Military Health Facility Capital Investment Planning

Tuesday April 17, 2012 at 3:00 PM
in
535 Duckering BLD
University of Alaska Fairbanks

You are invited to attend the
Engineering Science Management
Masters Program Final Project
for
Scott Shopa

A look at the Military Medical System’s capital investment decision process and recommendations for reducing costs.
Military Health Facility Capital Investment Planning

Advisor: Dr. Robert Perkins
Committee: Dr. J. Leroy Hulsey, Dr. Robert Perkins, & Keith Whitaker
ESM 684: Masters of Science Degree Project – Spring 2012
Department of Civil and Environmental Engineering
College of Engineering and Mines
University of Alaska - Fairbanks
Why Health Facility Planning?

- Seven Classes directly applied to this material
- This is my profession
- Attempt to employ my studies directly to my next assignment
## Applied Education

### Masters Project
- Design Project Scheduling
- Alternative Project Delivery Systems
- Project Proposals
- Project Management
- Functions for Calculus
- Managing & Leading Engineering Organizations
- Engineering Decisions

### Assignment
- Project Management
- Engineering Decisions
- Pre-Construction Contracts
- Human Resource Management
- Construction Claims
- Construction Related Law Topics
- Leadership/Management (family of Classes)
- Accounting for Managers
Outline

• Problem Statement
• Introduction
• MHS Capital Investment
• Goal
• Planning Process
• Funding Process
• Bid Selection Preparation
• Recommendations
Problem Statement

• The idea behind this project is to explain the process of building a new Army Hospital from the conception of a medical requirement to bid selection.

• What recommendations can be made to improve the selection process?
Introduction

- MHS Capital Investment
- Importance of MHS Capital Investment
- Unique Capital Investment Decision Making
MHS Capital Investment

• Budget outlay by the DoD for the purpose of building new medical facilities or renovating existing outdated facilities
• $250 to $300 million dollar a year budget.
• POM – 2010 work creates the 2012-2017
• BES – 2012 and 2013 the stable submissions
• Execution – Large MILCON requires 2 years
MHS Capital Investment

Execution Performance

Congressional Mark-up Current Budget

P O M

OSD

Decision Support Process

Refine Requirements and Missions (Transfers In / Out)

Budget Guidance

Budget Estimate Submission (BES)
Importance of MHS Capital Investment

- *Kaiserslautern* Military Hospital, located in Germany was built in 1938 by the Nazi government and is still in use as a United States Army Clinic.

- *Irwin Army Community Hospital*, Fort Riley, Kansas was designed in the 1930s; construction began in 1947 and has been in operation since 1952.

- *Tripler Army Medical Center* located in Hawaii, was completed in 1949 and is designated as a historic building, which the military is still using.
Soldiers Face Neglect, Frustration At Army's Top Medical Facility

By Dana Priest and Anne Hull
Washington Post Staff Writers
Sunday, February 18, 2007

Behind the door of Army Spec. Jeremy Duncan's room, part of the wall is torn and hangs in the air, weighted down with black mold. When the wounded combat engineer stands in his shower and looks up, he can see the bathtub on the floor above through a rotted hole. The entire building, constructed between the world wars, often smells like greasy carry-out. Signs of neglect are everywhere: mouse droppings, belly-up cockroaches, stained carpets, cheap mattresses.

This is the world of Building 18, not the kind of place...
Unique Considerations

• Unique and complex
• Agenda and cost
• Multi-functional
• News worthy
• Special Management
Unique Capital Investment Decision Making

Military Medical Hierarchy
- President
- Congress
- OSD ASD(HA)
  - Office of Portfolio Planning and Management
- Services
  - Service Surgeon Generals
  - Health Facility Planning Staffs
  - Regional Generals
  - Installation Medical Leadership

VA Medical Hierarchy
- President
- Congress
- Veterans Administration VHA
- Veterans Integrated Service Networks
- Medical Centers

Kaiser Permanente
- Board of Directors
- President
- Senior VP Hospital Strategy and National Facilities
  - Finance
  - Capital Projects

Managing & Leading Engineering Organizations
Sequential Military Capital Investment Process

- Regional Requirement Generation
- Army MEDCOM Master Planning
- Army MILCON scoring process
- MHS MILCON Scoring Process
- MHS Program Objective Memorandum*

*Program Objective Memorandum is the MHS budget document recommended for inclusion in the President’s Budget. Although it is a recommendation document, it is almost always accepted as part of the president’s plan recommended to and approved by Congress and signed into law by the President.
Planning

• Historic Process

• The 2008 Stimulus fully funded two Army hospitals:
  – Fort Benning, Georgia ($507M)
  – Fort Riley, Kansas ($404M)

• The 2009 ARRA legislation fully funded the $931M dollar Fort Hood hospital in Texas.

