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**A DELPHI STUDY OF HIPAA COMPLIANCE TO BATTLEFIELD MEDICAL
EVACUATION**

THESIS

John Chessman, Captain, USAF

AFIT/GIR/ENV/08-M03

**DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY**

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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AFIT/GIR/ENV/08-M03

A DELPHI STUDY OF HIPAA COMPLIANCE TO BATTLEFIELD MEDICAL
EVACUATION

THESIS

Presented to the Faculty

Department of Systems and Engineering Management

Graduate School of Engineering and Management

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In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Information Resource Management

John Chessman, BS

Captain, USAF

March 2008

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AFIT/GIR/ENV/08-M03

A DELPHI STUDY OF HIPAA COMPLIANCE TO BATTLEFIELD MEDICAL
EVACUATION

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Abstract

The purpose of this research was to examine the impact of HIPAA compliance on the Battlefield Medical Evacuation process. Specifically, this thesis sought to answer three research questions addressing the current Battlefield Medical Evacuation process and current HIPAA considerations for each step of the process. The research questions were answered through the use of the Delphi Technique. Eight experts, representing Air Force, Army and Civilian medical communities participated in two rounds of the Delphi Technique. The research identified how HIPAA compliance is handled now and identified suggested improvements.

An original model of the battlefield medical evacuation process was developed, and this was presented to the Delphi group for changes and acceptance. The group was then tasked to identify the application of the HIPAA requirements at each stage of the model. The final model suggests that partial HIPAA compliance is the current trend in the early steps of battlefield medical evacuation. The culmination of this effort was the development of recommended improvements based upon the suggestions of knowledgeable people. The suggested improvements were: clear guidance, training and additional resources.

The study may help Commanders prepare themselves and their personnel to handle HIPAA information in a deployed environment.

Acknowledgments

I would like to express my sincere appreciation to my faculty advisor, Dr Alan Heminger, for his guidance and support throughout the course of this thesis effort. The insight and experience were certainly appreciated. I would also like to thank the members of the Wright Patterson Medical Center who so generously donated their time to this study. Finally, I would like to thank my wife for her love and support without which I could not have accomplished this.

John A. Chessman

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A DELPHI STUDY OF HIPAA COMPLIANCE TO BATTLEFIELD MEDICAL EVACUATION

I. Introduction

Overview

The Health Insurance Portability and Accountability Act (HIPAA) of 1996, Public Law 104-191, was enacted on August 21, 1996, and went into effect on April 14, 2003. HIPAA was intended to protect the health insurance coverage for working families when they changed or lost their jobs, guard against fraud, waste, and abuse, and establish specific requirements for administrative simplification in the exchange of electronic health data among employers, insurers, and providers (Antognini, 2002, p296). The Military Health System is considered a health plan under HIPAA law and is obligated to comply with all HIPAA regulations (Butler, 2002). The battlefield is a uniquely military environment in which time is of the essence, and the extra burdens imposed by HIPAA compliance could impact the survival of military wounded.

The purpose of this study is to examine the implementation of HIPAA on battlefield medical treatment to determine where it makes sense for battlefield medical teams to comply with HIPAA regulations when treating military wounded. HIPAA administration simplification is supposed to significantly reduce the costs of processing and handling patient health information (Harman, 2005). Has the desired effect been realized in battlefield medical treatment or is the opposite true? The purpose of this

chapter is to introduce HIPAA, discuss the basic background, and describe the problem to be investigated and the methodology to be used.

Background

HIPAA has three main parts: (1) Insurance Portability, (2) Preventing Health Care Fraud and Abuse, and (3) Administrative Simplification (Office for Civil Rights, 2006). This study will address only the Administrative Simplification section of HIPAA. Administrative Simplification is intended to protect access to patient protected health information (PHI) and improve the efficiency and effectiveness of the health care system by standardizing electronic data exchange. HIPAA requires appropriate technical, administrative and physical safeguards to protect the privacy of health information. HIPAA is designed to standardize the handling of PHI and to promote data standards for the electronic exchange of medical information (Office for Civil Rights, 2006).

HIPAA Administration Simplification implementation is guided by two formal rules: the Security Rule and the Privacy Rule. The Security Rule describes the standards for the security of electronic PHI in any electronic medium (Health and Human Services, 2003). The Privacy Rule protects all individually identifiable health information records held or transmitted by a covered entity and specifies who can access the patient information (Office for Civil Rights, 2002; Leahy, 1997). The Privacy Act of 1974 and HIPAA Privacy Rule have very similar requirements. The Security and Privacy rules are the basis for handling and transmitting protected health information in all mediums (Wolfowitz, 2002).

The active duty Military Health System HIPAA is specifically mentioned in the law. All Military Treatment Facilities must comply with the HIPAA regulations. The Department of Defense (DoD) position is that HIPAA also applies to battlefield medical treatment (Ash, 2006). The law does permit exceptions to support unique military requirements such as information crucial to force health readiness. HIPAA places additional administrative burdens on deploying medical forces (Butler, 2002). Additional administrative personnel are required to process the extra requirements and properly protect the information. The forms, paper, and processing equipment required take up precious pallet space on military airlift. For these reasons alone, the Air Force medical community has requested waivers to HIPAA compliance (Greentree, 2004; Ash, 2006).

