IDA

INSTITUTE FOR DEFENSE ANALYSES

Medical Requirements and Deployments

Brandon Gould

June 2013

IDA Document NS D-4919
Log: H 13-000720

INSTITUTE FOR DEFENSE ANALYSES
4850 Mark Center Drive
Alexandria, Virginia 22311-1882

The Institute for Defense Analyses is a non-profit corporation that operates three federally funded research and development centers to provide objective analyses of national security issues, particularly those requiring scientific and technical expertise, and conduct related research on other national challenges.

About this Publication
The views, opinions, and findings should not be construed as representing the official position of either the Department of Defense or the sponsoring organization.

INSTITUTE FOR DEFENSE ANALYSES

IDA Document NS D-4919

Medical Requirements and Deployments

Brandon Gould

IDA

Medical Requirements and Deployments

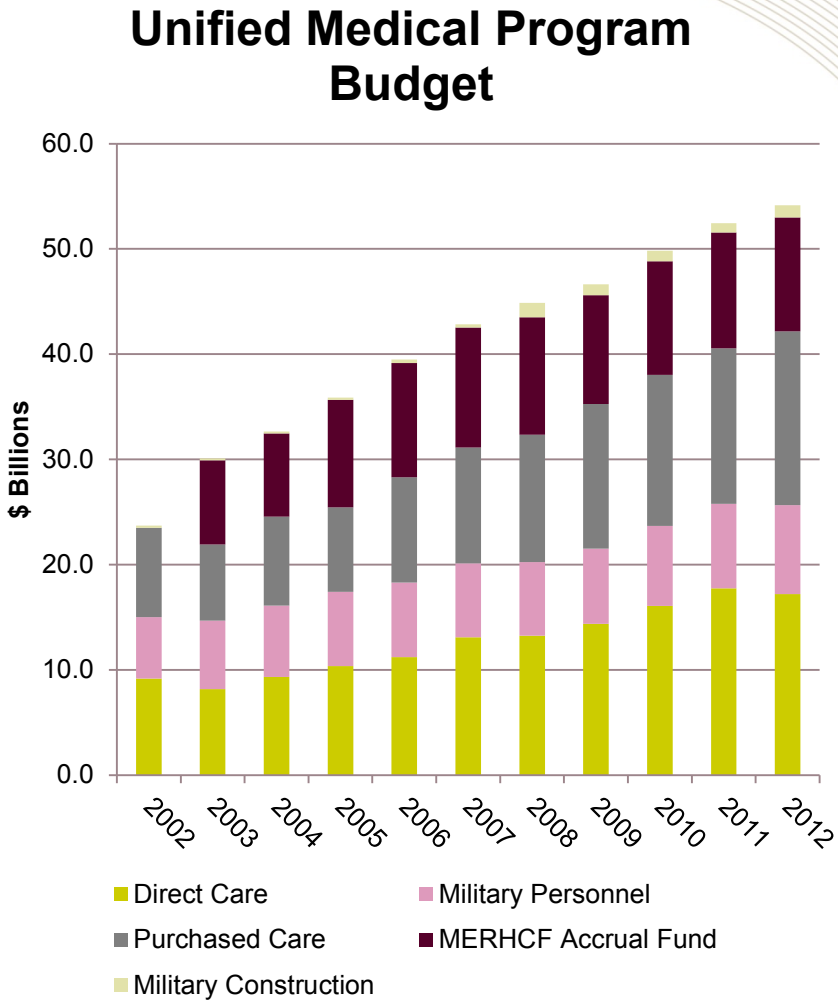
Brandon Gould

2013 WEAI Conference

- **Introduction**
- Total Medical Requirements and Lessons Learned
- Military Essentiality of Medical Requirements
- Specialty Mix of Medical Force
- Conclusion

IDA | Motivation: Medical Cost Growth

- Budget pressure is increasing and medical costs are one of the largest (and fastest growing) components of the defense budget.
- Controlling medical costs (level and growth) requires addressing causes:
  - Demand, e.g., benefit design and total force mix decisions.
  - Supply, e.g., the efficiency with which care is delivered.
- Total medical force management is an element of improving the efficiency of care delivery.



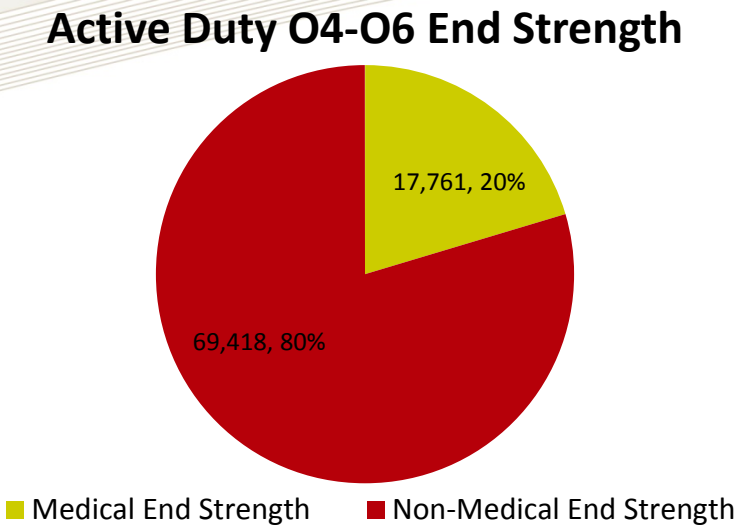
Source: TRICARE Evaluation Reports (multiple years)

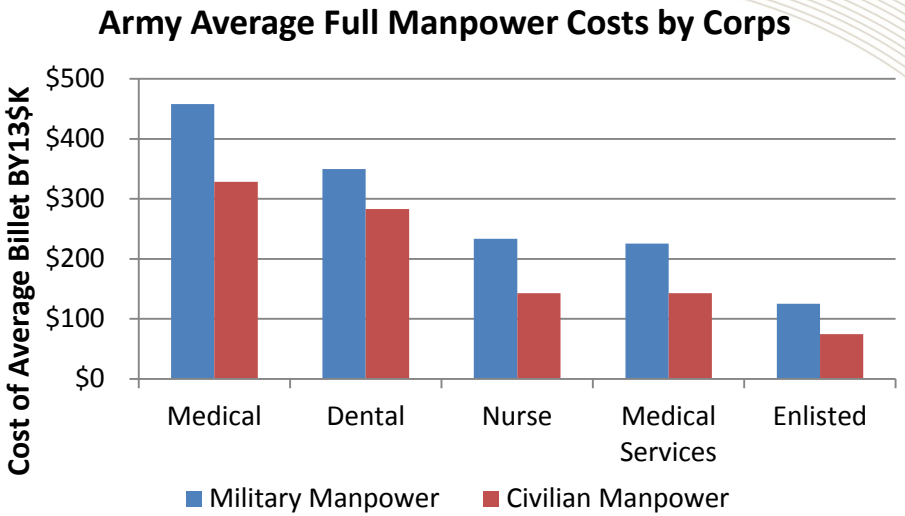
IDA | Background: The FY 2011 Medical Force

Service	Active Duty End Strength	Guard/Reserve End Strength	Civilian End Strength	Mil. + Civ. Medical Force
Army	52,400	48,715	27,228	128,343
Navy	34,886	11,713	7,444	54,043
Air Force	31,894	19,064	3,981	54,939
Total	**119,180**	**79,492**	**38,653**	**237,325**

- Military medical force composed of active, Guard, reserves, civilians, and contractors (contractors not included in table).
- Manpower mix should depend on the mission the manpower performs:
  - Military Essential: Defined in DoD Instruction 1100.22 §4(f).
  - Inherently Governmental, Non-Military Essential: Defined by FAIR Act and Inherently Governmental/Commercial Activity inventory.
  - Commercial Activity: Not inherently governmental, subject to public-private competitive sourcing.