• Regional Requirements Generation
Current Planning

Goal is to merge quantifiable data with leadership objectives.

- **Population Analysis** defines the population using MHS services and determines to the extent to which primary verses specialty care is relied upon.

- **Workload Analysis** contrasts historical utilization records with normal workload attributed to the population.

- **Provider Analysis** determines the number and composition of medical providers and recommends the optimal building configurations.

- **Space Analysis** combines workload and staffing forecasts with identified required spaces. This analysis utilizes defining characteristics to determine the sizing of rooms based upon the medical purpose.
Current Planning
The Master Planning Process

Health Care Market Analysis:
- Mission
- Market Assessment
- Business Plan
- Population (RAPS)
- Workcad (MEPRS/CHCS)
- Staffing (TDA)
- Enrollment (MCFAS)
- Utilization (M2)
- Provider Requirements
  - Volume Thresholds
  - Optimization
  - Functional Alignment
- Capacity Analysis
  - Space Program
  - Functional Options

Data Collection

Demand Analysis

Planning Scenarios

Space Requirements Forecast

Research Market Analysis:
- Mission
- Business Plan
- Bio-Safety Levels
- Research Population
- Animal Population
- Research Focus
- Equipment-driven Space
- Animal Models
- Utilization
- Throughputs
- Protocol Durations
- Researcher Requirements
  - Phasing
  - Optimization
  - Functional Alignment
- Capacity Analysis
  - Space Program
  - Functional Options

Facilities Data

Site Assessment

Alternate Business Scenarios

Facility Planning & Development

Site/Facility/Capacity Analysis:
- Space Utilization
- Capacity Analysis
- Architectural CADD Drawings
- Site Drawings
- List of Current Projects
- Historical Background
- Cost Option Studies
- Constraints & Opportunities
- Existing Program Capacities
- Photographs
- Site and Accessibility Info
- Infrastructure Assessment
- Engineering Systems
  - Architectural
  - Engineering
  - Systems
  - Equipment
  - ATP/P

FY 2007 Business Plans must contain statement indicating whether available space is sufficient, will increase or decrease, or must be modified to accommodate the mission.

Functional Business Analysis
- Alternative Solution and Cost Analysis

Functional Options Development
- Optional Cost and ROI Analysis
- Business Plan Modification Analysis
Leadership Objectives

- Sustain the force through recruiting and retention
- Prepare troops for success in the current conflict
- Reset the force to prepare for deployments and contingencies
- Transform the Army

<table>
<thead>
<tr>
<th>End-Strength</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>FY13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Army</td>
<td>482,400</td>
<td>489,400</td>
<td>532,400</td>
<td>547,400</td>
</tr>
<tr>
<td>Army National Guard</td>
<td>350,000</td>
<td>351,300</td>
<td>352,600</td>
<td>358,200</td>
</tr>
<tr>
<td>Army Reserve</td>
<td>200,000</td>
<td>205,000</td>
<td>205,000</td>
<td>206,000</td>
</tr>
</tbody>
</table>

Organizational Behavior in Project Management
Transformation

• **Grow the Force** mandated the Army grow from a standing personnel strength of 487K to nearly 550K with a temporarily increased end strength of 580K, which is supposed to have ended by 2012.

• **Brigade Combat** Team re-stationing efforts culminated with highest populations at Fort Bliss, Texas; White Sands Missile Range, New Mexico; Fort Carson, Colorado and Fort Stewart, Georgia. This was a shift of nearly 20K soldiers and nearly 60K family members.

• **Combat Service/Combat Service Support** unit population changes created re-stationing efforts which shifted approximately 20K soldiers to new military installations.

• **Army Modular Force (AMF)** was the redesign of the Army force structure for the purpose of creating smaller stand-alone brigade size formations that could accomplish tasks similar to that of the large Army division formations. The end state of this transformation would build a total of 76 Combat Brigades (48 AC/28 RC) and over 200 Support Brigades and shift soldier basing around the world.

