



# Relationship of Assignment Limitation Codes to Accession Waivers in USAF

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# Disclosures



- Vice Chair for Aerospace Medicine, American Board of Preventive Medicine
  - Volunteer unpaid Board of Directors position
  
- Managing Member of Flight Docs Unlimited, LLC
  - Currently contracted to US Air Force
  
- No specific companies or products identified
  
- No commercial interests involved in this presentation
  
- No financial interests or impacts related to this presentation, *but I will consider offers!* 😊



# Overview



- **Accession Standards Background**
  - Guidance for US Military Medical Standards
  - Goals of Medical Standards
  - Risks of Medical Standards Waivers
- **Methods**
- **Results**
- **Discussion**
- **Conclusion**



# *Accession Standards*



- **Developed & refined over centuries of military experience**
- **Defined for all branches of US military in DOD Instruction(DODI) 6130.03**
- **Lists medical conditions that DISQ individuals for military service**
- **Underlying assumptions vary (only slightly) as DODI gets revised – currently...**



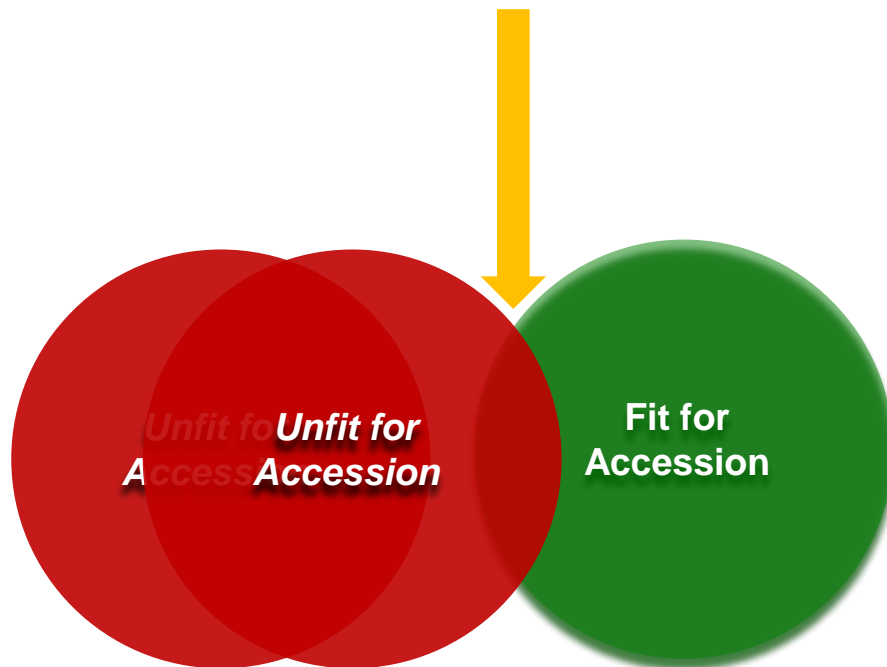
# Goals of Med Standards



- **DODI lists these 5 principles as goals. US military recruits are to be...**
  - **free of contagious diseases**
  - **free of conditions that may result in excessive lost duty time or early separation**
  - **able to complete all military training**
  - **adaptable to all military environments**
  - **able to do military duties without worsening the medical condition**
- **Each service can waive any condition for entry into their respective branch.**



# Medical Standards Model



- **2 Groups**
  - Fit for Accession – no known disqualifying conditions **LOWER RISK**
  - Unfit for Accession – 1 or more conditions DISQ per DODI 6130.03 **HIGHER RISK**
- **Waivers** – allow a person from the unfit group to access into the USAF
  - USAF assumes risk
  - DISQ condition does NOT go away
  - Must evaluate relative RISK



