obtain documents, clarifying confusing policy issues, and providing an easy, convenient method of communicating with one or more members of the COP. Achieving these goals may enhance the COPs value to all members resulting in members willingly visiting the website on a regular basis.

The most significant factor contributing to the success of a COP, however, is the need for a "champion" (someone who provides oversight to the COP and who will provide the encouragement necessary to get members to use the COP during its initial startup phase). The "champion" should be the senior member or at least one of the most influential and supportive members of the COP. Their leadership is absolutely essential during the adoptive phases of the COP. Once the COP is established and value has been determined, the role of the "champion" becomes less significant.

The COPs have the potential to add value to Deputy Commanders. As an initial test of the COP concept within the AMEDD, the DCA COP did demonstrate many success stories. Despite the failings of this COP, additional attempts to create other COPs for positions such as Deputy Commander for

Clinical Services or Nursing could prove very effective.

Future Initiatives

The need to enhance Deputy Commander effectiveness has led to the development of other management initiatives. The AMEDD Executive Skills Course, mandatory for all new Deputy Commanders, now uses a web-based scenario-training tool designed to simulate issues often addressed during a typical hospital morning report meeting. This tool contains 35 problems frequently found in military hospitals to include disaster planning and pending deployments. Participants are expected to formulate a course of action for all five problems.

In addition, Army ACHE Regents have greatly expanded the Army Day activities offered during the Annual ACHE Congress on Administration. This meeting has provided attendees, usually hospital administrators, with relevant information required to solve problems most military hospital executives face today.

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Factors Affecting Selection for Promotion to Lieutenant Colonel (O5)

A. David Mangelsdorff, PhD†

Introduction

The U.S. military has made many contributions to leader development, management theory, and practice. Personnel training is a major function of the military. Since World War II, the armed services have emphasized educating future leaders and managers.¹ Career management and executive development of future military leaders and managers has been notable.^{2,3} Jacobs and Jaques review the history of executive leadership beginning with Mintzberg.^{4,5} Formal military schooling and duty performance help officers to be competitive in career development. Formal schooling provides the technical knowledge to prepare officers for subsequent positions with increasing responsibilities and challenges. Nichols urged uniformed psychologists working in non-AMEDD (Army Medical Department) agencies to be innovative and flexible, to develop and cultivate both generalist and technical skills (accomplished by military professional schooling and additional graduate education).^{6,7}

What behaviors and competencies must be demonstrated by junior AMEDD officers to achieve successful careers as leaders and officers? The U.S. Army-Baylor University Graduate Program in Health Care Administration (HCA) conducts an active executive skills research program documenting the competencies needed for career progression of federal health care executives.⁸ Mangelsdorff and associates conducted a Delphi study of senior Army Medical Service Corps (MSC) officers for their vision for future MSC leaders.⁹ Army MSC officers must show integrity, courage, responsibility, and competence (among the behaviors and competencies assessed in the Army Officer Evaluation Report).

The size of the Army has been declining since 1990. Within the Army MSC, the number of commissioned officers has decreased as well from 4978 (in 1990) to 3608 (in 2004). Field grade officers are encouraged to complete additional professional military and graduate education programs to develop their competencies. The U.S. Army-Baylor University Graduate Program in HCA has been educating military officers since 1951.¹⁰ The career advancement of Army MSC students who attended Army-Baylor can be examined. From 1951 to 2004, 74.5% of Army MSC officers (n=1341) reached O5 (or

higher) and notably two graduates reached O7 and became Corps chiefs. Three Nurse Corps Army-Baylor graduates have also become corps chiefs.

The present research examines some of the factors associated with selection for promotion to Lieutenant Colonel of Army MSC officers. Support from the Office of the Chief of the MSC is appreciated for access to the annual directories of MSC officer personnel rosters (the “stud books”).

Method

Army MSC officers in the grade of Major (O4) listed in the 1993 Directory of MSC officers were tracked for their career development through the 2004 Directory. A predictive model was developed using information extracted from the MSC directories and the published O5 promotion selection lists. The criterion was selection and promotion to grade of Lieutenant Colonel (O5). Pinning on of O5 was confirmed using entries in the directories of MSC officers. Variables were coded as follows. For professional military education, the guidelines from DA PAM 640-1 section VI (military education) were employed: Senior Service College graduate (6), Command Staff College graduate (5), CAS3 graduate (4) CAS3/1 (3) Officer Advance course graduate (2), and Officer Basic course (1). For civilian education, the guidelines from DA PAM 640-1 section VI (civilian education) were employed: doctoral degree (5), professional degree (4), master’s degree (3), college degree (2), some college (1). The date of rank of O4 was used to determine year of eligibility. Date of rank of O5 was used to confirm promotion to LTC (yes=1, no=0). All officers eligible in 1993 (and later) were tracked to 2004 (n=1619). Descriptive statistics to summarize the demographics were calculated. Comparisons of the independent variables with the dependent variable (promotion) were made using chi square. A predictive model using linear regression was developed to predict promotion to LTC (1=yes, 0=no). The independent variables included: sex (male [1] female [0]), professional military education, completion of Command and General Staff College (GSC) (1=yes, 0=no), year eligible, civilian education, and whether student was ever enrolled in the Army-Baylor HCA program (1=yes, 0=no).

Results

Descriptive statistics were calculated for Army MSC officers eligible for promotion to O5 in 1993 to 2004. The demographics: for gender, 82.3% male, 17.7% female. Date of rank (O4) started from 1 Jun 1987 to present. The majority completed Command and GSC (79.4%), the majority completed civilian education of a masters degree or greater (89.7%), and 16.2% were students in the Army-Baylor HCA program (of which 94.5% graduated).

Comparisons of the independent variables with the dependent variable (promotion) using chi square showed significant differences in the distributions for: completed Command and GSC ($X^2 = 389.13$ [df=1], $P < .0001$); Army-Baylor student ($X^2 = 28.96$ [df=1], $P < .001$); civilian education completed ($X^2 = 127.38$ [df=4], $P < .001$). There was not a significant chi square for gender.

A predictive model using linear regression was developed to predict promotion to O5 (1=yes, 0=no). The equation developed was significant ($F = 392.72$ [df=6,1612], $P < .0001$; $R^2 = .594$). The results confirmed that completion of Command and GSC is the most significant predictor of selection to O5. Army-Baylor HCA students are selected significantly more frequently ($P < .016$). There were significant differences between the year groups ($P < .006$). There was not a significant effect for sex. The contribution of the variables is summarized in the table.

Discussion

Completion of professional military and civilian graduate education does contribute to making O4s more competitive for selection for promotion to O5. It is not surprising that completion of Command and General Staff (or equivalent courses) is critical; a reading of any of the MSC Annual Reports documents that fact. Attendance at the Army-Baylor HCA course provides the knowledge, skills, and abilities while the residency phase puts the knowledge into practice under the supervision of a senior health care executive. The majority of the preceptors in the residency phase are themselves former Army-Baylor graduates.

An additional consideration of the impact of the Army-Baylor education is how well the graduates perform as senior health care executives. Mangelsdorff and associates examined evidence-based outcomes in the military health system (MHS).¹¹ During the time from 1994 to 2001, all (n=38) of the Army military medical treatment facilities (MTFs) were examined by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Army MTFs with Army-Baylor graduates as the Deputy Commander for Administration (DCAs) received higher JCAHO scores and higher satisfaction scores. Army-Baylor graduates were more likely to be the DCA at Medical Centers. Promotion to O5 is a critical first step; having an impact on the MHS as a senior health care executive is also important.

Model	Unstandardized Coefficients		Standardized Coefficients		t	Significant
	B	Std Error	Beta			
1 (Constant)	-12.605	4.709			-2.676	.008
Above Zone	-.583	.017	-.621		-34.252	.000
Baylor Student	.052	.021	.039		2.419	.016
Civilian Educ	.044	.010	.070		4.354	.000
CGSC Completed	.278	.021	.230		12.987	.000
Year Eligible	.007	.002	.046		2.780	.006
Sex	.038	.020	.030		1.853	.064

Note: Dependent variable: Promote Selection for O5 (1=yes, 0=no). Independent variables: Sex: (1=male, 0=female); CGSC completed (1=yes, 0=no); Baylor student (1=yes, 0=no); Civilian education: (5) doctorate (4) professional degree (3) master's degree (2) college degree (1) some college; Year eligible: 1993 through 2004; Above zone: (-1) below zone; (0) in zone; (1) above zone.

Table. Contributions of the Variables to Predict Promotion to O5

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Executive Competencies in Health Care Research: A Decade of Assessment

Kenn Finstuen, PhD†
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Introduction

Commanders of military treatment facilities (MTFs) and leaders of the military health system (MHS) face major challenges managing financial uncertainty, organizational reform, readiness requirements, deployment operations, delivery of health services, and maintaining quality and access of health care for beneficiaries. The field of health care practice and the academic programs designed to prepare health care administrators long have been, and remain to be, challenges that recognize and deal with the demands of continual change.¹ The U.S. Army-Baylor University Graduate Program in Health Care Administration (HCA) has evolved over 50 years, meeting those challenges, and educating current and future leaders in the Federal sector.²⁻⁷ Over the past decade, the faculty and students of the U.S. Army-Baylor University Graduate Program in HCA have amassed a body of administration research, documenting executive competencies and skills in health care, which (1) contributes to the literature and academic inquiry within the health services and sciences fields, (2) provides guidelines for the development and revision of relevant curricula within the graduate program, and civilian sector executive development education programs, and (3) supports the Department of Defense's (DOD) Joint Medical Executive Skills Development Program Competencies and in particular, the Army Medical Department's (AMEDD) Executive Skills courses.⁸⁻⁹

Joint Medical Executive Skills Development Program Competencies

What elements of academic courses and assignments should be incorporated into the professional development of MTF commanders and leaders? To address these concerns, the U.S. Congress in the Defense Appropriations Act of 1992, mandated that MTF commanders be required to demonstrate professional administrative skills. The Secretary of Defense for Health Affairs convened a Tri-Service Task Force in early 1992 to identify managerial competencies required to successfully command MTFs. The competencies (knowledge, skills, and abilities) identified in the joint medical executive skills development program are accepted in both private and military sectors. The set of competencies identifies basic skills that a potential MTF commander should possess before assuming command. The Surgeons General of the U.S. Army, U.S. Navy,

and U.S. Air Force have approved the methods by which competencies may be acquired by departmental officers. Army officers achieve competencies through military education, graduate education, and progressive job experience. Navy and Air Force officers may also attain competencies through professional certification. Because career patterns (assignments, educational opportunities, and contingency operations experience) vary widely within and among the Armed Services, potential MHS leaders may not have fully achieved qualification in all specific competencies. The only academic curriculum addressing all the required federal competencies is the U.S. Army-Baylor HCA program. Baylor program graduates (and other officers selected for senior leadership positions) return to attend the AMEDD Executive Skills courses (for commanders and senior staff) to obtain updates on the current trends and research which draw from the executive competencies studies. Commanders need to stay current in their knowledge and skills about health care trends and developments.

Executive Competencies in Healthcare Research

In 1994, the U.S. Army-Baylor University Graduate Program in HCA became part of the newly founded Center for Healthcare Education and Studies at the AMEDD's Academy of Health Sciences (AHS) at Fort Sam Houston, TX. In response to the Congressional mandate, an ongoing research initiative was undertaken in late 1992 by the U.S. Army-Baylor program faculty, under the direction of the Dean of AHS, Colonel Paul Brooke, Jr, and the director of Army-Baylor, COL Ronald Hudak, to study and examine the executive skills, knowledge, and abilities projected to be required by both military and civilian health care professionals, managers, executives, and administrators. To date, these Delphi methodology research studies have examined health care executive and administrative job requirements for U.S. Army hospital commanders and deputies for administration, fellows of the American College of Health Care Executives (ACHE), fellows of the American College of Medical Practice Executives (ACMPE) – the professional development and credentialing arm of the Medical Group Management Association (MGMA), members of MGMA's Society of Physician Executives (SPE), the American College of Physician Executives (ACPE), U.S. Army Medical Service Corps

officers, U.S. Army nurse administrators, U.S. Navy hospital administrators, U.S. Coast Guard health care executives, U.S. Army and U.S. Navy dentists, and DOD and civilian pharmacists.¹⁰⁻³⁰ Over the past decade, nearly 3,000 senior civilian and military administrators have participated in the U.S. Army-Baylor executive skills research program. The table summarizes the extent of the research as it has appeared in the professional, scientific, and managerial literature of health services administration.