• **Global Defense Posture Realignment (GDPR)** was designed to decrease the Army’s world-wide presence overseas. The end-state was to shift soldiers from forward deployed locations in South Korea and Germany back to installations within the continental United States.
Why Numbers matter...

<table>
<thead>
<tr>
<th>Base</th>
<th>Category</th>
<th>FY2003</th>
<th>FY2013</th>
<th>DELTA FY03- FY13</th>
<th>CURRENT COP TOTAL AD AT INSTALLATION 06 MAR 08</th>
<th>COP TOTAL AD DELTA AT INSTALLATION 31 OCT 07</th>
<th>DELTA BETWEEN CURRENT COP AND 31 OCT 07 COP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation Name</td>
<td>Army Military</td>
<td>10769</td>
<td>18262</td>
<td>7493</td>
<td>7499</td>
<td>7073</td>
<td>426</td>
</tr>
<tr>
<td></td>
<td>PCS Students Military</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Military</td>
<td>443</td>
<td>559</td>
<td>116</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TDY Students and Trainees Military</td>
<td>26</td>
<td>114</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transient and Rotational Military</td>
<td>0</td>
<td>33</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL 06 MAR 08 COP</td>
<td>11,308</td>
<td>18,807</td>
<td>7499</td>
<td>7499</td>
<td>7073</td>
<td>426</td>
</tr>
<tr>
<td></td>
<td>TOTAL 31 OCT 07 COP</td>
<td>11,308</td>
<td>18,381</td>
<td>7073</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DELTA</td>
<td>0</td>
<td>426</td>
<td>426</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Provider Specialty</th>
<th>AD Population Allocation</th>
<th>Defining Characteristics</th>
<th>SF per Defining Characteristic/Support Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Care</td>
<td>500</td>
<td>2 Exam Rooms</td>
<td>1,170</td>
</tr>
<tr>
<td>Behavioral Health</td>
<td>700</td>
<td>Exam Room/Office</td>
<td>480</td>
</tr>
<tr>
<td>Labor and Delivery</td>
<td>5,000</td>
<td>1 LDR</td>
<td>1,465</td>
</tr>
<tr>
<td>Post Partum</td>
<td>5,000</td>
<td>3 PP Beds</td>
<td>1,200</td>
</tr>
</tbody>
</table>

*Population trigger is AD only. Defining characteristic thresholds include ADFMs, as well, using a 1.5 rate and 90% enrollment ratio*

Changes in soldier populations required adjustments to many of the Army’s medical facilities. COP changes supported the generation of requirements associated with medical facilities.

Engineering Decisions
### Population-Based Planning: Dental Defining Characteristics

<table>
<thead>
<tr>
<th>Provider Specialty</th>
<th>Population Allocation</th>
<th>Fill Rate</th>
<th>DTRs per Provider</th>
<th>SF per Defining Characteristic/Support Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>General/Comprehensive Dentist</td>
<td>800</td>
<td>89%</td>
<td>2</td>
<td>740</td>
</tr>
<tr>
<td>Periodontist</td>
<td>8,000</td>
<td>57%</td>
<td>2</td>
<td>740</td>
</tr>
<tr>
<td>Endodontist</td>
<td>12,000</td>
<td>77%</td>
<td>2</td>
<td>740</td>
</tr>
<tr>
<td>Prosthodontist</td>
<td>10,000</td>
<td>82%</td>
<td>2</td>
<td>740</td>
</tr>
<tr>
<td>Orthodontist: GME Sites Only</td>
<td>15,000</td>
<td>99%</td>
<td>3</td>
<td>1,110</td>
</tr>
<tr>
<td>Oral/Maxillofacial Surgeon</td>
<td>5,000</td>
<td>57%</td>
<td>2</td>
<td>740</td>
</tr>
<tr>
<td>Commander</td>
<td>N/A</td>
<td>100%</td>
<td>1</td>
<td>370</td>
</tr>
<tr>
<td>Hygienist</td>
<td>1,200</td>
<td>99%</td>
<td>1</td>
<td>370</td>
</tr>
</tbody>
</table>