IDA | Introduction: Military Medical Personnel in the Total Force





Full cost of medical manpower excludes Transients, Patients, Prisoners, and Holdees, which would increase divergence from civilian manpower

- Military medical personnel constitute a large and costly portion of the total force
  - Military personnel are generally more expensive than civilian personnel
  - Military officers in some corps consume Defense Officer Personnel Management Act (DOPMA)-constrained end strength
- Requirements for some medical capabilities are generated separately from line requirements

IDA | Dual Missions of the Military Health System

OPERATIONAL MISSION

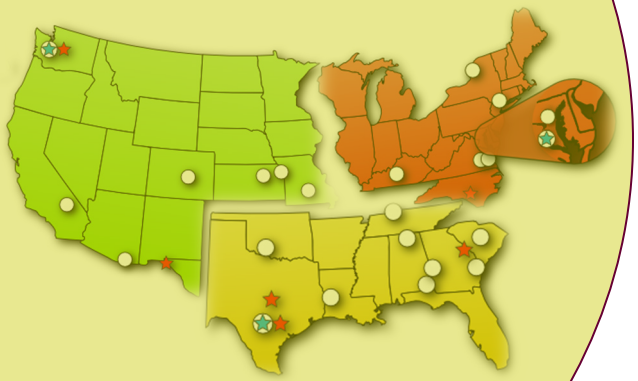
BENEFICIARY MISSION

Organic Medical Capability

In-Theater Hospitals

Military Medical Personnel w/ Dual Assignments

Military Treatment Facilities



Purchased Private Care

Trauma Surgery…Anesthesiology ← **Demand for Specialties** → Pediatrics…Obstetrics

IDA | Military Medical Manpower Issues

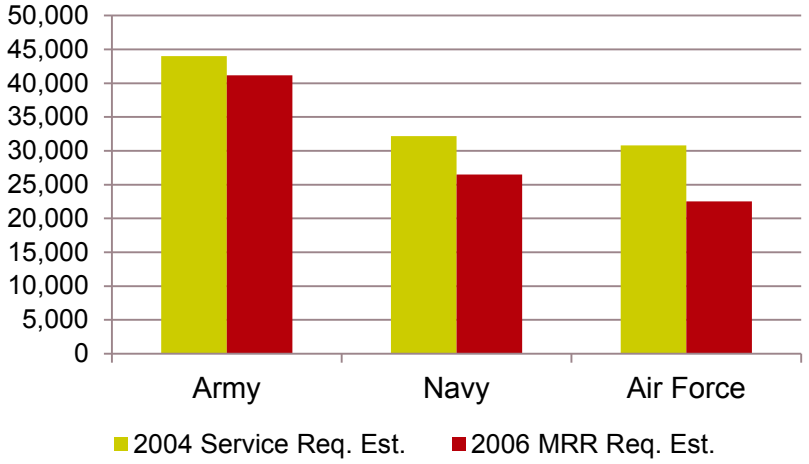
- Changes in warfighting and medicine have influenced the practice of military medicine. Are these changes reflected in medical requirements?
- Independent studies have estimated military essential requirements below Service-reported requirements. Is the medical force aligned with and utilized according to military essentiality guidance?
- The medical force has total force mix challenges. Service reported data during Iraq/Afghanistan show mismatch between active duty forces and requirements. Do these imbalances persist in today's medical force?

Medical Specialty Imbalances

	Readiness Requirement	FY 2004 End Strength	EndStr – Req.
Pediatrics	286	645	359
Obstetrics	208	387	179
Anesthesiology	318	259	-59
General Surgery	685	443	-242

Note: FY04 requirement for fully trained providers. Total requirements, including training, transients, prisoners, etc., were Pediatrics 484, Obstetrics 351, Anesthesiology 444, and General Surgery 947.

Total Medical Requirements



2006 data from the Medical Readiness Review
2004 data from Service medical sizing models

- Medical Requirements Data
  - Service-reported sizing model estimates from 2004 and 2011/12
  - Medical Readiness Review (MRR) requirement estimates from 2006
  - Medical end strength for 2001–2011 from Defense Manpower Data Center's (DMDC) Health Manpower Personnel Data System (HMPDS)
- Individual deployments to named contingencies from DMDC's Contingency Tracking System (CTS) (2001-12)
- Interviews with Service representatives on lessons learned during Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF).

IDA | Briefing Outline

- Introduction
- **Total Medical Requirements and Lessons Learned**
- Military Essentiality of Medical Requirements
- Specialty Mix of Medical Force
- Conclusion

IDA | Changes to Warfighting and Medicine from Service Interviews

- Warfighting and medical practice have changed.
  - Decentralized, mobile battlefield drives a smaller medical footprint with more rapid evacuation of casualties.
  - The range of care delivered in theater is reduced and medicine is more specialized.
- This has implications for medical force requirements.
  - Total requirement goes down as less care is performed in theater.
  - Specialty substitution opportunities decline as medical platforms become smaller with less redundancy – potentially increasing requirements for some specific specialties.
- Changes in the requirements and end strength data are consistent with these implications.
  - Systematic decline in underages across all Services.
  - Increase in Army requirements for deployable medical enlisted personnel in line units.
  - Decrease in Army requirements for deployable medical officers.
  - Navy transitioning away from general physicians to an all-specialist force.
  - Large requirements decreases in general physicians/nurses for Army and Air Force (other than aviation medicine).

IDA | Total Medical Requirements 2004 and 2011

Service	2004 Req.	2011/12 Req.	% Change	2004 End Strength	2011 End Strength	% Change
Air Force	30,802	25,175	-18%	34,756	31,894	-8.2%
Army	44,004	50,068	+14%	46,679	52,400	+12%
Navy	32,169	41,342	+29%	36,997	34,886	-5.7%
Total	**106,975**	**116,585**	**+9%**	**118,432**	**119,180**	**+0.6%**

- Air Force requirements and end strength decline, consistent with expectations.
- Army requirements grow, primarily due to two factors:
  - Increased deployable enlisted requirements (~4,000).
  - Increased non-deployable officer requirements (~3,000).
  - Army determines deployable medical requirements with line requirements in the Total Army Analysis process.
  - Non-deployable requirements are determined separately.
- Navy's substantial requirements increase is the outlier.

IDA | Briefing Outline

- Introduction
- Total Medical Requirements and Lessons Learned
- **Military Essentiality of Medical Requirements**
- Specialty Mix of Medical Force
- Conclusion

IDA | Military Essentiality – Introduction

- DoD Instruction (DoDI) 1100.22 requires a military billet be justified by:
  - Military-unique knowledge or skills
  - Statutory, executive order, or treaty requirement
  - Command and control, risk mitigation, or esprit de corps duties
  - Wartime assignment, rotation base, or career development demands
  - Unusual working conditions or costs not conducive to civilian employment
- All other manpower shall be designated civilian if inherently governmental/critical, or, if not, least-cost civilian or contractor performance

IDA | Elements of the Military Medical Requirement

- Wartime Requirement
  - Deployable Medical Requirement
  - Casualty Reception, R&D, Command & Control, etc.
- Day-to-Day Requirement
  - Outside Continental US Military Treatment Facilities
  - Isolated Continental US Military Treatment Facilities
  - Medical Staff Billets
- Sustainment Requirement
  - Graduate Medical Education Students and Trainers
  - Transients, Patients, Prisoners, and Holdees

2004 Service-Estimated Requirements

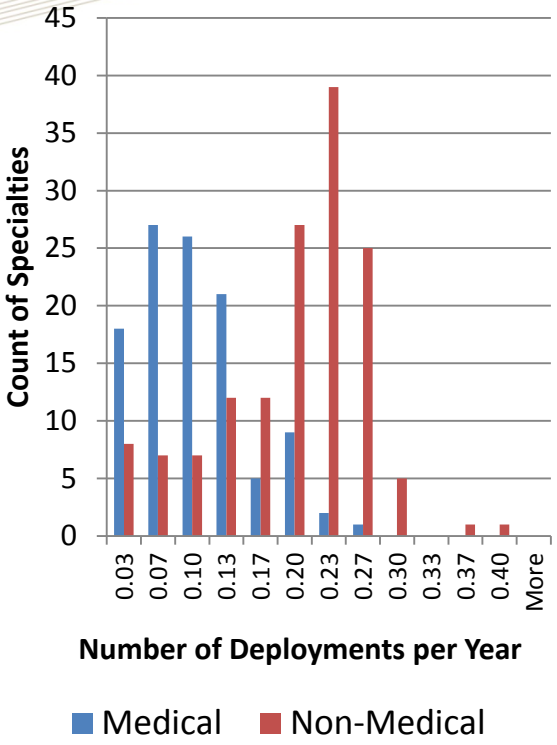
Service	Air Force	Army	Navy
Wartime Requirement	15,959	28,456	22,494
Day-to-Day Requirement	13,639	6,720	19,602
Sustainment Requirement	4,044	8,828	3,404
Total Requirement	**30,610**	**44,004**	**31,169**

How well do the elements of the medical requirement align with the military essentiality criteria?