Application of Executive Competencies in Healthcare Research to Program Curricula

Results from executive skills research have been, and continue to be, used to validate current U.S. Army-Baylor University HCA graduate program objectives and curricula. In

addition, a recent Delphi executive skills study is currently underway to identify and define particular competencies, skills, knowledge, and abilities required by our health care administration program preceptors.³¹ Other civilian agencies, such as ACHE headquarters in Chicago, MGMA's Center for Research in Ambulatory Health Care Administration in Denver, the ACPE in Tampa, and most recently the American Pharmacy Association (APhA) in Washington, DC have used, and are continuing to use, obtained results from the U.S. Army-Baylor civilian sector Delphi studies to determine needs and topics for continuing health care administration education and professional conferences.

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Year	Published Journal	n	Professional Executive Delphi Respondents
1993	Hospital & Health Services Administration	50	fellows, ACHE
1994	Military Medicine	74	U.S. Army Military Treatment Facility Commanders & Deputies for Administration
1995	Defense Technical Information Center	187	senior officers, U.S. Army, Army Nurse Corps
1997	The Journal of Health Administration Education	320	fellows, ACMPE of the MGMA
1997	Military Medicine	173	senior officers 0-6, Army Medical Service Corps
1998	Military Medicine	87	U.S. Navy Hospital Administrators
1998	Physician Executive	850	physicians, SPE within ACMPE of the MGMA
1998	Military Medicine	123	senior officers U.S. Army, Army Dental Corps
1999	American Academy of Medical Administrators	147	U.S. Coast Guard Hospital Administrators
2000	The Journal of Health Administration Education		invited article, summary of Plenary Session presentation at the Association of University Programs in Health Administration Annual Conference, Chicago
2001	Navy Medicine	67	senior officers, U.S. Navy Dental Corps
2002	Physician Executive-I Physician Executive-II	351	fellows, ACPE
2003	Journal of the American Pharmacists Association	93	senior officers, DOD Tri-service Pharmacists
2003	Journal of the American Pharmacists Association	218	junior officers, DOD Tri-service Pharmacists (comparison study with senior DOD pharmacists)
2004	Journal of the American Pharmacists Association (in review)	110	graduates of GlaxoSmithKline Executive Management Pharmacy Leader program, in conjunction with APhA and the Wharton School — University of Pennsylvania
2004	Work in progress	100	preceptors, U.S. Army-Baylor University HCA Program

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Defining the Future of Army Dentistry

L. Darwin Fretwell†

In the fall of 1996, the U.S. Army Dental Corps was faced with reduced dental officer strength and an expanding mission of dental readiness and oral wellness. To address these growing concerns, a “Hit Team” was established by the Dental Corps Chief to put forth a Concept and Feasibility Plan outlining better business practices and clinical efficiencies within the U.S. Army Dental Corps.

The original “Hit Team” had 10 members. It was no accident that 5 of the 10 were graduates of the Army-Baylor University Graduate Program in Health Care Administration. The Baylor-trained individuals were vital to the vigorous process required to create an architecture to analyze key processes, develop metrics, and outline efforts leading to improved operational performance outcomes. In essence, they were the driving force in the development of a new model for the delivery of dental care in the U.S. Army.

The Concept and Feasibility Plan was briefed to the Dental Corps Chief and Board of Directors in Feb 97. After acceptance by the Board and Corps Chief as the new direction for Army Dentistry, follow-on briefs were given to TSG and Office of the Secretary of Defense (HA) in Mar 97. Working with the U.S. Army Dental Command (DENCOM), the “Hit Team” conducted several potential Beta site visits and the new model was officially named the “Dental Care Reengineering Initiative (DCRI)” in May 97. The Baylor trained dental officers completed a Business Plan, followed by a Campaign Plan, in Jun 97. An Implementation Team and Oversight Committee was established in Aug 97 to field DCRI. Both the Team and Committee were lead by Baylor graduate dental officers. The Dental Corps Chief described DCRI as a watershed event in the history of the Dental Corps. As DCRI progressed at the Beta sites, an aggressive marketing strategy was employed throughout the DENCOM and Army Medical Department Oct 97-Jun 99. In Jul 98, the Oversight Committee merged with the Implementation Team and the DENCOM conducted a worldwide Clinic Management Conference in Sep 98 to outline the new direction for Army dentistry. The Implementation Team, lead by a Baylor graduate Dental officer, continued to field DCRI throughout the DENCOM.

In Jul 99, a report with recommendations on the continued implementation of DCRI was merged with the DENCOM to become the standard operational model for The Army Dental

Care System. That report was compiled by a Baylor graduate dental officer.

Since Jul 99, when the DENCOM became the proponent for DCRI, much progress has been made. Following a Strategic Planning Conference in Aug 00, the initiative was renamed “The Dental Care Optimization (DCO) Program,” reflective of TSG’s focus on health care optimization. The DENCOM provided model guidelines for DCO clinics and solicited dental activities to develop business plans for participation of individual clinics. These business plans were reviewed and approved for funding by DENCOM. As DCO expanded throughout the DENCOM and metrics were validated and improved, a business plan was put forward seeking venture capital funding to further expand and sustain DCO. In Jul 03, a DENCOM team, lead by a Baylor Graduate Dental Officer, submitted a business case to train Expanded Function Dental Assistants (EFDA) as an integral part of DCO. The U.S Army Medical Command Venture Capital funding was realized for FY 03-05 and Program Objective Memorandum (POM) funding scheduled FY 06-09. These Venture Capital monies, some \$5 million over FY03, FY04, and FY05, will be used to enhance dental readiness, fitness, and productivity and to transition DCO to the POM years. In FY 06, the EFDA POM is \$7.5M, in FY 07 - \$8.1M, in FY 08 - \$8.7M, and \$8.9M in FY 09.

Dental officer graduates of the Baylor program contributing to this effort that I am aware of include: Karl K. Harris, W. John Luciano, Ronald J. Lambert, Priscilla H. Hamilton, Joseph A. Wineman, Ronald J. Hayes, Jimmie C. Schmidt, Mary C. Concillo, and Francis E. Nasser, Jr.

The leading roles and efforts of these individuals shaped the resounding success of DCRI/DCO and revalidated the need to have dental officers trained in Health Care Administration. Thanks to these individuals and to all the dental officers, noncommissioned officers, and civilians who contributed to establishing a new, improved, and lasting legacy for the Army Dental Care System.

It is no easy task to change the culture, business practices, and operational performance of a worldwide organization such as the DENCOM. With the leadership of the key individuals listed above, an irreversible change was accomplished within the Army Dental Care System in 6 years. A remarkable success story!

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Program Director Profiles

Ronald P. Hudak, JD, MHA, PhD, FACHE

My knowledge of Baylor grads includes a number of colleagues who were senior, contemporaries, and junior officers. Consistently, they performed well and were clearly committed to improving our health care system. Notable graduates included COL Lanier whose subsequent assignments included high level policy positions and COL Paul Brooke who became the Dean of the School of Allied Health at Texas Tech.

I decided to attend Baylor because it was, and still is, the premier education for an MSC and for any administrator who wishes to be as competent as possible in the management of health care organizations.

What I remember most is not one particular classmate, but the extraordinary range of experiences that they brought to the classroom. We had aviators, nurses, logisticians, sister services – all brought a fascinating and impressive professional history with them.

My residency site was Moncrief Army Hospital, Fort Jackson. It was an outstanding experience because of its size and support of a training installation. I entered Baylor as a captain and left as a major.

My proudest accomplishments as the Director of the program were to double the class size without increasing staffing, expand the residency sites to include OSD(HA) as well as civilian agencies, select more sister service students and GS students, implement a PT program to maintain the physical fitness and esprit of the students (one of the most amusing aspects of implementing this policy was explaining/outfitting the students from the sister services and GS students who did not have a PT program like the Army students did and, therefore, did not know what to wear or what was an appropriate exercise regimen at “oh dark thirty”), create a Center for Healthcare Education and Studies, and conduct research on executive competencies with Dr Finstuen and COL Brooke.

My recommendation for the future is to ensure that we maintain the health care orientation of our program while increasing the amount of business courses. Health care today is clearly a business, but with a very human orientation and an obligation to community service.

Clarence E. (CEM) Maxwell, Jr, MHA, PhD, RA

CEM Maxwell was born in Port Sulphur, LA. He grew up in northeast Texas (Kilgore) and graduated from Texas A&M University in 1970 with a Bachelor’s degree in architecture. Upon graduation, he entered the U.S. Army and was commissioned into the Medical Service Corps. He retired from active duty in 1997.

Upon retirement, he was awarded the designation of a Distinguished Member of the AMEDD Regiment and, in 2002, was recognized as a “Hero” for volunteer work at Fort Sam Houston. He is a licensed architect in the state of Texas and a member of the Fort Sam Houston ISD School Board. During his Army career, he earned four Legions of Merit.

His most significant contributions during his military career were in the area of health facilities planning. He was personally involved and responsible for the programming, design, and/or construction management of more Army health facilities than any officer since the Korean War era – over 30 replacement facility projects. From being involved in the design of Building 2 at Walter Reed Army Medical Center (AMC) in 1970, to being on the shovel line for the ground breaking of the new Womack AMC in 1994, CEM Maxwell worked to provide the Army with the best of health facilities. Major projects included the new Womach, Madigan, and Brooke AMC, the new Walter Reed Army Institute of Research, and the NCO Academy at Fort Sam Houston, as well as numerous health and dental clinics.

As the Director of the U.S. Army-Baylor Program, he enhanced the program by providing an additional course classroom, dividing the class into two sections, renovating the classrooms, and providing improved technology to include network drops to each student seat. He designed and oversaw the construction of the AMEDD Classroom of the Future, dedicated by The Surgeon General in 1995. He expanded the Baylor teaching staff and obtained Baylor University teaching position recognition for each faculty member.

Jody R. Rogers, MSBA, MHA, PhD, FACHE

My involvement with Baylor University occurred in two significant ways. The first involved the privilege I had to serve as the Program Director of the U.S. Army-Baylor Graduate Program in Health Care Administration from 1997 until 1999. I followed COL Lee Briggs and preceded LTC Charles Wainright. The Program enjoyed considerable stability during this time. The most significant event impacting the Program was the selection of Dr Larry Lyon as the Dean of Graduate Studies, Baylor University. Doctor Lyon was, and continues to be, a staunch supporter of the Program. His support has clearly increased the name recognition of our Program on the Baylor campus and within the Army Medical Department.

Class size continued to fluctuate between 35 and 50 students. The Program experienced difficulty recruiting Medical Service Corps (MSC) officers and subtle changes to the selection process were instituted to increase MSC involvement. In the past, MSCs attending Baylor were required to change their AOC to 70A (Healthcare Administrator). The slow promotion rates of health care administrators to Colonel appeared to be scaring qualified officers from attending Baylor because they did not want to be forced to become 70As. With the support of the 70A Consultant, COL George Masi, MSCs attending Baylor were given the option of keeping their old AOC. In other words, the focus of recruitment was to encourage the best and brightest MSCs to attend Baylor, regardless of their AOC. These officers may have served at least one utilization tour in a 70A position, but they did not have to change their AOC. As a result of this subtle change to the recruitment process, many more officers from other AOCs began attending Baylor. This increase in diversification was intended to enhance the quality of MSC officers by allowing non-70As the opportunity to obtain a graduate education from a nationally recognized institution and thus, better prepare them for jobs in TOE and TDA organizations.