**Sources:** Dental Automated Staffing Model (DENASAM), DoD Space Planning Criteria

*DTRs = Dental Treatment Rooms*
Dental Treatment Rooms

Assumptions: AD Care only; Source: HFPA Model
Sensitivity

Primary Care

Dental

Behavioral Health

Labor & Delivery

Med/Surg

Most Sensitive

Least Sensitive
Army Scoring

Capital Investment Proposal (CIP) Overview

Army Metrics, Scoring and Alternative Weighting

- Planning Data
- Leadership Objectives
- Transformation
- MILCON Criteria

Accepted as a decision making system for Army MILCON by TSG April 2010

Union Intersection Theory:

Project Management Functions for Calculus
Army Medical MILCON Scoring

Purpose:

**Determine Top Three Army Projects**

Four CIPs Emerge Based on Weight Set Analysis:
- Fort Shafter/TAMC Add/Alt ($1.4B)
- Fort Irwin Hospital Replacement ($274M)
- Fort Knox Hospital Replacement ($481M)
- PHC (C) Laboratory Replacement ($173M)

**Mission Weight Recommended**

“World Class Healthcare can be delivered in a broom closet.” attributed to TSG in a facility discussion with COL Bond.
MHS Preparation

Pre-CIRB Validation Template:

- 3 page CIP Template: includes the required data fields directly associated with the CIDM.

- Department Level Program for Design: The early design concept.

- Characteristics document (# ORs, # Beds, etc.).


- Quad Chart: A single page representation of the project. Below is the Fort Irwin CIP Quad Chart.

![Quad Chart Image]
Weed Army Community Hospital Replacement
Fort Irwin, CA
PA $326M FY12

Description
- TOTAL PROJECT: 212,409 GSF Replacement Hospital; 10K GSF Alterations to existing Mary Walker outpatient clinic
- Design Status: 0%; DBB
- Construction Award: MAR 2012
- Beneficial Occupancy: MAR 2015
- Acquisition Method: DBB
- Major Initiative: Defense Health Program

Drivers
- 41 year old hospital does not meet California seismic requirements and is not functionally aligned for modern health care delivery
- Obsolete spaces, such as semi-private and quadruple inpatient rooms and undersized operating rooms, pose patient care challenges and risks
- Hospital alteration not feasible because of anti-terrorism / force protection requirements and costs associated with complete seismic retrofit
- Outpatient clinic alteration takes advantage of newer infrastructure by reusing space within Mary Walker clinic
- Remote Army installation where the nearest civilian community hospital is one hour away, and tertiary care medical center more than two hours away

Population/Enrolled Beneficiaries
- Fort Irwin’s Soldier and Family Member enrollment is projected to increase by 5% from FY 08 to FY 15. End state enrollment is projected at 12,000
- In addition to enrollees, the hospital supports an average daily population of approximately 5,000 Soldiers engaged in high risk training exercises at the National Training Center
Demographics:
Weed Army Community Hospital on Fort Irwin provides general and limited specialty care for inpatients and outpatients. Using the Managed Care Forecasting and Analysis System (MCFAS), which produces population projections based upon zip code demographics, the following is projected through fiscal year (FY) 2013:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Duty</td>
<td>5,227</td>
<td>37%</td>
</tr>
<tr>
<td>Active Duty Family Members</td>
<td>6,912</td>
<td>49%</td>
</tr>
<tr>
<td>Retirees/ Retiree Family Members</td>
<td>1,489</td>
<td>10%</td>
</tr>
<tr>
<td>R65+/ Medicare Eligible</td>
<td>608</td>
<td>4%</td>
</tr>
<tr>
<td>Military Community Population</td>
<td>14,235</td>
<td></td>
</tr>
</tbody>
</table>

Monthly Rotation of NTC soldiers: 5,000
Total number of medically supported personnel: 19,235

Staffing Forecast:
Staffing analyses of work time rates are linked to specific medical specialties recorded from historic service levels. The following are applicable to Fort Irwin’s current level of service:

- Available clinic hours per day: 6 to 7 hours
- Available clinic days per week: 3 to 5 days
- Available procedure days per week: .5 to 2 days
- Available weeks per year: 41.2 weeks
- Average visits per hour: 1 to 3 visits
- Average provider visits per year: 1,236 to 4,326

