

Running Head: U.S. NAVY HEALTH CARE EXECUTIVE COMPETENCIES

Navy Health Care Executive Competencies

LT Stephen A. Marty, USN

U.S. Army-Baylor University Graduate Program in Healthcare Administration

20071101300

Acknowledgements

I never would have finished this project on time without the work I did in my final semester at Baylor. For that I thank Dr. Nicholas Coppola, Army-Baylor University Graduate Program in Health Care Administration, for allowing me to develop this project during his Advanced Research Methods class. I would like to thank my preceptor, CAPT Ann Bobeck, for approving this project and providing constant support throughout this entire process. I would also like to thank my classmates, Natalie Sutto and LTjg Michael Knoell, for providing the inspiration for this project as well as constant technical and emotional support. I must also thank Dr. Ronald Hudak, Dean School of Business Administration Marymount University, for traveling across the country in order to participate on the expert panel for this study as well as providing some extremely valuable insight. I must also thank Dr. Kenn Finstuen, Army-Baylor University Graduate Program in Health Care Administration, for all of his guidance including traveling to San Diego to oversee the expert panel and providing some much needed statistics training. Finally, I would like to give special thanks to Dr. A. David Mangelsdorff, Army-Baylor University Graduate Program in Health Care Administration. Whenever I got way ahead of myself on this project (which was just about all the time) Dr. Mangelsdorff always calmed me down and got me focused on the task at hand, for that, I am forever grateful.

Abstract

The purpose of this paper is to update the core competencies and associated skills, knowledge, and abilities (SKAs) required by Navy health care executives. Three waves of the Delphi technique were employed. In Wave I, senior Navy health care executives identified the five most important competencies and their associated SKAs believed to be required for Navy health care executives over the next decade. An expert panel of senior health care executives reviewed and sorted the identified competencies from Wave I into six domain categories and gave each domain an appropriate title. From the expert analysis, the researcher developed a questionnaire for use in Delphi waves II and III. In Wave II, senior executives from Wave I rated the competencies from each domain. During Wave III, junior Navy health care executives completed the same questionnaire given to the senior executives. Results indicated that competencies surrounding interpersonal skills and understanding the environment emerged as most critical for Navy health care executives into the next decade. In addition, statistically significant differences in opinions emerged between groups and among 20 of the 100 individual SKAs rated indicating that senior and junior health care executives have very real differences in opinion regarding required executive skills.

Table of Contents

Title Page	1
Acknowledgements	2
Abstract	3
Table of Contents	4
List of Tables	5
Introduction	6
Literature Review	7
Methods	14
Delphi Wave I Competencies	16
Analysis of Competencies	16
Delphi Waves II & III	17
Results	20
Expert Panel Analysis	20
Demographics	20
Descriptive Statistics	21
Inferential Statistics	24
Limitations	26
Discussion	26
Conclusion	30
Recommendations	30
References	48
Appendix 1: Wave I Letter of Introduction	52
Appendix 2: Wave I Instructions	53
Appendix 3: Wave I Instrument	55
Appendix 4: Wave II Introduction: Senior Officers	56
Appendix 5: Wave II Introduction: Junior Officers	57
Appendix 6: Wave II Instrument	58

List of Tables

- Table 1. Frequency Count of Individual Competencies, Domain Totals, and Unique Competencies from Wave 1
- Table 2. Summary of Demographic Data of Respondents
- Table 3. Skills, Knowledge, and Ability (SKA) Item Rating Reliability Coefficients
- Table 4. 15 Highest Rated SKAs for Navy Health Care Executives
- Table 5. 15 Lowest Rated SKAs for Navy Health Care Executives
- Table 6. Two Most Important SKA Item Averages by Domain for Navy Health Care Executives
- Table 7. Two Least Important SKA Item Averages by Domain for Navy Health Care Executives
- Table 8. Mean Rating Differences by Domain for Navy Health Care Executives
- Table 9. ANOVA Summary- Mean Differences in Item Ratings
- Table 10. Item Differences Between Senior and Junior Navy Health Care Executives via Simple Main Effect Comparisons
- Table 11. Mean Rating Difference for SKAs Indicating Statistically Significant Interaction Effects

Updating Navy Health Care Executive Competencies

The existing literature regarding Navy health care executive competencies is nearly ten years old therefore an update of these skills is required. This study will address two research questions: (1) Since 1996, have previously identified Navy health care administration executive competencies changed? and (2) Is there a difference between junior and senior health care executives regarding their perceptions of required executive competencies? The overall objective is to determine how recent changes in America's health care system have affected the requisite executive competencies for Navy health care administrators.

Health care in the United States and the Department of Defense (DoD) has undergone dramatic changes over the last ten years. Three of the main reasons for these changes are increases in health care costs, deficiencies in access to care, and deficiencies in health care quality. Health care spending in the U.S. increased more than ten percent each year from 2000 to 2002 and has increased more than six times (from \$280 billion to nearly \$1.7 trillion) since 1980 (Haase, 2005). Currently, health care expenditures represent more than 15% of the nation's GDP and though costs increases have slowed recently, they are still rising at a greater rate than economic growth and annual inflation (Haase, 2005).

Rapid increases in health care expenditures have caused problems with access to care. The U.S. Census Bureau reported that the number of uninsured Americans increased by 1.4 million to 15.6 percent, or 45 million, in 2003, up from 15.2 percent in 2002, equaling the third straight annual increase ("Number of Uninsured, Poverty rate Both Climb", 2004). This trend is predicted to continue. Gilmer and Kronick (2005) estimate that the number of non-elderly uninsured Americans will increase to 56 million by 2013.

Similar problems exist in terms of quality of care in the U.S. Between 1999 and 2001, the Institute of Medicine (IOM) released three reports detailing major shortcomings in the quality of care delivered in America. The first report, the *National Roundtable on Health Care Quality* (Donaldson, 1999), revealed serious problems throughout the health care system due to overuse, misuse, and under use of care. The second report, *To Err is Human* (Kohn, Corrigan, & Donaldson, 1999), pointed to a flawed health care system in America that is responsible for killing nearly 98,000 Americans annually due to medical errors. The final report, *Crossing the Quality Chasm* (Corrigan, Donaldson, Kohn, Maguire, & Pike, 2001), recommended a new framework for health care in America including improvements in safety, efficiency, and equity.

In a response to these issues surrounding cost, quality, and access to care, the military health system (MHS) has instituted several new programs and policies including major changes to TRICARE, a new prospective payment financing system, and a new personnel management system. As the MHS has evolved it is prudent to speculate that the role of the health care administrator has evolved as well.

Literature Review

This study is a replication and expansion of Sentell and Finstuen's 1998 Delphi study conducted on senior Naval hospital executives. Their study utilized two iterations of the Delphi process to identify the most critical executive competencies required of health care administrators for successful health care management into the 21st century. In the first iteration, fifty-four senior Navy MSC officers identified 106 unique issues that were separated into nine domains by an expert panel. The five member expert panel had an average age of 54 and total of 107 years of health care executive experience. The domains identified, in descending order of

ranked importance, were leadership, health care delivery systems, cost-finance, technology, accessibility, professional staff relations, marketing, quality-risk management, and ethics. In the second iteration, the same senior executives reviewed the domain results and rated identified job requirements on their required job performance. The results from these ratings indicated that although business orientation is required for organizational survival, people-oriented SKAs (i.e., interpersonal skills) are also necessary for future success as a Navy health care administrator.

While Sentell and Finstuen's work is the only existing literature conducted solely on Navy health care administrators, there have been multiple studies on executive competencies conducted throughout both the DoD and civilian health care sectors. Mangelsdorff, Rogers, Zucker, Thieschafer, Hagen, and Finstuen (1997) performed a Delphi study of Army senior Medical Service Corps leaders to identify the expected behaviors and competencies needed to ensure the future success of junior MSC officers into the 21st century. Two iterations of the Delphi were conducted on a population of 173 senior Army MSC leaders (all pay grade of O6). The study identified 41 important behaviors necessary for future success. Of the 41 behaviors, the five rated most important were integrity, morally courageous, responsible, accountable, and competent-proficient.

One of the most comprehensive studies conducted of executive competencies in the health care industry is a review of a series of Delphi studies conducted by Hudak, Brooke, and Finstuen (2000). This study reviewed the findings of six Delphi studies, each of two iterations, conducted on senior health care executives from both the civilian and federal sectors. In the first iteration, respondents were asked to identify the top five executive competencies and associated SKAs necessary for future success. Before the second iteration, these competencies were separated and divided into set of meaningful domains by a panel of experts. In the second

iteration, respondents ranked the competencies and their associated SKAs in order to determine the most important executive competencies.

Hudak, Brooke, Finstuen, and Riley (1993) conducted a nationwide sample of 50 Fellows of the American College of Healthcare Executives (ACHE). The purpose of the study was to identify the most important competencies in the field of health care administration. Identified competencies were separated into nine domains. The top five competencies domains, ranked in descending order of importance, were cost/finance, leadership, professional skill interactions, health care delivery concepts, and accessibility to care. The top five SKAs identified from all domains, ranked in descending order of importance, were patience, listening skills and communications; leadership, management and human relations; strategic thinking and sense of vision; understand physician motives, needs and politics; and conflict management, team-building and motivational leadership. In all, this study pointed out that successful health care administrators must have a strong business sense coupled with sound human relation skills.

Hudak, Brooke, and Finstuen (1994) targeted chief executive officers (CEOs) and chief operating officers (COOs) from the federal health care sector. The purpose of this study was to determine the most important issues to the health care administration field for the remainder of the twentieth century. Seventy-four CEOs and COOs identified nine important executive competencies. The top five competencies, ranked in descending order of importance, were cost-finance, health care delivery, access to care, quality and risk management, and technology. The top five identified SKAs, ranked in descending order of importance, were patience, listening skills/communications; leadership, management and human relations; understanding managed care contracts; studies in conflict management, team building and motivational leadership; strategic vision and sense of vision. Overall, although the top competencies in this study were

diverse, the ranking of the top SKAs identified an emphasis on interpersonal skills as critical factors for successful CEOs/COOs.

Duperroir (1995) examined senior executive nurses in the federal sector. The aim of the study was to identify the most important issues facing executive nurses at the close of the 20th century. A sample of 187 executive nurses from the southwestern United States participated in the study. The study identified ten management domains. Of these domains, the top five identified were leadership, managed care, business management, staffing/personnel management, and technology. The five most important SKAs identified from this study, in descending order, were diplomacy, tact, patience, open-mindedness, and the ability to visualize. Results from this study indicated the nurse executives must be well rounded and diverse in a variety of fields including leadership, strategic management, and finance.

Hudak, Brooke, Finstuen, and Trounson (1997) sampled 320 senior ambulatory health care administrators in order to identify the essential ambulatory health care management competencies and their related SKAs through 2002. Six competency domains were identified. These domains, in descending order of importance, were leadership and strategic management, relations management, resource management, functional management, stakeholder management, and patient care management. The most important SKAs identified, in descending order, were ability to listen, hear, and respond; ability to build trust, respect and integrity; ability and adaptability to change; skill to speak effectively, write with a purpose and listen attentively; and ability to work with many types of individuals. Overall, this study points to interpersonal and leadership factors as of utmost importance to ambulatory care administrators.