The pressure to add more courses and material in a given course continued unabated during this time. The demand for officers with strong quantitative skills continued to increase. Course content in terms of teaching new and more complex quantitative skills continued to grow. As a result, the stress level of students also continued to grow. The Program continued to be an integral part of the Center for Healthcare Education and Studies. Colonel Stuart Baker was the Chief, CHES, until 1999 when COL Harrison Hassell replaced him.

While serving as the Director, I was also the Regent for the Army Western Region, ACHE, and the President of the Baylor Alumni Association. Having all three jobs at the same time gave me an interesting perspective of military and civilian health care administration and also of the tremendous pride that Baylor Alumni have for our Program.

The Deputy Program Director during my tenure was CDR Elaine Ehresmann, USN, and then LTC Charles Wainright. Lieutenant Colonel Wainright became the Deputy in 1998. Both officers were extremely confident and capable of providing the support necessary to lead this Program.

The second significant involvement I had with Baylor was as a student and graduate from 1983-1985. I was the second Laboratory Officer to attend Baylor. My experience as a student was outstanding because of the outstanding officers who were my students and because of the excellent education I received. We had 35 officers in class with two Navy and two Air Force officers in attendance. Our co-class leaders were a Veterinarian, MAJ Tom Catanzaro, and a Psychologist, MAJ Larry Reed. The class of 1985 was the first 4-semester class. Prior to this time, Baylor classes were 9 months in length and only 3 semesters long. Although it was designed for 12 months of study, our class time was only 10 months in order to get on the schedule that the program currently has. We started in late September and finished in early August. Today, class begins 1 July and ends 1 year later. Needless to say, putting 4 semesters of study into 10 months was extremely taxing for the students and the faculty. In fact, for most of our 4th semester, two classes were going at the same time as the class of 1986 started in late June and we didn't finish out studies until late August. This affected our classes' morale in a significant way. By the time of orals, we were burned out from not having a regular

classroom, not having a dedicated faculty, and the whole orals process. The stress level was so great that our class leader and one faculty member almost came to blows during a class.

One of my classmates, LTC Eric Rubel, became a physician in subsequent years. Doctor Tom Catanzaro, VC, became the only Veterinarian in the ACHE to become a Fellow in the College. Several classmates became Colonels and at least two of us earned our Doctorates. One died tragically while on active duty. I am currently a Visiting Professor at Trinity University in San Antonio, TX.

Charles F. Wainright, MHA, PhD, FACHE

Early in my career as a Medical Service Corps (MSC) officer, I was mentored by several senior officers that I was capable of pursuing a higher degree beyond the Undergraduate level and that it would be necessary in order to progress in rank in the military. Many of the senior MSC officers were graduates of the Army-Baylor Program and strongly suggested this career track as a hospital administrator. I was not as familiar with the Army-Baylor Program in the early 1980s, but I knew that I must continue my education in order to ensure a successful career either in the military or in the civilian sector. After examining several programs around the country, I decided to apply for the Army-Baylor Program in 1984.

I was elated to discover I was selected for the Program to attend in 1985. This was a great honor and I give credit for my selection to several individuals including BG Leffler, COL Gerry Allgood, COL Paul Krier, and the Officer Advanced Course (OAC) faculty at the Academy of Health Sciences. I was attending the 6-month OAC when I received my acceptance letter. However, I really never completely understood the significance of this event until much later in my military career.

As with so many other Army-Baylor graduates, I had a great class and have remained very close to my classmates over the years. These individuals also significantly contributed to my career development and health care experiences throughout my military career. They all have provided not only professional and collegial discussions, but have been close advisors throughout the years. I am extremely indebted to all my fellow classmates as well as other Baylor graduates who were excellent role models for many AMEDD officers. The experiences I gained working with and for these officers were invaluable.

Throughout my Army career, my Army-Baylor Degree afforded me tremendous opportunities for increasing levels of responsibility as well as notoriety. The degree opened doors that presented unique opportunities to succeed and the information and knowledge gained from my work on the master's of health care administration certainly contributed to that success. My accomplishments in Europe as the health care administration consultant for Ambulatory Care and Emergency Medicine at MEDCOM Headquarters are a direct result of my Baylor degree. Both the knowledge and experience from the didactic and residency phases of Baylor gave me the necessary tools to contribute to health care delivery in Europe.

As a senior Captain, I was afforded the rare opportunity to be the administrator and operations officer for the Army-Baylor Program. I gained skills in not only how the program operated, but obtained a solid perspective of the core values and skills that it took to keep the Program flourishing for so many years. I also must take credit for one of the crowning jewels for Baylor – I hired Ms Rene Pryor, who is endearingly known as the “Baylor Mom.” She was, and still is, truly grand and the Program would not succeed without her. During this time, I gained valuable allies that helped me to realize another dream – to complete my doctoral degree. For this special opportunity, I must sincerely thank COL Paul Brooke, COL Ron Hudak, and LTC George Gisin for their mentorship and support for my long-term training selection to obtain my PhD. This had always been a lifelong dream and goal of mine even before I entered the military, and I will always be appreciative to everyone who had a hand in affording me this educational experience.

As fate would have it, I completed my doctorate at the University of Alabama in Birmingham in 3 years and was assigned back at Fort Sam. However, I was not directly assigned as a professor for the Army-Baylor Program at first. I was assigned as the MSC Education and Training Officer at the Department of Healthcare Education and Training (DHET), where I spent about 2 years before finally getting assigned to the Program as a full time faculty member. During that 2-year period at DHET, I continued to volunteer to teach one course a semester in the Program.

While it took a tremendous amount of effort from key individuals, I was finally assigned to the Program in 1997. I have to

give many thanks to COL Maxwell, who had been the previous Director of the Program and was the current Dean of the School. Colonel Maxwell and LTC Jody Rogers greatly facilitated my assignment to the Program. Because of my previous background with the Program as an alumnus and as the former administrator, I was able to contribute to both the teaching requirements as well as the operational requirements. Colonel Maxwell and LTC Rogers were also instrumental in my being selected as the Deputy Director of the Program.

As Deputy Director, I was able to hone my skills, both as a teacher and as an administrator to prepare me for an even greater opportunity. As Deputy Director, it positioned me to achieve another once in a lifetime dream, to become the Director of the Program. When I was selected to succeed LTC Jody Rogers as the Program Director, I was completely overwhelmed with joy. While I had dreamed of this opportunity, I never expected it to become a reality. I have many individuals to thank, but specifically, COL Harrison Hassell and COL George Masi were two individuals that were instrumental in this process. Being Director was a humbling and wonderful experience and the epitome of my military career. The Baylor faculty and staff during my tenure were absolutely incredible in every detail and the student classes were equally superior. Even if you tried your best, you couldn't invent or imagine a better situation and group of great individuals to work with as a last assignment in the military. On 30 Sep 01, I said my goodbyes and retired with nearly 23 years of military service.

However, my story does not end with my retirement from active duty. Because of my Army-Baylor experiences, I was selected to be the Director of the Graduate and Undergraduate Healthcare Administration Programs at Western Kentucky University. As my current position, this has been a great career move and allowed me to test my skills in the civilian academic world. As before, I firmly believe that the Baylor experiences have been a major contribution to my new position and professional career.

Lastly, I must thank my family – my wife, Daphne, and my daughters, Laura, Jennifer, and Katherine for their unwavering support and dedication to ensure that I succeed in my professional career. They are a wonderful and cherished part of my life and I am truly blessed. Finally, I must thank the Lord, who most of all has continued to guide my life and allow me these opportunities throughout my career.

I sincerely believe that the Army-Baylor Program has touched so many lives and so many careers that it is really hard to imagine. I think it has strengthened the military presence in professional societies such as ACHE, MGMA, HFMA, AAMA, and AUPHA. It has also set the military and government health care administrators in a special class of MHA graduates that has served the United States with distinction. I am extremely proud of the men and women graduates of the Program and I wish them well in all their future endeavors. Go Army-Baylor!

Daniel G. Dominguez, MHA, PhD

My involvement in the U.S. Army-Baylor University Graduate Program in Health Care Administration program has had a profound impact on me personally and professionally. I joined the Navy directly out of high school and spent the majority of my first 6 years sailing the oceans of the world as an Electrician's Mate, first in the Pacific on an oiler homeported out of Pearl Harbor HI, then in the Atlantic on a Destroyer Tender berthed in Norfolk, VA. After two Western Pacific cruises and a 6-month Mediterranean deployment, I was assigned to shore duty at the Naval Hospital, Corpus Christi, TX, in 1979. It was here that I completed an undergraduate degree in management and came to appreciate and admire those involved in the provision of health care.

Prior to leaving Corpus Christi, I applied for a commission in the Medical Service Corps and was selected while in route to my next assignment at sea. My first position as a Navy Ensign was at the Naval Hospital, Long Beach, where I served first in the Materials Management Division and then the Information Management Department. My next assignment was at the Naval Hospital, Philadelphia, where I became the Head of the Management Information Department. It was near the end of that tour that I reached what would be a critical juncture in my professional career.

I had been offered a seat in the Information Systems Management Masters Program at the Naval Post Graduate School in Monterey, CA, and was excited to begin my studies there. However, my supervisor and mentor, CPT John Gallis, the Director for

Administration at the hospital, argued compellingly that I should pursue the Director for Administration, Executive Officer, Commanding Officer career track versus a computer systems management track. As such, I would require a MHA degree versus a specialty Masters. I was convinced, and submitted my application for full-time education to attend graduate school at Temple University in Philadelphia, having not heard of the Army-Baylor MHA program at that time.

To make a long story short, I was selected to attend graduate education, however, I was given only one option-attend Army-Baylor or move on to a recruiting assignment in Atlanta. I quickly did my homework on the Baylor program and found that it did not require extended trips to the woods or desert as I had feared, nor did it require the pitching of a single tent! In fact, I found that it was a rigorous academic program, highly regarded by the Navy, and that I should consider myself fortunate to have been selected to attend. While not completely convinced of its value to a Naval health care administrator, and with some trepidation due to reports of the grueling pace of study, I accepted the nomination and matriculated in 1988.

Our year at Baylor – it is at this point that I specifically and most intentionally include my family in this narration (which by now had increased to include three children) – was one of the most challenging of our lives. Neither before, nor since, have I allowed my days to be so consumed by an endeavor. So demanding was the program and so poor my time management skills, that when selected for Doctoral training in 1995 my oldest son Dan, who was then 12, asked with some apprehension if this was going to be “another Baylor?” He had been age five during the didactic phase of the program and sadly, I had often neglected spending time with him during that year. This significant disappointment aside, I must say that attending Baylor changed the course of my professional life.

It was at Baylor that I came to know some of the finest military officers I have met in my career. Officers like LTCs Darrell Hanf, and Brian Anselman who sat on my left and right respectively throughout the didactic year. Not only were we row-mates, but we also worked on numerous papers and projects together – I learned much from both of them and consider them good friends to this day. Officers like COL Tim Williamson and MAJ Roger Miller, both of whom were articulate and passionate debaters whose arguments never ceased to stimulate and expand my own thinking and that of our professors! I have many fond memories of the class of 1990: the dry wit of LTC Tom Clines; the quiet shepherding of the class by our Executive Officer, MAJ Archie Summerlin, USAF; the firm direction of our class leader, COL Bea Coquilla, MC; and the selfless service of LTC Howard May, MSC, our Boone Powell award recipient and a graduate of the Army-Baylor Physical Therapy Program. I could go on to name virtually the entire class, noting the positive effect each has had upon me both as a person and as an officer, however, space will not allow it.