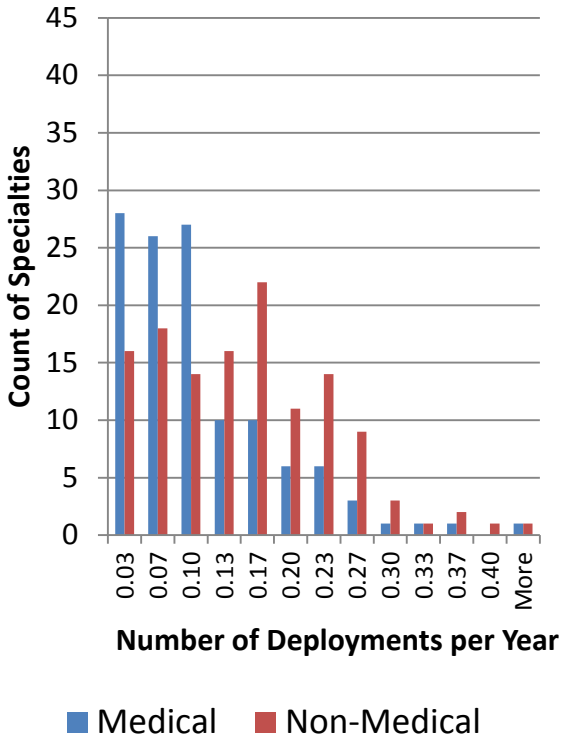
- Deployments of medical personnel serve as a proxy for utilization of the medical force.
  - What fraction of the medical force deploys in support of contingencies?
  - How frequently are medical personnel deployed?
  - How long are medical deployments?
  - Where do medical personnel deploy to?
- Comparison of medical deployments to deployments of non-medical personnel, specialties, and corps provides insight on the military essentiality of medical force elements.