Need for Solution

When HIPAA was written, Congress made it clear that HIPAA applies to the DoD. By specifically including the Military Health System, Congress left no doubt that it intended for the military to be included in HIPAA compliance. It did not foresee all of the impact of the HIPAA regulations on military operations. For example, any information about battlefield casualties which could lead to the identification of a specific member is prohibited from public release. This has implications for family members' ability to get a status update and even state governors and members of congress ability to obtain casualty information for their districts. Senator Ted Kennedy, one of the sponsors of the HIPAA bill, has publicly said it was not his intent to block battlefield casualty information from being released when HIPAA was written. Yet this is one of the

unintended consequences of the HIPAA law (Williams, 2004). It does not make sense for HIPAA to completely apply to battlefield wounded at all stages of the treatment process and has led to confusion as to where it should take effect. At some point between being wounded and arriving back in the United States for treatment the HIPAA requirements take effect.

Problem to be researched

From the above information the following research question has evolved to be answered by this study:

Where does it make sense for HIPAA regulations to take effect for battlefield wounded?

To fully investigate this research question, the following investigative questions must be answered:

1. What is the current Battlefield Medical Evacuation Model and what are the current HIPAA considerations for battlefield wounded at each step of the battlefield evacuation model?
2. What are the recommended suggestions for improvement to HIPAA compliance to the Battlefield Medical Evacuation model?

In order to fully answer the investigative questions and ultimately the research problem, the following research tasks were identified:

1. Develop a model of current DoD standards for battlefield HIPAA compliance
2. Confirm accuracy of battlefield evacuation model with panel of experts

3. Ask panel of expert for recommendations for improvement to HIPAA compliance to the battlefield evacuation model

Accomplishing the above research tasks and answering the appropriate questions helped determine where it makes sense for HIPAA to take effect for battlefield wounded. The next section will cover the methodology to be used to accomplish these tasks.

Scope/ Methodology

The study was limited to HIPAA compliance during the battlefield evacuation process. This study used a Delphi Study to address the research problem. Interviews with medical personnel were part of the initial study to help determine the questions for the Delphi Study.

Anticipated Results

The possible findings of this research may provide a solution recommended by experts of where HIPAA should take effect and provide a possible reference for future decisions on DoD and Air Force HIPAA compliance.

II. Literature Review

Introduction

The Health Insurance Portability and Accountability Act (HIPAA) was intended to protect the availability of health insurance for working families and their children when they changed or lost their jobs, protect against fraud and abuse, and establish specific requirements for administrative simplification in the exchange of electronic health data among employers, insurers, and providers. HIPAA is designed to standardize the transfer of patient protected health information (PHI) and to promote data standards for the electronic exchange of medical information (Antognini, 2002, p296). The Military Health System is considered a health plan and is obligated to comply with all requirements of HIPAA as if it were a civilian healthcare plan. HIPAA makes allowances for the unique circumstances of military operations with limited exceptions to meet unique military requirements, but leaves the details to the DoD to work out (Butler, 2002).

The purpose of this study is to examine the impact of HIPAA on battlefield medical treatment to determine where it makes sense for battlefield medical teams to comply with the full HIPAA regulations when treating military wounded. The purpose of this chapter is to expand upon the information presented in Chapter 1 through relevant literature. First, a background of HIPAA will be discussed. Then, the Security and Privacy rules will be explained. Finally, the impact of HIPAA compliance to the Military

Health System will be addressed to provide a basic understanding of the requirements HIPAA places on military medical organizations when handing patient information.

Background

Public Law 104-191, The Health Insurance Portability and Accountability Act (HIPAA) was signed into law by President Clinton on August 21, 1996. HIPAA protects individuals from losing their health coverage when changing jobs (Portability) and it increases the federal government's authority over medical fraud and abuse (Accountability) (Harman, 2005). The HIPAA law lists the Military Health System as a Health Plan, which is a covered entity under HIPAA and subject to the HIPAA regulations (Butler, 2002). Covered entities are health care providers, health plans, and health care clearinghouses required to protect individually identifiable health information. Protected health information (PHI) is individually identifiable health information relating to an individual's past, present, or future physical or mental health condition, provision of health care, or payment for the provision of health care (Antognini, 2001).

To improve the efficiency and effectiveness of the health care system, Congress included Administrative Simplification provisions into HIPAA (Office of Civil Rights, 2006). Sections 261 through 264 require the Secretary of the Department of Health and Human Services (HHS) to publish national standards for the electronic exchange, privacy and security of electronic health care information transactions between covered entities and these together are known as the Administrative Simplification provisions (Office of Civil Rights, 2006). Congress recognized the pace of electronic technology advances

would endanger the security and privacy of health information. (Leahy, 1997). To meet this need, Congress included provisions in HIPAA that mandated federal privacy protections for individually identifiable health information (Butler, 2002). Another goal of HIPAA was the development of the electronic health record, or the electronic medical record as it is commonly referred to. Electronic medical records help reduce the administrative costs of updating, storing, and protecting health records. The HIPAA Administrative Simplification provisions are guided by two rules: the Security Rule and the Privacy Rule (Office of Civil Rights, 2006)

Security Rule

The Administrative Simplification provisions of HIPAA required the Department of Health and Human Services to establish national standards for the security of electronic health care information. The *Health Insurance Reform: Security Standards*, better known as the Security Rule, describes the standards for the security of electronic protected health information (EPHI). The Security Rule was published in the *Federal Register* on February 20, 2003, and final compliance took effect on April 21, 2006. The Security Rule has three subsections: Administrative, Physical, and Technical. Administrative safeguards are policies and procedures to clearly demonstrate how the entity will comply with HIPAA, and include written privacy policies and the designation of a Privacy Officer. Physical safeguards control physical access to protected health information to avoid unauthorized access to protected data. Technical safeguards control

access to computer systems and protect PHI transmitted over open networks from being intercepted (Health and Human Services, 2003).