After completing the didactic phase of the program, we moved from Fort Sam Houston to our residency site. I was truly blessed to have RADM Charles R. Loar, MSC, USN, then Chief of the Navy’s Medical Service Corps, as my preceptor. A health care statesman and the consummate professional, Admiral Loar ensured that my residency at the Naval Medical Center Portsmouth, VA, was comprehensive and meaningful. RADM Loar opened doors for me to spend time not only with the Air Force at Langley AFB and the Army at Fort Eustis, but also the Veteran’s Administration in Hampton, as well as the Tidewater Health and Sentara Health systems. His good name and the reputation of Baylor residents who had preceded me ensured that my residency experience was of the highest caliber.

Working with RADM Loar, who had previously precepted Baylor residents, also allowed me to begin work on what has become a lifelong topic of interest, the study of leadership and leadership development. It was at the Admiral’s insistence that I pursued the study of the “Identification and Development of Leaders Within the Navy Medical Department” as my Graduate Management Project (GMP) topic. I will be forever indebted to him for starting me on this quest and also to CDR Bill Lambert, Army-Baylor’s first Navy Professor and my academic advisor, for expertly guiding me in my early reading within the field of leadership and for encouraging me throughout the GMP process. The GMP was very well received by RADM Loar, who incorporated the findings and recommendations, especially with regard to mentorship, into the Medical Service Corps strategic plan.

After successfully completing all requirements for graduation, I was assigned to the Naval Medical Clinic, New Orleans, as the Director for Administration in 1990. I must note that my studies at Baylor prepared me well for that position and further, that I required every skill and competency learned to carry out the responsibilities of that demanding position.

In 1993, I was assigned to the Branch Medical Clinic, Bermuda, as the Officer in Charge and was clearly on the development track for command positions within the Navy Medical Department. It was at this point that my career took another significant shift, and again the shift would ultimately involve the Army-Baylor MHA program.

When considering career options in 1995, it was my wife Sam who suggested I apply for doctoral education. Earning a PhD had never been a serious consideration prior to this point, however, the notion of obtaining a doctorate and serving as a senior policy analyst within the federal health system or possibly teaching at Baylor, held great appeal. Through a series of minor miracles, which I am truly convinced are the result of divine intervention, I was once again selected for Navy sponsored graduate education and began graduate studies at the University of Iowa in pursuit of a PhD in the summer of 1995. It is interesting to note that I selected Iowa on the recommendation of LTC George Gisin, a graduate of both the Army-Baylor program and University of Iowa. Doctor Gisin, a past Army-Baylor Program Professor and Director, was a wonderful mentor through this process and remains a trusted advisor to this day.

While at Iowa, it was my pleasure to work with Professor Samuel Levy whose interest in leadership informed and fueled my own. Also, I was truly blessed to work with Professor James Price, whose work in organizational commitment and turnover served as the basis for my doctoral dissertation. It is significant to report that I was one in a series of military PhD's who worked with both of these wonderful men while at Iowa. Colonel Joe Constable, COL Wayne Sorenson, and COL Paul Brooke also completed their doctoral dissertations under their guidance.

Toward the end of my dissertation year, I was called to discuss my post-PhD job assignment. I was fearful that I would be asked to fill a PhD billet in Washington DC, but was hoping that instead I would be assigned to the Army-Baylor program as a Professor. The conversation began in typical fashion with the "detailer" indicating that he had "such a deal for me!" To my surprise it was the Baylor program position that he was offering. I did my best to contain my excitement and "graciously" accepted the assignment.

I arrived at Baylor in August of 1998 as a freshly hooded PhD with a Doctorate in Health Management and Policy. I began co-teaching Strategic Management with Dr Chuck Wainright in January of the following year to the class of 2000. It is not an overstatement to say that the first year was very challenging and I often wondered whether I would survive the teaching experience. However, I had wonderful mentors, to include Dr Jody Rogers who provided great insight and advice throughout my time at Baylor, especially during that critical first year. There are three other individuals who not only assisted me personally, but have had crucial, and significant roles in, and influence upon the Baylor program – COL Dick Harder, LTC Brett Walker, and Dr Dave Mangelsdorff. All three personify commitment and loyalty and have done much, over many years, to strengthen our program. We who are graduates of this program owe them much.

In June of 1999, I became the Deputy Director of the Program and in Jun 01, I became the first non-Army Director in the program's 50-year history. It is now Sep 03; I have completed my 5th year with the program, have turned over the reins to my friend and colleague LTC Shonna Mulkey, and will retire from the military by the year's end. I believe in this program, and more importantly, in the health care professionals it produces. The Army-Baylor program has a legacy of preparing exceptionally committed and competent leaders for service within the federal health care system. It has been my privilege to contribute to this legacy by being part of an exceptionally gifted and committed faculty for the past 5 years. Without question, my time at Baylor has been the most rewarding and significant of my 30-year military career and I am most thankful for having been given the opportunity to serve my country by educating the next generation of federal health care leaders.

Shonna L. Mulkey, JD, MHA, PhD

I had the good fortune to be born at Wilford Hall Medical Center, the child of Mary Jane and Ty Mulkey. There, I spent my first 24 hours in intensive care doing my best to hold on to life in spite of failing lungs while my mother said the rosary nonstop and my dad slept in the car in a happy state of unknowing bliss. To this day, my mother credits my survival to the fact that it was a great hospital with wonderful providers and the latest medical equipment. That, and all those Hail Mary's she said. Fast forward 28 years and I have graduated from college with a dual major in Psychology and Theology, have a law degree, and am pursuing a PhD in Political Science from a good Jesuit institution, Fordham University, in New York City, NY. How in the world did I end up in the Army and in the Baylor Program?

My decision to do both was fostered in large part by Baylor Graduate, LTC Bob Galloway. I had the good fortune to work for LTC Galloway as a reservist on a short tour and later as my first boss on active duty. When I began the short tour at the Academy of Health Sciences, I intended to stay on active duty for only 179 days, a good way for a poor graduate student to make a few extra bucks. But in that tour, I was so impressed with the work that we were doing, and particularly with LTC Galloway as a boss, that when he encouraged me to apply for active duty, I thought it was a great idea. The reserves had been a way to supplement my income and no more, but LTC Galloway demonstrated to me that it was possible to pursue scholarly interests while serving in the Army, and, more than that, the AMEDD mission was an honorable one. Until then, my image of the Soldier was not very positive. After meeting LTC Galloway, I gained another perspective about Soldiers and about Viet Nam. In addition to being a Soldier and a scholar, LTC Galloway was also a leader who never failed to support his people. He took great pride in furthering the interests of his subordinates. He had just completed an assignment as a professor in the Baylor Program and so he talked about it often and still had a steady stream of visiting students in his office. I had no idea until I met him that it was possible to become a professor while serving in the Army. While many 70As aspire to become Deputy Commander for Administrations (DCAs), I never did. The example of a scholar who was also a real leader, and the possibility of contributing in a way that I felt suited to contribute, is what brought me in. I am very grateful for the diversity of the 70A field.

Shortly after coming on active duty, I was reassigned as a Company Commander in the 187th Medical Battalion. In the many assignments since, I have never achieved a greater level of responsibility. Having a company of 550 AIT students and a cadre of seven senior NCOs was an awesome experience. Due to the size of the company and the age of the Soldiers, I had ample opportunity to guide and counsel many individuals who were embarking on a new life endeavor, one that could serve them well throughout their lives, or one that could end in disaster. Because it was an academic environment, I could relate to the students' difficulties and frustrations, and to their academic failures as well. I count those as the most productive years of my career. I have never had another position that challenged me as much or gave me the opportunity to influence so many individuals during a critical point in their lives.

Near the end of my company command, I had to decide whether or not to take a subsequent assignment as a 70A. Lieutenant Brian Foley, at PERSCOM, offered me a 70A position at the MEDCOM but he also presented the Baylor course as an option. Since I hoped to someday teach there, I chose to attend the Baylor Program and I have never regretted that decision. As a new captain, I was among the most junior members of my class. Having never been assigned to an MTF, I felt a bit intimidated by it all. However, one of my fellow company commanders, Tim Rhodes, pulled me aside in the first week of Baylor and asked me to join a study group with himself, Pat Riley, Dave Kelty, and our class leader, Mary Savitsky. That study group was my saving grace and I will always appreciate Tim for asking me to join it. Mostly, we helped each other keep our sanity and we did a good job with that. I absolutely loved the subject matter taught in the Baylor Program. Compared to law school, it was like being in heaven. My fellow classmates were a big part of that – you form a bond during such an intense year and the solidarity I felt with my classmates is still a very important part of my life. I am proud to be an MSC, but there can be little sense of community with some 3,500 people, most of whom I have never met. There is a shared experience that we Baylor grads all have, regardless of corps and age. Whether it is with Dick Harder, class of 67, whom I see often, or the students I teach today, class of 2004, there is a sense of belonging that goes beyond any other type of community I've experienced in my professional life.

During my Baylor year, one of my professors, LTC Bill Brown, encouraged me to resume my doctoral work in Political Science, but with a new focus in Health Policy. That seemed to be a much more efficient option than starting over in a Health Care Administration doctoral program. So, while in Baylor, I wrote my doctoral proposal. I have to credit being back in an academic environment with giving me the impetus to finish it while so many miles from New York City – that, and Commander Bill Lambert, my Health Policy professor, who clearly loved the subject and inspired in me a love of it as well. Memorable people and events during Baylor include Mary Savitsky for her always kind and steady leadership throughout the year, Gary Crystal for his very strange but lovable sense of humor, and the skit that my OB/OT group taped and showed as our presentation to the class. In that tape, one of my classmates, I think it was Jerry Penner, got to say to Jane Allgood, "Jane, you ignorant slut" and have it considered part of a successful class assignment. It got a lot of laughs, especially from Jane.

After finishing the didactic year at Baylor, I went to Frankfurt as a resident. My preceptor was COL Bob Hawkins. He was a wonderful preceptor, a kind and soft-spoken gentleman, and a true partner with COL Kirchdoerffer, the Commander, in running the hospital. Watching the two of them provided me with an excellent example of a great working relationship between a Commander and a DCA in a very well run hospital. At the end of my residency year, I took a position in Wurzburg as Chief,

Clinical Support Division. I cannot say that my didactic year prepared me for the difficult personal dynamics that I had to deal with in my first year there while working for the DCCS. The tension between the DCA and the DCCS was a constant source of stress for me. My primary learning experience in that assignment came from being the JCAHO Project Officer. The excellent lectures in our Baylor QA course, provided by LTC Ann Brazil, certainly helped greatly in that position. Ann saved many a JCAHO project officer with her sound advice and quick wit. I know she saved me. Although I now teach Quality in the Baylor course, I am still in awe of her tremendous knowledge about quality in military medicine. Other fellow Baylor comrades in Europe included Scott Hendrickson, Randy Howard, Joel Bales, and Pete Shaul who were JCAHO Project Officers at their facilities and so we had an opportunity to experience the Baylor network at its best. The next year, the death of Pete Shaul was a tremendous blow to all who knew him. He was admired by so many for his compassion, intelligence, and willingness to share what he knew with others. For the past 3 years, I have attended the Baylor Closing Ceremony and am always gratified to hear the “Pete Shaul Peer Award” being given to the class mate who is most honored by his peers. The award was initiated and funded by Pete’s classmates, Class of 1989-1991.

After my tour in Europe, I proceeded to a policy analyst position in what was then a new creation, a Lead Agency. At Region 10 in Northern California, I learned a great deal about TRICARE. My boss, COL Ken Ansell, USAF, called us “pioneers” and we experienced all the excitement and frustration involved in being pioneers. It was a great assignment and I believe my Managed Care course taught by COL Ron Hudak served me very well, particularly the emphasis on military health care, the Catchment Area Management Program, and CHAMPUS Reform Initiative. While he worked us to death in that course, he ensured that we learned a great deal. While at Region 10, I completed my dissertation and defended it in New York City. Much more importantly, I adopted my first child, Amy, from China, and as all parents know, my life was forever changed!