Average Annual Share of Force Deployed by Specialty

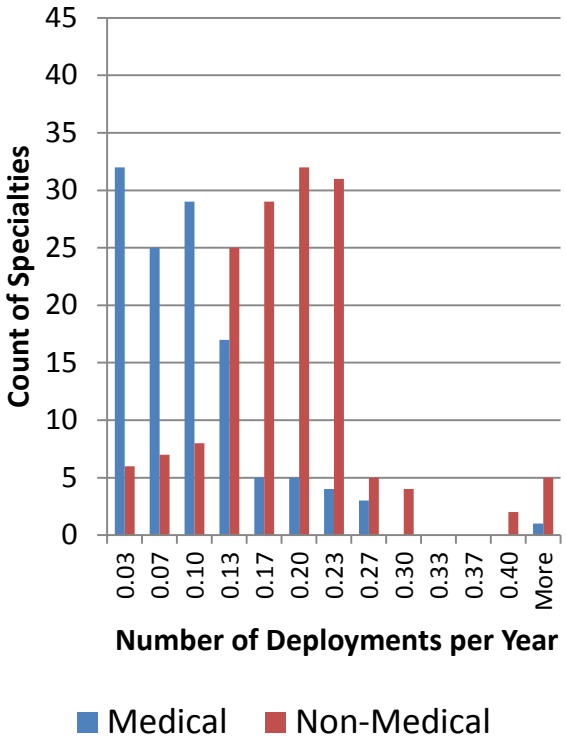
Army Specialties



Air Force Specialties

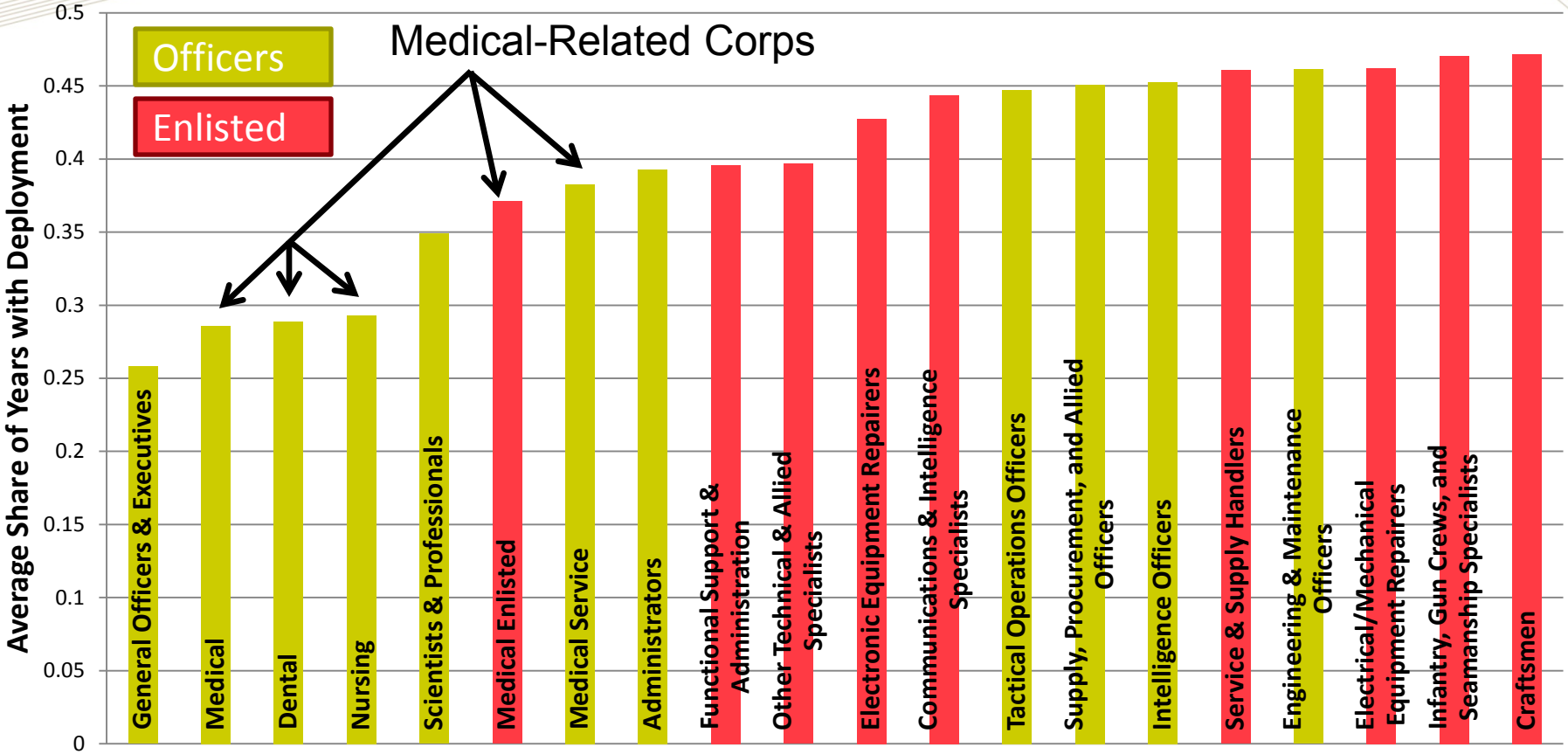


Navy Specialties



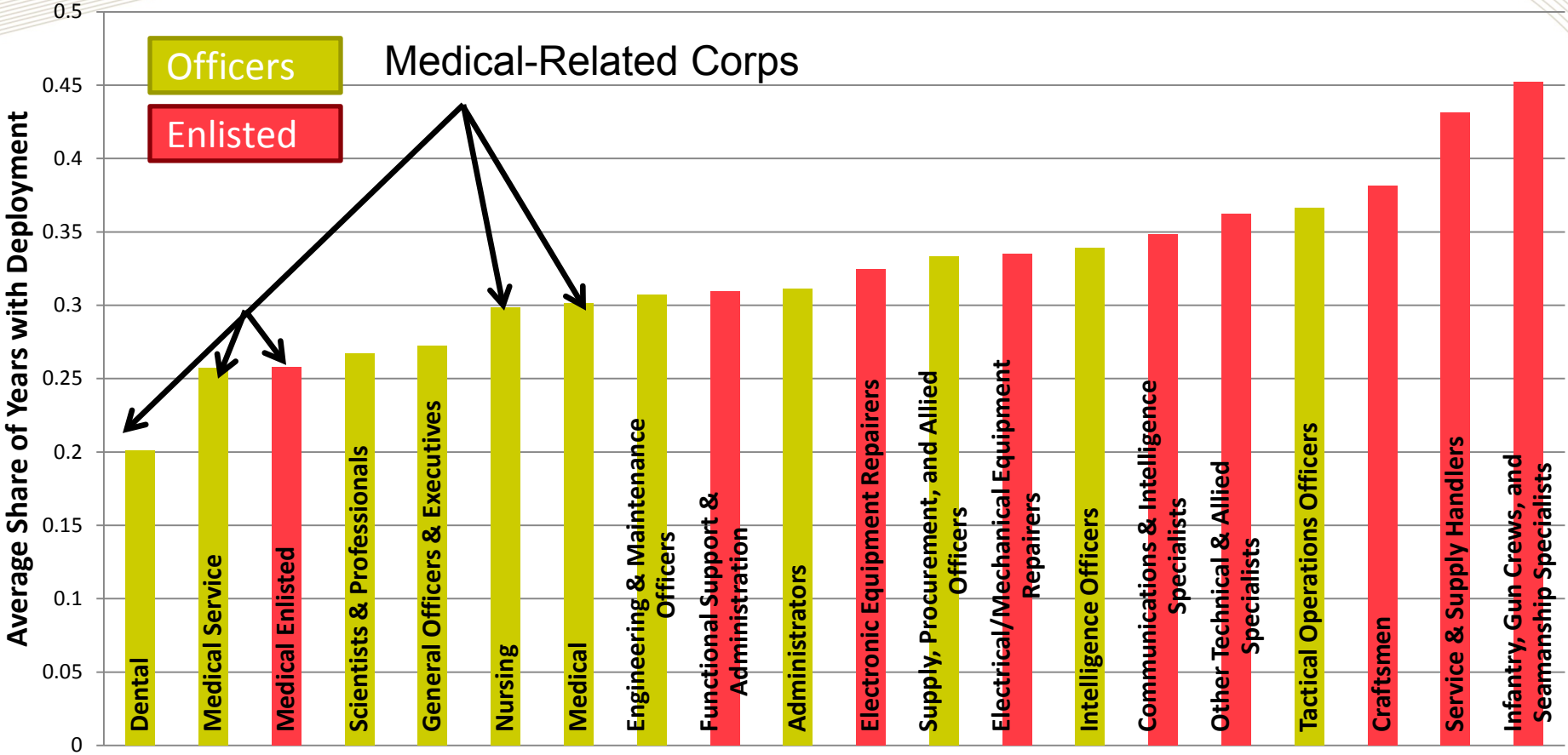
- Medical specialties have fewer deployments per year than non-medical specialties.
  - Divergence between Army medical and non-medical specialties is greater than other Services, driven by higher non-medical deployment rates in the Army than in other Services.
  - Medical deployment rates are similar across the Services.

IDA | Army Medical Deployments Compared to Other Groups



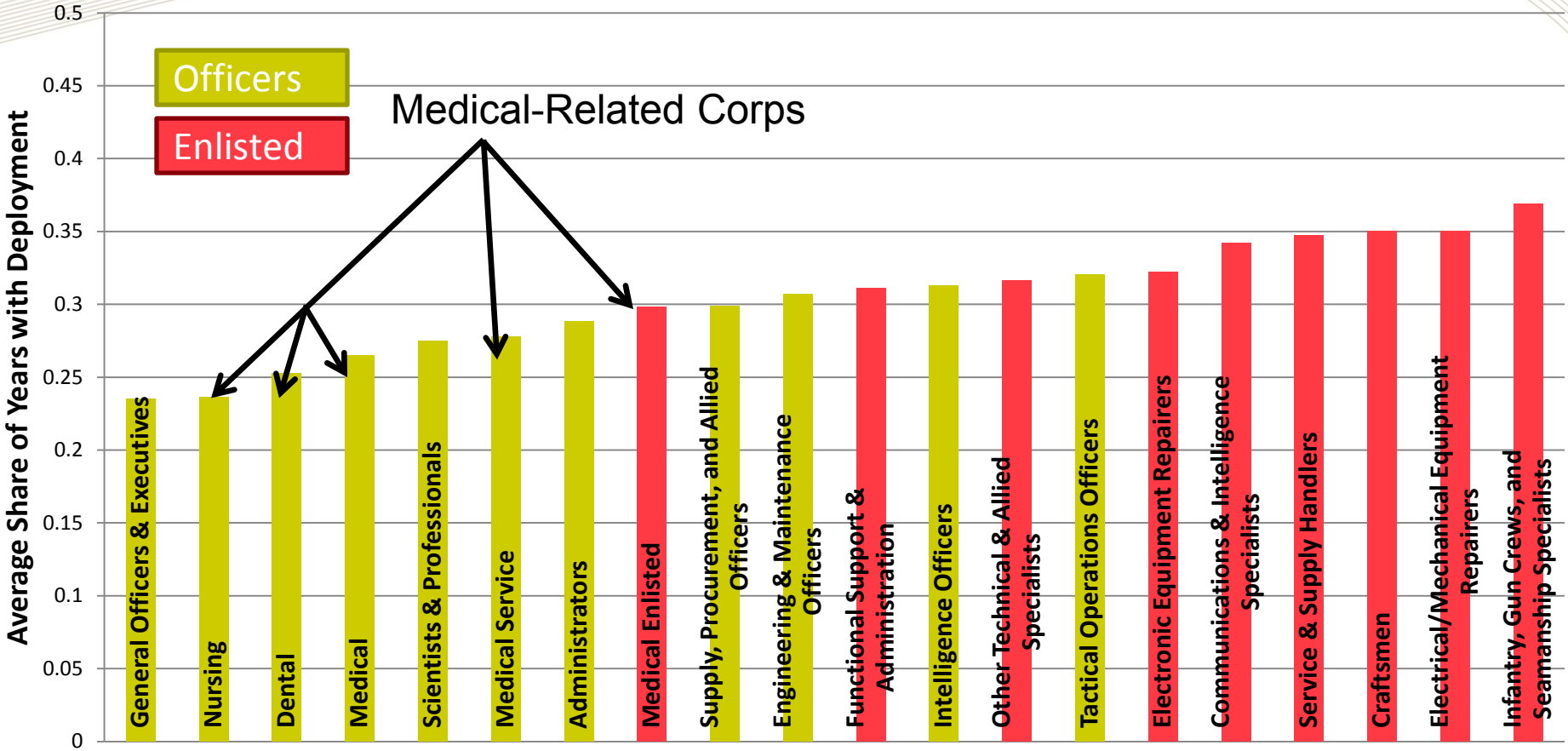
- Medical corps are among the least-deploying corps in the Army.

IDA | Air Force Medical Deployments Compared to Other Groups



- Medical corps are among the least-deploying corps in the Air Force.