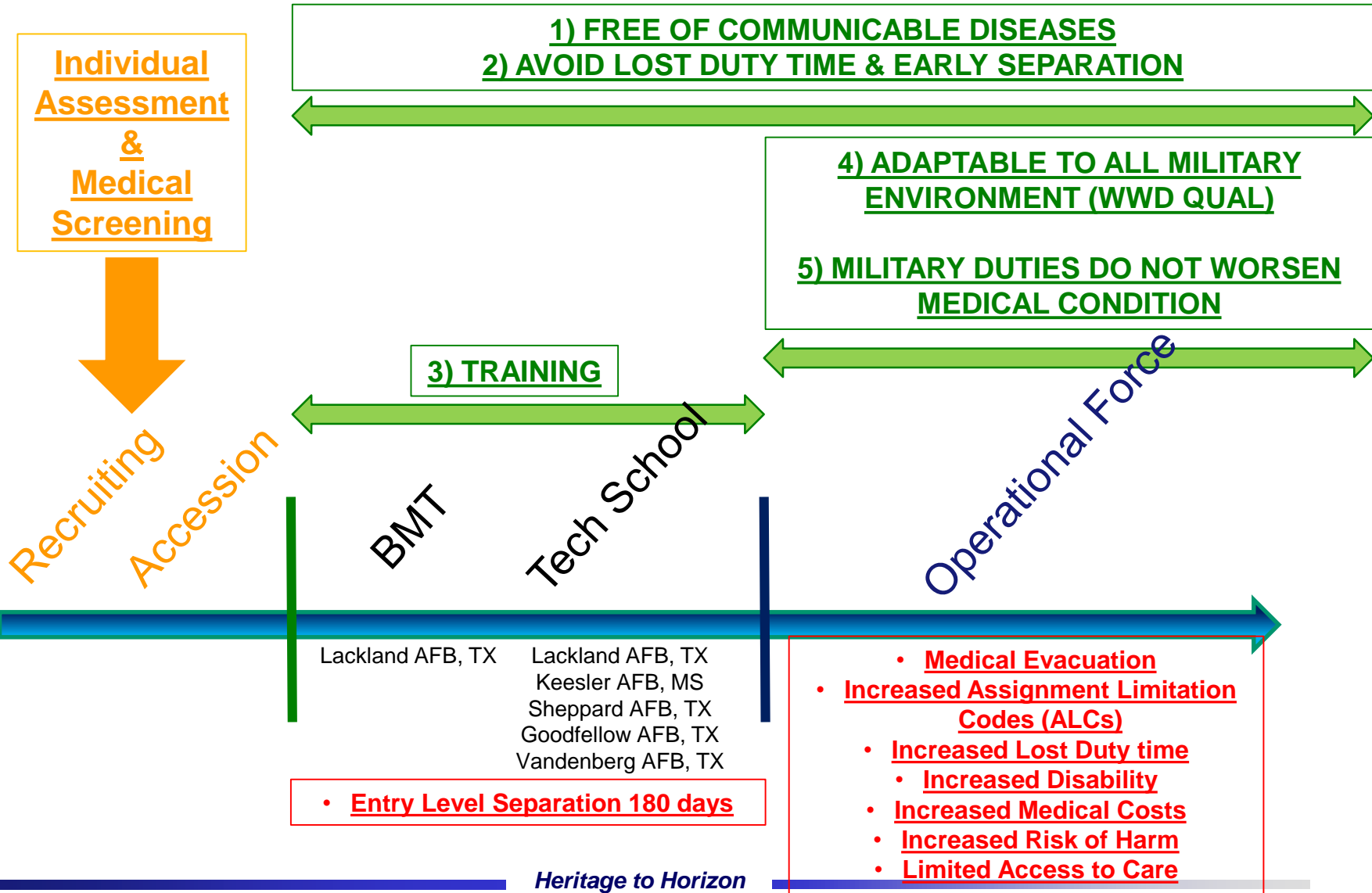
# Risks



- There is both risk to the USAF and to the individual when a waiver is granted
- USAF Risks relate to human availability and performance
  - Entry Level Separation (ELS)
  - Medical Evacuation from the Combat Zone
  - Assignment Limitation Codes (ALCs)
  - Disability discharge
  - Mission risk (failure)
  - Risk to fellow airmen
- Individual risks relate to health
  - Worsening of Condition – increased illness/disability/death
  - Limited access to medical care
- For this study, we focus on Assignment Limitation Codes (ALCs)