After completing my assignment with the Lead Agency and obtaining my PhD, I went after that job I had always wanted, teaching in the Baylor Program. I didn’t succeed, but did manage to get close to the Academy of Health Sciences. Hoping I could get my foot in the door by volunteering to teach a course, I took a position against the advice of my assignment officer, LTC Bob Foster, as Chief, Provider Actions Branch, Quality and Accountability Division, MEDCOM. It was a position that entailed oversight of adverse actions against physicians and initiation of reports to the National Practitioner Data Bank. I now refer to it as “the most hated MSC position in the AMEDD.” Bob, you were right! After surviving that job by the skin of my teeth, and thanks to the sage advice of a very dear friend and long time colleague, LTC Karen Wagner, I interviewed for and was accepted in a new position as Policy Analyst, TRICARE Division, MEDCOM. I enjoyed that position immensely and worked for two terrific people, COL Karen Ferguson, and LTC Tim Rhodes, a Baylor classmate. In addition to Tim, I worked alongside LTC John Felicio and later for LTC Joel Bales and COL Tom Broyles. Colonel Martha Lupo followed COL Broyles and both were excellent mentors. So many talented Baylor grads in one small office – it was a wonderful 18 months. Then, just as I had almost given up on ever getting to teach in Baylor, a position came open. Thanks largely to the help of my good friend and Baylor colleague, LTC Mary Garr, and the understanding of a great boss, COL Harrison Hassell, I was accepted for a position on the Baylor faculty.

During my first year on the faculty, I adopted my second daughter, Cady, also from China. My dream family and dream job had both come true – I feel sure it was all those Hail Marys! As I reflect on it, the friends, bosses, and colleagues I’ve known due to the Baylor connection, have influenced my entire career. Every quarter I’m asked to speak with potential 70A students attending the Advanced Course. The question they never fail to ask is: If I can become a DCA from any 70 AOC, why should I become a 70A? I tell them this: The 70A field is more than a DCA producing field. It offers diversity and so many possibilities such as policy analyst positions at RMCs, MEDCOM, OTSG, and HA/TMA. These positions require you to look at the big picture and in them you can have far reaching influence. If you decide to be a DCA, you will be prepared. If you choose another path, you might obtain a doctorate, and, finally, the opportunity to be a professor in this great Baylor Program. I can honestly look them in the eye and say it has been the greatest career I could imagine.

The Evolution of the United States Army Ambulance

CPT Joseph P. Edger, MS, USA†

The Birth

According to Merriam-Webster's dictionary, the word "ambulance" originated in 1809 in the French language meaning *ambulant field hospital*. The modern day meaning of ambulance is *a vehicle equipped for transporting the injured or sick*. During the Civil War, Americans combined these definitions creating the commonly used term, ambulance wagon, to describe the two-wheeled and four-wheeled wagons that transported patients to field hospitals. According to Haller, Americans misuse of the word ambulance corrupted the meaning to today's definition.¹ Yet, characteristics of early 19th century ambulances might show evidence that the term ambulance wagon was befitting.

The first true ambulance wagon utilized in the U.S. was in 1859 and was named after the Army Assistant Surgeon, Isreal Moses. The Moses was predominately used to support the sick and wounded patients from the droves of travelers moving westward into the new frontier.^{1,2} However, it was in the year of 1861 at the first Battle of Bull Run that it became painstakingly evident to the Army's Medical Department leaders that patient evacuation would become essential to their readiness.³ The Union Army suffered enormous casualties (681) and wounded (1,011), highlighting the requirement for ambulances, as well as generating multiple ideas for ambulance operations. The most popular ideas were those created by MAJ Jonathon Letterman (Figure 1) and later became widely known as the Letterman Plan. The Plan called for the coordination of patient evacuation, logistical support, and field hospitals; and maybe most

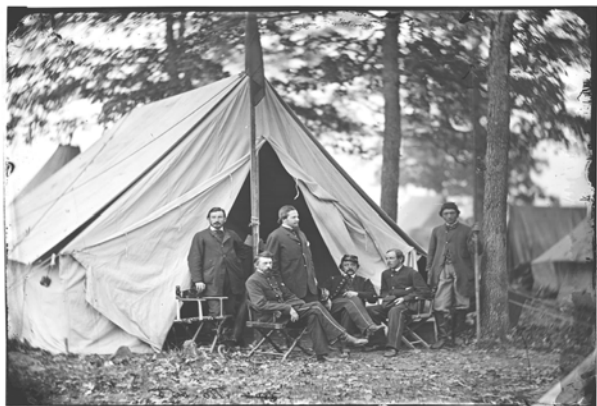


Fig 1. Major (Dr) Letterman (second from left) and Staff—Warrenton, VA 1862.

significant was the realigning of ambulance control from the Quartermaster Corps to the Medical Department Director.³ One year later, at the battle of Gettysburg (1-4 July 1863), approximately 1,000 ambulance wagons evacuated 14,163 Union casualties and 6,802 Confederate casualties resulting in no casualties remaining on the battlefield. This was a complete turn-around from the Battle of Bull Run. The ambulance proved to be a fundamental element in sustaining life and preserving combat power; Thus securing its purpose and place in the U.S. Army.⁴

The Evolution

Following ambulances rise to popularity in battle, the U.S. Army procured two basic types of animal-drawn wagons (ambulance wagons) as seen in Figure 2. These were the Coolidge Ambulance and the Tripler Ambulance. The Coolidge Ambulance was named after Surgeon Richard H. Coolidge. It was a light weight, 2-wheeled wagon pulled by two horses.⁵ Soldier's referred to this ambulance as the "avalanche" because of the jarring ride created by the instability of only having two wheels. This led to the U.S. Army abandoning the Coolidge Ambulance by 1863.¹ The Tripler, named after Surgeon Charles S. Tripler, was a heavy-weight and cumbersome 4-wheeled wagon pulled by four horses. Lessons learned from the battlefield led to the U.S. Army opting for a more versatile ambulance wagon – the Wheeling Ambulance. The wheeling was a medium weight, four-wheeled wagon pulled by two horses. This ambulance became the prominent ambulance used in the Civil War. The design of a medium weight, two-horse wagon remained the standard into the 19th century. Newer models would emerge in the years to come as minor improvements were discovered. These improved models included ambulances such as the Sus Ambulance, the Rucker Ambulance, and the Terre Haute Ambulance. The Sus Ambulance, named after its New York manufacturer Augustus W. Sus could carry four stretchers, twice that of the wheeling, using a 2-tier system. The Rucker Ambulance, shown in Figure 3, offered an effective braking system, and a noticeably improved suspension system providing comfort for the patient. The last of the major animal-drawn ambulances utilized in the Civil War was the Terre Haute Ambulance, and later adopted by the U.S. Army in 1900. Unlike the Rucker, the Terre Haute's four litters were standardized allowing them to be used in any one position of the two-tier (2x2) wagon.



Fig 2. Ambulance wagons removing casualties from the battle of Fredericksburg.

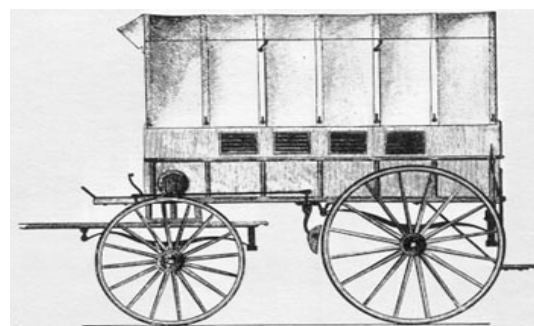


Fig 3. The Rucker Ambulance.

The new century brought new technology. Most significant was Henry Ford's Model "T" automobile coming off the assembly line in 1909. The invention of the automobile allowed the U.S. Army to strengthen their ambulance fleet with this new technology. Prior to the war, the motorized ambulances were configured to allow passage from the front to the rear of the ambulance. This was the first time that first aid could be administered during evacuation of casualties. One might argue that this new design of the ambulance supported the American definition of ambulance. However, lessons learned indicated that this was not practical. In-transit first aid did more damage than good with the spread of infectious diseases. The extra space was needed for patients, and so ambulances were completely paneled and first aid was no longer provided en route after 1915.⁶ The 19th century also brought World War I (WWI) in 1917. The Medical Department procured 3,070 General Motors Company (GMC) Ambulances and 3,805 Ford Model "T" ambulances for shipment to France in support of WWI operations.³ Each ambulance was shipped in two containers, the body in one container and the chassis in another container. This was done to prevent potential damage to the entire ambulance while in transit. Yet, this process created its own chaos as it was common that shipments would arrive at erroneous ports throughout France.⁶ By 1915, The Ford ambulances were narrow and light vehicles proving advantageous when operating near the front lines and in

mountainous terrain, where only animal-drawn ambulances could pass (Figure 4). The Model "T" ambulances provided our troops with two other significant advantages: (1) four strong Soldiers could pick up the ambulance in the event it was stuck and (2) its fording capability far exceeded other vehicles of that time.³ The GMC ambulances, on the other hand, were heavier and better suited for operations in the rear echelons.



Fig 4. Animal-drawn and motorized Model "T" ambulances.

Even during WWI, the animal-drawn ambulances had significant value to the Medical Department and were often the preferred ambulance of use. The ambulance wagons chief advantages were that they could travel cross country, go around road obstacles, or impassable terrain that the motorized ambulances could not pass.⁶ The ambulance wagons also were not prone to the dangers faced by the motorized ambulances when traveling in the mountains, as seen in Figure 5. Such dangers included inferior brakes, transmission and gear burn-out, and gravity fed fuel lines.³ Patients not only had to survive their wounds, they also had to survive the ambulance ride. By the time of the world war armistice, the Medical Department evacuated an estimated 214, 467 casualties in Europe.³

Almost a quarter century later, the U.S. Army would enter WWII following the attack on Pearl Harbor in 1941. The Army's Medical Department would face a challenge like no other in its history. The theatre of operations was widely scattered across continents and oceans, and diversified among deserts, mountains, and arctic terrain. In order to preserve combat power across the theater of operations, the medical leaders would have to use every ambulance in its inventory, as well as make use of any means of transportation made available.⁷



Fig 5. An American ambulance stuck in the mud on a hillside, somewhere in France.

Prior to entering WWII, the Medical Department published Field Manual (FM) 8-35, *Medical Field Manual Transportation of the Sick and Wounded*. Within FM 8-35, it describes the principal ambulances used by the Medical Department. They include the metropolitan ambulance, field ambulance, cross-country field ambulance, and animal-drawn.⁸ The motorized ambulances were a panel body manufactured by Dodge Brothers Inc (Figure 6). The metropolitan ambulance was much like modern day ambulances in that it carried only one wheeled litter. The remaining two ambulances held four litters, or eight sitting patients. The main difference was that the field ambulance was 2-wheel drive and the cross-country field ambulance was 4-wheel drive. Interestingly, the manual also discusses the two and four animal-drawn ambulances. The four animal-drawn ambulance is described as slow yet effective, and the two animal-drawn ambulance is described as an excellent ambulance well-matched with the horse cavalry.⁸



Fig 6. Dodge, field ambulances awaiting shipment overseas.

The next time the U.S. Army entered a war, helicopters had replaced the majority of its horses. During the Korean War (1950-1953), the Medical Department had its first “ambulance of the air” evacuation. Helicopter evacuation demonstrated enormous value. Air ambulances offered an alternative means to evacuation when ground evacuation by ambulance was not possible.⁹ Impossible ground evacuation conditions would be the case for the Medical Department in the Vietnam War in 1965.¹⁰ The U.S. Armed Forces would fight a war like no other

in its history. There were no front lines, and troops were scattered across the dense jungles of Vietnam. The air ambulance would make history as a highly mobile and flexible ambulance (Figure 7). The average medical evacuation flight averaged 35 minutes. The responsiveness of helicopters revolutionized how the Army would evacuate casualties from the battlefield.¹¹



Fig 7. Air ambulance evacuation in Vietnam.