Facility Master Plan Update Final: June 2005. Weed Army Community Hospital, Fort Irwin California, prepared by the Smithgroup and The Innova Group
## Capital Investment Decision Model:

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>SUB-CRITERIA</th>
<th>SOURCE FOR CRITERIA EVALUATION</th>
<th>EVALUATION SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic Alignment</strong></td>
<td>Mission/Scope Change</td>
<td>From Template: 2a Mission Change Qualitative review by CIRB of the detailed statement documented in CIP-Executive Summary Judgment to be made by CIRB</td>
<td>CIRB member assessment</td>
</tr>
<tr>
<td></td>
<td>Service/TMA Priorities</td>
<td>Data call: To be provided by Services as a data call separate from templates or proposals, can be almost instantaneously entered into Decision Lens at time of final review</td>
<td>Decision lens import Priority # 1 = 100 Priority # 2 = 80 Priority # 3 = 60 Priority # &gt; 3 = 0</td>
</tr>
<tr>
<td><strong>Location Constraint</strong></td>
<td>Location Constraint</td>
<td>From CIP 1a: Location Constraints - Narrative describing the impact of location on the ability to provide care needed by the population</td>
<td>CIRB member assessment</td>
</tr>
<tr>
<td><strong>Effectiveness of Infrastructure</strong></td>
<td>Weighted Square Footage Improvement</td>
<td>From PCV Team’s Spreadsheet (April 5th Meeting)</td>
<td>Decision lens imports &gt; 50 years = 1.0 41 - 49 years = .75 31 - 40 years = .50 15 - 30 years = .25 &lt; 15 years = 0</td>
</tr>
<tr>
<td></td>
<td>% Reduction in Square Footage</td>
<td>From Template: Calculation made, Section 4 Table (Existing compared to Planned GSF)</td>
<td>Decision lens imports ≥ 50% = 1.0 35 - 49% = .8 15 - 34% = .6 6 - 14% = .3 &lt; 5% = 0</td>
</tr>
<tr>
<td><strong>Collaborative Synergies</strong></td>
<td>Collaborative Synergies</td>
<td>From PCV Team’s Spreadsheet (April 18th Meeting)</td>
<td>Decision lens import None = 0% Low = 33% Medium = 66.6% High = 100%</td>
</tr>
<tr>
<td><strong>Life, Health or Safety Threatening Deficiency</strong></td>
<td>Life, Health or Safety Threatening Deficiency</td>
<td>From CIP narrative question IV</td>
<td>Decision lens import YES = 100% NO = 0</td>
</tr>
<tr>
<td><strong>Qualitative assessment</strong></td>
<td></td>
<td>From review of all CIP, QUAD chart, 1391, PFD, and PCVT.</td>
<td>CIRB member assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quartile Ranking 1-4 1 = 100 2-75 3 = 50 4 = 25</td>
</tr>
</tbody>
</table>
### Planning Costs

**Supporting CIDM Costs Millions More Than before 2007.**

<table>
<thead>
<tr>
<th></th>
<th>Pre-CIDM Cost Outlay</th>
<th>CIDM Cost Outlay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Army</td>
<td>Internally Driven - $0</td>
<td>Approx: $9M</td>
</tr>
<tr>
<td>Navy</td>
<td>Internally Driven - $0</td>
<td>Approx: $2M</td>
</tr>
<tr>
<td>Air Force</td>
<td>Internally Driven - $0</td>
<td>Approx: $7M</td>
</tr>
<tr>
<td>ASD (HA)</td>
<td>Technical Support - $500K</td>
<td>Approx: $3M</td>
</tr>
<tr>
<td>CIDM</td>
<td>No CIDM</td>
<td>Approx: $500K</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>$500K</td>
<td><strong>$21.5 M</strong></td>
</tr>
</tbody>
</table>

Note: These costs are approximations based upon personal memories. Appropriate reference material is not available at this time.