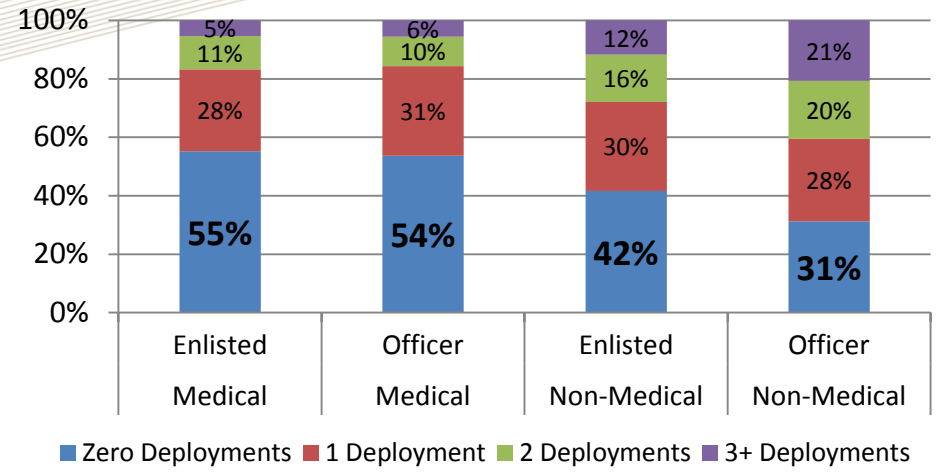
IDA | Navy Medical Deployments Compared to Other Groups



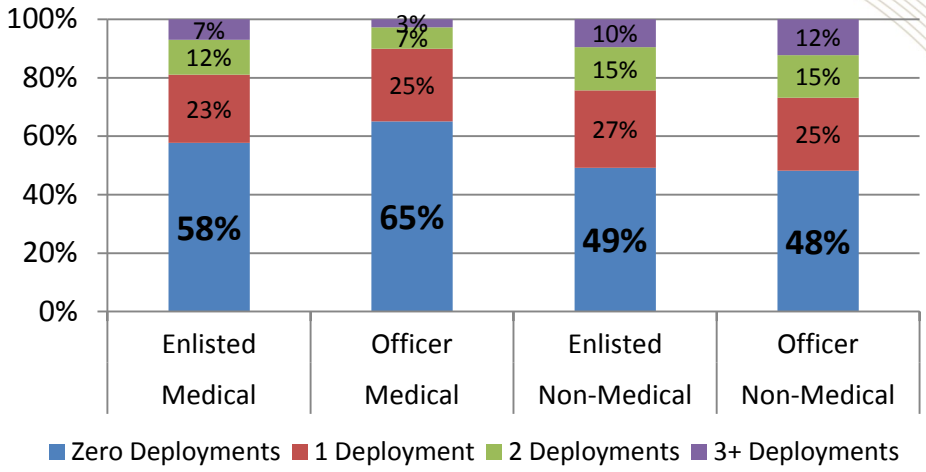
- Medical corps are among the least-deploying corps in the Navy.

IDA | Deployment Experiences for Medical and Non-Medical Individuals

Number of Deployments for Army Personnel

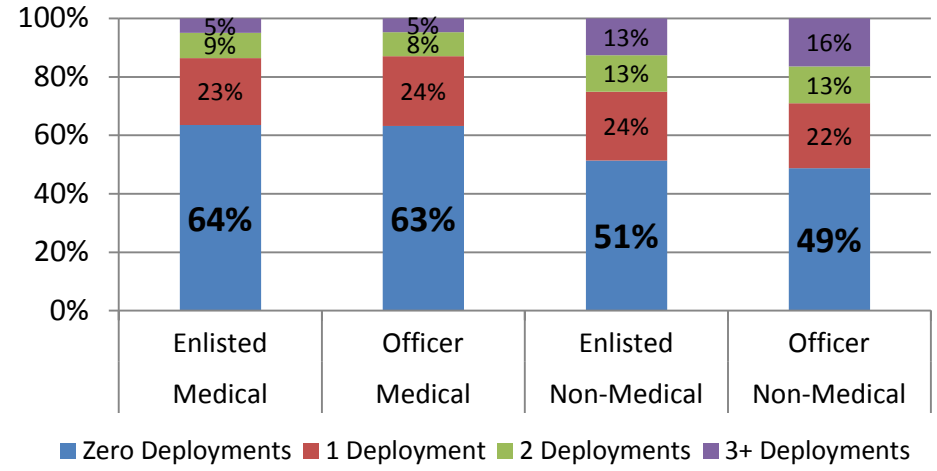


Number of Deployments for Navy Personnel



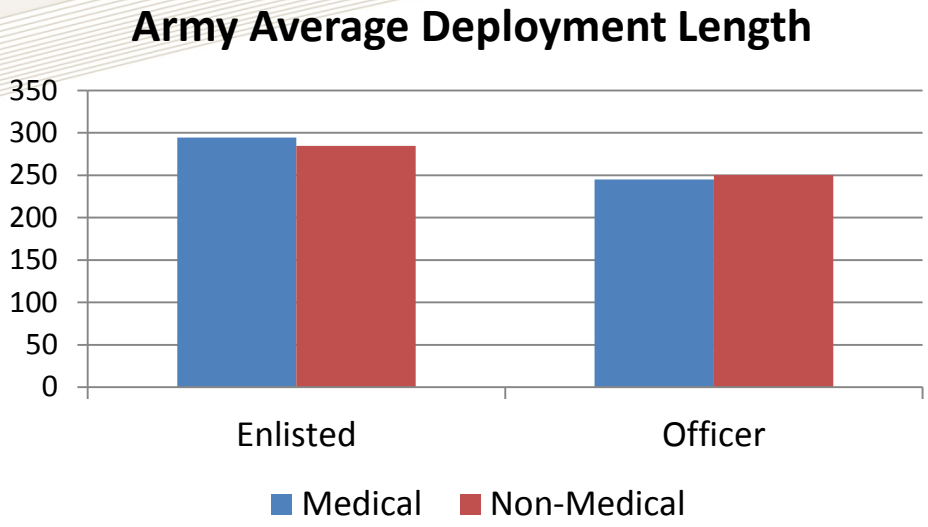
Adding Marines to Navy does not significantly alter distribution

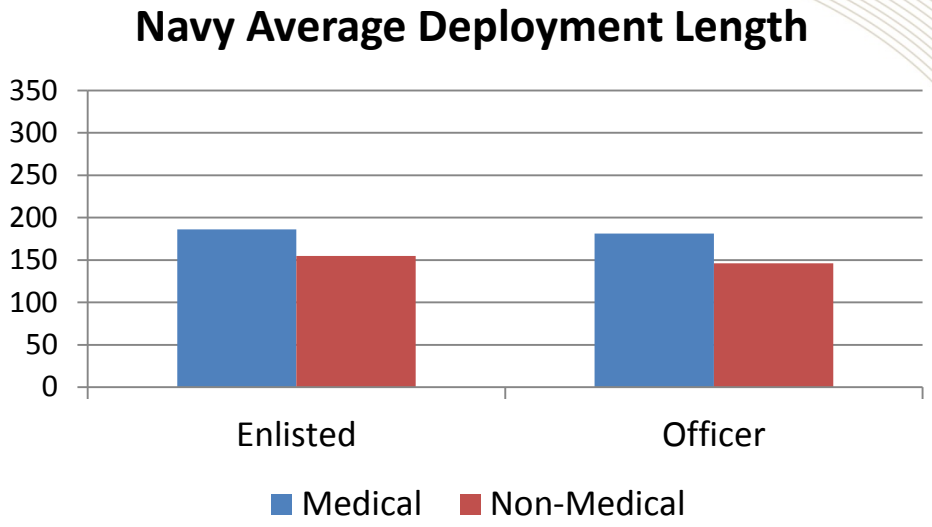
Number of Deployments for Air Force Personnel