The Influence

The Letterman Plan and lessons learned from the battlefields of the American Civil War served as the catalyst for launching ambulance service into the civilian sector.⁴ A surgeon from the Union Army, Edward B. Dalton, is credited for establishing the first city ambulance system in New York City. Haller cites the President of the Board of Health of New York as saying, “Dalton modified an Army ambulance for use in the city as early as 1868.”¹² The modifications included such things as adjusting the wagon to function in confined areas of the city, equipped with supplies, and as a result, capable of transporting fewer patients.¹² The military’s medical corps proved their worth in the management of casualties through the years, yet the civilian sector lagged far behind in the principles MAJ Letterman provided. Despite the efforts of Dalton, almost 80 years later, the civilian sector would reflect on the military’s effectiveness and efficiency to manage casualties on the battlefield in an attempt to improve civilian care. J.D. “Deke” Farrington has been labeled as the Father of modern emergency medicine services. In the mid-1950s, he advocated that the lessons learned from the military’s medical corps be incorporated in the civilian sector.¹³ Probably the most significant attempt made within our nation was that made by the 1966 publication of *The Accidental Death and Disability: The Neglected Disease of Modern Society* by the National Academy of Science. This report outlined measures to improve emergency medicine services through improving first responder training, providing better transportation, and providing improved en-route care to automobile accident victims.¹⁴ These new steps closely mirror the same principles found in the Letterman Plan almost 100 years ago, but applied in a more civil environment.

Today's ambulances have changed dramatically since Dalton's modified U.S. Army ambulance. In fact, today's ambulances may be best defined as an *Ambulant Field Hospital* – 1809 French definition. Modern day ambulances are fully equipped with emergency medical equipment, supplies, and paramedics who are far more capable of sustaining life than the ambulance wagons and drivers used over 100 years ago in the Civil War. Ludwig suggests the modern day ambulance can serve even a far greater role in today's managed care environment. He suggests ambulance services can serve as a gatekeeper to medical care.¹⁵ The notion of ambulance services serving as gatekeepers may be a result of the deterioration of managed care organization's ultimate goal. Managed Care Organization's ultimate goal is to provide appropriate care in the most efficient and cost-effective manner possible.¹⁶

...A Non-Emergency Ambulance Transport Study done by the American Ambulance Association in 1996 showed that only 8.4% of those patients transported by ambulance to an emergency room (ER) actually needed definitive care capable of being rendered by an ER. Another study done on Medicare patients showed that 94.6% of all Medicare patients transported to an ER could have received treatment at another resource.¹⁵

Managed care organizations are aware of these inefficiencies, and are beginning to address them for solutions. Moody-Williams' report, *Managed Care and EMSC: A Practical Guide to Resources in Managed Care*, actually lists ambulance services as one of five issues for collaboration within managed care organizations.¹⁷ Managed care organizations have formed partnerships with ambulance services. These ambulance service providers perform the role as a gatekeeper to emergency services. They may choose the location of the best emergency department or other forms of emergency care required, based on the patient's medical condition. In doing so, managed care organizations control costs and utilization by ensuring the appropriate level of care is delivered to the patient, while improving their continuum of care. In early 1999, Kaiser Permanente contracted with America's largest ambulance service provider – American Medical Response (AMR). The AMR was contracted to provide medical transportation for Kaiser's managed care patients across the country, in return for a monthly fee compared to the fee for service payment method ambulance services had been accustomed to receiving.¹⁷ You might say AMR provides coordinated emergency medical services similar in nature to the coordinated patient evacuation the Medical Department provided the Union Army at the Battle of Gettysburg in 1863. The same key elements (coordination, logistics, and ambulant field hospitals) of the Letterman Plan can be seen in today's contracts between managed care organizations and ambulance service providers.

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Prioritizing Endemic Diseases

Charles W. Elliott†

Introduction

Endemic diseases have historically accounted for a significant amount of casualties in military operations. Effective preventive medicine countermeasures to these diseases are a force multiplier and can reduce the cost of military operations. While the threats are many, the resources available to develop the countermeasures are limited. The military needs to apply resources judiciously to countermeasures development. To that end, this article describes an approach for developing a defensible, prioritized list of endemic diseases that will allow an organization to expend resources efficiently and effectively.¹

Methodology

Recognizing that valid differences of opinion exist as to the appropriate priority of each disease, a prioritization method is needed that will lead to agreement not only within an organization, but also across organizations. The method needs to be transparent and allow for the incorporation of divergent views.

The method portrayed here uses a mathematical model that rank orders endemic diseases using three modules in parallel.² Each module operates independently. The “Factor Module” is more quantitative and objective, and uses seven factors. The “Mission Module” explicitly identifies and uses seven national missions, but is moderately subjective. The “Delphi Module” is more qualitative and subjective, and uses a survey of senior military medical professionals. The final prioritized list of diseases results from the weighted combination of all three modules.

Factor Module

The factor module assumes the following scenario.³ First,

Soldiers have received normal vaccinations and chemoprophylaxis. Second, compliance with chemoprophylaxis regimen, repellents, water purification methods, heat and cold injury prevention techniques, and other preventive measures occur at normal levels for U.S. Forces. Third, U.S. Forces are not isolated from indigenous peoples. Fourth, U.S. approved sources provide food and water; however, consumption of non-U.S. approved food or water will occasionally occur. Fifth, U.S. approved sources provide blood, blood products, vaccines, and medicines. Sixth, hostilities may range anywhere from no immediate conflict to large-scale conventional warfare. (The threat comes from endemic diseases and not from biological weapons.)⁴ Seventh, the location may be anywhere in the world.

The factors are meant to cover the impact of the disease on the individual, the military operation, and the society, while delving into the prevalence and virulence of the disease. The purpose of a factor is to allow differentiation between diseases – failing to do this is an indicator that a factor either is not needed or needs to be reworded. Factors are not meant to be mutually exclusive and may overlap in scope.

Weight can be assigned to each factor to allow for differences in importance between factors. For this example, the weight is set equal for all factors – at 0.143 for each of the seven factors. The individual responses for the factors are summed to give total points for each disease. The diseases are then rank ordered from highest to lowest points for the Factor Module result (Table 1).

Table 2, following page, illustrates the computations involved.⁵

Mission Module⁶

The Mission Module is meant to cover the impact of the

¹ The terms “efficient” and “effective” are frequently misunderstood. For a clear definition, see “Measuring the Productivity of Staff Elements,” Winter 1990, *Armed Forces Comptroller* magazine.

² In 1997, a similar method was used by the author for United States Forces Korea (USFK) to prioritize all U.S. military installations in the Republic of Korea for possible base consolidation. At that time, it was reviewed and found acceptable by the local U.S. Army Audit Agency office in Seoul, Korea. The output from the method was then included in the USFK Theater Master Plan.

³ COL Lynch, for a disease and nonbattle injury project, developed this scenario sketch in 1999. Colonel Lynch is currently with the Pacific Command.

⁴ Biological weapons can be prioritized; however, that effort would require a different set of factors and a different scenario.

⁵ The values for this example were suggested in a brainstorming session held in 2002. Participants were Dr Mosebar, LTC Fudge, and MAJ Bosetti from the Directorate for Combat Development, Army Medical Department Center and School, and the author.

⁶ The author thanks COL Lynch and LCDR Marienau for suggesting the idea of a mission module.

	Factor	Question	Score	Weight
1	Treatment Statue	What is the status of an infected Soldier? (Inpatient means admitted to a hospital for at least 24 hours)	9 - Inpatient 1 - Outpatient	0.143
2	Society Treatment Cost	How much is the cost to society to take care of one infected Solider? (Veterans Administration, death benefits, disability retirement, etc)	9 - Significant 3 - Moderate 1 - Minimal	0.143
3	Military Resource Use	What military medical resources are required to take care of one infected Soldier? (Class VII, hospital bed, medical personnel, etc)	9 - Many 3 - Some 1 - Few	0.143
4	Human Cost	What is the long-term health effect on an infected Solider? (If there is an expected fatality rate over 20%, then mark "Significant")	9 - Significant 3 - Moderate 1 - Minimal	0.143
5	Geography	How geographically widespread is the disease?	9 - Worldwide 3 - Partial 1 - Isolated	0.143
6	Frequency	How many Soldiers are likely to contract the disease? (Ignore biological weapons)	9 - Some 3 - Few 1 - Rare	0.143
7	Preventive Medicine	How effective is the current preventive medical measure? (Effectiveness is the ratio of ACTUAL outcome to DESIRED outcome) (If vaccine is available, then mark "significant")	9 - Minimal 3 - Moderate 1 - Significant	0.143
		Must Total To One =		1.000

Table 1. The Factors with Potential Responses and the Weight Assigned to Each Factor

		Treatment Status	Society Treatment Cost	Military Resource Use	Human Cost	Geography	Frequency	PVNTMED	POINTS	FACTOR RANK
	Weight Must Total To One =	0.143	0.143	0.143	0.143	0.143	0.143	0.143	1.000	
2	AIDS/HIV	9	9	9	9	9	1	3	7.000	2
3	Amebic Dysentery	9	3	3	1	9	1	3	4.143	31
4	Anthrax, cutaneous	9	3	3	1	9	1	1	3.857	40
5	Ascariasis	1	1	1	1	9	1	1	2.143	68
6	Brucellosis	9	3	1	3	9	1	1	3.857	40
7	Campylobacter Enteritis	9	1	1	1	9	9	9	5.571	17

Table 2. The Application of Weight to the Factor Responses

disease on the major potential military missions. The purpose is to allow differentiation between diseases. Missions are not meant to be mutually exclusive and may overlap in scope.

The Mission Module uses almost the same scenario as the Factor Module, with some additions. It is likely that U.S. civilians, third country nationals, and indigenous people may be involved in some of these missions; and their welfare may be a big part of the mission. Additionally, for some missions, U.S. troops may find themselves responsible for prisoners of war.

Weight can be assigned to each mission to allow for differences in importance or expected occurrence. For this effort, the weight was set equal for all missions – at 0.143 for each of the seven missions. The diseases were then rank ordered from highest to lowest points for the Mission Module result (Table 3).

Each participant would be asked to assign “nine” (most impact) to 20% of the diseases, “one” (least impact) to 30% of the diseases, and not assign anything to 50% of the diseases (moderate impact). The moderate impact diseases would then be assigned “three.”

Table 4, following page, illustrates the computations involved. The data shown in this table is fictitious and is provided only to show how the computations work.

Delphi Module⁷

Delphi allows forecasting or decision making with less than perfect information where the decision making must take into account many complicated, and not easily identified or quantified, factors. It is usually used for predicting a single data point, such as a future interest rate or turning point, for example the future start of a recession. It may also use iterations, allowing the contributing isolated experts to modify their positions.

For this exercise, a single value is not the objective, and allowing experts to modify their positions would introduce unwanted influence. The objective is to gain the unbiased, independent knowledge of the experts and to rank order a list. Therefore, a single iteration is more appropriate.

Twelve experts took part in the Delphi process that provided the data used for this example.⁸ They were asked not to consult with each other. They were not given a scenario or

	Mission	Question	Score	Weight
1	Major Theater War	What impact on the mission is this disease expected to have?	9 - Relative to other diseases, this disease is expected to have a high impact. (Assigned to 20% of the diseases) 1 - Relative to other diseases, this disease is expected to have a low impact. (Assigned to 30% of the diseases)	0.143
2	Noncombatant Evacuation Operations	“	“	“
3	Homeland Security/Defense	“	“	“
4	Special Operations	“	“	“
5	Peacemaking; Counter-insurgency; Counter-terrorism	“	“	“
6	Humanitarian Assistance; Disaster Relief; Peacekeeper	“	“	“
7	Partnership for Peace; Non-Conus Training Exercises	“	“	“
			Must Total To One=	1.000

Table 3. Missions with Potential Responses and the Weight Assigned to Each Mission

⁷An article on this technique can be found in “Delphi Downsizing: a working tool,” 2d Quarter ‘94, *Resource Management* magazine. The percentages going into categories are always the same: 20% to the most important category, 30% to the least important category, and 50% by default to the middle category. The “nine, three, one” scale is used to allow for significant differences to become readily apparent.