Privacy Rule

HIPAA required the Secretary of HHS to issue privacy regulations covering PHI within three years of passing if Congress did not enact Privacy Legislation. In 1999, Health and Human Services (HHS) published the *Standards for Privacy of Individually Identifiable Health Information*, or the Privacy Rule, and it went into effect on April 14, 2003. The Privacy Rule protects all individually identifiable health information held or transmitted by a covered entity. Unlike the Security Rule, the Privacy Rule is not limited to PHI in electronic format. It covers all PHI information in any format to include: electronic, written, or oral form. The Privacy Rule applies to health plans, health care clearinghouses, and to any health care provider who transmits health information in electronic form (Office of Civil Rights, 2002).

The Privacy Rule gives patients more control over their medical records. Patients have the right to see their records, the right to request corrections to the record, and the right to restrict its use for certain purposes. The privacy rule also requires that covered entities provide their privacy policies to their patients on their first visit. The HHS Office for Civil Rights is charged with enforcing the Privacy Rule (Office of Civil Rights, 2002).

HIPAA Impact

The Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 required the DoD to develop regulations to improve the privacy protections of DoD

medical records. The Act required a comprehensive plan be submitted to Congress to improve medical record privacy protection. The Act also required the plan to be consistent with the soon-to-be-implemented HIPAA requirements (Wolfowitz, 2002). The Act passed during the interim period after HIPAA passed and before the Security and Privacy rules went in to full effect on 14 April 2003. The Authorization Act shows Congress's determination to protect the privacy of all Health information regardless of the entity.

The Military Health System is considered a health plan under HIPAA and must comply with the requirements of HIPAA as if it were a civilian healthcare plan (Butler, 2002). HIPAA does make certain limited exceptions to meet unique military requirements, such as the transfer of medical information about active duty force health readiness (Butler, 2002). Compliance to the HIPAA provisions has required and will continue to require considerable resources from the DoD. Full compliance with all sections of HIPAA is expected to cost over \$100 million (Williams, 2004).

Under the HIPAA privacy rules, individually identifiable health information is not allowed to be publicly reported without the express permission of the patient or next of kin. It is possible that if a service member has not authorized the release of his or her PHI, then not even family members are authorized to receive medical updates (Williams, 2004). HIPAA regulations make tracking casualty information difficult even for state governors and members of congress (Ash, 2006; Williams, 2004).

Literature relating directly to HIPAA on the battlefield is almost non-existent. Most information relating to active duty health is focused on the Military Treatment

Centers in the United States and established bases overseas, where the normal HIPAA requirements are identical to those of civilian facilities. There are indications that the HIPAA requirements put an enormous burden on deployed medical teams. A 2004 position paper by Maj Greentree AF/SGMA suggested the HIPAA requirements detract from the primary medical mission of treating and evacuating patients. HIPAA would require extra administrative personnel and supplies be transported on already crowded airlift assets. The position paper recommended excluding Air Force Medical Service deployed units and operating forces from HIPAA compliance while in theater (Greentree, 2004).

The literature is clear that the military is required by law to comply with HIPAA regulations under normal day to day operations. Congress included the Military Health System in the language of the HIPAA law to ensure it was covered. Given the demands of the myriad of privacy regulations the military must adhere to and the exemptions allowed under HIPAA, it is not clear when real world enforcement makes sense in a combat theater of operations. If the question is asked of the military medical community, the quick answer will likely be, "It applies everywhere." The reality of enforcement in a theater of active combat operations may be vastly different.

Summary

This chapter looked at the literature to explain the background of HIPAA followed with a discussion of the major components which affect the DoD; the Security Rule and the Privacy Rule. The chapter concluded with a discussion of the impact of

HIPAA compliance on the DoD. These elements are the foundation of this study. The methodology will be discussed in the next chapter.

III. Methodology

Chapter Overview

The purpose of this chapter is to describe the methodology used in this study. The purpose of this research is to study HIPAA compliance relating to battlefield medical evacuation. This study used the Delphi Method to address the research problem. The objectives of this study:

- Define the major steps in the battlefield evacuation process.
- Examine and determine HIPAA compliance at each step of the Battlefield Evacuation model.
- Determine a recommended approach to HIPAA compliance at each step of the Battlefield Evacuation model based upon the opinion of multiple experts.

