Department of the Air Force

Integrity - Service - Excellence

Preparing Ready Medics for Agile Combat Employment/Multi-Modal Conflict

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Disclosure

Presenter has no relevant financial or non-financial interests to disclose.

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Learning Objectives

1) Describe medics role in the AFFORGEN model and Agile Combat Employment environment

2) Define Ready Medics

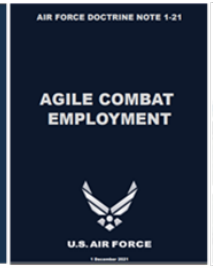
3) Identify the medical readiness standards to deploy

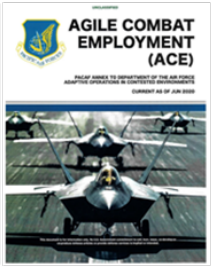
4) Explain existing and future technologies for delivery of health care while either under attack or in a cyber-degraded environments

The Foundation

Optimizing Force Structure

To pace the PRC threat, we can no longer afford to maintain weapons that are not relevant in the future fight and whose capabilities can be matched by superior technology. Sustaining such equipment takes needed defense dollars away from the acquisition of systems that are needed for modernization. We need to retire aging platforms, and ensure that every defense dollar is spent on programs and equipment that will be relevant to the high-end fight in contested environments. We cannot continue to mortgage our future by being wedded to technology of the past.





ACCELERATE CHANGE OR LOSE

In an environment that includes, but is not limited to, declining resources, aggressive global competitors, and rapid technology development and diffusion, the U.S. Air Force must accelerate change to control and exploit the air domain, while also underwriting national security through nuclear deterrence to the standard the Nation expects and requires.

Accelerate Change or Lose Document, Gen Brown, C.Q., Aug 20

"The DAF requires a modernized force that is relevant today and long into the future…We must invest in the cutting-edge technologies and capabilities that are critical to securing our military advantage in the future. Enabling our military advantage in the long term means that we need to shift away from legacy platforms and weapons systems that are decreasing in relevance today and will be irrelevant in the future. We must also create decision superiority by delivering information and capabilities to decision makers at all echelons. We must methodically and immediately move out on tough decisions in order to compete".

Vision: *"All Air Force Medics in 2030 will be able to perform tactical lifesaving skills in a cyber-degraded, overwhelmingly contested environment, with mass casualties for a prolonged period of time with limited resources."*

All AFMS personnel, Air Force Specialty Codes/Skillsets, and ranks in order to enhance and improve outcomes in a contingent environment.

The Skill Sets

- Perform Universal Precautions
- Vital Signs
- Activities of Daily Living
- Intake & Output
- Respiratory
- Wound Management
- Alarm Management
- Patient Movement
- Documentation
- Post Mortem Care
- Specimen Collection
- Trauma Precaution

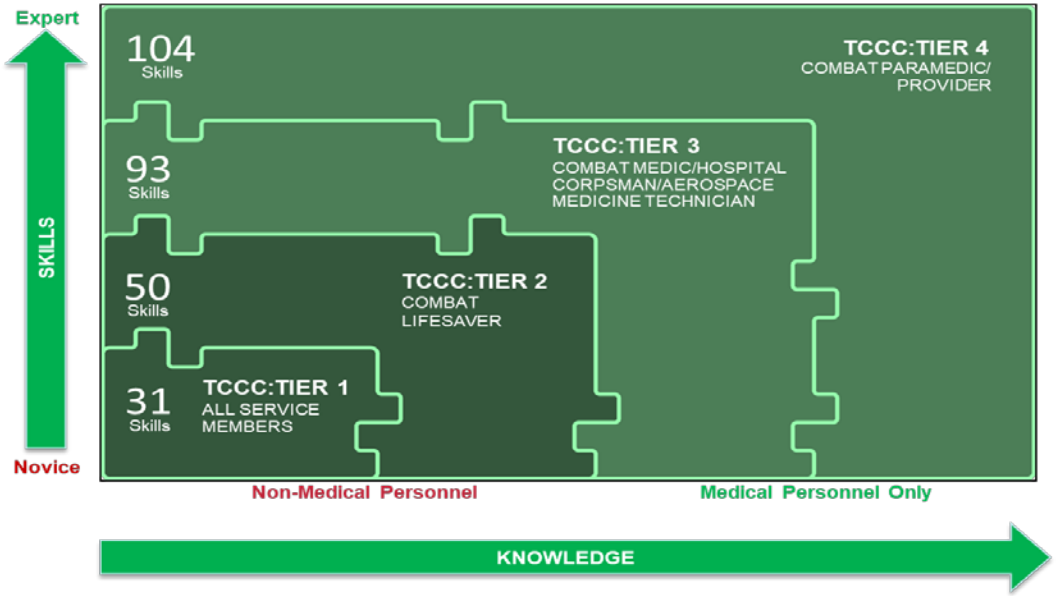
Total of 52 Specific Skills:
Achievable/Repeatable/Retainable