# Timeline of Tasks & Risks







# Methods



- **Retrospective Cohort study to assess relative risk of ALC in active duty USAF members compared to prevalence of accession waiver (WAVR)**
- **USAF Data systems**
  - **Personnel Center provided all ALCs in USAF as of Aug 2016**
    - **Names, SSN, VA disability code group**
    - **Problems: range of 1-30+ years in service, VASRD codes**
  - **Physical Standards Branch keeps database of accession waivers (WAVR)**
    - **Names, SSN, ICD codes**
    - **Problems: Data from 2000, only 16 yrs, database (errors)**
- **Relative risk of finding a WAVR given to a person with ALC versus finding WAVR in Air Force population at large**
  - **Problems: Selection of appropriate Air Force denominator**
  - **Attempt to parse diagnosis data for WAVR vs ALC**



# Results



- AFPC list from Aug 2016 contained **11,419 individuals with ALC**
  - ALC list contained **1800 individuals with WAVR**
  - Risk of having **ALC and WAVR = 15.8%**
- Estimated of AF denominator (those eligible for ALC) in Aug 2016
  - AF total population in 2016 = ~317,000
  - AF population in training = 30,000-40,000
  - AF population available for deployment = ~240,000
  - Denominator range – 240,000 up to 280,000
- Risk of finding an ALC in the Air Force (range of denominators)
  - 11,419 divided by 240,000 or 280,000 = **4.8% or 4.1%**
- Review of historical WAVR rates
  - In all volunteer force, rates have ranged over the past decade from **8.3-9.6%** of the total force accessed in the USAF
    - AVG – 9.0%, worst case **10%** (estimated)
    - Est. prevalence of WAVR 19,920 (8.3%) or 28,000 (10%)
- Risk of ALC in the WAVR group
  - 1800 divided by 19,920 or 28,000 = **9.0% or 6.4%**



# 2 x 2 Tables



## Best WAVR Case Lowest denominator

		WAVR	WAVR	
		+	-	Total
ALC	+	1800	9619	11,419
ALC	-	18,120	210,461	228,581
Total		19,920	220,080	240,000

## Worst WAVR Case Highest denominator

		WAVR	WAVR	
		+	-	Total
ALC	+	1800	9619	11,419
ALC	-	26,200	242,381	268,581
Total		28,000	252,000	280,000

Chi square 877.4 p<0.0000001

Risk of WAVR in ALC 15.76% (15.11-16.44)

Risk of noWAVR in noALC 7.927% (7.817-8.039)

Overall Risk of WAVR in TOTAL 8.3% (8.19-8.41)

**Risk Ratio 1.989**  
**(CI 1.902-2.079)**

Chi square 439.3 p<0.0000001

Risk of WAVR in ALC 15.76% (15.11-16.44)

Risk of WAVR in noALC 9.755% (9.643- 9.868)

Overall Risk of WAVR in TOTAL 10% (8.19-8.41)

**Risk Ratio 1.616**  
**(CI 1.546-1.688)**

**Risk of ALC for WAVR members  
doubles (incr 99%)**

**Risk of ALC for WAVR members  
increases by 61%**



# Diagnosis Analysis



- AFPC list from Aug 2016 of ALCs contained 11,419 individuals
  - ALC list contained VASRD codes (Veterans Affairs Schedule for Rating Disabilities) for all individuals
  - Grouped by body system (ie, musculoskeletal or cardiovascular)
- Physical Standards Branch database uses International Classification of Disease (ICD) codes
  - Grouped by body system but different numbering & order
- Review of historical WAVR rates – est 8.3-10%
- Individually analyzed 1800 wavier cases on ALC list for diagnosis group match
  - 35 matched diagnosis group from ALC to WAVR Dx
  - 35 divided by 11,419 = **0.31% developing ALC related to WAVR**
  - 35 divided by 1800 = **1.9% risk WAVR worsening to ALC** (despite 8-10% of force with WAVR)
  - 98.1% of all ALC development is due to new conditions