Delphi Method

This study used the Delphi Method to address the research problem. Delphi Studies were developed by the RAND Corporation for the US Air Force as a method of forecasting solutions to strategic military problems. It is a method for utilizing the expertise of a group of experts while minimizing the negative aspects of group interactions by eliminating the need for physical interaction among the group members. It is intended to “obtain the most reliable consensus of opinion of a group of experts” (Dalkey & Helmer, 1963). It uses a series of questionnaires and controlled opinion feedback (Fowles, 1978; Rowe and Wright, 1999).

The panel of experts for this study was comprised of HIPAA and Privacy officers, Civilian HIPAA expert from a major university, Emergency Room personnel, and

medical readiness specialists. The Delphi study questionnaire was developed from the results of the literature review and initial interviews of medical personnel. The Delphi Study and the panel selection process are discussed in greater depth later in the chapter.

Initial Model

A conceptual model of the Battlefield Evacuation process was developed from information gleaned from unstructured interviews. The literature review and unstructured interviews with medical personnel were part of the initial study to help develop the battlefield evacuation model and determine the questions for the Delphi Study. The model was matured and validated with the Delphi Study panel.

Panel Selection

The selection of qualified panel members was determined during unstructured data gathering interviews which were conducted to determine the exact route the study would take. The panel members were Active Duty and Civilian Air Force medical personnel, an Active Duty Army surgeon, and a civilian university professor. Subjects were selected based two factors: HIPAA knowledge and Deployed medical experience. The criterion for individual selection for deployment was at least one deployment to a combat theater of operations in the last three years in a medical capacity. For selection based on HIPAA knowledge the criteria was extensive knowledge of HIPAA in a military medical environment. During these interviews each member was asked deployment and HIPAA experience both deployed and in garrison. Those which met the

criteria were asked to be panel members. Two civilian HIPAA experts were on the panel. One of whom is a university professor who served on a HIPAA advisory committee to congress when the law was drafted. The military members are emergency room and deployment readiness experts who have extensive medical experience in a deployed environment. These are personnel who each have multiple deployments to medical facilities in the Iraqi and Afghanistan Theaters of operations and have been involved with HIPAA compliance while deployed. While selecting the panel members every attempt was made to have at least one expert in each of the areas studied. Experience in multiple areas or all areas of interest was highly desired in each participant, but not realistic, in practice, for every member of the panel.

Delphi Research Protocol

The follow protocol was developed to guide the Delphi study:

Stage One: Build model of Battlefield Medical Evacuation process with experts

Round One

- Create model of Evacuation process
- Conceptual model developed from unstructured interviews with medical and deployment experts.

Round Two

- Refine model with help of experienced experts
- Create first round Delphi Questions
 - o Test run questions for clarity to non-Delphi individuals

Stage Two: Mature and Validation of Model with Delphi Study panel

Round one

- The model, cover letter, HIPAA overview, and Delphi questions distributed to all team members.

Questions

- Q1 In General do you agree with the model?
- Q2 Do you have any change to make to the model?
- Q3 How does HIPAA apply at each stage?

End of Round

- Consolidate and de-conflict answers for the group and question if necessary on areas of dispute or wide variance. If no disputes, proceed to round two.

Round Two

Questions (possible)

- Q1. Which model do you think best reflects what is being done in theater?
2a or 2b?
- Q2. Given the model you chose, do you have any further recommendations for change to the model?
- Q3 What are your recommendations to better implement HIPAA at each stage of the model?

End of Round

- Consolidate and de-conflict answers for the group. If necessary, perform one last round of to clarify and refine responses

Round One

Before Round One, the model and questions were pilot tested on 2 individuals within the GIR program. The model and questions were found to be clear with only a few minor changes.

At the start of Round One, the questionnaire package was emailed to each participant and, in addition, a copy was hand delivered to each local panel participant. The questionnaire consisted of the conceptual model and questions. The package consisted of two MS Excel documents and One MS Word document. The cover letter explained the purpose of the study and included a DoD HIPAA fact sheet which explained HIPAA from a military perspective. Each participant was asked to examine the model and answer three questions. First, each participant was asked if they in general agreed with the model. Second, each participant was asked if they had any changes to model. Finally, each participant was asked how HIPAA applies at each step of the model. Eight surveys were sent out and seven were returned over a three week period. The analysis of Round One is described in greater detail in Chapter IV.

Round Two

For Round Two, the model was modified to incorporate individual participant responses. The Round One responses resulted in the creation of two models to reflect the differences in inputs received from the panel. A summary of the Round One response for each question was included in the Round Two package. The complete questionnaire package (See Appendix B) for Round Two included a brief cover letter, a summary of Round One responses, two models of the battlefield medical evacuation process, and three new questions. The package was distributed the same as Round One; it was emailed to all participants and hand delivered to local participants. The each participant was asked to pick the model they felt best represented how HIPAA was implemented.

They were then asked if they had any additional changes to the model they chose.

Finally, each participant was asked to what should be done to better implement HIPAA at each step of the model. Eight Surveys were sent out and five were returned over a two period. The analysis of Round Two is described in greater detail in Chapter IV.

Summary

The results of the Delphi panel were analyzed and two final models were created. Each participant's responses were analyzed and summarized. Recommendations were made based on the analysis of study results and the models revised to reflect the analysis performed in Chapter IV. Future research Topics are identified in Chapter V.