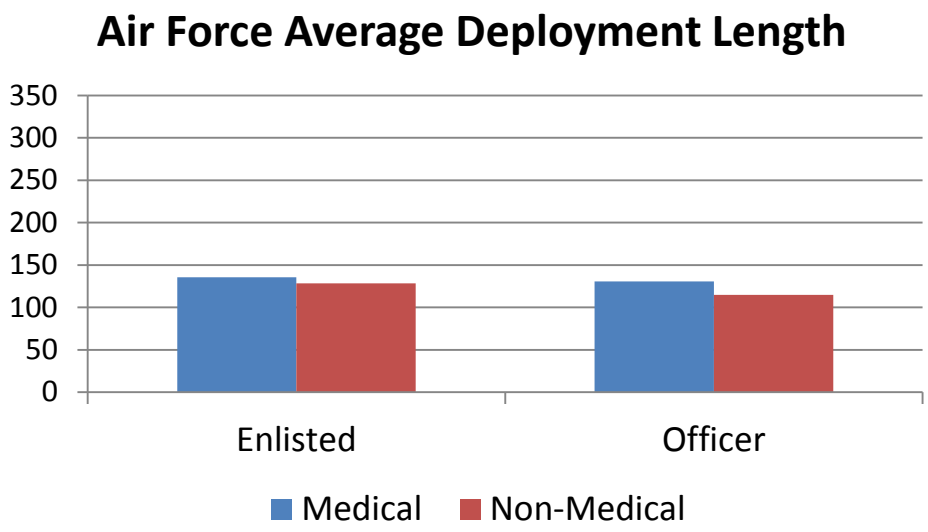


- Medical personnel are significantly less likely to experience deployment than non-medical personnel
- Medical personnel are less likely to experience repeat deployments than non-medical personnel
  - Misalignment of specialty requirements and end strength likely has not caused force stress

IDA | Average Deployment Length by Service



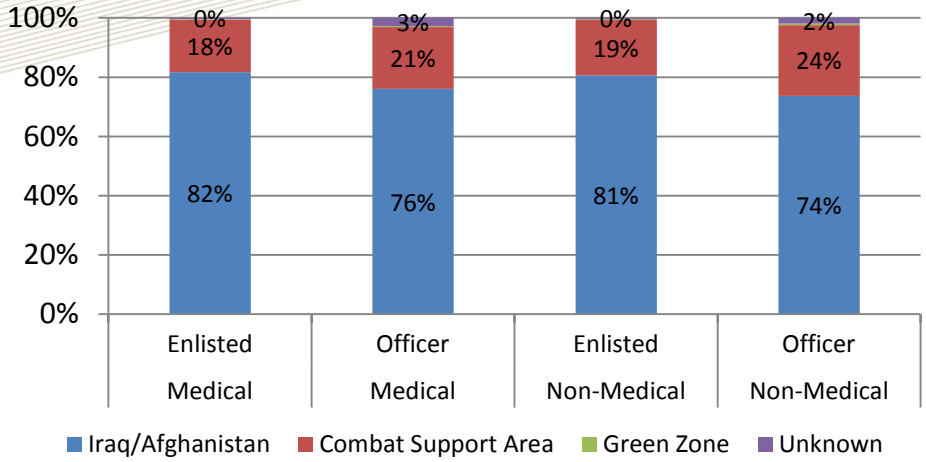




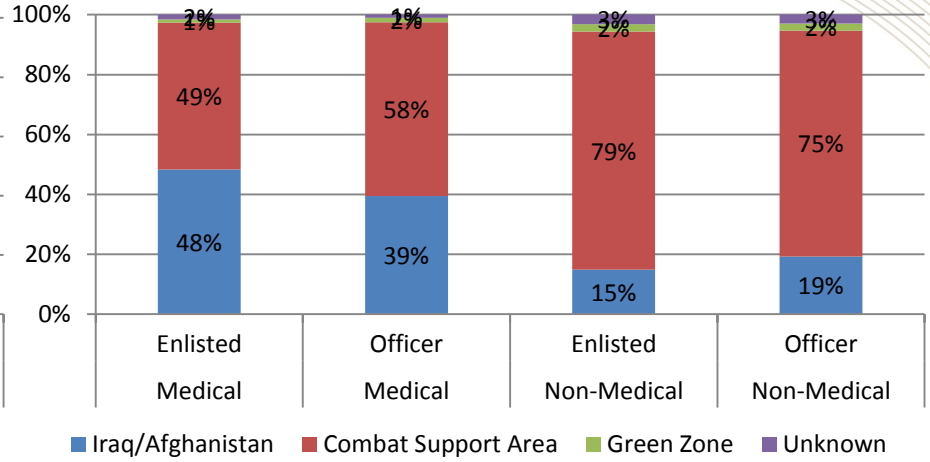
- Army medical and non-medical deployments are similar in length and longer than the other Services
- Air Force personnel have the shortest deployment lengths; medical deployments are slightly longer
  - Is joint sourcing an explanation?
- Navy medical deployments are longer than non-medical
  - This difference diminishes when including Marine Corps deployments

IDA | Locations for Medical & Non-Medical Deployments

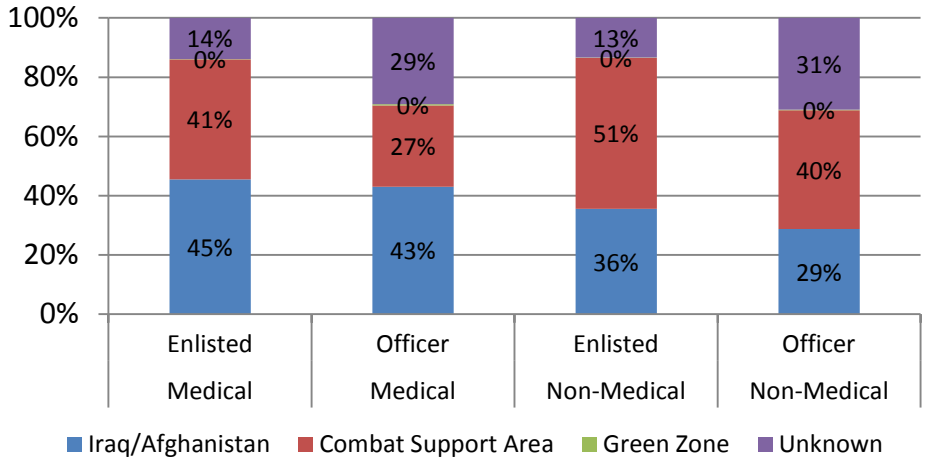
Army CTS Deployments by Country



Navy CTS Deployments by Country



Air Force CTS Deployments by Country



- Army medical deployment locations mirror non-medical deployment locations
- Iraq/Afghanistan provide a greater share of Air Force and Navy medical deployments than non-medical deployments
  - Air Force medical locations provide evidence of joint sourcing (e.g., Balad, Bagram)
  - Joint sourcing and medical deployments for Marines deployments explain Navy locations

- Introduction
- Total Medical Requirements and Lessons Learned
- Military Essentiality of Medical Requirements
- **Specialty Mix of Medical Force**
- Conclusion

IDA | Active Duty Specialty Underages (2004/11)

- Services report fewer underages against operational requirements.
  - In general, requirements have decreased for wartime specialties and end strength for these same specialties has increased.

Service	Total Specialties 2004/2011	Underage* Specialties 2004	Underage* Specialties 2011	Personnel* Shortfall 2004	Personnel* Shortfall 2011
Army	90/93	21	41	3,720	3,661
Navy	92/91	16	25	1,601	4,404
Air Force	91/92	24	15	3,762	1,905

* Underage defined as end strength greater than 20% below requirement.

- Army underages decreased 1.6% due to two offsetting trends.
  - Large decrease in deployable requirements for 2004 underage specialties.
  - Large increase in non-deployable requirements for new 2011 underage specialties.
- Navy increased end strength in 2004 underage specialties (+15%) despite overall end strength decreases. Requirements for 2012 underages have grown by 64% over 2004.
- Air Force underages cut in half due to large increases in underage specialty end strength (+222%) despite overall end strength decreases.

IDA | Causes and Consequences of Specialty Underages

- Underages have been reduced from FY04 to FY11.
  - Deployable requirements are now generally fully covered.
  - Consistent with OEF/OIF lessons learned, underages concentrated in generalist or substitutable specialties.
  - Low deployment levels suggest that underages caused minimal force stress during OIF and OEF.
  - Through substitution, recruitment, and skill maintenance partnerships with civilian facilities, the Services appear to be managing their underages.
- Two causes of underages were identified by the Services:
  - Insufficient beneficiary care workload to support the required personnel was the main cause of underages identified.
  - A secondary factor cited was challenges to recruit/retain wartime specialties.

IDA | Active Duty Specialty Overages 2004/11

- Services continue to report overages against many specialties.
  - Overages are generally seen in beneficiary care specialties with little to no wartime requirement and are larger than can be explained by substitutions.