TCCC

Broad base of skills common to all AFSCs

Enhance skills supporting Tactical Combat Casualty Care (TCCC)

Validate proficiency and currency in skills



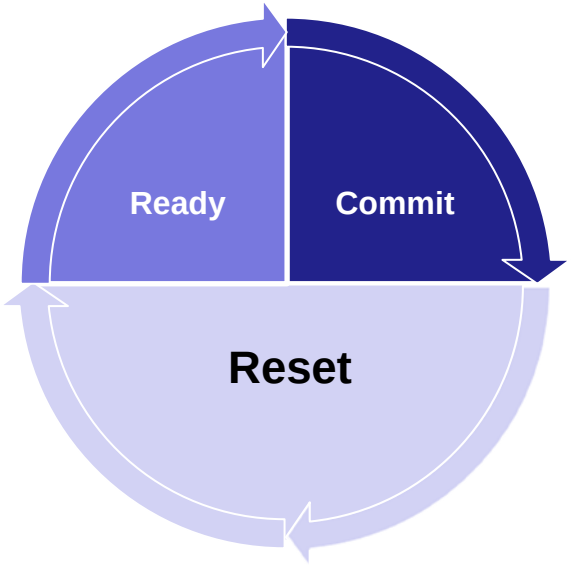
AFFORGEN

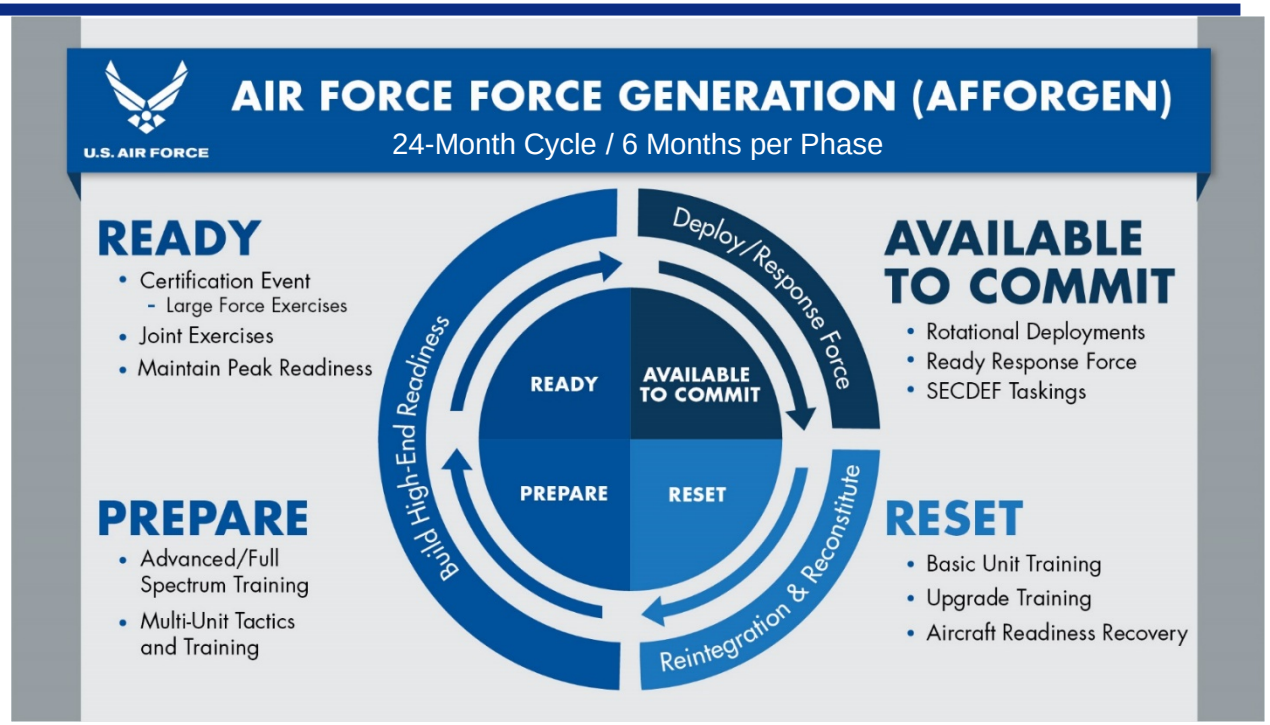
AFFORGEN Readiness Framework

SECDEF Readiness Framework

Active Component	Reserve Component
Deploy-to-Dwell 1:3 *= SD Goal*	Mob-to-Dwell 1:5 *= SD Goal*
Deploy-to-Dwell 1:2 *= SD Redline*	Mob-to-Dwell 1:4 *= SD Redline*

Joint Staff 3-Phase Model





"Balance of current operations tempo with time for our Airmen to train for full-spectrum combat operations"

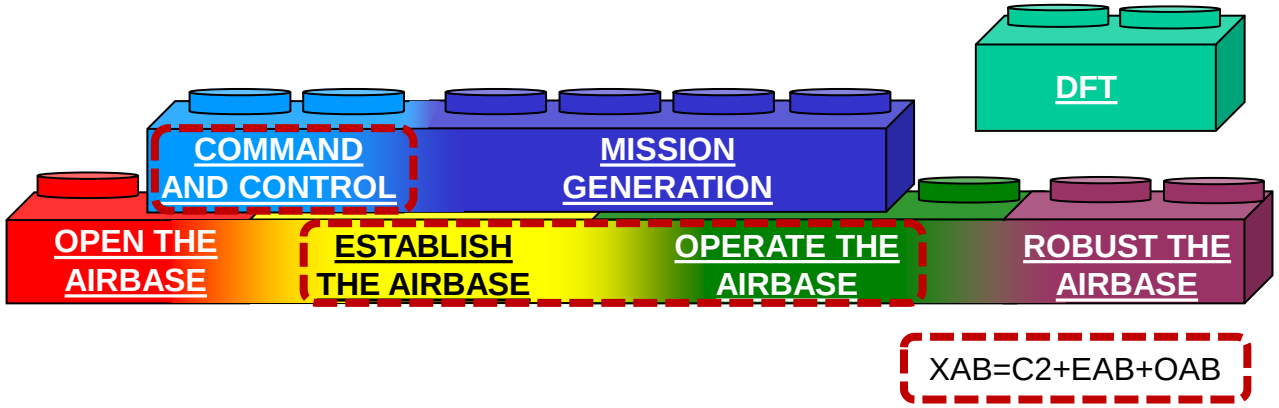
General Brown, CSAF

A	B	C	D	A	B	C	D
Oct 2022 – Mar 2023	Apr 2023 – Sep 2023	Oct 2023 – Mar 2024	Apr 2024 – Sep 2024	Oct 2024 – Mar 2025	Apr 2025 – Sep 2025	Oct 2025 – Mar 2026	Apr 2026 – Sep 2026

Regain readiness for the high-end fight

AFFORGEN Force Elements

- **Force Element (FE): Integrated set of multiple unit type codes (UTCs) that the USAF uses to offer operational capability to the Joint Force**
  - **Mission Generation (MG)**
  - **Open the Airbase**
  - **Expeditionary Airbase (XAB)**
    - **Command and Control (C2)**
    - **Establish the Airbase (EAB)**
    - **Operate the Airbase (OAB)**
  - **Robust the Airbase (RAB)**
  - **Demand Force Team (DFT)**
    - **High-demand/low-density capabilities; regional/theater assets; unique capability not required at most XABs**



- **FEs are dependent on preceding FEs**
- **FEs are tailorable but not divisible**

Future: AFMS will integrate medical capability with all AF operational Force Elements, augmented with discreet medical capability sets (DFTs)

TRAINING FOR AND TRANSPORT OF INFECTIOUS PATIENTS

Building a Legacy

The West Africa Ebola outbreak highlighted capability gaps for DoD to manage patients with high consequence infectious diseases

Modeled after C-STARS framework in partnership with University of Nebraska Medical Center