The fifth study reviewed was Sentell and Finstuen's 1998 study on Navy health care administrators. This study was discussed previously. The final study assessed by Hudak,

Brooke, and Finstuen in their review of a series of Delphis was conducted by Brooke, Hudak, Finstuen, and Trounson (1998). This study examined 850 physician executives in medical groups and other ambulatory settings. The goal of the study was to determine the most important competencies required through 2003. Thirteen management domains were identified. Of these domains, the top five, ranked in descending order, were managing health care resources; fundamentals of business and finance; leadership and management competencies; development of vision and strategic planning; and communication/interpersonal skills. The top SKAs identified from this study, in descending order, were ability to build and maintain trust, ability to be honest when facing hard decisions, ability to articulate a course for the organization, ability to persuade others to work as a team, and the ability to look for win-win solutions. Similar to the studies conducted on CEOs/COOs and nurse executives, overall this study points to a wide array of necessary competencies and SKAs required of physician executives.

Several other Delphi studies have been conducted since Hudak et al.'s 1998 review. Rogers, Finstuen, Mangelsdorff, and Synder (1999) conducted two iterations of the Delphi technique to measure the required executive competencies of U.S. Coast Guard health care administrators. This study sampled 147 Coast Guard and U.S. Public Health Services personnel assigned to Coast Guard and DoD health care administration duties. The top five executive competencies domains, ranked in descending order, were managed care, cost/finance, personnel, technology, and leadership. Of these SKAs, three were in the leadership domain thus indicating an emphasis on leadership skills for Coast Guard health care administrators.

Peters, Dominguez, and Finstuen (2001) utilized the two iterations of the Delphi to assess the required executive competencies of U.S. Navy Dental Corps officers. The study included 67 senior leaders in the Navy Dental Corps. The top five executive competency domains recognized

were personnel management, leadership issues, dental health care management, resources management, and information technology. The top five SKAs identified were ability to accomplish the mission, ability to communicate effectively, ability to prove value of Navy dentistry to the line, ability to maintain high standards of care, and the ability to build and maintain effective teams. Results from this study indicate senior dental health care executives must focus on personnel management and leadership issues.

Rubenstein's (2000) study of the perceptions of Army Hospital Deputy Commanders for Administration details twelve years of research examining the role of Army hospital commanders. Every two years between 1988 and 2000, Rubenstein surveyed the DCAs at all Army CONUS-based hospitals. Identical surveys were used, each asking respondents about their perceptions concerning their role as a DCA. Results from this research indicate that the DCA's most critical role has evolved over time. Initially the most critical role identified was resource allocation. It subsequently shifted to entrepreneur and most recently, leadership is seen as the most essential role for DCAs. The most important point from this research is that the role of the DCA is not static and it develops over time.

Meadows, Finstuen, and Hudak (2003) conducted two rounds of the Delphi technique to identify the issues and problems facing DoD pharmacy executives. This study included 93 senior DoD Pharmacists (all serving at the grade of O-5 or above) and identified eight competency domains: human resources, pharmacy operations/business practices, information management and technology, financial resources, formulary management, drug therapy management, leadership, and formulary management. From these domains the five highest rated SKAs were ability to see the big picture, ability to build strong relations with medical staff, skills in written and verbal communication, ability to build strong relations with executive staffs, and ability to

actively listen. Overall, this study pointed out that in addition to developing their clinical abilities, successful DoD pharmacy executives must possess strong communication skills.

Meadows, Finstuen, Hudak, Carrillo, Lawrence, & Right (2003) expanded upon the previous study by examining whether senior DoD pharmacists perceived required executives skills differently from junior DoD pharmacists. In this study 218 junior DoD pharmacy officers (serving at the grade of O-3 or below) were asked to complete the same questionnaire given to the senior DoD pharmacy officers from the previous study. Although overall ratings of the eight competency domains were similar between senior and junior pharmacists, results indicated the groups differed in their opinions regarding the relative importance of specific items within the domains. Specifically, both groups had very similar ratings of the importance of SKAs in the domains of human resources, pharmacy operations and business practices, drug therapy management, and leadership but senior pharmacists placed a greater emphasis on the importance of SKAs with the financial resources and pharmacy benefit management domains. These results indicated that although senior DoD pharmacists were effectively mentoring junior officers, more emphasis should be placed on providing junior pharmacists opportunities for training and education on traditional business skills (i.e. forecasting, budgeting, marketing, etc.).

More recently, Meadows, Maine, Keyes, Pearson, and Finstuen (2005) employed two iterations of the Delphi to measure the competencies and SKAs required of civilian pharmacy executives. This study sampled 110 pharmacists who graduated from the GlacxoSmithKline Executive Management Program for Pharmacy Leaders. Five competency domains were identified. Ranked in descending order of importance these domains were management and development of the pharmacy workforce, pharmacy finance, total quality management of workflow systems, influences on the practice of pharmacy, and professional pharmacy

leadership. The top five SKAs identified from these domains, in descending order, were ability to see the big picture, ability to demonstrate the value of pharmacy services, ability to lead and manage ethically, and skills for influencing an organization's senior leadership. Overall, this study identified that communication skills, critical thinking, and problem solving techniques are extremely important for the future success of pharmacy executives.

Methods

This study utilizes the Delphi technique. The goal is to capture, articulate, and prioritize professional competencies and their associated skills, knowledge, and abilities (SKAs). Skills represent technical expertise, knowledge equates to the possession of facts and principles, and abilities incorporate physical, mental, or legal power (Hudak, Brooke, & Finstuen, 2000). The Delphi technique was developed during the 1950s by the RAND Corporation. It solicits the current knowledge of experts through the use of detailed questionnaires.

The Delphi technique is unique because it does not employ surveys therefore it avoids researcher bias (i.e., when a researcher develops a survey, he or she is determining items for respondents). Conversely, the Delphi methodology obtains field generated responses given in their current job language. This results in relevant, extremely timely, up to date information. In addition, the questionnaires are strictly anonymous and filled out individually, thus the technique obtains the opinions of a group of experts but avoids common biases associated with interacting groups (Rowe & Wright, 1999). Although the Delphi was originally used as a process for technological forecasting, it has become a multiple use planning tool applicable to a variety of disciplines including health care (Delbecq, Van de Ven, & Gustafson, 1975).

All correspondence for this study was conducted via electronic mail and a website dedicated to this study. The study website utilized the same server as a Veterans Administration (VA) nurse executive study conducted by Sutto and Knoell (2005). This web server runs on Microsoft IIS 6.0 and uses Microsoft FrontPage 2003 to edit and configure the site. The backend data is collected and processed via a Microsoft Access 2003 database. This design saves time by providing direct access to collected data and eliminates the need for the researcher to manually create a database once questionnaires are received by mail.

Before each wave of the Delphi, study participants were contacted via email requesting their participation. An email list of senior Navy health care executives (Commanding Officers, Executive Officers, Directors for Administration, and other senior Navy health care leaders all O-5 and above) and junior Navy MSC officers (all O-3 and below) was compiled from data provided by the Bureau of Naval Personnel (BUPERS). Each email included a link to the study website and provided participants a username and password to gain access to the questionnaires utilized in each wave. Details of the emails sent to all respondents are found in the appendices. The questionnaires were consistent with the Delphi process of anonymity and did not request any personal identifying information. In addition to ensuring the anonymity of the respondents and providing extremely timely feedback, the use of web-based questionnaires allowed the researcher access to Navy health care executives stationed around the world.

Validity, reliability, and ethical concerns are addressed throughout this study. The expert panel provided adequate content validity due to their extensive experience and their positions at the pinnacle of the health administration field. The Delphi technique has been used extensively in previous studies of executive competencies therefore construct validity has been addressed. In order to establish the extent to which the same results would be obtained from another study

sample, inter-rater reliability was tested using Cronbach's coefficient alpha (Nunnally, 1978). For ethical concerns, all questionnaires were completed anonymously and any identifying information was destroyed as soon as the all data was recorded

Delphi Wave I – Competencies

This study utilized three waves of the Delphi technique with the first two waves separated by an expert panel content analysis. In the first wave, 133 senior Navy health care executives (Commanding Officers, Executive Officers, Directors for Administration, and other senior Navy health care leaders) were given a questionnaire asking them to identify five competencies believed to be essential for performance by Navy health care executives over the next five to ten years. They were also asked to identify the SKAs necessary to attain these competencies. The senior respondents were chosen based upon their proven record of outstanding performance as health care executive and their extensive experience in the Navy's health care system.

Fifty-seven of the 133 senior administrators responded, for a response rate of nearly 43%. This response rate is considered adequate based on response rates from previous executive skills studies employing the Delphi technique (Hudak, Brook, and Finstuen, 2000). The initial responses produced a total of 285 competencies. After analyzing these competencies for similar wording, the researcher grouped key phrases, calculated frequencies, and created a preliminary draft list of competencies. This preliminary list of competencies was presented to the expert panel for use as frame of reference in order to conduct their analysis.

Analysis of Competencies

An expert panel of five senior health care executives was assembled to analyze the collected issues from the first Delphi wave. The panel members included the Director of the Navy Medical Service Corps (currently serving as the Commander of a large MTF), a senior

Navy Medical Corps Officer (currently serving as the Deputy Commander of a large MTF), a senior Navy nurse (currently serving as a department head at a large MTF), a senior MSC officer (currently a director at a large MTF), and a retired U.S. Army health care administrator (currently serving as Dean of a U.S. business school). All five members are recognized leaders within their field who collectively hold eight advanced professional degrees including a Medical Doctor, a Master's degree in nursing, one Doctorate, and one Juris Doctorate. Their diverse backgrounds provided a robust professional perspective and collectively represented 136 years of health care experience.

The expert panel sorted the collected competencies into a set of meaningful domain categories and determined an appropriate title for each domain. Additionally, the panel decided to eliminate five competencies that they did not consider relevant leaving a total of 280 competencies (of these 280 total competencies, 99 were unique). After the 280 competencies were separated into specific domain categories, their associated SKAs were assigned. The 280 SKAs were consolidated into 100 SKA statements by the researcher (based upon the percentage of total competencies within each domain). Subsequently, the researcher created a field generated, categorized list of executive competencies and associated SKA statements. These results allowed the researcher to form a questionnaire for the second and third Delphi waves.

Delphi Waves II and III

During the second Delphi wave, the same senior hospital administrators from the initial Delphi wave were asked to rate the collected competencies and associated SKAs according to their assessment of the importance of the competency for a health care executive over the next five to ten years. All questions were based on a seven point Likert scale anchored at the extremes with 1 being extremely unimportant to 7 being extremely important. Background and

demographic data (including age, gender, current position, job experience, and education) was also collected.

In order to expand upon previous research and identify any differences between senior and junior officer opinions, a third wave of the Delphi was completed. During this wave, 130 junior MSC officers were given the same questionnaire given to the senior respondents in Wave II. All of these officers were Lieutenant (O-3) or below. Subsequently, the responses given by the junior executives in Wave III were compared to the responses from the senior executives from Wave II.

Descriptive statistics were conducted on demographic data and SKA ratings from the responses received in Waves II and III. In addition, a two-factor split-plot analysis of variance (ANOVA) mixed design with repeated measures on one factor was performed within each competency domain to determine if there were statistically significant differences among the mean ratings of identified SKAs among senior and junior executive responses.