IV. Findings and Analysis

Overview

Analysis of the questionnaires has been summarized and is presented in the first part of this chapter as a summary of results. General comments have been incorporated into this summary, with specific comments used to illustrate key points. The Delphi Study was conducted in two rounds.

Summary of Results

The Delphi Panel initially consisted of eight members with one not responding to the first round questionnaire (Appendix A), leaving seven members who responded. The Afghanistan member of the panel did not respond until after Round Two had been sent out. He was counted as one of the seven respondents. His comments, while too late to be included in the Round two models, were considered important as he was, as of the time of this study, deployed to the Afghanistan theater of operations at the Army Combat Support Hospital (CSH). His overall responses did not change the general consensus of the answers given by group but did bring to attention the differences in the evacuations models for Iraq and Afghanistan. His responses will be discussed in more depth later in this chapter.

Round One

Round one of the Delphi study was sent out to the panel with the model created during the investigative phase of the study (See Figure 1 below). The Round one

questionnaire consisted of three questions. Two questions evaluated the Battlefield Evacuation Model and one open ended question intended to establish the current level of HIPAA compliance at each step of the model. The following Round one questions were asked:

Q1. In general do you agree with the model?

Q2. Do you have any changes to the model?

Q3. How does HIPAA apply at each step?

Of the seven members, all responded to all questions and provided responses. Comments were summarized and incorporated into the second round questionnaire into two new models. Individual replies were consolidated and analyzed for consensus. All (100%) seven members of the panel had consensus on Question one, indicating they agreed with the model in general. Question two asked for any changes to the model. There were no contradictory answers given to this question. However, several members indicated missing steps on the model. Five out of seven respondents noted the same omissions on the model. The changes and additional steps were incorporated into the new models for round two. The responses to question three were divided between full compliance and partial compliance. This division spawned two models for round two reflecting the split in opinions (See Figures 2 and 3).

Battlefield Evacuation Model 2a															
	Step 1		Step 2		Step 3		Step 4		Step 5	Step 6		Step 7	Step 8	Step 9	
Name of step	Battlefield	Transport	Battlion Aid Station	Transport	Medical Company	Transport	Combat Support Hospital (CSH)	Transport	AF CASF**	AF Theater Hospital	Transport	AF CASF	Army or Air Force Medical Center	Transport	CONUS
Description									Balad Bagram Kuwait	Balad Bagram Kuwait		Ramstein AB	Landstuhl Ramstien AB		Lackland AFB Milford Hall
Who involved	Combat Medics		2 Treatment Teams				Forward Surgical Teams		*CCATT Team Flight Crews			*CCATT Team Flight Crews	OCONUS		Walter Reed
Activities	Combat Life Saver								Recieves patients for AF Theater Hospital and prepares patients to be sent to Germany/ CONUS			Recieves patients from theaters and transfers them to Landstuhl Regional Medical Center and also prepares patients to be sent to CONUS	Landstuhl Regional Medical Center		
Issues			Unit Enquiries		Unit Enquiries		Unit Enquiries		Unit Enquiries	Covered Charts 50 Person Bays Unit Enquiries		Unit Enquiries	Fixed Facility US Mill Installation		
HIPAA Implications															
HIPAA Compliance	Full compliance		Full compliance		Full compliance		Full compliance		Full compliance	Full compliance		Full compliance	Full HIPAA Compliance		Full HIPAA Compliance
* Critical Care Air Transport Team															
**Contingency Aeromedical Staging Facility															
*** Shaded Areas indicate change from round one model															

Figure 2. Round Two Model 2a "Full Compliance"

Battlefield Evacuation Model 2b															
	Step 1		Step 2		Step 3		Step 4		Step 5	Step 6		Step 7	Step 8	Step 9	
Name of step	Battlefield	Transport	Battlion Aid Station	Transport	Medical Company	Transport	Combat Support Hospital (CSH)	Transport	AF CASF**	AF Theater Hospital	Transport	AF CASF	Army or Air Force Medical Center	Transport	CONUS
Description									Balad Bagram Kuwait	Balad Bagram Kuwait		Ramstein AB	Landstuhl Ramstien AB		Lackland AFB Milford Hall
Who involved	Combat Medics		2 Treatment Teams				Forward Surgical Teams		*CCATT Team Flight Crews			*CCATT Team Flight Crews	OCONUS		Walter Reed
	Combat Life Saver												Landstuhl Regional Medical Center		
Activities									Recieves patients for AF Theater Hospital and prepares patients to be sent to Germany/ CONUS			Recieves patients from theaters and transfers them to Landstuhl Regional Medical Center and also prepares patients to be sent to CONUS	Fixed Facility US Mil Installation		
Issues			Unit Enquiries		Unit Enquiries		Unit Enquiries		Transfers may be between CASFs Unit Enquiries	Covered Charts 50 Person Bays Unit Enquiries		Transfers may be between CASFs Unit Enquiries			
HIPAA Implications															
HIPAA Compliance	Partial compliance		Partial compliance		Partial compliance		Partial compliance		Partial compliance	Partial compliance		Full compliance	Full Compliance		Full Compliance
* Critical Care Air Transport Team															
**Contingency Aeromedical Staging Facility															
*** Shaded Areas indicate change from round one model															

Figure 3. Round Two Model 2b "Partial Compliance"