Service	Total Specialties 2004/2011	Overage* Specialties 2004	Overage* Specialties 2011	Personnel* Excess 2004	Personnel* Excess 2011
Army	90/93	40	11	4,594	1,130
Navy	92/91	38	24	3,512	853
Air Force	91/92	45	53	4,284	7,080

* Overage defined as end strength greater than 20% above requirement.

- Army overages go down, but that is driven by large (70%) increases in non-deployable requirements and small (17%) end strength declines.
- Navy has decreased end strength in 2004 overage specialties by 27% and increased requirements by 18%.
- Air Force increase in overages driven by both reduction in requirements and increases in end strength in specialties becoming overage specialties in 2011.

IDA | Causes and Consequences of Specialty Overages

- Overages remain a consistent problem with the medical force.
- A cause discussed in Service meetings is the lack of visibility into full cost of military personnel in total force decisions in beneficiary care mission.
  - Local commanders and Military Departments only bear a fraction of the cost of military personnel, but bear most of the cost of civilians and contractors.
- Two additional factors discussed with the Services include:
  - Constraints on the ability to manage the force such as:
    - Legislative restrictions, e.g., conversion ban and mental health requirements.
    - Policy restrictions, e.g., civilian personnel cap.
  - Service choices in provision of beneficiary care, e.g., Air Force “blue-on-blue.”

- Introduction
- Total Medical Requirements and Lessons Learned
- Military Essentiality of Medical Requirements
- Specialty Mix of Medical Force
- **Conclusion**

IDA | Conclusion on Military Medical Requirements

- Military medical requirements have partially incorporated lessons from OEF/OIF.
  - Deployable requirements have fallen.
  - Specialization has increased.
  - Navy medicine is a significant outlier.
- Specialty mix is more aligned with operational requirements but significant overages remain.
- Large portions of medical requirements may not be military essential.
  - Deployment levels uniformly low compared to other occupations.
  - Some elements of the medical requirement may not be consistent with military essentiality guidance.
  - Line participation in medical requirement generation may help to align the medical force with its military essential operational mission.