An ANOVA provides a test of whether significant differences exist between the mean scores of two or more groups on one or more variables. A two-factor split-plot ANOVA consists of two grouping factors and one or more observations on each combination of the grouping factors (Brunig & Kintz, 1977; Nunnally, 1978; Winer, 1971). In this study, the senior and junior officers represent the two grouping factors and their ratings of the SKAs within the identified competency domains represent the observations being examined. If any repeated factor is present a repeated measures ANOVA should be used (Brunig & Kintz, 1977; Nunnally, 1978; Winer, 1971). This type of ANOVA allows the researcher to account for any correlation between the repeated measures. In this study the respondents are rating several SKAs within a single

competency domain. Each rating of an SKA is a repeated measure of the respondent's opinion regarding that specific competency therefore, a repeated measure ANOVA will be conducted.

The two-factor split-plot ANOVA will test three hypotheses:

Hypothesis 1

Null hypothesis (H_{01}): There is no difference between ratings of required executive competencies among respondent groups (i.e., senior and junior health care executives).

Alternative hypothesis (H_{a1}): There is a difference between ratings of required executive competencies among respondent groups.

Hypothesis 2

Null hypothesis (H_{02}): There is no difference in the importance of each SKA within specific domains.

Alternative hypothesis 2 (H_{a2}): There is a difference in the importance of each SKA within specific domains.

Hypothesis 3

Null hypothesis (H_{03}): There is no difference between the ratings of specific SKAs between groups to overall group rating patterns.

Alternative hypothesis 2 (H_{a3}): There is a difference between the ratings of specific SKAs between groups to overall group rating patterns.

The decision criteria for the ANOVA test will be an alpha level of .05. Overall, the results from this testing will allow the researcher to examine three factors: the main effects of group membership (senior versus junior officers), the relative importance of each SKA within the specific domains, and the potential interaction effects among the SKA ratings (i.e., an analysis of the difference between ratings of specific SKAs between groups to overall group

rating patterns). If interaction effects were present in a particular domain post hoc tests were performed on each SKA within that domain in order to determine which SKAs resulted in statistically significant differences between junior and senior respondent ratings (Nunnally, 1978; Winer, 1971).

Results

Expert Panel Analysis

From the initial list of competencies received during Wave I, the expert panel established six domain categories. Rank ordered by frequency (i.e. the percentage of total competencies within each domain) they were: Essential Resources (representing nearly 37% of all competencies), Leadership (25%) Environmental Analysis (15%), Knowledge/Experience Requirements (13%), Execution (8%), and Outcomes (2%). Table 1 displays the frequency of responses and the percentage of total competencies within each domain.

Demographics

A summary of the demographic data representing the junior and senior executives is presented in Table 2. Of the 64 senior executives who responded in Wave II, 42 were male and 22 were female. All but nine of the 51 junior executive respondents from Wave III were male. The mean age of the senior executives was slightly under 49 years and they averaged about 11.5 years of health care experience. In contrast, the mean age of the junior executives was slightly over 34 years and they averaged just over 4.5 years of health care experience. As a group the senior executives consisted of 28 MSC Officers (19 of which were Health Care Administrators), 21 Medical Corps Officers, 12 Nurse Corps Officers, and 3 Dental Corps Officers. All of the junior executives were MSCs and all but one were Health Care Administrators. Approximately

70% of members from both groups were members of a professional health care organization therefore professional affiliation between the two groups did not vary significantly. Seventy-five percent of the seniors had a Bachelor of Science degree and 83% earned a masters degree. Additionally, 48% of the senior executives earned doctorate degrees. Similarly, 80% of the juniors had a Bachelor of Science degree and 80% earned a masters degree, however none of the junior executive respondents earned a Doctoral degree.

Descriptive Statistics

All 100 SKA ratings were measured by importance ratings on a 7-point Likert bipolar relative rating scale anchored at the extreme from 1 for unimportant to 7 for extremely important. Inter-rater reliability of the SKA item importance ratings was assessed using Cronbach's coefficient alpha (Nunnally, 1978). Coefficients were computed for separate and combined respondent groups for each of the six domains. The alpha coefficient measures the internal consistency of rating responses and represents the stability of the item rating means (Nunnally, 1978). Domains, the number of SKA items within each domain, and the alpha coefficient for respondents are shown in Table 3. Alpha coefficient for senior respondents ranged from a low of .79 in the Outcomes domain to .94 in the Essential Resources domain. Similarly, alpha coefficients for the juniors ranged from a low of .80 in the Outcomes domain to a high of .94 in the Essential Resources and Environmental Analysis domains. Alpha coefficients for all respondents combined followed a similar pattern ranging from .79 in the Outcomes domain to .94 in the Essential Resources domain. These results are within the acceptable range of greater than .70 as discussed by Nunnally (1978) and can be construed as evidence of consistent and reproducible levels of importance rating agreement among junior and senior executives, as well as both groups combined.

More than half of the 100 SKA items from both groups had mean ratings above 5.50 (57 SKAs had average ratings above 5.50 for the seniors, 56 for the juniors). Thirty-two SKAs had mean ratings above 6.0 for the seniors while juniors accounted for 15 SKAs with mean ratings above 6.0. Table 4 lists the 15 highest rated SKAs for each group. The two highest rated SKAs for both groups were “communication skills” and “decision making skills” (rated at 6.63 and 6.56 respectively by the seniors and 6.55 and 6.37 respectively by the juniors). Both of these SKAs were from the Leadership domain. Of the 15 highest rated SKAs, all but four are common for both groups although the senior executives mean ratings are noticeably higher than the junior executive ratings. All of the top 15 SKAs for both groups come from the Leadership, Environmental Analysis, or Essential Resources domain with Leadership dominating. Of the top 15 SKAs for both groups, the Leadership domain accounts for seven of the top 15 SKAs for the juniors and eight of the top 15 for the seniors.

Table 5 lists the 15 lowest rated SKAs for each group. Only five of the 100 SKAs between the two executive groups received a mean rating below 4.0. The lowest rated SKA for both groups was “knowledge of command and community volunteer opportunities” from the Essential Resources domain, receiving a mean rating of 3.80 from the seniors and 3.90 rating from the juniors. Of the 15 bottom rated SKAs, all but 4 are common among the groups although the junior executive mean ratings are slightly higher than the senior executive ratings. The Essential Resources domain dominates the bottom 15 rated SKAs for both groups, accounting for 11 of the 15 lowest rated SKAs for both junior and senior executives.

Group mean importance ratings for the two highest-rated and two lowest-rated items within each of the six domains are displayed in Tables 6 and 7. In all six domains from each of these tables, at least one identical SKA between groups is present. Excluding the Outcomes

domain (which consisted of just 2 SKAs), of the two highest rated SKAs from each domain, all but two of the SKAs had mean ratings above 6.0 for the seniors and all but three were above 6.0 for the juniors. Of the two lowest rated SKAs from each domain (again excluding the Outcomes domain), all but three of the SKAs for both groups had a mean rating below 5.0.

In the Essential Resources domain the highest rated SKA for both junior and senior executives was “interpersonal relations skills.” Similarly, both groups shared the lowest rated SKA in this domain, “knowledge of command and community volunteer opportunities.” In the Leadership domain, both groups rated “communication skills” and “decision making skills” as the top two highest rated SKAs. The SKA “active in local community activities” emerged as the lowest rated SKA in the Leadership domain for seniors and was the second lowest for junior executives. In the Environmental Analysis domain, seniors ranked “critical thinking skills” highest and juniors ranked this SKA second highest. In this domain both groups had identical lowest rated SKAs: “information technology skills” and “knowledge of the strategic planning process.” Both groups shared the same highest rated SKA in the Knowledge/Experience Requirements domain: “ability to interpret and analyze data.” In this domain senior executives ranked “membership in a professional health care organization (i.e. ACHE, AMA, MGMA, etc)” as the least important SKA while juniors ranked this SKA second lowest. In the Execution domain both groups rated “ability to create new/real solutions to old problems” as most important and both groups had identical lowest rated SKAs: “marketing skills” and “ability to implement, track, and redefine CPGs.”

Overall mean ratings for each domain are displayed in Table 8. The greatest difference in mean ratings occurred in the Leadership and Environmental Analysis domains. In both of these domains senior executives have a considerably higher average rating (.25 points higher in the

Leadership domain and .29 points higher in the Environmental Analysis domain) than the junior executives. Inferential statistical tests were conducted to determine if the differences in domain means were statistically significant.

Inferential Statistical Tests

For each of the six domains a two-factor split-plot ANOVA with repeated measures on one factor was used to test the three hypotheses of differences between overall groups (senior and junior executives), differences among specific domain items, and the difference between the ratings of specific SKAs between groups to overall group rating patterns (Nunnally, 1978; Winer, 1971). Table 9 contains the results of this ANOVA testing. Three F-ratios were obtained for each of the six domains: the main effect for overall rating differences between senior and junior executives, a second main effect for overall rating differences within SKA items, and an interaction effect of groups and items. In four of the six domains (Essential Resources, Knowledge/Experience Requirements, Execution, and Outcomes), no main effects for overall differences between senior and junior executives emerged. This indicates that the two groups did not differ in their overall rating style used to assess the importance of SKA items (i.e., overall, they shared the same opinion in these domains). Interestingly, the two groups did have statistically significant ($p < .05$) main effect differences in the Leadership and Environmental Analysis domains at $F(1, 113) = 5.237$ and $F(1, 113) = 4.622$ respectively. This indicates that the two groups differed in overall opinion regarding these two domains.

Statistically significant ($p < .001$) and systematic within item main effect differences were detected for all but one domain, with F-ratios ranging from $F(12, 1380) = 20.602$ in the Knowledge/Experience Requirements domain, to $F(35, 4025) = 56.754$ in the Essential Resources domain. This consistency among domains indicates that items were consciously rated

by respondents and that both groups were focused on the rating task and carefully distinguished the SKA items in terms of relative perceived importance. The only domain contrary to this trend was Outcomes but given this domain's small number of SKAs (2), little can be derived from this finding.

The most telling statistically significant findings emerged from the test for interaction effects. Four of the six domains produced statistically significant interaction effects indicating that average importance differences emerged on specific SKA items between groups (seniors and juniors) in a pattern dissimilar to overall group rating patterns. These domains (Essential Resources, Leadership, Environmental Analysis, and Knowledge/Experience Requirements) required a-posteriori post hoc testing in order to determine which SKAs produced statistically significant interaction effects. This involved the use of F-tests for simple main effects analysis (Nunnally, 1978; Winer, 1971). This F-test is derived from the ANOVA table subjects' residual components. The proper error term denominator of the F-ratio becomes the within cells mean square and the numerator represents the mean square of the groups deviations for any given single item within the domain. These simple main effects tests are recommended as the appropriate procedure for a-posteriori comparisons because they lessen the probability of committing Type I error that would likely occur if all domain item comparisons were tested using independent sample student's t tests from importance differences between group means (Nunnally, 1978; Winer, 1971).

Table 10 presents the findings from the post hoc tests. Overall, statistically significant differences between senior and junior executive group means were detected for 20 of the 89 SKA items tested. Table 10 lists the SKAs by domain and includes mean ratings and standard deviations for the two groups as well as the results of the individual F-test and the associated

probability estimate. Each of the domains contained a different number of SKA items therefore degrees of freedom for each test F-test varied. The Essential Resources domain contained 36 SKAs therefore $F(1, 4068)$, Leadership contained 25 SKAs therefore $F(1, 2825)$, Environmental Analysis contained 15 SKAs therefore $F(1, 1695)$, and Knowledge/Experience Requirements contained 13 SKAs therefore $F(1, 1469)$.