The Afghanistan member of the panel noted on Q1 that the model did not allow for the differences between Iraq and Afghanistan but in general it represented the “general scheme of things” and that operational situations may dictate changes to the flow of the model. On Q2 he stated the Afghanistan evacuation process is very compressed compared to the Iraq model. In Afghanistan, the Forward Surgical Teams (FST) were split in half and are co-located with Battalion Aid Stations on small forward bases along the Pakistan border. The CSH in Afghanistan is also the Theater Hospital and the Contingency Aeromedical Staging Facility (CASF) and the patients are evacuated straight to the OCONUS step of the evacuation model. This was a surprise finding due to the fact that up to this point in the study, all research suggested that the Iraq and Afghanistan theaters of operations were the same and from an evacuation perspective, the same theater of operations. Most of the panel members had only been deployed to the Iraq or Kuwait theater of operations and apparently were unaware of the differences. These findings prompted the creation a separate model to reflect the Afghanistan battlefield medical evacuation procedures (See figure 4 below). In response to Q3, the patient documentation relating to care and evacuation for the CSH is entered and stored in a secured clinical database which makes it easier to be tracked by all authorized parties. On the ground, the commanders are made aware of all pertinent medical information that affects the mission capabilities of his/her soldiers and unit. The system has security and privacy element built in. The security and privacy elements help meet HIPAA requirements, but according to the panel member the system is focused primarily on operational security.

Afghanistan Theater of Operations									
Battlefield Medical Evacuation Model									
	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7		
Name of step	Battlefield Point of Injury	Transport Battlion Aid Station (BAS)	Transport Army Combat Support Hospital (CSH)	Transport CASF*	OCONUS Army or Air Force Medical Center	Transport CASF	CONUS		
Possible Locations	Anywhere	Small Forward Bases	Bagram	Ramstein AB	LRMC Ramstien AB	Andrews AFB	Walter Reed		
Who involved	Combat Medics								
Special Teams		FST	*CCATT Team		*CCATT Team				
Extra Information	Combat Life Saver	FST are split in half and co-located with BAS	Also Theater Hospital and CASF	Receives patients from theaters and transfers them to LRMC and also prepares patients to be sent to CONUS	Fixed Facility US Mil Installation	Received patients from theater CASFs and transfers to military hospitals			
Additional Information Issues		Unit Enquiries	Unit Enquiries	Unit Enquiries	Transfers may be between CASFs				
HIPAA Implications									
HIPAA Compliance	Partial compliance	Partial compliance	Partial compliance	Full compliance	Full compliance	Full compliance	Full compliance		
* Critical Care Air Transport Team (CCATT) - Usually pickup patients at an ICU or OR at Steps 3,4,6, and 8 and will deliver to Step 10. Will only pickup from CASF if stable patient crashes.			**Contingency Aeromedical Staging Facility (CASF) - Usually co-located with Theater Hospital. Receives patients for theater hospital and prepares patients for transport from theater hospital.						
FST - Field Surgical Team									
LRMC - Landstuhl Regional Medical Center									

Figure 4. Afghanistan Model

The secure clinical database mentioned in Q3 by the Afghanistan panel member was another change to the Afghanistan theater of operations. Further research discovered that the system is called The Medical Communications for Combat Casualty Care (MC4) and it was deployed at Bagram AB Afghanistan in November 2007 and additional deployments planned in Iraq. According to the MC4 website (2008) when the system is fully implemented it will allow medical information to gathered, tracked, and transferred electronically from the battlefield point of injury throughout the evacuation process all the way back to CONUS. MC4 is meets all HIPAA privacy and security requirements

making it a very powerful tool for protecting PHI (Steen, 2007). MC4 was not within the scope of the study.

Round Two

The second round of the Delphi study (See Appendix B for full package) was sent to all eight of the original panel members. Three members of the panel did not respond. The second round consisted of a summary of the answers to the round one questions, two new models of the evacuation process, and three new questions. Questions Q1 and Q2 relate to how HIPAA is currently implemented and refers to Models 2a and 2b (See Figures 2 and 3 above). Question Q3 relates to recommendations for future improvements to HIPAA compliance. The following questions were asked:

Q1. Which model do you think best reflects what is being done in theater? 2a or 2b

Q2. Given the model you chose, do you have any further recommendations for change to the model?

Q3. What are your recommendations to better implement HIPAA at each stage of the model?

All members of the panel selected Model 2b, which had partial compliance in steps 1 thru 6 and full compliance in steps 7 thru 9. One panel member had further minor changes to the model. The changes to the model suggested by the single member were implemented into the final model as they were relatively minor, improved the accuracy, and did not change the spirit of the model (See Figure 5 below).