⁸The author thanks COLs Benenson, Gouge, Hoke, Karwacki, O'Donnell, Sanchez, Stikes, LTCs Kelly, Feighner, Novakoski, and MAJs Nang, Keep, for their patience and effort as participants in the Delphi process conducted in 1999.

		Major Theater War	Noncombatant Evacuation Operations	Homeland Security/Defense	Special Operations	Peace Making; Counter-insurgency; Counter-terrorism	Humanitarian Assistance; Disaster Relief; Peace Keeping	Partnership for Peace; Non-CONUS Training Exercises	POINTS	MISSION RANK
	Weight Must Total to One =	0.143	0.143	0.143	0.143	0.143	0.143	0.143	1.000	
2	AIDS/HIV	1	3	9	1	9	9	1	4.714	3
3	Amebic Dysentery	9	9	3	9	9	9	3	7.286	1
4	Anthrax, cutaneous	1	3	3	9	1	9	3	4.143	4
5	Ascariasis	3	3	1	1	9	3	1	3.000	5
6	Brucellosis	3	1	1	3	3	9	1	3.000	5
7	Campylobacter Enteritis	9	9	3	9	3	3	3	5.571	2

Table 4. The Application of Weight to the Mission Responses

other instruction – just asked for their opinion regarding the risk the disease posed to U.S. Forces.

Each participant was asked to assign “nine” (most important) to 20% of the diseases, “one” (least important) to 30% of the diseases, and not assign anything to 50% of the diseases (moderate importance). The moderate importance diseases were then assigned “three.”

The individual responses from these senior medical professionals were summed to give total points for each disease. The diseases were then rank ordered from highest to lowest points for the Delphi Module result. All Delphi participants’ responses were given the same weight (0.083).

Table 5, following page, illustrates the computations involved.

Final Rank

Each module received equal weight. The ranks from each module were then combined to give the overall rank for a specific disease. A final result example is illustrated in Table 6.

Suggested Diseases

There is always great debate over which diseases to consider. Table 7 is a suggested alphabetical list of diseases to be considered.⁹ Four sources were used to provide candidate diseases for inclusion in this list. The four sources were: the “Tri-Service Reportable Medical Event List,” the Medical Research and Material Command Military ID Research Prioritization list, a 1998 Army Medical Department Center and School (AMEDDC&S) Force Protection Integrated Concept Team list, and a Medical Surveillance Monthly Report.^{10,11}

⁹The author is indebted to Dr Mosebar, LTC Fudge, and MAJ Bosetti for their participation in a 2-day brainstorming session for this final list.

¹⁰Enclosure D to Memo, 6 Oct ‘98, ASOD Health Affairs, Subject: Policy for Pre- and Post-Deployment Health Assessments and Blood Samples.

¹¹Volume 07, Number 01, page 14, Jan 01, published by the U.S. Army Center for Health Promotion and Preventive Medicine.

		COL Benenson, AMEDDC&S	COL Gouge, DCDD	COL Hoke, MPMC	COL Karwacki, MEDCOM	COL O'Donnell, OTSG	COL Sanchez, CHPPM	COL Stikes, FORSCOM	LTC Kelly, WRAIR	LTC Feighner, Korea	MAJ Nang, CHPPM	MAJ Keep, WRAIR	LTC Novakoski, N/A	POINTS	DELPHI
	Weight Must Total To One =	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	1.000	
2	AIDS/HIV	9	1	9	3	1	1	9	1	3	3	3	9	4.333	18
3	Amebic Dysentery	1	9	3	1	3	3	3	3	3	3	9	3	3.667	28
4	Anthrax, cutaneous	9	9	3	3	9	3	3	1	1	9	3	9	5.167	12
5	Ascariasis	1	3	1	1	1	1	3	3	1	1	1	3	1.667	54
6	Brucellosis	1	1	1	3	3	3	1	1	1	1	3	3	1.833	52
7	Campylobacter Enteritis	9	1	9	3	3	9	3	9	9	3	9	1	5.667	9

Table 5. The Application of Weight to the Delphi Responses

		Factor Module Rank	Mission Module Rank	Delphi Module Rank	Combined Points	Final Rank
	Weight Must Total to One =	0.333	0.333	0.333	1.000	
2	AIDS/HIV	2	3	18	7.667	4
3	Amebic Dysentery	31	1	28	20.000	34
4	Anthrax, cutaneous	40	4	12	18.667	29
5	Ascariasis	68	5	54	42.333	71
6	Brucellosis	40	5	52	32.333	61
7	Campylobacter Enteritis	17	2	9	9.333	6

Table 6. The Application of Weight to Each Module's Responses

1	Adenovirus	33	Human papillomavirus
2	AIDS/HIV	34	Influenza
3	Amebic Dysentery	35	Lassa Fever
4	Anthrax, cutaneous	36	Legionellosis
5	Ascariasis	37	Leishmaniasis, cutaneous
6	Brucellosis	38	Leishmaniasis, Mucosal/Visceral
7	Campylobacter Enteritis	39	Leprosy
8	Chancroid	40	Leptospirosis
9	Chikungunya Virus	41	Listeriosis
10	Chlamydia	42	Lyme Disease
11	Cholera	43	Malaria, Falciparum
12	Coccidioidomycosis	44	Malaria, Malariae, Ovale, & Vivax
13	Cryptosporidiosis	45	Measles
14	Cyclospora	46	Melioidosis
15	Dengue Fever	47	Meningitis, Viral (diverse etiology)
16	Ebola-Marburg Viral Diseases	48	Meningococcal, Meningitis B
17	E. Coli (EHEC, ETEC)	49	Plague, Bubonic
18	Ehrlichiosis	50	Pneumonia, Mycoplasmal
19	Encephalitis, Equine (EEE, VEE, WEE)	51	Pneumonia, Strep, pneumoccal
20	Encephalitis, Japanese	52	Q Fever
21	Encephalitis, Tick-borne	53	Rabies
22	Filariasis	54	Relapsing Fever
23	Gastroenteritis, Acute Viral (diverse etiology)	55	Respiratory Disease, Acute Viral (excluding flu)
24	Giardiasis	56	Rickettsioses, Tickborne (for example, RMSF)
25	Gonococcal Infections	57	Rift Valley Fever
26	Hantavirus, Pulmonary (including Sin Nombre)	58	Salmonellosis
27	Hantavirus, Renal	59	Sand Fly Fever
28	Hepatitis A	60	Schistosomiasis
29	Hepatitis B	61	Shigellosis
30	Hepatitis C	62	Streptococcal Diseases (all groups)
31	Hepatitis D	63	Strongyloidiasis, Toxocariasis
32	Hepatitis E	64	Syphilis

Table 7. Shows a List of Suggested Diseases for Consideration

65	Trichinellosis/Trichiniasis/Trichinosis
66	Trypanosomiasis, African
67	Trypanosomiasis, American
68	Tuberculosis, Active
69	Tularemia
70	Typhus, Louseborne/Fever
71	Typhus, Scrub
72	Varicella (Chickenpox/Herpes Zoster)

Table 7. Shows a List of Suggested Diseases for Consideration (con't)

Summary

This article describes a clear, rational, documental and defendable approach to prioritizing an endemic disease list.¹² Documenting in this manner allows the content to be modified and the process repeated. Relying upon several techniques simultaneously within the approach allowed the incorporation of differing views, thereby allowing for consensus building.

This approach is a macro decision support tool. It does not significantly differentiate between adjacently ranked diseases and there are other issues of importance that should be taken into account when making decisions concerning the expen-

diture of resources. Such techniques as economic analysis, cost/benefit analysis, and payoff matrices should also contribute to the resource expenditure decision-making process.

This model does not provide decision support on the *need* to protect forces from endemic diseases. "Least risk disease" does not mean the risk is insignificant. The model just rank orders the diseases, thereby providing decision support when considering which diseases should first receive countermeasure advancement, given constrained research and development resources.

The method can be expanded to develop a list for all of the Department of Defense by having each service run through the process, then adding another step combining the services' lists. If this is done, it is recommended that weight be applied in direct proportion to each service's population at risk (PAR).¹³ Each service would have its own list, yet the priority for the entire military would be known. In a similar fashion, the method could be applied at lower levels; for example, each of the four U.S. Army Combatant Commands could develop their own lists.

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¹²These desired characteristics of prioritized list were required by COL (ret) Tieman, previously Directorate of Combat Development Director, of her Threat Manager, MAJ Osborn, in 1997.

¹³As of Dec 01, the active duty PAR was Army 340,883, Navy 333,942, and Air Force 273,130; for weights of Army 0.360, Navy 0.352, and Air Force 0.288. Navy includes the Marine Corps.

AMEDD Dateline

Wayne R. Austerman, PhD†

- 1 Jan Peter Hawkins of Richmond, VA, was the first documented black dentist practicing in what is now the United States. Catering to the colony's black population, Hawkins was renowned for his strength, and was often known to extract a tooth without even dismounting from his horse, for "his strength of wrist was such, that he would almost infallibly extract , or break a tooth, whether the right one or wrong one." **(1765)**
- The U.S. entered the last year of peace before involvement in World War II. At this time, fully 70 million Americans, 60% of the population, subsisted on an income of less than \$2000 a year. **(1941)**
- 11 Jan Snowbound at a winter camp on Palo Duro Creek, OK, Surgeon Louis S. Tesson reported that an epidemic of scurvy had erupted among a 500-man detachment of the 5th U.S. Cavalry. **(1869)**
- 16 Jan Peter Francisco died at age 71. Standing just under 7 ft tall, Francisco served in the 10th Virginia Regiment during the War for Independence. Armed with a broadsword whose blade spanned 5 feet, Francisco fought in the American defeat at Camden, SC, cutting down 11 British Soldiers in quick succession from horseback. When a twelfth redcoat pinned Francisco's leg to his saddle with a bayonet thrust, the Virginian reached down, wrenched the blade from the wound, and then split his attacker's skull with a sword stroke. Francisco survived six wounds and outlived two wives before dying of appendicitis. **(1831)**
- Private Rooney, 1st U.S. Dragoons, underwent emergency field expedient medical treatment for an arrow wound to the skull suffered in a skirmish with Apaches near Galisteo, NM. Only 1/8 inch of the 21/2 inch-long arrowhead protruded above the wound. "One of the Mexicans got hold of it with his teeth," related a comrade, "and could not move it . . . Then one of the citizens . . . tried it with his Bowie knife, but could not succeed . . . one of our men . . . had a pair of pliers . . . which just answered the purpose." Rooney died of his wound in a hospital 13 days later. **(1855)**
- 17 Jan Gertrude Janeway died in Emerson, NJ, at the age of 93. She was the last surviving widow of a Union Civil War veteran, John Janeway, of the 14th Illinois Cavalry. Gertrude married Janeway in 1927, when she was 18 and he was 81. Still living is 95-year old Confederate widow Alberta Martin of Elba, AL. **(2003)**
- 20 Jan The Sullivan Ordinance made it illegal for women to smoke cigarettes in any public place in New York City. **(1908)**
- In the closing episode of the Battle of New Orleans, Dr Robert Morrell, a U.S. Navy surgeon, led a force of 53 volunteers crewing six small boats to capture a barge full of retreating British troops on Lake Borgne. Doctor Morrell had earlier been held prisoner by the British in violation of a flag of truce. He had fed his captors false information, telling them that New Orleans was held by 20,000 American troops instead of the 4,000 actually in position there. **(1815)**
- 21 Jan Doctor Guillotine proposed his new device as a humane means of capital punishment. **(1790)**
- 25 Jan Grand Rapids, MI, was the site of the first public drinking water fluoridation program. **(1945)**
- 26 Jan The electric dental drill was patented on this date by Joseph Green of Kalamazoo, MI. **(1875)**
- 31 Jan The first clinic devoted to the treatment of venereal diseases opened at the London Dock Hospital. **(1747)**