Limitations

During all three waves of the Delphi from this study, response rates were under 50%. If more executives had responded during these waves, there is a possibility results may have differed slightly. More importantly, all but one of the junior executive respondents were HCAs, while the senior executive respondents were comprised of a mix of providers and administrators. This study was focused on executive skills in health care administration therefore the two populations were relevant but, future studies may look to be more specific, perhaps targeting solely providers or administrators while adding their junior counterparts. This may help discern any bias in opinion between providers and administrators as well as assist in distinguishing which competencies and SKAs are most important for each group

Discussion

Only four of the 20 SKAs that exhibited statistically significant interaction effects had mean ratings below 5.0 for both groups indicating that these SKA likely reflect differences in opinion on items of lower concern. The remaining 16 SKAs had a rating of 5.50 or better from at least one executive group. This fact points to very real differences of opinion among items of high level of perceived importance.

Analysis of the direction of results indicates that of the SKAs showing statistically significant interaction effects, all 13 from the Leadership and Environmental Analysis domain were rated considerably more important by the senior executives. This trend was reversed for the Essential Resources and Knowledge/Experience Requirements domains. In these domains all seven remaining SKAs indicating statistically significant interaction effects were rated considerably more important by the junior executives. Table 11 details the mean rating difference between groups for all the SKAs exhibiting statistically significant interaction effects.

When analyzing these trends it becomes apparent that personnel skills (i.e., communication, rewarding, and understanding subordinates) and experience (at the CO, XO, Director, or Department Head level) are more important to the seniors than they are to juniors. Additionally, seniors have placed more emphasis on strategic planning and understanding the environment of the organization (i.e., understanding command's mission and goals, readiness requirements, critical thinking skills, and planning for contingencies) than the junior executives. In contrast, junior executives have placed more emphasis on education and knowledge requirements (i.e., master's degree in business or management and proficiency with the latest software) than the senior executives. Junior executives have also placed a greater emphasis on gaining experience in multiple health care settings.

Sentell and Finstuen's 1998 study found that business orientation and interpersonal skills were critical for future success as a Navy health care administrator. Results from this study have found that though interpersonal skills are still very important, competencies and SKAs surrounding strategic planning and understanding the environment of the organization have emerged as critical for Navy health care executives over the next five to ten years. Given the

complex nature of the health care environment and the amount of change in the Navy's health care system since 1998, this change seems prudent.

Although this study has shown that senior and junior Navy health care executives share a similar opinion regarding the most important executive competencies and SKAs for Navy health care executives, critical differences in their opinions exist. Senior executives have clearly placed a stronger emphasis on the SKAs in the Leadership and Environmental Analysis domains, while the juniors have placed greater importance on the Essential Resources and Knowledge/Experience Requirements domains. These results are not surprising. In fact they may reflect the difference between experience and education (i.e., actually performing a job and learning about the job in the classroom).

Senior executives have more experience in the Navy's health care system therefore they have a better understanding of the SKAs indicated in the Leadership Domain (i.e. position requirements and personnel skills) than their junior counterparts. Additionally, more experience allows the seniors to have a better understanding of the overall health care system in the Navy (i.e., readiness requirements and strategic planning) thus their stronger emphasis than the juniors in these areas should not be unexpected.

Another factor leading to the heavy emphasis on personnel skills and strategic planning from the seniors is the current state of health care in the DoD. Operational commitments given the on-going crisis in the Middle East have created staffing shortages for many facilities throughout the Navy's health care system. Moreover, rising health care costs coupled with shrinking budgets are forcing senior executives to do more with less. These factors coupled with the dynamic health care environment have forced senior executives to pay more attention to staffing issues and strategic planning than they have in the past.

Similarly, the responses from junior executives are not surprising. Junior executives placed a greater emphasis on educational and knowledge requirements. Juniors are more closely removed from school than senior executives and during their education they are more likely to have exposure to the latest IT technologies available than seniors. Therefore, it is not surprising that juniors have placed a heavier emphasis in these areas. In addition, it is likely that many of the junior executives received their graduate level education prior to becoming health care executives while many of the seniors received their education after their entrance as executives. This may have also played a factor in the higher emphasis on graduate education from juniors.

Perhaps an even more important issue than why the seniors and juniors have different opinions regarding executive skills is what can be done to narrow this gap in opinion. The data from this study show an opportunity for improvement in the professional development of junior executives. What makes this a difficult task is that many of the identified SKAs cannot be taught in a classroom (i.e., “experience as CO or XO”, “ability to balance competing priorities”, or “understanding of readiness requirements.”) These types of skills may be best taught through exposure.

At the opening session of the 2006 annual American College of Health Care Executive ACHE Chairman William C. Schoenhard remarked, “We can’t be concerned with the future of healthcare without concern with the future of our health care leaders.” This study is a direct reflection of those words. Given the dynamic state of health care it is imperative for health care leaders to recognize and adapt to changes in their market if they are going to be successful. This principle applies to the training of young executives as well. Better trained and better prepared young health care executives will be more likely to advance professionally as well as successfully deal with future problems within the health care industry

Conclusion

Over the last ten years health care in the United States and the DoD has undergone dramatic changes due to issues surrounding cost, quality, and access to care. In a response to these changes, health care in the Navy (and the MHS overall) has evolved. As a part of this evolution, the requisite executive competencies for health care executives have changed.

Results from this study indicate statistically significant differences in opinion between senior and junior health care executive groups, between the importance of each SKA within specific domains, and between the ratings of specific SKAs among groups to overall group rating patterns therefore, all three null hypotheses have been rejected. The implications of these results are extremely important for Navy health care executives. This study indicates a need for improvement in the development of junior Navy health care executives specifically in the area of interpersonal skills and understanding the environment. Additionally, this study warrants further, more detailed, executive competency research in order to develop the most relevant training programs for junior health care executives throughout the Navy's health care system.

Recommendations

Results of this study have highlighted important similarities and critical differences between senior and junior executive opinions and point to a clear difference between performing the job of a health care administrator and learning about health care administration in a classroom. These results can be used as a basis for improving training/mentoring programs for young Navy health care executives as well as young health care executives in the civilian sector. Additionally, these results can be used as a basis for further studies (i.e. executive skills studies targeting solely Navy providers or administrators). Further analysis among all executive groups

would provide the most detailed insight into the required executive competencies for Navy health care executives and allow the greatest opportunity for developing relevant training programs for junior health care executives throughout the Navy's health care system.

Few undergraduate and master's educational programs in health care (MHAs and MPHs) provide extensive residency programs. Undergraduate and master's programs in health care administration (especially programs designed specifically for appointment into the DoD health care system) may look at this as an area for improvement in order to provide junior executives the most robust exposure to the military health system. Additionally, these programs may seek to provide more opportunities for guest speakers/instructors who are practicing senior executives in the field of health care administration in order to provide the most relevant information to young health care executives.

Outside of educational opportunities, senior health care leaders in the Navy (COs, XOs, Directors for Administration, and other senior health care leaders) should use this information to adapt and develop pertinent and up to date training programs for the young health care executives in their organization. Furthermore organizations such as the American College of Health Care Executives can use this information to plan and develop professional educational conferences aimed at training young health care executives.

Table 1. Frequency Count of Individual Competencies, Domain Totals, and Unique Competencies from Wave 1.

Executive Competencies within Content Domains		280 Total		99 Unique	
	n	n	%	N	%
Essential Resources		103	36.79	24	24.24
Business Management	23	Maximizing Technology 21 st Century Enterprise	2		
Personnel Management	18	Technology 21 st Century Performance	1		
Resource Management	8	Metrics	1		
Staff Management	8	Facilities Integration with the Civilian	1		
Budgeting	6	Sector Military to Civilian Job	1		
Contracting	6	Conversion	1		
Data Management/Manipulation	5	Negotiation Non-Federal Health Care	1		
Integration with Other Services	5	Networking	1		
Recruit and Retain Deliver Health Care to Beneficiaries	5	Operational Planner	1		
	2	Resource Sharing	1		
Information Management	2	Risk Management	1		
Information Technology Solutions	2	Volunteerism	1		
Leadership		71	25.36	30	30.30
General Leadership	15	Creating a Performance Environment	2		
Communication	12	Creativity Distinguish Leadership and	2		
Legal Issues	5	Management	1		
Mentoring	5	Effective Public Speaking	1		
Interpersonal Relationships	3	Emotional Intelligence	1		
Delegating	2	Establish Responsibilities Individual and Organizational	1		
Leading Teams	2	Behavior	1		
Navy Core Values	2	Integrity	1		
Organizational Leadership	2	Leadership Experience	1		

Political Savvy	2	Managing Community Relationships	1				
Role Model	2	Managing Diverse Teams	1				
Ability to Focus on "Main Thing"	2	Patient Centered Leadership	1				
Ability to Take Risks	1	Promote Morale	1				
Concern for Subordinates	1	Superior Judgment	1				
Professional Maturity	1	Understand Yourself	1				
Environmental Analysis				42	15.00	14	14.14
Change Management	13	Information Management Strategies	1				
Strategic Planning	8	Interoperability	1				
Readiness	5	Knowledge Management	1				
Mission	4	Managing Operational Unit Augmentation	1				
Decision Making	2	Quantitative Analysis	1				
Vision	2	Support the Global War on Terrorism	1				
Homeland Security	1	Transition to the Joint Medical System	1				
Knowledge/Experience Requirements				37	13.21	14	14.14
Operational Experience/Understanding	10	Automated Health Systems Information	1				
Understanding Business	9	Familiarization with Civilian Health Care and Other Government Systems	1				
Understanding TRICARE	3	Master's Level Education	1				
Understanding JCAHO	2	Organizations	1				
Understanding Mission Requirements	2	Understanding Clinical Delivery	1				
Current Events/Trends	2	Understanding Technology	1				
Understanding the Joint Operations Environment	2	Acquisitions/Contracting	1				
Execution				23	8.21	12	6.60
Achieving Quality/Efficiencies	3	Marketing	1				
	3	Maximizing Clinical	1				

Clinical Practice Guidelines		Productivity			
Cost Control	3	Measuring Health System Performance	1		
Managed Care	2	Create Effective Surge Capabilities	1		
Managing Hospital/Clinical Operations	2	Public Affairs	1		
Balancing Priorities	1	Monitor System Effectiveness	1		
Clinical Treatment to Health Productivity Models	1	Visionary Problem Solving	1		
Managing Deployable Assets	1				
Outcomes				4	1.43 2 0.20
Emergency Management	3	Population Health	1		