U.S. AIR FORCE

GLOBAL CENTER FOR HEALTH SECURITY

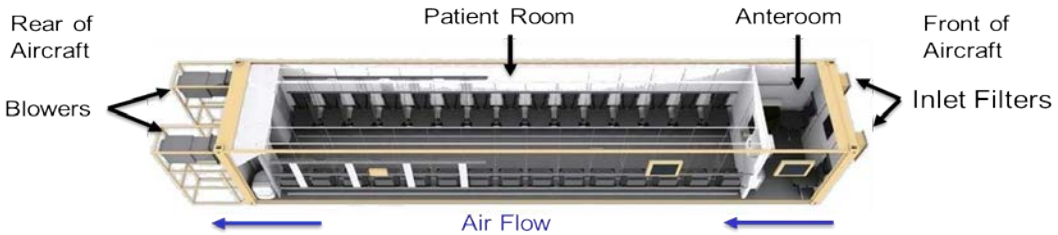
NETEC

University of Nebraska Medical Center
Nebraska Medicine

UNITED STATES AIR FORCE INFECTIOUS DISEASE C-STARS OMAHA SCHOOL OF AEROSPACE MEDICINE

Negatively Pressurized Conex (NPC)

Internal view. The NPC has 30 side facing seats in patient room, 2 caregiver seats in anteroom, and 5 litter stanchions, each with 3 sets of litter arms for 15 total positions.



External view of NPC. The NPC has an aft negative pressure blower system continuously pulling air through the forward inlet HEPA filters. Air flows from the least to most contaminated areas, entering the NPC through the anteroom. Air from the Anteroom then enters the patient room through two HEPA filters, then exits the NPC through two HEPA filters, at > 99.97% efficiency for < 0.3 microns.

- **Max Number of Passenger Configuration:**
  - **30 Passengers (no medical care during transport)**
- **Max Number of Ambulatory Patients Configuration:**
  - **22 Ambulatory Patients (patients seated & medical care is needed during transport)**
- **Max Number of Litter Patients Configuration:**
  - **8 Litters, 7 Ambulatory Patients and 2 caregivers (max patients supine position & medical care is needed during transport)**
- **System Data:**
  - **6 HEPA Filters**
  - **2 Blowers (1 Pri / 1 Backup)**
  - **~70 Minute C-17 Load Time (includes chain tie downs)**

PHYSIOLOGIC MONITORING

Assisted Trauma Distributed Observation Kit (BATDOK) ™

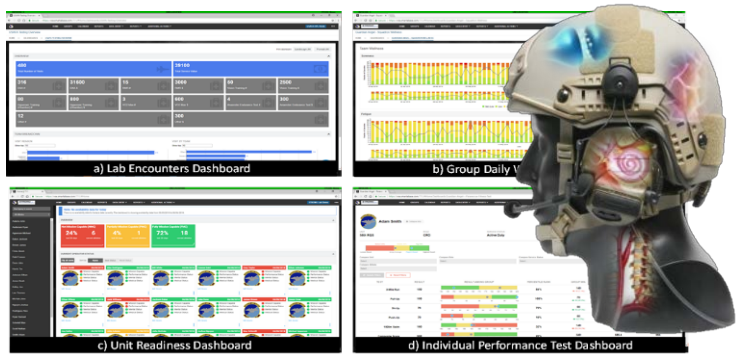
- Initiated from a requirement needing <u>improved point-of-injury patient care & documentation</u> while supporting <u>offline referencing of clinical practice guidelines</u>
- Designed using an <u>open-architecture</u>, bottom-up approach where multi-service medics drove the look and functionality of every button, menu, and interface
  - Custom modes/views & documentation workflows <u>tailored to end-user needs</u>
- Runs on any COTS/GOTS Android (5.0+) device and is free to government

- Sensor <u>*agnostic*</u> allows it to leverage existing & emerging FDA approved wireless sensors to scale to multiple mission sets
- Transmit encrypted/unencrypted messages on isolated, commercial, or military networks to share and <u>*disseminate patient status between parties*</u>

Other Wearables

Fatigue Optimized Cognition Under Stress (FOCUS)

Airman Data Analysis & Performance Tracking System (ADAPTS)



- **Rapid Assessment of Special Tactics Readiness**
- **Improve readiness and performance**

Key Deliverables:

- Airman-wearable and pre/post mission fatigue management system comprising sensors, analytic models, and personalized interventions
  - Existing and emerging indicators of fatigue
  - Interventions including scheduling, pharmacological, probiotics, and non-invasive brain stimulation
- Laboratory and relevant environment test data to confirm efficacy
- System software

Warfighter/Sustainment Benefit

- Secure and maintain combat readiness
- Reduce tracking and reporting burden
- Improve human performance team coordination
- Cognitive and physical state assessment
- Advanced data integration and transmission
- Ingestion, analysis, display and reporting

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