- Contracted Design Firms
- Travel Schedules
- Meeting Locations/Facilitators
- Packaging
- System Development

![Cost Graph](image-url)
### Army – MHS Score Cards

<table>
<thead>
<tr>
<th>Army Scoring Criteria</th>
<th>Aligned Criteria</th>
<th>MHS Scoring Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>1</td>
<td>Service/TMA Priorities</td>
</tr>
<tr>
<td>Demand Imbalance</td>
<td>2</td>
<td>Mission Scope Change</td>
</tr>
<tr>
<td>Remote Network</td>
<td>3</td>
<td>Location Constraint</td>
</tr>
<tr>
<td>Facility Condition</td>
<td>4</td>
<td>Weighted Square Foot Age Improvement</td>
</tr>
<tr>
<td>Facility Age</td>
<td>5</td>
<td>Collaborative Synergies</td>
</tr>
<tr>
<td>VA Collaboration</td>
<td>6</td>
<td>Life, Health or Safety Threatening Deficiency</td>
</tr>
<tr>
<td>Life &amp; Patient Safety</td>
<td>7</td>
<td>Qualitative Assessment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mission Criteria</th>
<th>Non-Aligned Criteria</th>
<th>Qualitative Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td></td>
<td>Percent Reduction in Square Footage</td>
</tr>
<tr>
<td>Capacity Concerns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMEDD Utilization</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:**

Let say $10 per Criteria

- 20 Criteria, $10 \times 20 = $200
- 8 Criteria, $10 \times 8 = $80
How to shorten the execution period?
Project Schedule
Reviewed to look for time savings...

Reduce the time to build; can’t because CP in the CIRB
After CIDM

• DD form 1391
• How to save time and money?
  – Evidence Based Design (EBD) - Savings?
  – Acquisition Method
    • Cost savings
    • Time/Cost savings
  – Adjusted Construction Costs
    • $326M, $274M to ???

<table>
<thead>
<tr>
<th>Future Value</th>
<th>Systematic Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10.3 Million</td>
<td>$605 Thousand</td>
</tr>
<tr>
<td>18 year investment</td>
<td>18 years of annual payments</td>
</tr>
<tr>
<td>5%</td>
<td>5.87%</td>
</tr>
<tr>
<td>$24 Million</td>
<td>$10.3 Million</td>
</tr>
</tbody>
</table>

USGBC began in 1993 and is a non-profit trade organization that promotes sustainability in how buildings are designed, built, and operated. USGBC is best known for the development of the Leadership in Energy and Environmental Design (LEED)

Will the new project save $605K annually or will $24M of energy be used for this facility?
Evidence Based Design (EBD)

• $6 Million for the Fort Irwin Project

About The Center for Health Design - 2009
The Center for Health Design (CHD) is a nonprofit organization that engages and supports professionals and organizations in the healthcare, construction, and design industry to improve the quality of healthcare facilities and create new environments for healthy aging. CHD’s mission is to transform healthcare environments for a healthier, safer world through design research, education, and advocacy.

Criteria not as defined as LEED - http://www.healthdesign.org/

• Would the design team not design a project with Evidence Based Design criteria?
Acquisition Strategy

**Cost Difference**

<table>
<thead>
<tr>
<th>Cost Savings</th>
<th>DBB</th>
<th>DB</th>
</tr>
</thead>
<tbody>
<tr>
<td>300,000,000</td>
<td>300,000,000</td>
<td></td>
</tr>
<tr>
<td>339000000</td>
<td>321000000</td>
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<td><strong>180000000</strong></td>
<td><strong>Clinic Price</strong></td>
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**Price Escalation 7%**

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- **DBB**
  - 13% standard design cost
  - 2 bid selection phases

- **DB**
  - 6% standard design cost
  - 1 bid selection phase

*CMAR is not presented because no MHS cost guidance has been published; but some saving in time compared to DBB would be expected.*

MHS Determine Funding Efforts

- Diversify Funding
- Determine where MHS wants to invest...
  - Hospitals (score best)
  - Clinics (higher value for cost)
  - Dental (higher value for cost)
  - Laboratories (very rare)
  - Other
- Compete like projects
Matching Workload with Funding

- Not a perfect metric
- Population Distribution
- Different Standards of Care
- Different Risks – War Footing vs Peace Time

- Politics/Competition
- Acquisition Strategy
- Delays
- Centralized Decision making

One third shares

- Army
- Navy
- Air Force

Work load share

- Army
- Navy
- Air Force

Hard to quantify
Plus politics
Summary

- Walter Reed started significant oversight
- Little difference in funding $200M to $300M

Recommend
- Reduce Time to build - (prevent price escalation)
- Practice Design Build - (higher risk of claims)
- MHS to determine platform funding efforts
- Match workload with funding - $21M/POM year
Questions