Table 2. Summary of Demographic Data for Respondents

Variable	<u>Junior Officers (n=51)</u>		<u>Senior Officers (n=64)</u>	
	Mean ± SD	No. (%)	Mean ± SD	No. (%)
Age, years	34.11 ± 4.15	-	48.72 ± 4.71	-
Experience	4.68 ± 3.25	-	11.55 ± 7.91	-
Sex				
Male	-	42 (82.4)	-	42 (65.6)
Female	-	9 (17.6)	-	22 (34.4)
Corps				
MSC-HCA	-	50 (98.0)	MSC	28 (43.8)
HCS	-	1 (2.0)	HCA	19
			Other	9
			MC	21 (32.8)
			NC	12 (18.8)
			DC	3 (4.6)
Professional Affiliation ^a				
ACHE	-	32 (62.7)	-	28 (43.8)
Other	-	7 (13.7)	-	15 (23.4)
None	-	14 (27.5)	-	21 (32.8)
Degree Obtained				
Bachelor	-	51 (100)	-	64 (100)
BS	-	41 (80.4)	-	48 (75.0)
Other	-	10 (19.6)	-	16 (25.0)
Masters ^a	-	41 (80.4)	-	53 (82.8)
MHA	-	25 (49.0)	MHA	11 (17.2)
MBA	-	10 (19.6)	MBA	8 (12.5)
MPH	-	5 (9.8)	MPH	10 (15.6)
Other	-	7 (13.7)	Nursing	7 (10.9)
None	-	10 (19.6)	Other	20 (31.2)
			None	11 (17.2)
Doctorates	-	0 (0)	Doctorates	31 (48.4)
			MD	21 (32.8)
			DMD	2 (3.1)
			Nursing	1 (1.5)
			Other	8 (5.1)

SD = standard deviation

^aCategories are not exclusive

Table 3. Skills, Knowledge, and Abilities (SKA) Item Rating Reliability Coefficients

Respondents Domain	No. of SKA Items Rated	Cronbach α		
		Junior Respondents (n= 51)	Senior Respondents (n=64)	All (n=115)
Essential Resources	36	.94	.94	.94
Leadership	25	.92	.93	.93
Environmental Analysis	15	.94	.92	.93
Knowledge/Experience Requirements	13	.82	.88	.85
Execution	9	.90	.92	.91
Outcomes	2	.80	.79	.79
All Domains	100	.98	.98	.98

Responses were recorded on a 7-point rating scale, with 1 = unimportant to 7= extremely important

Table 4. 15 Highest Rated SKAs for Navy Health Care Executives

Junior Officer Respondents

Domain	SKA Item	Mean Rating ^a
Leadership	45. Communication skills	6.55
Leadership	52. Decision making skills	6.37
Leadership	37. Ability to lead a diverse staff (AD, GS, and contractors)	6.35
Essential Resources	8. Interpersonal relations skills	6.25
Leadership	55. Ability to distinguish and focus on “key” issues	6.24
Leadership	40. Ability to motivate staff to accomplish mission	6.22
Leadership	44. Ability to develop loyalty and trust	6.22
Essential Resources	25. Time management skills	6.16
Environmental Analysis	70. Knowledge/understanding of command’s mission	6.16
Essential Resources	5. Ability to analyze data for decision making	6.12
Environmental Analysis	75. Critical thinking skills	6.12
Essential Resources	30. Organizational skills	6.06
Environmental Analysis	62. Ability to focus staff on the mission	6.06
Execution	98. Ability to create new/”real” solutions to old problems	6.06
Leadership	50. Ability to empower subordinates	6.02

SKA = skills, knowledge, and abilities

^aSeven-point relative importance scale, where 1 = extremely unimportant and 7 = extremely important

Bold indicates not among Senior Officer respondent 15 highest rated SKAs

Table 4. 15 Highest Rated SKAs for Navy Health Care Executives

Senior Officer Respondents

Domain	SKA Item	Mean Rating ^a
Leadership	45. Communication skills	6.63
Leadership	52. Decision making skills	6.56
Essential Resources	8. Interpersonal relations skills	6.55
Leadership	40. Ability to motivate staff to accomplish mission	6.55
Environmental Analysis	75. Critical thinking skills	6.50
Leadership	44. Ability to develop loyalty and trust	6.50
Leadership	37. Ability to lead a diverse staff (AD, GS, and contractors)	6.48
Environmental Analysis	62. Ability to focus staff on the mission	6.44
Environmental Analysis	73. Ability to balance competing priorities	6.42
Environmental Analysis	70. Knowledge/understanding of command's mission	6.39
Leadership	57. Understands and conveys command's mission and goals	6.33
Environmental Analysis	68. Ability to translate strategic plan into reality	6.30
Leadership	58. Ability to solicit and listen to input from subordinates	6.27
Leadership	50. Ability to empower subordinates	6.23
Essential Resources	5. Ability to analyze data for decision making	6.22

SKA = skills, knowledge, and abilities

^a Seven-point relative importance scale, where 1 = extremely unimportant and 7 = extremely important**Bold** indicates not among Junior Officer respondent 15 highest rated SKAs

Table 5. 15 Lowest Rated SKAs for Navy Health Care Executives

Junior Officer Respondents

Domain	SKA Item	Mean Rating ^a
Essential Resources	32. Knowledge of command and community volunteer opportunities	3.90
Leadership	60. Experience as a CO or XO	3.94
Leadership	56. Active in local community activities	4.06
Essential Resources	11. Contract negotiation skills	4.25
Essential Resources	12. Ability to write position descriptions	4.37
Essential Resources	28. Knowledge of the federal civilian hiring process	4.39
Essential Resources	14. Knowledge of contracting	4.45
Essential Resources	16. Understanding manpower management OCONUS	4.47
Essential Resources	36. Knowledge of facilities management	4.51
Leadership	47. Thorough knowledge of UCMJ	4.59
Essential Resources	9. Basic knowledge of OPM and civil service unions	4.63
Essential Resources	13. Labor relations skills	4.63
Essential Resources	24. Ability to forecast market trends	4.71
Essential Resources	35. Ability to write a statement of work	4.71
Knowledge/Experience Requirements	81. Major staff tour experience	4.71

SKA = skills, knowledge, and abilities

^aSeven-point relative importance scale, where 1 = extremely unimportant and 7 = extremely important

Bold Indicates not among Senior Officer Respondent 15 Lowest Rated SKAs

Table 5. 15 Lowest Rated SKAs for Navy Health Care Executives

Senior Officer Respondents

Domain	SKA Item	Mean Rating ^a
Essential Resources	32. Knowledge of command and community volunteer opportunities	3.80
Essential Resources	12. Ability to write position descriptions	3.86
Essential Resources	35. Ability to write a statement of work	3.98
Knowledge/Experience Requirements	79. Membership with a professional healthcare organization (i.e., ACHE, AMA, MGMA, etc)	4.02
Essential Resources	26. Proficiency with latest hardware and software applications	4.13
Essential Resources	11. Contract negotiation skills	4.25
Knowledge/Experience Requirements	89. Masters level education in healthcare management or business	4.36
Leadership	56. Active in local community activities	4.38
Essential Resources	14. Knowledge of contracting	4.42
Essential Resources	16. Understanding manpower management OCONUS	4.52
Essential Resources	24. Ability to forecast market trends	4.53
Essential Resources	20. Knowledge of the acquisitions process	4.59
Essential Resources	36. Knowledge of facilities management	4.67
Essential Resources	28. Knowledge of the federal civilian hiring process	4.69
Leadership	47. Thorough knowledge of UCMJ	4.75

SKA = skills, knowledge, and abilities

^a Seven-point relative importance scale, where 1 = extremely unimportant and 7 = extremely important**Bold** Indicates not among Junior Officer respondent 15 lowest rated SKAs

Table 6. Two Most Important SKA Item Averages by Domain for Navy Health Care Executives

Domain	Junior Officer Respondents		Senior Officer Respondents	
	SKA Item	Mean \pm SD ^a	SKA Item	Mean \pm SD ^a
Essential Resources	8. Interpersonal Relations Skills	6.25 \pm 0.82	8. Interpersonal Relations Skills	6.55 \pm 0.78
	25. Time Management Skills	6.16 \pm 0.90	5. Ability to analyze data for decision making	6.22 \pm 0.84
Leadership	45. Communication skills	6.55 \pm 0.58	45. Communication skills	6.63 \pm 0.65
	52. Decision making skills	6.37 \pm 0.69	52. Decision making skills	6.56 \pm 0.66
Environmental Analysis	70. Knowledge/understanding of command's mission	6.16 \pm 1.16	75. Critical thinking skills	6.50 \pm 0.82
	75. Critical thinking skills	6.12 \pm 0.89	62. Ability to focus staff on the mission	6.44 \pm 0.85
Knowledge/Experience Requirements	84. Ability to interpret and analyze data	5.88 \pm 1.18	84. Ability to interpret and analyze data	6.09 \pm 0.97
	85. Ability to understand and track the value of care	5.75 \pm 1.06	87. Knowledge/understanding of delivering care	5.97 \pm 1.01
Execution	98. Ability to create new/ "real" solutions to old problems	6.06 \pm 0.88	98. Ability to create new/ "real" solutions to old problems	6.08 \pm 0.98
	93. Knowledge of the managed care system	5.76 \pm 0.84	90. Knowledge of productivity measurements and standards	5.64 \pm 0.93
Outcomes ^b	100. Knowledge of the concept and benefit of population health	5.59 \pm 1.04	99. Knowledge of command, county, state, and federal disaster preparedness requirements	5.73 \pm 1.10
	99. Knowledge of command, county, state, and federal disaster preparedness requirements	5.51 \pm 1.32	100. Knowledge of the concept and benefit of population health	5.67 \pm 1.04

SD = standard deviation; SKA = skills, knowledge, and abilities

^a Seven-point relative importance scale, where 1 = extremely unimportant and 7 = extremely important

^b Outcomes domain consisted of just 2 SKAs

Table 7. Two Least Important SKA Item Averages by Domain for Navy Health Care Executives

Domain	Junior Officer Respondents		Senior Officer Respondents	
	SKA Item	Mean \pm SD ^a	SKA Item	Mean \pm SD ^a
Essential Resources	32. Knowledge of command and community volunteer opportunities	3.90 \pm 1.39	32. Knowledge of command and community volunteer opportunities	3.80 \pm 1.21
	11. Contract negotiation skills	4.25 \pm 1.38	12. Ability to write position descriptions	3.86 \pm 1.23
Leadership	60. Experience as a CO or XO	3.94 \pm 1.61	56. Active in local community activities	4.38 \pm 1.32
	56. Active in local community activities	4.06 \pm 1.33	47. Thorough knowledge of UCMJ	4.75 \pm 1.36
Environmental Analysis	76. Information technology skills	5.06 \pm 1.22	76. Information technology skills	4.88 \pm 0.98
	67. Knowledge of the strategic planning process	5.31 \pm 1.14	67. Knowledge of the strategic planning process	5.45 \pm 1.22
Knowledge/ Experience Requirements	81. Major staff tour experience	4.71 \pm 1.10	79. Membership in a professional healthcare organization (i.e., ACHE, AMA, MGMA, etc)	4.02 \pm 1.56
	79. Membership in a professional healthcare organization (i.e., ACHE, AMA, MGMA, etc)	4.75 \pm 1.56	89. Masters level education in healthcare management or business	4.36 \pm 1.86
Execution	96. Marketing skills	4.86 \pm 1.15	96. Marketing skills	5.08 \pm 1.10
	91. Ability to implement, track, and redefine CPGs	5.08 \pm 1.18	91. Ability to implement, track, and redefine CPGs	5.14 \pm 1.15
Outcomes ^b	100. Knowledge of the concept and benefit of population health	5.59 \pm 1.04	99. Knowledge of command, county, state, and federal disaster preparedness requirements	5.73 \pm 1.10
	99. Knowledge of command, county, state, and federal disaster preparedness requirements	5.51 \pm 1.32	100. Knowledge of the concept and benefit of population health	5.67 \pm 1.04