Surgeon William H. Forwood of Fort Larned, KS, kept a buffalo and a wolf as pets. The post commander ordered him to get rid of the buffalo, terming it a “public nuisance.” On this date, the post adjutant informed the surgeon that “complaints have also been made of the howling of the wolf at night. It is therefore directed that you have the animal removed to someplace where it will not be an annoyance to the garrison.” **(1869)**

- 1 Feb Two American military surgeons died in the destruction of the Space Shuttle COLUMBIA as it returned from an orbital mission. U.S. Navy flight surgeons Laurel Clark and David Brown perished with five fellow astronauts as the spacecraft broke up at 200,000 ft over Texas. **(2003)**
- 2 Feb Medic Al Ultman of the 11th Airborne Division made the following entry in his diary for this day as his unit battled the Japanese to liberate Manila, capital of the Philippines: “At noon it happened . . . artillery opened up, everyone dived for ditches, but some were not so lucky. At least 10 killed . . . Assisted major in performing an amputation in a ditch with a trench knife, artillery landing around us. A miserable day.” **(1945)**
- 6 Feb Army Medical Department Soldier, SGT Michael C. Barry of the 205th Area Support Medical Battalion, died in a traffic accident near Camp Arifjan in central Kuwait. Four other Soldiers were injured in the accident. **(2003)**
- 10 Feb Mongol invaders destroyed Baghdad. **(1258)**
- 11 Feb Sixteen-year old Sacajawea, a Shoshone Indian girl, delivered a baby boy with the aid of Captain Meriwether Lewis of the Lewis and Clark Expedition. Her delivery was supposedly aided by the administration of a powder made of ground-up rattlesnake rattles dissolved in water. **(1805)**
- 13 Feb Forensic anthropologists reported that analysis of the bones of a Bronze Age man found buried near England’s Stonehenge monoliths revealed that chemical components of his tooth enamel established that he grew up in what is now Switzerland. The discovery prompted speculation about the extent of trade and travel between England and Europe at the time. **(2003)**

An unknown number of wounded Confederate Soldiers were burned alive in their beds when Union General Williams T. Sherman’s troops set fire to a field hospital housed in South Carolina College at Columbia, SC. **(1865)**
- 19 Feb The National Academy of Engineering awarded the \$500,000 Russ Prize in Biomedical Engineering to Willem Kolff, inventor of the artificial kidney machine, a device which has saved the lives of approximately 1.2 million people. **(2003)**
- 20 Feb Wire service reports revealed that the U.S. Navy conducted a psychiatric survey of personnel who volunteered for tours of duty in the Antarctic. The survey determined that their rate of psychiatric disorders was 7 times greater than the norm among all other Navy personnel. Many cited their reasons for volunteering as a desire to get away from a mother, wife, or girlfriend. **(2003)**
- 22 Feb A mixed detachment from Company E, 1st Cavalry, and Company B, 32d Infantry, was ambushed by Apaches in Meadow Valley, AZ. Surgeon Charles Smart established a dressing station in the cover of some boulders and began treating casualties as the fighting raged around him. When Corporal Duncan sustained a bullet wound to the leg, Dr Smart immediately extracted the projectile, which proved to have been molded from pure silver. This was the first time in history that a physician had performed a surgical procedure and collected a fee at the same time. **(1867)**
- 25 Feb Doctor Reed Bontecou was thrown from his horse, suffering a “hernia at the umbilicus,” when his mount stumbled over the partially buried carcass of a dead mule on the beach at Fortress Monroe, VA. Doctor Bontecou recovered to pioneer the use of documentary photography in the study of wounds. His photographs were included in the official surgical history of the AMEDD in the Civil War. **(1862)**

Colonel John Holcomb, of the U.S. Army Institute of Surgical Research, announced the onset of “a revolution in hemorrhage control on the battlefield” as the AMEDD prepared to provide medics with new fibrin bandages, which contained a rapid-acting blood clotting agent capable of halting the bleeding in severe wounds which would otherwise not be controllable. **(2003)**

1 Mar Rebecca Lee became the first black woman to receive an American medical degree, from New England Female Medical College in Boston, MA. **(1864)**

Lieutenant Samuel Harris, of the 5th Michigan Cavalry, used up a lifetime’s supply of good luck in one instant during a skirmish at Green’s Farm, VA. Caught in a volley fired by a Confederate infantry unit at point-blank range, Harris suffered one minor wound to the neck while two bullets ripped through his hat and another 13 holed his overcoat without touching him. **(1864)**

5 Mar Dictator Joseph Stalin died of a supposed brain hemorrhage. Held responsible for the deaths of as many as 25 million Russians, the paranoid Stalin was reportedly preparing to launch World War III at the time of his death. Attending doctors were puzzled when the leeches applied to his head, in an effort to reduce the pressure on his brain due to the hemorrhage, kept dropping off dead, leading to suspicions that Stalin had actually been poisoned in a covert coup staged by Secret Police head Lavrenti Beria. **(1953)**

6 Mar The Alamo fell to assaulting Mexican troops in San Antonio, TX. Commander William B. Travis had recorded being intimate with over 58 different women in his personal journal, and had contracted a case of gonorrhea as a result of his amorous activities. He was taking mercury-based medication for the disease well prior to his assumption of command at the Alamo, leading some scholars to speculate on the possible adverse impact the poisonous chemical had upon his judgment and mental faculties at the time of the battle. **(1836)**

10 Mar Advancing Confederate forces captured a concealed Union ordnance and quartermaster depot at the remote village of Cubero, NM, with the aid of Dr Finis E. Kavanaugh, a former AMEDD contract surgeon posted at Fort Fauntleroy, NM. Confederate sympathizer Kavanaugh made possible the continuing Confederate offensive drive northward to seize Santa Fe with this piece of espionage. The Southern forces advancing northward from El Paso, TX, were led by Brigadier General Henry H. Sibley, the son of an AMEDD surgeon. **(1862)**

16 Mar Doctor John M. Smith, Jr died at the age of 88 in San Antonio, TX. A graduate of Tulane University School of Medicine, Dr Smith was an AMEDD surgeon during World War II, serving in Normandy and the Ardennes Campaign with a field hospital. In 1959, his efforts led the state legislature to charter what is now the University of Texas Health Science Center. **(2003)**

17 Mar An Iraqi Mirage F-1 fighter fired two Exocet air-to-surface missiles into the destroyer USS STARK, killing 37 American seamen in an overt act of war. **(1987)**

18 Mar Czar Ivan IV (“Ivan the Terrible”) died at the age of 54, the most feared ruler of Russia until the time of Joseph Stalin, 350 years later. Known for his cruelty and paranoia, Ivan killed hundreds of thousands of his subjects during his bloody reign, including his own eldest son and several of his estimated eight to 10 wives. In the late 1990s, a team of Russian forensic pathologists excavated and examined his skeleton. They determined that he had suffered from excruciatingly painful arthritic ailments, which had been treated with the mercury-based medications of the day in such prolonged and heavy dosages that he had undoubtedly suffered brain damage from mercury poisoning, thus accounting for his increasingly bizarre and violent behavior. **(1584)**

The Continental Congress stipulated that each American Soldier should receive a ration of one pint of beer per day. **(1775)**

20 Mar Major Mark D. Taylor, 41, was killed by rocket fire near Fallujah, Iran. Major Taylor was part of a Forward Surgical Team deployed in support of the 82d Airborne Division. **(2004)**

- 23 Mar Iraqi troops fired on “U.S. military vehicles clearly marked by Red Cross symbols,” according to troops of the 3d battalion, 69th Armor Battalion, 3d Infantry Division. **(2003)**
- An HH-60G PAVE HAWK helicopter of the U.S. Air Force 41st Rescue Squadron crashed in southeastern Afghanistan, killing all aboard, while conducting an aeromedical evacuation of two injured Afghan children. **(2003)**
- 24 Mar The first casualties evacuated from in-theater were airlifted from Iraq to Landstuhl Regional Medical Center in the Federal Republic of Germany. Eight Marines and two U.S. Army Soldiers arrived at Ramstein Air Force Base en route to the AMEDD facility commanded by COL David Rubenstein. **(2003)**
- In a historic “first,” U.S. Marine Corporal Josh Menard lay on a stretcher somewhere in Iraq awaiting treatment for a bullet wound to his hand and spoke directly to his parents at home in Houston, TX, via a live network satellite link on a global telecast and then via cell phone. For the first time in the history of warfare, a casualty experienced direct communication with his family in CONUS while in the hands of his unit’s medics at the first echelon of care. **(2003)**
- OPERATION VARSITY, the Allied airborne assault across the Rhine River, commenced with Medic Wallace E. Thompson, 17th Airborne Division, sitting behind the wheel of a jeep loaded with medical supplies. The vehicle was strapped in the belly of a cargo glider as it dared German antiaircraft fire to deliver its payload to the drop zone. As the glider swept in for a landing at an altitude of 10 to 15 feet, an 88 mm shell detonated in its rear cargo bay, and the blast hurled Thompson and his jeep forward through the nose of the aircraft. The jeep soared through the final few feet to the ground and then impacted with the dazed medic still sitting behind the wheel. As Thompson sought to recover from the shock of his precipitate landing, a sniper fired at him. The bullet hit his helmet, but was deflected. Joined by the glider’s bruised and bleeding crewmen, Thompson drove the jeep to the nearest aid station and delivered his cargo safely. **(1945)**
- 25 Mar Hospital Corpsman 3/c Michael Vann Johnson was caring for wounded Marines when grenade fragments inflicted a lethal head wound on the 25-year-old native of Little Rock, AR, in Iraqi fighting. **(2003)**
- 26 Mar Major Todd Albright, battalion surgeon for the 3d Squadron, 7th Armored Cavalry, 3d Infantry Division, treated a 4-year-old boy, a pregnant woman, and two other Iraqi civilians for shrapnel wounds as his unit weathered enemy ambushes on its approach to the Euphrates River. **(2003)**
- Bolivian doctors and nurses mobbed the U.S. embassy in La Paz in response to rumors that American citizenship would be granted to all medical professionals volunteering for service in Iraq with the AMEDD. **(2003)**

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Combat Medic Prayer

Oh Lord, I ask for the divine strength to meet the demands of my profession. Help me to be the finest medic, both technically and tactically. If I am called to the battlefield, give me the courage to conserve our fighting forces by providing medical care to all who are in need. If I am called to a mission of peace, give me the strength to lead by caring for those who need my assistance. Finally, Lord, help me to take care of my own spiritual, physical, and emotional needs. Teach me to trust in your presence and never-failing love.

Amen



WRITING AND SUBMITTING ARTICLES FOR THE AMEDD JOURNAL

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2. It may be necessary to revise the format of a manuscript in order to conform to established page composition guidelines.
3. Articles should be submitted in disk form (preferably Microsoft Word on 3.5" disk) accompanied by two copies of the manuscript. Journal format requires four double-spaced typewritten pages to complete one page of two-column text. Ideally, manuscripts should be no longer than **20 to 24 double-spaced pages**. Exceptions will be considered on a case-by-case basis.
4. The American Medical Association Manual of Style should be followed in preparation of text and references. Abbreviations should be limited as much as possible. A list identifying abbreviations and acronyms **must** be included with the manuscript or materials will be returned to the author.
5. Photos submitted with manuscripts can be black and white or color. Color is recommended for best print reproduction quality. Space limitations allow no more than eight photos per manuscript. Photo prints are preferred, but we will accept electronic graphic (i.e., BMP, JPG, or GIF) and photo files in Microsoft Word or PowerPoint. Avoid excessive use of color and shading. Please do not send photos embedded in PowerPoint. Slides, negatives, or X-ray copies will not be published. To avoid possible confusion, the top of photos should be marked on the reverse and their position within the article should be clearly indicated in the manuscript. Photo captions should be taped to the back of photos or submitted on a separate sheet.
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