# Discussion



- Confidence Intervals do not include 1.0 indicating the two populations have a low likelihood of overlap.
- High n means statistics are strong, p value highly significant.
- Estimates of WAVR prevalence and ALC eligible population are estimates only which induce variance.
- Data in Physical Standards Branch has errors. VASRD codes not equivalent to ICD codes.
- Individuals with WAVR have a higher risk of ALC than those that meet all medical standards.
- Diagnosis analysis indicates that the WAVR decisions made by Physical Standards Branch reduces risk in the “unfit” group from their known condition.
- Could indicate that those with known conditions are more likely to develop other conditions that limit military duties.



# Conclusions



- **Relative risk of individuals with an accession waiver developing a medical condition requiring Assignment Limitation in the US Air Force is **elevated on the order of 161-199%**.**
- **Complete adherence to the current Medical Standards likely reduces the risk of individuals acquiring assignment limitation codes (ie, increases human effectiveness & availability).**
- **Granting of accession waiver seems to increase the risk of assignment limitation but NOT for the known condition for which WAVR was granted.**
- **Assessment of individual risk of certain conditions waived for accession appears to be largely effective.**



# Questions / Comments



Acknowledgements to Maj Richard Kipp, MD, USAF and MSgt Robert Rackard



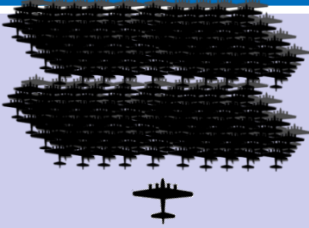
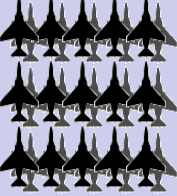