SD = standard deviation; SKA = skills, knowledge, and abilities

^a Seven-point relative importance scale, where 1 = extremely unimportant and 7 = extremely important

^b Outcomes domain consisted of just 2 SKAs

Table 8. Mean Rating Differences by Domain for Navy Health Care Executives

Domain	Junior Mean Rating ^a	Senior Mean Rating ^a	Difference
1. Essential Resources	5.14	5.10	0.04
2. Leadership	5.65	5.92	0.27
3. Environmental Analysis	5.74	6.03	0.29
4. Knowledge/Experience Requirements	5.35	5.25	0.10
5. Execution	5.53	5.43	0.10
6. Outcomes	5.55	5.70	0.15

^a Seven-point relative importance scale, where 1 = extremely unimportant and 7 = extremely important

Table 9. ANOVA Summary – Mean Differences in Item Ratings

Domain / Effect Sources	SS (Subtotals)	SS (Totals)	df	MS	F	P
1. Essential Resources						
Between subjects	-	1605.206	(114)	-	-	-
Officer group (G)	1.577	-	1	1.577	.111	NS
Residual between subjects	1603.629	-	113	14.192	-	-
Within subjects	-	5130.462	(4025)	-	-	-
n = 36 items (I)	1686.904	-	35	48.197	56.754	<.001
Interaction G x I	84.860	-	35	2.425	2.855	<.001
Residual within subjects	3358.698	-	<u>3955</u>	.849	-	-
Total	-	6735.668	(4139)	-	-	-
2. Leadership						
Between subjects	-	1182.301	(114)	-	-	-
Officer group (G)	52.368	-	1	52.368	5.237	<.05
Residual between subjects	1129.933	-	113	9.999	-	-
Within subjects	-	2952.574	(2760)	-	-	-
n = 25 items (I)	898.223	-	24	37.426	51.216	<.001
Interaction G x I	81.548	-	24	.118	4.650	<.001
Residual within subjects	1981.803	-	<u>2712</u>	.731	-	-
Total	-	4134.875	(2874)	-	-	-
3. Environmental Analysis						
Between subjects	-	879.250	(114)	-	-	-
Officer group (G)	34.548	-	1	34.548	4.622	<.05
Residual between subjects	844.702	-	113	7.475	-	-
Within subjects	-	1053.741	(1606)	-	-	-
n = 15 items (I)	207.425	-	14	14.816	28.120	<.001
Interaction G x I	12.782	-	14	.913	1.733	<.05
Residual within subjects	833.534	-	<u>1582</u>	.527	-	-
Total	-	1932.991	(1720)	-	-	-
4. Knowledge/Experience Requirements						
Between subjects	-	856.031	(114)	-	-	-
Officer group (G)	3.955	-	1	3.955	.524	NS
Residual between subjects	852.076	-	113	7.540	-	-
Within subjects	-	1790.655	(1380)	-	-	-
n = 13 items (I)	264.790	-	12	22.066	20.602	<.001
Interaction G x I	73.502	-	12	6.125	5.719	<.001
Residual within subjects	1452.363	-	<u>1356</u>	1.071	-	-
Total	-	2646.686	(1494)	-	-	-
5. Execution						
Between subjects	-	677.281	(114)	-	-	-
Officer group (G)	2.324	-	1	2.324	.389	NS
Residual between subjects	674.957	-	113	5.973	-	-
Within subjects	-	569.925	(920)	-	-	-
n = 9 items (I)	93.867	-	8	11.733	22.581	<.001
Interaction G x I	6.319	-	8	.790	1.520	NS
Residual within subjects	469.739	-	<u>904</u>	.520	-	-
Total	-	1247.206	(1034)	-	-	-

Domain / Effect Sources	SS (Subtotals)	SS (Totals)	df	MS	F	P
6. Outcomes						
Between subjects	-	238.322	(114)	-	-	-
Officer group (G)	1.348	-	1	1.348	.643	NS
Residual between subjects	236.974	-	113	2.097	-	-
Within subjects	-	49.004	(115)	-	-	-
n = 2 items (I)	.004	-	1	.004	.008	NS
Interaction G x I	.282	-	1	.282	.654	NS
Residual within subjects	48.718	-	113	.543	-	-
Total	-	287.326	(229)			

ANOVA = analysis of variance; df = degrees of freedom; MS = mean squares; NS = not statistically significant; SS = sum of squares

Table 10. Item Differences Between Navy Executive Groups via Simple Main Effect Comparisons

Domain	SKA Item	Junior Respondents	Senior Respondents	F ^b	P
		Mean ± SD ^a	Mean ± SD ^a		
Essential Resources	1. Experience in multiple healthcare settings	5.73 ± 0.98	4.95 ± 1.17	13.88	< .01
	12. Ability to write position descriptions	4.37 ± 1.17	3.86 ± 1.23	6.13	< .05
	19. Budgeting skills	5.75 ± 0.93	5.27 ± 0.98	5.35	< .05
	26. Proficiency with latest hardware and software applications	4.86 ± 1.11	4.13 ± 1.23	12.66	< .01
	35. Ability to write a statement of work	4.71 ± 1.12	3.98 ± 1.23	12.11	< .01
Leadership	*53. Ability to take risks	5.49 ± 0.90	6.06 ± 0.91	8.44	< .01
	*57. Understands and conveys command's mission and goals	5.88 ± 0.91	6.33 ± 0.82	5.12	< .05
	*58. Ability to solicit and listen to input from subordinates	5.86 ± 1.10	6.27 ± 0.78	4.18	< .05
	*59. Ability to reward appropriately	5.65 ± 1.07	6.06 ± 0.85	4.45	< .05
	*60. Experience as a CO or XO	3.94 ± 1.61	5.53 ± 1.61	65.15	< .01
	*61. Experience as a director and or department head	5.37 ± 1.22	6.14 ± 1.17	15.20	< .01
Environmental Analysis	*62. Ability to focus staff on the mission	6.06 ± 0.95	6.44 ± 0.85	4.11	< .05
	*68. Ability to translate strategic plan into reality	5.78 ± 1.14	6.30 ± 0.77	7.53	< .01
	*71. Ability to recognize and plan for command's limitations	5.67 ± 1.09	6.06 ± 0.77	4.49	< .05
	*72. Ability to plan and implement operational contingencies	5.73 ± 1.15	6.09 ± 0.89	3.89	< .05
	*73. Ability to balance competing priorities	5.94 ± 1.16	6.42 ± 0.77	6.62	< .05
	*74. Understanding of readiness requirements	5.80 ± 1.15	6.22 ± 0.84	4.93	< .05
Knowledge/ Experience Requirements	*75. Critical thinking skills	6.12 ± 0.89	6.50 ± 0.82	4.19	< .05
	89. Masters level education in healthcare management or business	5.71 ± 1.30	4.36 ± 1.86	32.80	< .01
	79. Membership with a professional healthcare organization (i.e., ACHE, AMA, MGMA, etc)	4.75 ± 1.56	4.02 ± 1.56	9.63	< .01

SD = standard deviation; SKA = skills, knowledge, and abilities

^aSeven-point relative importance scale, where 1 = extremely unimportant and 7 = extremely important

^bEach domain contained a different number of items therefore degrees of freedom varied. For the Essential Resources Domain: F(1, 4068), Leadership: F(1,2825) Environmental Analysis: F(1,1695) and Knowledge/Experience Requirements: F(1,1469)

*Indicates that average item ratings by senior officer respondents were statistically, significantly higher than the junior officers.

Table 11. Mean Rating Difference for SKAs Indicating Statistically Significant Interaction Effects

Domain	SKA	Junior Mean Rating ^a	Senior Mean Rating ^a	Difference
Leadership	60. Experience as a CO or XO	3.94	5.53	1.59*
Knowledge Experience Requirements	89. Masters level education in healthcare management or business	5.71	4.36	1.35
Essential Resources	1. Experience in multiple healthcare settings	5.73	4.95	0.78
Leadership	61. Experience as a director and or department head	5.37	6.14	0.77*
Essential Resources	26. Proficiency with latest hardware and software applications	4.86	4.13	0.73
Knowledge Experience Requirements	79. Membership with a professional healthcare organization (i.e., ACHE, AMA, MGMA, etc)	4.75	4.02	0.73
Essential Resources	35. Ability to write a statement of work	4.71	3.98	0.73
Leadership	53. Ability to take risks	5.49	6.06	0.57*
Environmental Analysis	68. Ability to translate strategic plan into reality	5.78	6.30	0.52*
Essential Resources	12. Ability to write position descriptions	4.37	3.86	0.51
Essential Resources	19. Budgeting skills	5.75	5.27	0.48
Environmental Analysis	73. Ability to balance competing priorities	5.94	6.42	0.48*
Leadership	57. Understands and conveys command's mission and goals	5.88	6.33	0.45*
Environmental Analysis	74. Understanding of readiness requirements	5.80	6.22	0.42*
Leadership	59. Ability to reward appropriately	5.65	6.06	0.41*
Leadership	58. Ability to solicit and listen to input from subordinates	5.86	6.27	0.41*
Environmental Analysis	71. Ability to recognize and plan for command's limitations	5.67	6.06	0.39*
Environmental Analysis	62. Ability to focus staff on the mission	6.06	6.44	0.38*
Environmental Analysis	75. Critical thinking skills	6.12	6.50	0.38*
Environmental Analysis	72. Ability to plan and implement operational contingencies	5.73	6.09	0.36*

SKA = skills, knowledge, and abilities

Seven-point relative importance scale, where 1 = extremely unimportant and 7 = extremely important

* Indicates senior executive mean is higher than junior executive mean

References

- Briere, R. (Ed.). (2001). Institute of Medicine. *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academy Press.
- Brooke, Jr., P.P., Hudak, R.P., Finstuen, K., & Trounson, J. (1998). Management competencies required in ambulatory care settings. *The Physician Executive*, 24, 32-37.
- Bruning, J.L. & Kintz, B.L. (1977). *Computational Handbook of Statistics*. 2nd ed. Glenview, Ill: Scott, Foresman & Co.
- Delbecq, A.L., Van de Ven, A.H., & Gustafson, D.H. (1975). The Delphi technique. In, *Group techniques for program planning* (pp. 83-107). Glenview, Illinois: Scott, Foresman and Company.
- Donaldson, M.S. (Ed.). (1999). Institute of Medicine. *National roundtable on health care quality: The urgent need to improve health care quality*. Washington, DC: National Academy Press.
- Duperroir, R.A. (1995). *Envision 2000: A forecast of the issues and associated competencies required by federal nurse executives into the 21st century*. (Defense Technical Information Center No. ADA 313802)
- Gilmer, T., & Kronick, R. (2005). It's the premiums, stupid: Projections of the uninsured through 2013. *Health Affairs*, retrieved June 1, 2005 from:
http://www.pnhp.org/news/2005/april/projected_increases_.php
- Haase, L.W. (2005). *A new deal for health: How to cover everyone and get medical costs under control*. Century Foundation. New York: Century Foundation Press.