Final Battlefield Medical Evacuation Model															
	Step 1	transport	Step 2	transport	Step 3	transport	Step 4	transport	Step 5	Step 6	transport	Step 7	Step 8	transport	Step 9
Name of step	Battlefield Point of Injury		Battlion Aid Station (BAS)		Medical Company		Army Combat Support Hospital (CSH) AF EMEDS		AF CASF**	AF Theater Hospital (AFTH)		AF CASF	OCONUS Army or Air Force Medical Center		AF CASF
Possible Locations									Balad Bagram Kuwait	Balad Bagram Kuwait		Ramstein AB	LRMC Ramstien AB		Andrews AFB
Who involved	Combat Medics		2 Treatment Teams or FST		FST										
Special Teams	Combat Life Saver		Air Force MFST Army FST		*CCATT Team Army FST		*CCATT Team			*CCATT Team			*CCATT Team		
Extra Information									Recieves patients for AF Theater Hospital and prepares patients to be sent to Germany/ CONUS			Recieves patients from theaters and transfers them to LRMC and also prepares patients to be sent to CONUS	Fixed Facility US Mil Installation		Received patients from theater CASFs and transfers to military hospitals
Additional Information									Transfers may be between CASFs	Covered Charts		Transfers may be between CASFs			
Issues			Unit Enquiries		Unit Enquiries		Unit Enquiries		Unit Enquiries	50 Person Bays		Unit Enquiries			
HIPAA Implications										Unit Enquiries					
HIPAA Compliance	Partial compliance		Partial compliance		Partial compliance		Partial compliance		Partial compliance	Partial compliance		Full compliance	Full compliance		Full compliance
<p>This model is intended to show the longest path of the Battlefield Medical Evacuation process and to generally represent the evacuation process. The model is not intended to show any particular theater operations or is it intended to represent the experiences of any particular patient. Each location in the model may do the functions of several steps. For example the CSH in Afghanistan is also the theater the CASF. The transport steps represent patient movement between the various steps of the model and not necessarily patient movement between locations.</p>															
<p>* Critical Care Air Transport Team (CCATT) - Usually pickup patients at an ICU or OR at Steps 3,4,6, and 8 and will deliver to Step 10 . Will only pickup from CASF if stable patient crashes.</p>															
<p>**Contingency Aeromedical Staging Facility (CASF) - Usually co-located with Theater Hospital. Recieves patients for theater hospital and prepares patients for transport from theater hospital. Destination depends on location of CASF.</p>															
FST - Field Surgical Team															
LRMC - Landstuhl Regional Medical Center															
MFST - Air Force Mobile Field Surgical Team															

Figure 5. Final Model

Question three asked for recommendations to better implement HIPAA at each stage of the model. Several suggestions were offered by the panel and mainly centered on administrative fixes such as “Clear written guidance”, “Cover letters”, and “Education to field medics.” One of the panel members noted that full compliance with HIPAA is probably somewhat budget constrained as full compliance would require additional resources of people and equipment.

Summary

The responses to the Delphi Rounds suggest that there is a common perception among the Delphi Panel members that HIPAA compliance is partially in place throughout the evacuation process. The panel recommendations are entirely administrative in nature and complimentary to each other. Chapter V presents a discussion of the findings, conclusions of the study and recommendations for change.

V. Conclusions and Recommendations

Discussion

In the first round of the study all participants were in agreement except to how much HIPAA should be implemented. The third question asked each participant “How does HIPAA apply at each step?” The basic breakdown of responses was that several of the participants felt that HIPAA was partially implemented at each step and a few others said that HIPAA was fully implemented in each step. As noted earlier, this difference prompted the creation of two models for Round Two. There may have been confusion with the question, because during Round Two of the study when asked which model best represents how HIPAA is currently implemented all respondents chose Model 2b (Partial compliance). This suggests a possible disconnect on how the respondents interpreted the questions. The responses suggest that some participants may have interpreted the question as “How is it being done” and some interpreted it as “How is it supposed to be done.” In all cases the responses said that patient care took the precedence over administrative requirements.

When asked to provide suggestions for improvements in how HIPAA requirements are implemented the panel gave a range of administrative responses: Clear written guidance, training and clearly marked cover sheets.

One of the issues mentioned by various members of the panel during the study was unauthorized requests for patient information from unit members and high ranking military members. The study suggests that when these requests come in the lack of written guidance put an extra burden on the medical personnel because they don't have

clear written operating instructions to fall back on. It is not inconceivable that a low ranking military member could be approached for patient PHI by a high ranking military member or even a member of congress. The pressure felt to release the requested information would likely be immense. Without clear written guidance to reference, the member would have to rely upon the support of their chain of command to ensure they didn't release patient PHI to unauthorized individuals. If the individual released the requested PHI to an unauthorized person then they have violated HIPAA and could conceivably find themselves facing legal and financial penalties. Another and more frequent source of unauthorized requests for patient PHI comes from the members of the patient's unit.

When a member of a unit is wounded in the course of a mission, it is only natural his or her buddies will likely want to know the status of their team mate. Under current HIPAA policy, these unit members are not one of the authorized categories authorized to receive this information without the patient's permission. The responses from the panel suggest the morale of the remaining members of the wounded individual's unit should be taken into account, and that the current practice, especially at the initial steps of the model, is to provide at least minimal information to the unit members. In many cases, the bonds between unit members in a combat are as strong as if they were family members. The moral of a unit could be affected by the denial of status information for the fallen team mate and could affect performance in coming missions.