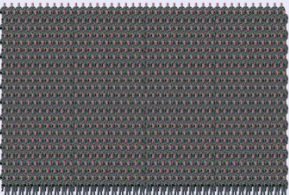










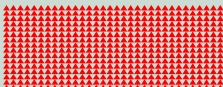
**U.S. AIR FORCE**





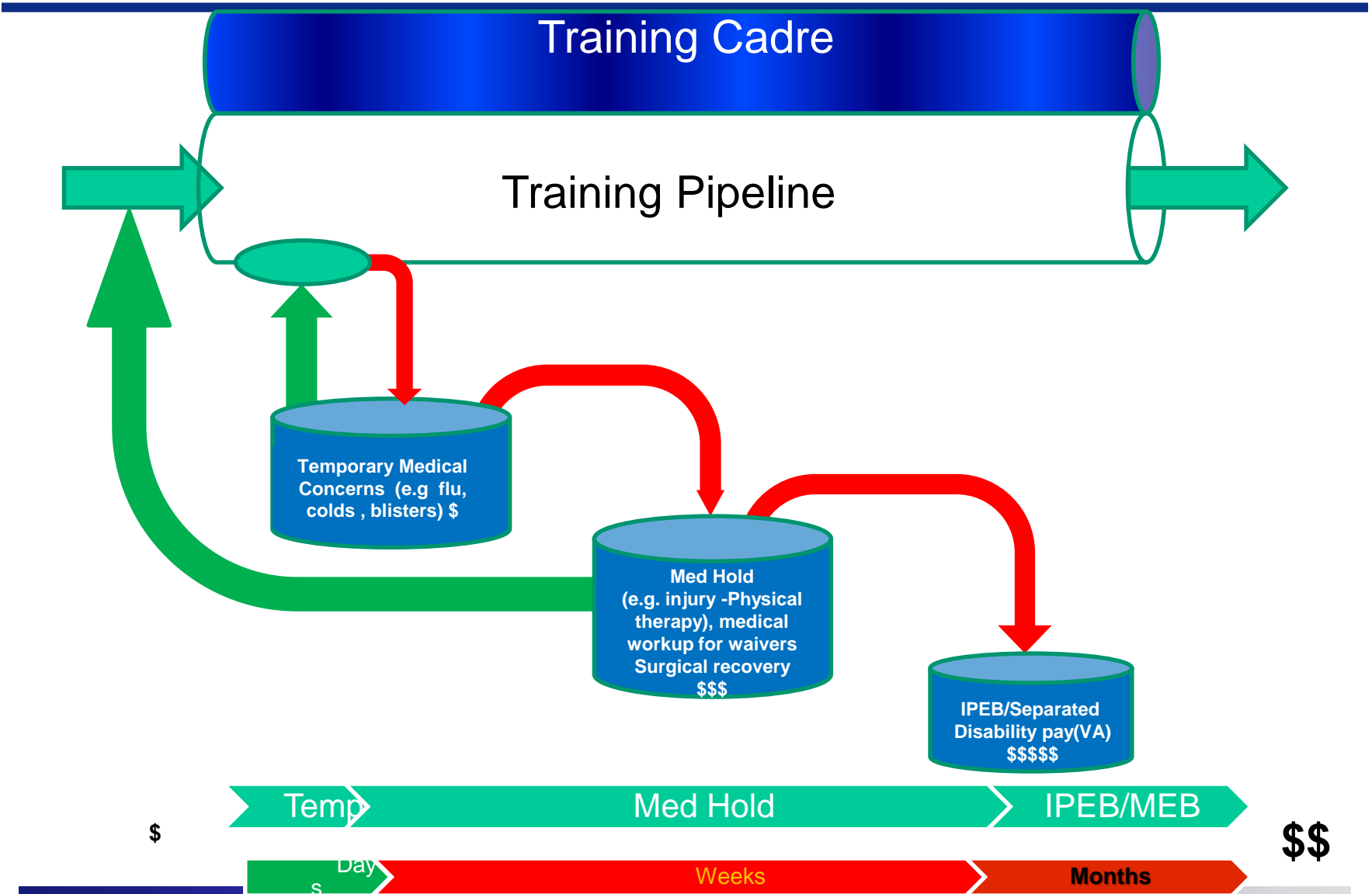
# Changing Air Power and Warfare



	WWII	Vietnam	Gulf War	OIF/OEF	Near Future	Distant Future
Planes	 1,000 planes (B-17)	 30 planes (F-4)	 1 plane (F-117)	 1 plane (F-16)	 4 planes (MQ-X)	 Swarm (Autonomous UAS)
Aviators	 10,000 crew	 60 crew	 1 crew	 1 crew	 1 crew	 Mission Commander
Targets	 1 Tgt	 1 Tgt	 2 Tgts	 6 Tgts	 32 Tgts	 ??? Tgts
Tech	Mass Aircraft	Tactical Strike	PGMs	Bigger Payload	MAC	Autonomy