- Hudak, R.P., Brooke, Jr., P.P., & Finstuen, K. (2000). Identifying management competencies for health care executives: Review of a series of Delphi studies. *The Journal of Health Administration Education, 18*, 213-243.
- Hudak, R.P., Brooke, Jr., P.P., & Finstuen, K. (1994). Forecast 2000: A prediction of skills, knowledge, and abilities required by senior medical treatment facility leaders into the 21st century. *Military Medicine, 159*, 494-500.
- Hudak, R.P., Brooke, Jr., P.P., Finstuen, K., & Riley, P. (1993). Health care administration in the year 2000: Practitioner's views of the future issues and job requirements. *Hospital & Health Services Administration, 38*, 181-195.
- Hudak, R.P., Brooke, Jr., P.P., Finstuen, K., & Trounson, J. (1997). Management competencies for medical practice executives: Skills, knowledge and abilities required for the future. *The Journal of Health Administration Education, 15*, 219-239.
- Kohn, L.T., & Donaldson, M.S. (Eds.). (1999) Institute of Medicine. *To err is human: Building a safer health system*. Washington, DC: National Academy Press.
- Mangelsdorff, A.D., Rogers, J.R., Zucker, K.W., Thieschafer, C.L., Hagen, J.P., & Finstuen, K. (1997). Vision 21 Delphi panel: Senior Army medical service corps officers' vision of behaviors for success of future medical service corps officers. *Military Medicine, 162*, 450-452.
- Meadows, A.B., Finstuen, K., & Hudak, R.P. (2003). Pharmacy Executives: Leadership issues and associated skills, knowledge, and abilities in the U.S. Department of Defense. *Journal of the American Pharmacists Association, 43*, 1-7.
- Meadows, A.B., Finstuen, K., Hudak, R.P., Carrillo, J.D., Lawrence, J.B., & Wright, K. (2003). Perception of managerial and administrative competencies of professional pharmacists in

- the U.S. Department of Defense. *Journal of the American Pharmacists Association*, 43, 488-496.
- Meadows, A.B., Maine, L.L., Keyes, E.K., Pearson, K., & Finstuen, K. (2005). Pharmacy executive leadership issues and associated skills, knowledge, and abilities. *Journal of the American Pharmacists Association*, 45, 55-62.
- Number of Uninsured, Poverty Rate Both Climb.* (2004). Retrieved June 1, 2005 from <http://usgovinfo.about.com/od/censusandstatistics/a/censusbadnews.htm>.
- Nunnally, J.C. (1978). *Psychometric Theory, 2nd Edition*. New York: McGraw-Hill.
- Peters, A.D., Dominguez, D.G., & Finstuen, K. (2001). Vision 2005: A forecast of executive leadership skills and associated competencies required by navy dental corps officers into the 21st century. *Navy Medicine*, 92, 10-15.
- Rogers, J.R., Finstuen, K., Mangelsdorff, A.D., & Snyder, G.L. (1999). Executive competencies and skills required by United States Coast Guard health care administrators. *American Academy of Medical Administrators*, 10-15.
- Rowe, G., & Wright, G. (1999). The Delphi technique as a forecasting tool: Issues and analysis. *International Journal of Forecasting*, 15, 353-375.
- Rubenstein, D.A. (2000). Role perceptions of Army hospital DCAs. *Army Medical Department Journal*, 25-32.
- Sentell, J.W., & Finstuen, K. (1998). Executive competencies 21: A forecast of leadership skills and associated competencies required by naval hospital administrators into the 21st century. *Military Medicine*, 163, 3-8.

- Sutto, N, & Knoell, M. (2005). *Executive Competencies of Nurses in the Veterans Health Administration*. Unpublished manuscript, Army-Baylor University Graduate Program in Health and Business Administration, San Antonio, TX.
- Winer, B.J. (1971). *Statistical Principles in Experimental Design*. 2nd Ed. New York: McGraw – Hill.

Appendix 1: Wave I Letter of Introduction

Executive competencies for Navy Health Care Leaders

DELPHI Wave 1

Dear Commanding Officers, Executive Officers, Directors, Executive Staffers, and other Senior Health Care Leaders:

LT Stephen Marty, MSC, USN, a resident in the U.S. Army-Baylor University Graduate Program in Health Administration, is conducting a research study on executive competencies for Navy health care administrators. The purpose of this study is to identify the most critical issues facing Navy health care leaders over the next decade and identify the skills, knowledge, and abilities (SKAs) required to successfully handle these issues.

You were selected to participate in this study because of your extensive experience in the Navy's health care system. The importance of this study cannot be overstated since it will help identify critical issues for the future and will provide valuable information necessary to better train and prepare future Navy health care executives. Additionally, the research results will be shared throughout the DOD health care system.

This study requires you to complete two questionnaires, one over the next two weeks and another over a two-week period beginning in early December. Each survey will take approximately 20 to 25 minutes to complete. After this study is complete you will be sent the final results.

Initial data collection for the study will be collected via the World Wide Web. Please follow the link below in order to begin. When prompted enter GoNavy followed by the password BeatArmy (note: this login/password is case sensitive). Once you are logged onto the site you will receive a brief overview of the study and its design before you are directed to the questionnaire. Please note: THIS IS NOT A SURVEY, but an effective means of assessing the judgment of a group of experts. Your responses will be totally confidential; at no time will individual respondents be identified.

I appreciate your assistance in LT Marty's research and thank you in advance for your participation. If there are any questions or need for clarification, please contact LT Marty at: work: 619-532-5877, cell: 619-865-7426, or via his email at samarty@nmcsd.med.navy.mil.

Very Respectfully,

B. G. BRANNMAN
Rear Admiral (Lower Half)
Senior Health Care Executive
United States Navy
Commander
Naval Medical Center San Diego

To Begin: Please go to www.baylor2006.com and click the Delphi link. Next, click on Navy HCA Competencies. When prompted enter GoNavy followed by the password BeatArmy. Note the login and password are case sensitive.

Appendix 2: Wave I Instructions

Navy Health Care Executive competencies**Background Information**

Health care in the United States and the Department of Defense (DoD) has undergone dramatic changes over the last ten years. Issues surrounding cost, quality, and access to care have led to several new programs and policies in the military health system (MHS) including major changes to TRICARE, a new prospective payment financing system, and a new personnel management system. As the MHS has evolved, it is prudent to speculate that the role of the health care executive has evolved as well.

Objectives

This executive competencies project is being conducted in conjunction with the U.S. Army-Baylor University Graduate Program in Health Care Administration to identify the major issues facing Navy health care executives over the next five to ten years. This research will update the requisite competencies for Navy health care executives and describe the skill, knowledge, and ability (SKA) requirements associated with these competencies. Additionally, this research will attempt to determine if a difference in opinion exists between junior and senior health care executives regarding these executive competencies.

Expert Respondents

Senior Navy health care executives (O-5 and above) were selected as study participants. This group includes officers who are serving or have served as Navy Hospital Commanding Officers, Executive Officers, Directors, Executive Staffers, and other senior health care leaders. Collectively, this group represents over 120 officers with significant executive experience as well as proven records of excellence as health care providers and administrators.

Junior Respondents (second iteration only)

Over 100 junior Navy Medical Service Corps Health Care Administrators (O-3 and below) were selected as study participants.

How Long Will It Take?

It will take approximately 45-60 minutes of total time, over a three-month period to respond to two questionnaires. The first iteration will request short answers to a specific question that is posed. The final iteration will require respondents to complete a questionnaire providing numeric ratings of items. At each round, responses should be submitted to the investigator within two weeks of receiving the email requesting their participation in order for the study to remain on schedule.

Methods

This is not a survey! This study employs the Delphi Method to collect and describe the opinions of expert respondents. Respondents are not required to complete any advanced reading. The RAND Corporation initially developed the Delphi as a means of effectively and efficiently gaining expert group judgments. The Delphi Method solicits the current knowledge of experts through the use of detailed questionnaires. What makes the Delphi unique is the fact that all the data developed is derived from recognized experts therefore the technique is not as susceptible to researcher-induced bias. In addition, the questionnaires are strictly anonymous and filled out individually, thus the technique obtains the opinions of a group of experts but avoids common biases associated with interacting groups.

Individual Utility of Results

Through their participation, senior and junior health care executives will have the opportunity to respond to the collective ideas of recognized experts in their field. More importantly, these officers will play a vital role in updating and identifying the essential competencies necessary for future success as a Navy health care executive. Upon study completion, each participant will receive a summary report of the results.

How Will The Results Be Used?

Compiled results from this study may be used in several ways:

1. Knowledge of these results will better prepare senior health care executives when mentoring junior health care administrators;
2. Junior health care executives can use the results from this study to better prepare themselves for future success;
3. A comparison between senior and junior officer opinions can be used to better understand the relationship between actual experience and education/training.
4. Graduate education and training programs (both military and civilian) can use the results to better train future health care executives;
5. The results from this study can be compared to the results of executive competency studies from other professions;
6. The results will be published in a professional journal to add to the existing body of research regarding executive competencies.

Appendix 3: Wave I Instrument

Executive Career Field Questionnaire #1

Instructions:

First - Specifically, list what you personally consider the **top five** competencies that Navy healthcare executives will encounter in the next five to ten years. Define the competencies as clearly as possible, making sure to avoid generalized or categorical terms.

Second - For each identified issue or problem, list what you consider to be the requisite skills, knowledge, or abilities that will be needed to deal with each of the executive competencies.

Finally - review your answers prior to selecting the submit button at the bottom of this form.

Executive Competencies

Skills, Knowledge, or Abilities

Example: Management of union contractors.	Negotiating, interpersonal relations, communications, computing, forecasting.
1.	
2.	
3.	
4.	
5.	

Appendix 4: Wave II Introduction: Senior Officers

Dear Experts,

Wave I of the Delphi Study entitled: "U.S. Navy Health Care Executive Competencies" is complete. As you may recall, this research seeks to identify the most critical competencies and job skill, knowledge, and ability (SKA) requirements facing Navy health care executives over the next five to ten years. The response rate for Wave I was over 43 percent, a rate that is very reasonable for the Delphi research methodology. I thank everyone for his or her prompt and thorough responses. Results from Wave I are included in the introduction to the Wave II questionnaire.

Regardless of whether you responded during Wave I, I now request that you take a few minutes to complete the Wave II questionnaire. Although this questionnaire is longer than the first one, you will complete it more quickly because the format only requires numerical responses. In order to complete this questionnaire please follow the instructions below:

Log onto www.baylor2006.com
Click on the link that says Delphi
Click on the link that says Navy HCA Competencies
Enter the login id: sawdust
Enter the password: ranch
(note: please leave the domain field blank)

This study is for Commanding Officers, Executive Officers, Directors, Executive Staffers, and other Senior Health Care Leaders, please do not forward this study to any other personnel. Thank you for your participation. Your efforts in this project may help benchmark the direction of executive skill education in the Navy's medical department for the next decade.

Should anyone have any comments, recommendations, or questions, please respond to this email or call me at 619-865-7426. Once again, thank you for your valuable time.

Very Respectfully,
LT Stephen A. Marty

LT Stephen A. Marty, MSC, USN, CHE
Army-Baylor HCA Resident
Naval Medical Center San Diego
Department of Health Care Operations and Planning
email:samarty@nmcsd.med.navy.mil
wk: 619-532-5352
cell: 619-865-7426
fax: 619-532-5353

Appendix 5: Wave II Introduction: Junior Officers

Dear Health Care Executives,

As current leaders in the Navy health care administration (HCA) community, I would like to invite you to participate in an ongoing study entitled "Navy Health Care Executive Competencies". The purpose of this study is to identify the major issues facing Navy health care executives over the next five to ten years. This research will update the requisite competencies for Navy health care executives and describe the skill, knowledge, and ability (SKA) requirements associated with these competencies. Additionally, this research will attempt to determine if a difference in opinion exists between junior and senior health care executives regarding these executive competencies.