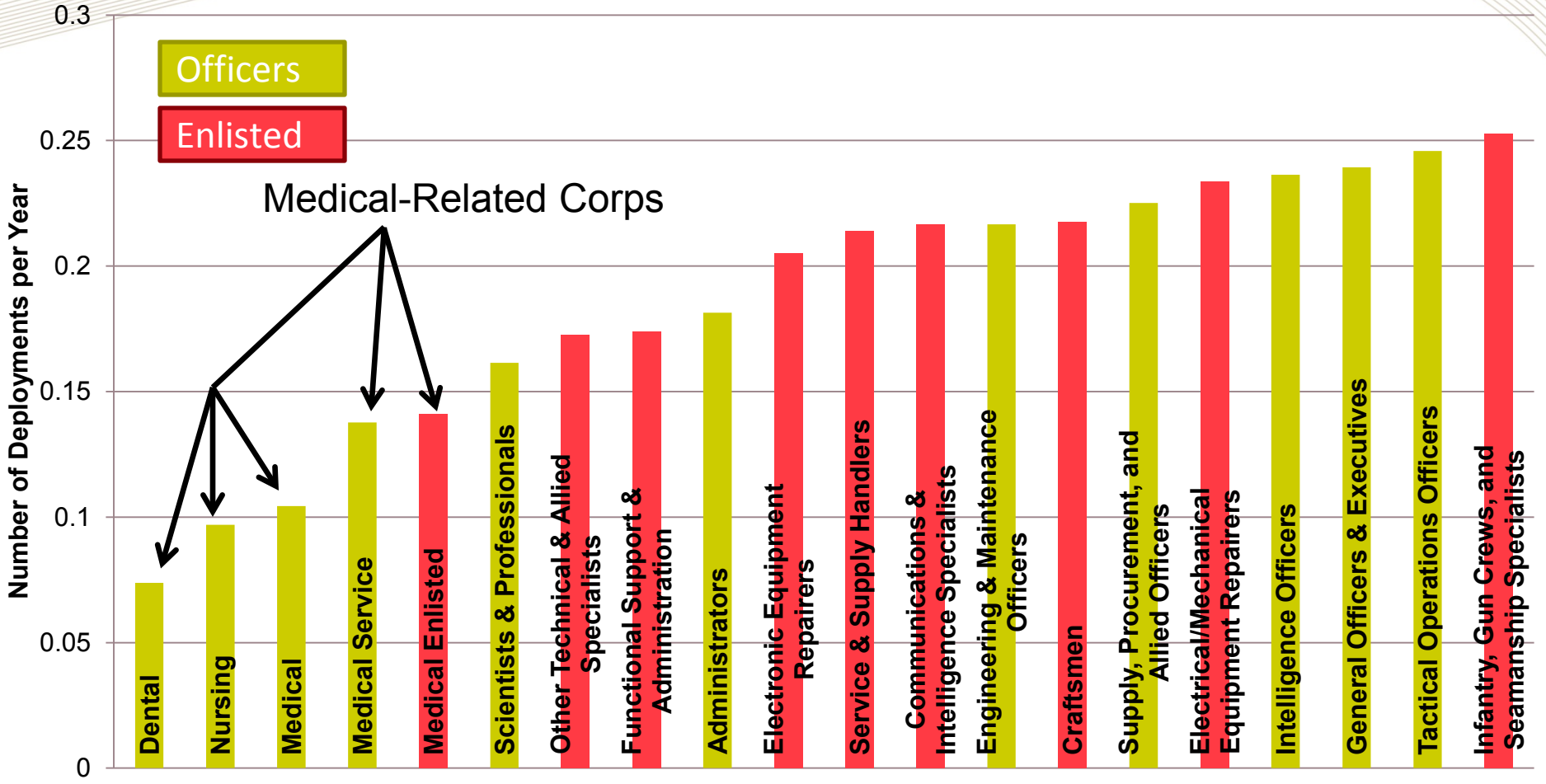
IDA

BACKUP

IDA | Explanations for Medical Deployment Levels

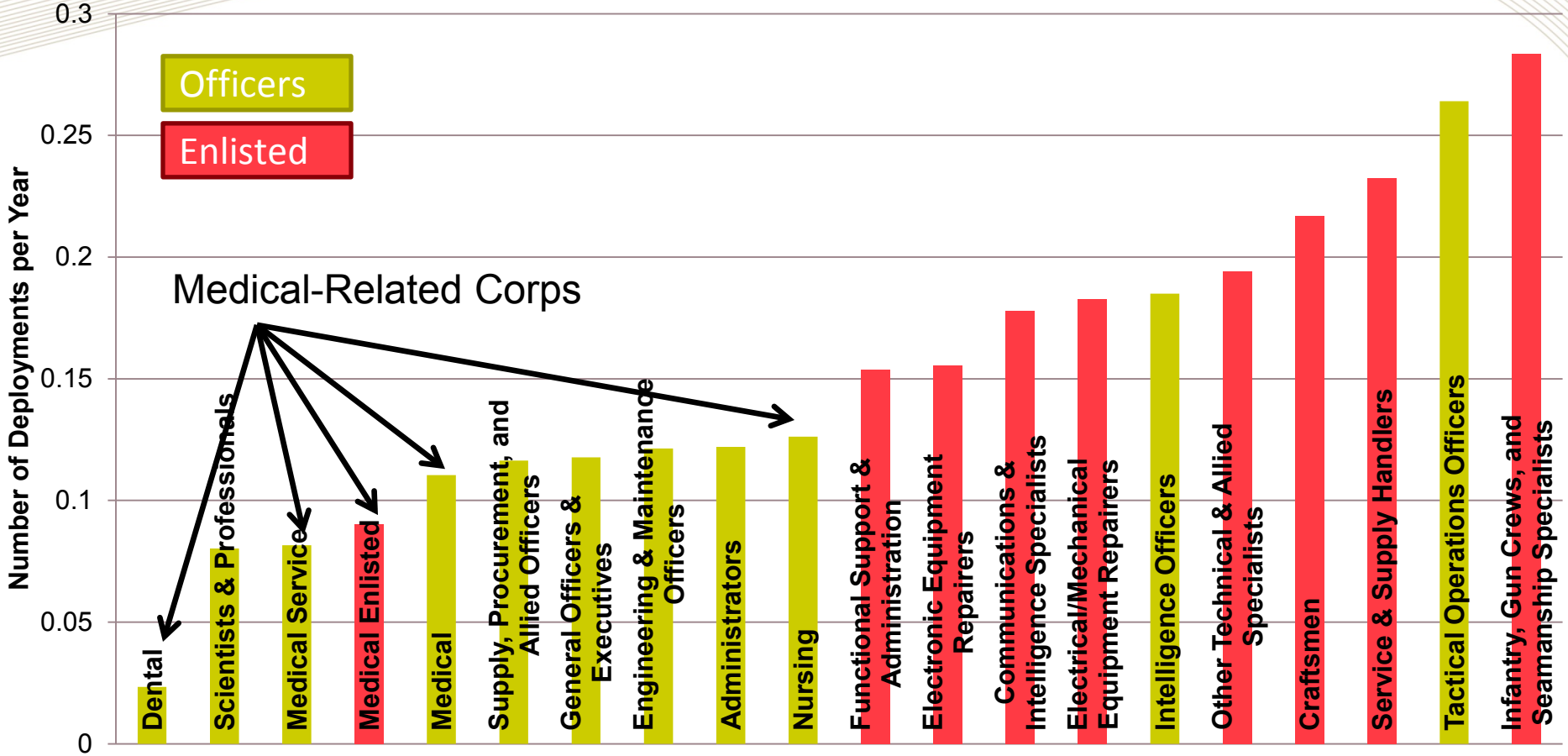
- Uniformly low deployment rates may be explained by:
  - Joint sourcing and substitution smoothing deployment levels across high and low deploying specialties and services.
  - Insufficient workload during deployments to maintain clinical skills constrains rotation of medical personnel.
  - Negative recruitment and retention consequences from deployment may discourage greater utilization of medical assets.
- Large elements of medical requirements are not deployable

IDA | Army Medical Deployments Compared to Other Groups



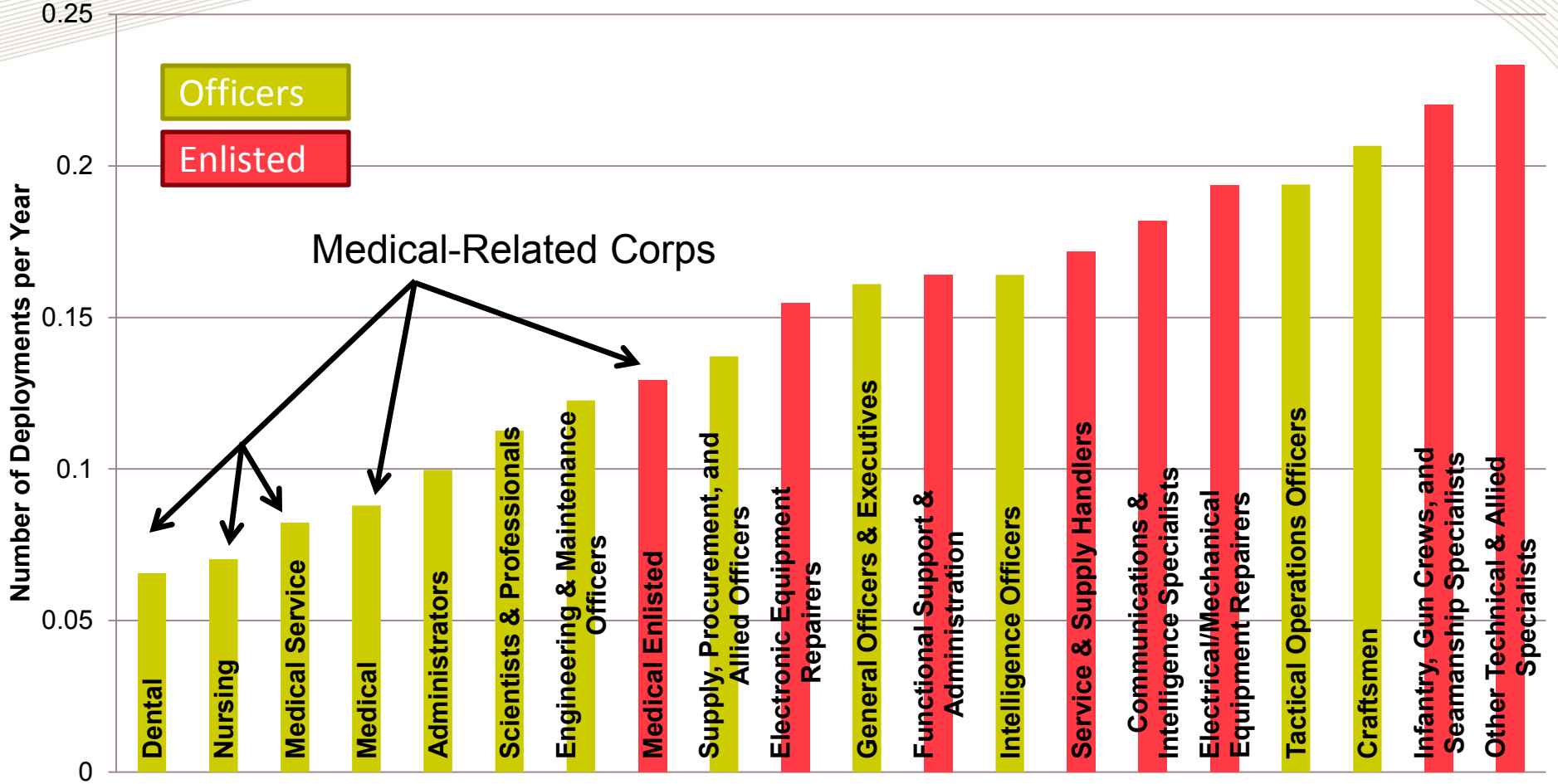
- Medical corps are among the least-deploying corps in the Army.

IDA | Air Force Medical Deployments Compared to Other Groups



- Medical corps are among the least-deploying corps in the Air Force.

IDA | Navy Medical Deployments Compared to Other Groups



- Medical corps are among the least-deploying corps in the Navy.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
xx-06-2013	Final	

4. TITLE AND SUBTITLE

Medical Requirements and Deployments

5a. CONTRACT NUMBER

DASW01-04-C-0003

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Gould, Brandon

5d. PROJECT NUMBER

5e. TASK NUMBER

CARDPD

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Institute for Defense Analyses
4850 Mark Center Drive
Alexandra, VA 22311-1882

8. PERFORMING ORGANIZATION REPORT NUMBER

IDA Document NS D-4919

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Institute for Defense Analyses
4850 Mark Center Drive
Alexandra, VA 22311-1882

10. SPONSOR/MONITOR'S ACRONYM(S)

IDA

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release; distribution unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT

Military medical personnel comprise a large and disproportionately expensive part of the total uniformed force. They also comprise a majority of the governmental manpower for the Military Health System (MHS). According to Departmental guidance on military essentiality, medical manpower requirements should derive from the MHS's operational mission of providing care to deployed forces rather than commercial activities such as beneficiary care. However, pressures from the beneficiary care mission have historically created imbalances in the execution of medical requirements among medical specialties. certain components of the medical requirement and utilization patterns of the medical force may be inconsistent with guidance on military essentiality. Furthermore, certain components of the medical requirement and utilization patterns of the medical force may be inconsistent with guidance on military essentiality. While the former pattern shows signs of abating, questions of the military essentiality of elements of the medical force should be scrutinized in today's tight budgetary environments.

15. SUBJECT TERMS

Military Health System, medical requirements, medical manpower, military essentiality, commercial activity, deployment, total force management

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Gould, Brandon
Unclassified	Unclassified	Unclassified	Same as Report	39	19b. TELEPHONE NUMBER *(Include area code)* (703) 575-1414

Reset

Standard Form 298 (Rev. 8/98)
Prescribed by ANSI Std. Z39.18