HIPAA policy allows commanders and their designees to ask for information regarding the status of personnel under them, but is limited to PHI in the interests of

fitness for duty and to perform a mission. There are other individuals who may have an interest in PHI in a combat situation, other than the commander, and who may not be a “designee” and probably do not have access. In addition to moral factors, the health information could, in combat, be critical to squad leaders, platoon leaders, flight leaders, or anyone else who might not fit the definition of "commander". They would certainly be concerned about the person, but would need to know "information" for replacement of a skill set, to protect others, or to assess readiness. They may need to know the person’s status to know if the person will return or if they will need to request a replacement. A unit missing critical skills sets could be at a disadvantage when operating in the field. This issue could impact the mission readiness of combat units and may need to be addressed in the future. The policy may need to be looked at as to allow for some information on patient condition to be legally given to unit members on the basis of morale concerns as this may impact readiness of combat units.

All members of Delphi Panel chose a model of partial compliance in the combat theater of operations not one of full compliance. Current practice suggests that having freedom of motion in complying with HIPAA during combat seems to be working well according to the Delphi panel. While current interpretation of HIPAA policy does not appear to be full compliance on the battlefield itself, it may be worth in the future to look at how the policy can be written to fit how things are actually need to be done. For example, unit members who may be giving medical aid at the front are exempt from HIPAA until the wounded reaches the BAS. Once at the BAS, unit chain of command can get status and fitness for duty information, and they would then have authority to

release to unit members. Unit members may receive basic status information such as will they live and whether the wounded members return. Once the wounded is at the CSH, status and fitness for duty information could be given to the unit commander's and down to the squad leader level. Once a Policy needs to be examined to bring it in line with what is being done. While current interpretation of HIPAA policy does not appear to be full compliance on the battlefield itself, it may be worth in the future to look at how the policy can be written to reflect what needs to be done. In consultation with legal authorities DoD policy and HIPAA policy may need to be looked at modified to allow room in the policy for partial HIPAA compliance on the battlefield.

The issues raised by the Delphi panel suggest that the DoD policy discussion may not have completely considered HIPAA implications in a combat zone. There are provisions in the policy for fitness for duty, fitness for a particular mission and casualty reporting, but beyond that it seems like DoD may have extended the HIPAA policy without thinking it through. It may be that DoD wanted to avoid any possibility of a lawsuit or other legal issue and may have extended HIPAA compliance too far down.

It was assumed there would be common way to handle battlefield casualties in the military medical system but the research suggests there may be differences in different areas of operations. Future research may need to tie down for sure if that is true in other cases as well, and if so, how this will have impact on how HIPAA is implemented.

Conclusions

There does seem to be fairly standard practice and implementation of HIPAA policy in combat areas and it is one in which the strict interpretation of HIPAA does not come in play until casualties reach a certain stage of the evacuation process. The findings of the study suggest that the military could, in consultation with legal authorities, adjust DoD HIPAA compliance policy at every level of the battlefield medical process to clearly define who can have access to PHI at each stage and under what conditions that access is granted.

If DoD made these recommended changes to the current policy it could go a long way to clarifying the requirements placed on deployed medical personnel at all level of the evacuation model. Clear written guidance and training would help ensure that the Privacy Rule of HIPAA was complied with and help avoid unnecessary and potentially costly violations of the law. The more the process can be clarified for the medical personnel all along the evacuation process the better the chance of full HIPAA compliance at all steps of the process.

Limitations

An Inherent limitation of all Delphi studies is that results depend on the knowledge of a small set of identified experts. To the extent that other experts might see things differently, the conclusions could be called into question. The panel consisted of Air Force medical personnel, with primarily Iraq and Kuwait deployment experience and only one member with Afghanistan experience which may be a potential limitation. This

possibly was suggested in Round One when the member in Afghanistan pointed out difference between Iraq and Afghanistan. Two separate models were identified for Iraq and Afghanistan but single member of panel from Afghanistan did not provide any recommendations for improvement to Afghanistan model.

Recommendations for Future Research

Now that a basic model on the Battlefield Medical Evacuation process with HIPAA compliance at each step has been identified, additional research could be done to validate the findings and look at areas beyond the scope of this study.

The panel consisted of Air Force medical personnel with primarily Iraq and Kuwait deployment experience. One member was knowledgeable on Afghanistan, due to past and current deployment experience. This study could be applied using members of services other than the Air Force to explore the possibility that medical personnel for the Army, Navy and Marines view the evacuation process differently.

This study assumed there would be a common way to handle battlefield casualties in the medical system, but there is strong evidence from the research to suggest there may be differences in different areas of operations. The study identified differences between Iraq and Afghanistan, and future research should explore the significance, if any, of this finding. Questions to study might be: Will there be other models for other theaters of operations? Is it appropriate to have multiple models?

Many individuals with the military community, but outside the medical field must have access to patient PHI. A recommendation is made to conduct research on the many

non-medical personnel who may have a need to have access to HIPAA information, such as commanders and their designees, in order to identify how these non-medical personnel think the process should be conducted. A specific question to study might be: Is the current process meeting their needs?

It would also be interesting to explore this issue from a legal standpoint to ensure that solutions meet legal requirements, as especially as this study was conducted entirely without input from the legal community. The legal community will likely have to be involved in any solution brought forth, because the solution will have to meet all applicable HIPAA legal requirements. The legal community is best equipped to provide the legal knowledge and expertise needed to ensure compliance and avoid legal pitfalls which could derail any proposed solution.

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