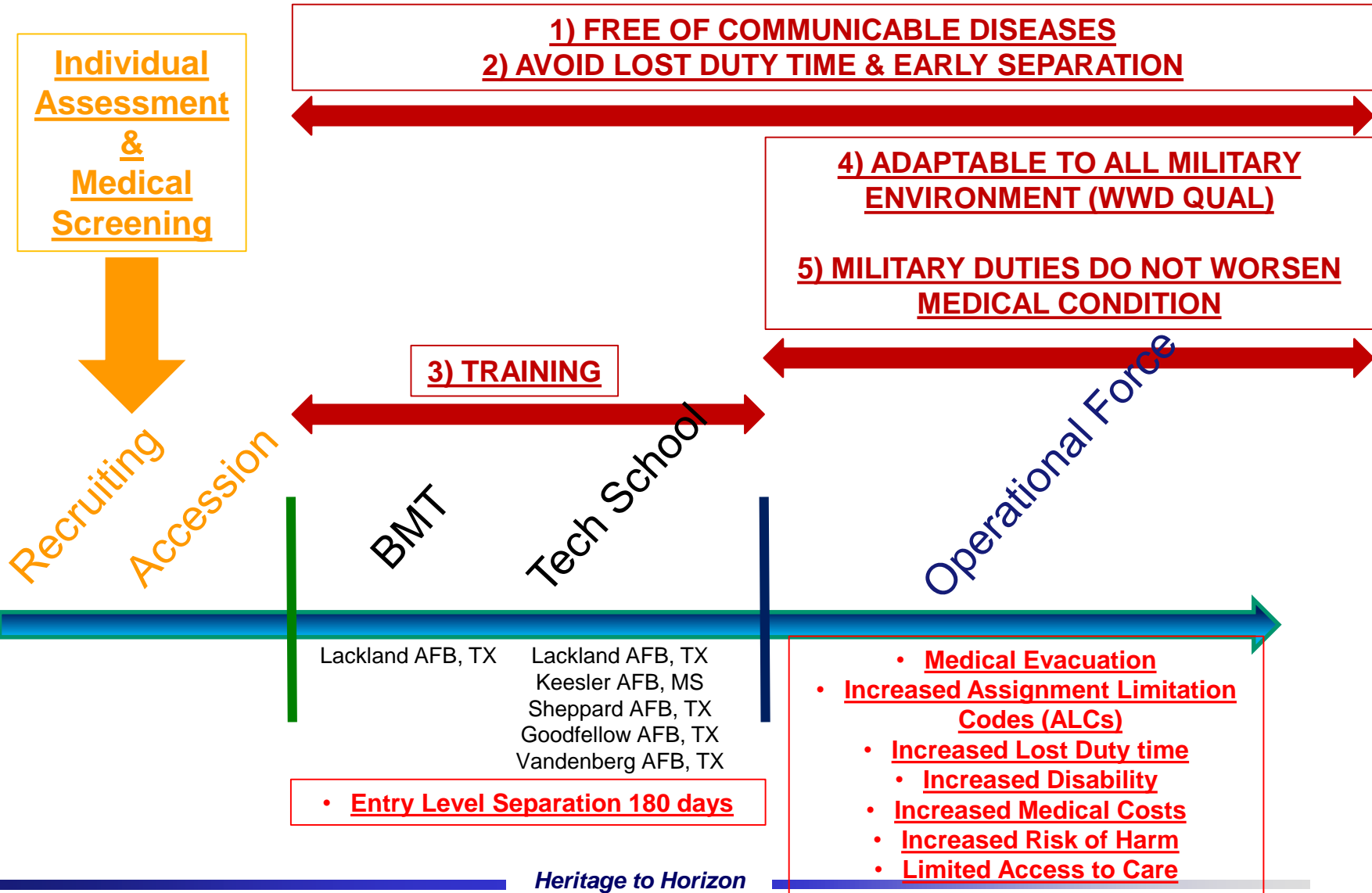


# Med Standards Impacts





# DODI Tasks & Risks





# What is Capacity?

## More Donkey or Less Cart?



- What is the **CAPACITY** of available healthcare?
  - Historically defined by enrollment...but not a function of enrollment
- OR capacity = available time/room (**maximize this first**)
  - Minutes/day available to surgeons
- Clinic capacity = provider availability for patient care (**maximize this second**)
  - Schedules and templates (minutes/day available to patients)
- Visible capacity can be filled (**third**)
- Lingering questions:
  - What is an available FTE?
  - How much time is bookable time?
  - How many appts per FTE/week?