This research study is endorsed by the Director of the Navy Medical Service Corps (MSC), RDML B.G. Brannman and is being conducted in collaboration with qualified researchers from the U.S. Army-Baylor University Graduate Program in Health Care Administration. The first portion of this study (Wave I) is already complete. During this initial wave 133 senior health care executives (O-5 and above) were asked to identify the most critical competencies and describe the job skill, knowledge, and ability requirements facing Navy health care executives over the next five to ten years. Results from this initial wave are located on the website mentioned below.

Please take a few minutes of your time to complete the Delphi Wave II questionnaire. The research results will be shared with you in the future. In order to complete this questionnaire please follow the instructions below:

Log onto www.baylor2006.com
Click on the link that says Delphi
Click on the link that says Navy HCA Competencies
Enter the login id: jamboree
Enter the password: rubicon
(note: please leave the domain field blank)

Your responses in this study will be confidential. At no time will individual responses be identified. Please do not forward this study to any other personnel. Thank you for your participation. Your efforts in this project may help benchmark the direction of executive skill education in the Navy's medical department for the next decade. Should anyone have any comments, recommendations, or questions, please respond to this email or call me at 619-865-7426. Once again, thank you for your valuable time.

Very Respectfully,
LT Stephen A. Marty, MSC, USN, CHE
Army-Baylor HCA Resident
Naval Medical Center San Diego
Department of Health Care Operations and Planning
email:samarty@nmcsd.med.navy.mil
wk: 619-532-5352
cell: 619-865-7426
fax: 619-532-5353

Appendix 6: Wave II Instrument

U.S. Navy Health Care Executive Competencies-Initiation of Wave II

Because of your position as a health care executive, you have been invited as a participant in an exciting research study. This research seeks to identify the most critical competencies and describe the job skill, knowledge, and ability requirements facing Navy health care executives over the next five to ten years.

This study uses the Delphi Method. The Delphi Method is an effective means of assessing the judgments of a group of experts. Wave I of the study was sent out in October 2005 and the response rate was approximately 43 percent. An expert panel of senior health care executives then analyzed and categorized like kinds of key competencies together into groups. These groups are called 'Domains' in this study. Additionally, the expert panel assigned a title to each Domain that best represented the issues contained in that Domain.

Wave II of this study gives respondents the opportunity to rate skill, knowledge, and ability items that were generated from Wave I. Please be assured that confidentiality of your responses will be maintained throughout the study.

The tables on the next page summarize the responses that were provided in Wave I after the expert panel analyzed and categorized all of the responses. You should find this information interesting and insightful because all of the responses were generated from practicing health care executives in the field – just like you. Please feel free to print the tables and refer to them as needed in your daily practice.

Please take the time to complete the following questionnaire. It should take approximately 20 minutes to complete. **You may participate in this wave of the study even if you did not respond during Wave I.**

Thank you in advance for your time and insight!

Part 1 – Domain Overview

Domain	Total Competencies	Unique Domain Issues
I. Essential Resources	103	24
II. Leadership	71	30
III. Environmental Analysis	42	14
IV. Knowledge/Experience Requirements	37	14
V. Execution	23	15
VI. Outcomes	4	2
Totals	280	99

Part 2 – Detailed View of Domains

I. Essential Resources (24 Unique Competencies)			
Business Management	23*	Maximizing Technology	2
Personnel Management	18	21 st Century Enterprise Technology	1
Resource Management	8	21 st Century Performance Metrics	1
Staff Management	8	Facilities	1
Budgeting	6	Integration with the Civilian Sector	1
Contracting	6	Military to Civilian Job Conversion	1
Data Management/Manipulation	5	Negotiation	1
Integration with Other Services	5	Non-Federal Health Care Networking	1
Recruit and Retain	5	Operational Planner	1
Deliver Health Care to Beneficiaries	2	Risk Management	1
Information Management	2	Resource Sharing	1
Information Technology Solutions	2	Volunteerism	1

* 23 represents there were 23 responses that were grouped by the researcher into "Business Management" as a unique competency.

Part 2 – Detailed View of Domains (continued)

II. Leadership (30 Unique Competencies)

General Leadership	15*	Distinguish Leaders vs. Managers	1
Communication	12	Effective Public Speaking	1
Legal Issues	5	Emotional Intelligence	1
Mentoring	5	Establish Responsibilities	1
Interpersonal Relationships	3	Focus on “Main Thing”	1
Delegating	2	Individual and Org. Behavior	1
Leading Teams	2	Integrity	1
Navy Core Values	2	Leadership Experience	1
Organizational Leadership	2	Managing Community Relationships	1
Political Savvy	2	Managing Diverse Teams	1
Role Model	2	Morale	1
Ability to Take Risks	1	Patient Centered Leadership	1
Concern for Subordinates	1	Professional Maturity	1
Create a Performance Environment	1	Superior Judgment	1
Creativity	1	Understand Yourself	1

* 15 represents there were 15 responses that were grouped by the researcher into “General Leadership” as a unique competency.

III. Environmental Analysis (14 Unique Competencies)

Change Management	13*	Information Management Strategies	1
Strategic Planning	8	Interoperability	1
Readiness	5	Knowledge Management	1
Mission	4	Operational Unit Augmentation	1
Decision Making	2	Quantitative Analysis	1
Vision	2	Support GWOT	1
Homeland Security	1	Transition to Joint Medical System	1

* 13 represents there were 13 responses that were grouped by the researcher into “Change Management” as a unique competency.

Part 2 – Detailed View of Domains (continued)

IV. Knowledge/Experience Requirements (14 Unique Competencies)			
Operational Experience/Understanding	10*	Acquisitions/Contracting	1
Understanding Business	9	Automated Health System Information	1
Understanding TRICARE	3	Familiarization with Civilian Health Care and Other Government Systems	1
Current Events/Trends	2	Masters Level Education	1
Understanding Mission Requirements	2	Organizations	1
Understanding JACHO	2	Understanding Clinical Delivery	1
Joint Operations Environment	2	Understanding Technology	1
* 10 represents there were 10 responses that were grouped by the researcher into “Operational Experience/Understanding” as a unique competency.			

V. Execution (15 Unique Competencies)			
Achieving Quality/Efficiencies	3*	Managing Deployable Assets	1
Clinical Practice Guidelines	3	Marketing	1
Cost Control	3	Maximizing Clinical Productivity	1
Managing Hospital/Clinical Operations	2	Measuring Health System Performance	1
Managed Care	2	Monitor Systems Effectiveness	1
Balancing Priorities	1	Public Affairs	1
Clinical Treatment to Health Productivity Models	1	Visionary Problem Solving	1
Create Effective Surge Capabilities	1		
* 3 represents there were 3 responses that were grouped by the researcher into “Achieving Quality/Efficiencies” as a unique competency.			

VI. Outcomes (2 Unique Competencies)			
Emergency Management	3	Population Health	1
* 3 represents there were 3 responses that were grouped by the researcher into “Emergency Management” as a unique competency.			

Wave II Questionnaire

<p>Please take a minute to complete the following items. Fill in the blanks or mark as appropriate. Thank you!</p>
<p>Demographics:</p> <p>Age: years (please enter number of years in the box)</p> <p>Gender: M F</p> <p>Practice setting: Large Training, Small CONUS, Community Clinic, OCONUS</p> <p>Job Title/Position: CO, XO, DFA, OIC</p> <p>Corps: MSC-HCA, MSC Provider, MC, NC, DC</p>
<p>Education: (check all that apply)</p> <p>Professional Degree Bachelors Degree Master's Degree Doctorate Degree</p> <p>Other</p>
<p>Experience:</p> <p>Experience as a health care executive: years (please enter number of years in the box)</p> <p>Experience in current position: years (please enter number of years in the box)</p> <p>Member of ACHE, MGMA, AAMA, Other</p> <p>IF member of ACHE, what is your affiliation status: Associate, Diplomate, Fellow</p>
<p>***Use this space for any additional comments you may want to share***</p>

Domain VI – Outcomes

VI. Outcomes (2 Unique Competencies)

Emergency Management	3	Population Health	1
----------------------	---	-------------------	---

* 3 represents there were 3 responses that were grouped by the researcher into "Emergency Management" as a unique competency.

Skills, Knowledge, and Abilities Rating Scale

Directions - Please rate all of the following skills, knowledge, and abilities items according to the importance that should be placed on them in dealing with types of competencies listed above. Indicate your answers by marking the appropriate box. Take care to not mark multiple boxes per rating item.

	<i>Extremely</i>						
	Unimportant			---	Important		
	1	2	3	4	5	6	7
1. Knowledge of command, county, state, and federal disaster preparedness requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Knowledge of the concept and benefit of population health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

End of Wave II questionnaire

Please review your responses to make sure that you have rated each item only once and have rated all items. Thank you very much for your time and consideration.

28 April 06

From: CAPT Ann Bobeck, MSC, USN, Director Naval Medical
Center San Diego Department of Health Care
Operations and Planning
To: Renee Pryor, Education Technician, US Army-Baylor
Graduate Degree Program in Health Care
Administration
Subj: GRADUATE MANAGEMENT PROJECT ICO LT STEPHEN A.
MARTY, MSC, USN
Ref: (a) 2005-2006 U.S. Army-Baylor Residency Manual

1. Per reference (a), subject report is approved for LT
Stephen A. Marty, administrative resident, Naval Medical
Center San Diego.


CAPT ANN BOBECK, MSC, USN

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE (DD-MM-YYYY) 04-04-2006		2. REPORT TYPE Final Report		3. DATES COVERED (From - To) July 2005 to July 2006	
4. TITLE AND SUBTITLE Navy Executive Competencies HEALTH CARE				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Stephen A. Marty, LT, USN				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Medical Center San Diego 34800 Bob Wilson Drive San Diego CA, 92134				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) US Army Department Center and School BLDG 2841 MCCS-HFB (Army Baylor Program in Health and Business Administration) 3151 Scott Road, Suite 1411 Fort Sam Houston, TX 78234-6135				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) 32-06	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT The purpose of this paper is to update the core competencies and associated skills, knowledge, and abilities (SKAs) required by Navy health care executives. Three waves of the Delphi technique were employed. In Wave I, senior Navy health care executives identified the five most important competencies and their associated SKAs believed to be required for Navy health care executives over the next decade. An expert panel of senior health care executives reviewed and sorted the identified competencies from Wave I into six domain categories and gave each domain an appropriate title. From the expert analysis, the researcher developed a questionnaire for use in Delphi waves II and III. In Wave II, senior executives from Wave I rated the competencies from each domain. During Wave III, junior Navy health care executives completed the same questionnaire given to the senior executives. Results indicated that competencies surrounding interpersonal skills and understanding the environment emerged as most critical for Navy health care executives into the next decade. In addition, statistically significant differences in opinions emerged between groups and among 20 of the 100 individual SKAs rated indicating that senior and junior health care executives have very real differences in opinion regarding required executive skills.					
15. SUBJECT TERMS Executive Skills, Health Care Management Education, Delphi Study					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 70	19a. NAME OF RESPONSIBLE PERSON
a. REPORT U	b. ABSTRACT U	c. THIS PAGE U			19b. TELEPHONE NUMBER (include area code) (210) 221-6443