



# ***Air Force Global Strike Command***

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## **Missile Community Cancer Study (MCCS) Update**



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AFGSC/CC  
February 2024**



# MCCS Summary

Guardian/former Missileer diagnosed with non-Hodgkins Lymphoma (NHL) discovered colleagues with cancer & started important dialog: *do Missileers have increased cancer risk?*

Cancer concerns  
in Missileers  
Dec 2022

AFGSC/CC directs  
study  
Feb 2023

Site Visits & Town  
Halls at Missile  
Wgs, Space Delta  
Mar-May 2023

Round 1  
Environmental  
sampling  
Jun-Jul 2023

PCBs identified &  
Mitigation efforts  
started  
Aug-Oct 2023

Round 2  
Environmental  
sampling  
Oct-Nov 2023

Round 3  
Environmental  
sampling  
Feb-Apr 2024

Epidemiology  
Review complete  
Jun 2024

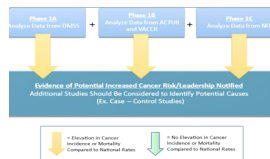
## Missile Community Cancer Study (MCCS)

Run by US Air Force School of Aerospace Medicine (USAFSAM)



### Epidemiology Review

Compare 14 common cancers in the general population to missile-related career fields using large government databases



- Data back to 1976
- Includes ~84K past/present missile community members

### Environmental Sampling

Collect 3 seasonal rounds to assess for any chemicals, contaminants, or hazards



### Safety of Airmen prioritized at all stages

- Immediately instituted changes after site visits
  - ✓ Burning activities ceased, hazard signs updated
  - Deep cleans & living space upgrades scheduled
- MAFs with PCBs over EPA threshold closed until mitigated

### Environmental Sampling

- ✓ Round 1 Air/Water/Soil/Surface complete; results posted on website
- ✓ Rounds 1 & 2 Radon complete
- ✓ Round 2 Air/Water/Soil/Surface complete
- Vandenberg Sampling complete
- Round 3 Sampling Plan pending

### Epidemiology Review

- ✓ Phase 1A – DoD Medical Data
- Phase 1B – Currently analyzing

### Transparent engagement with stakeholders & leaders

- White House PACT Act Representatives
- VA Military Environmental Exposure Sub-Council
- Veterans' Service Organizations

a/o Feb24



# Round 2 Results

- **Environmental Sampling:** all 45 Missile Alert Facilities (MAFs) tested in each of 3 seasonal rounds
  - All air, water, & soil samples below acceptable regulatory levels for any chemicals or hazards
  - Radon levels well below intervention threshold for all 3 bases
  - Over 2,400 samples taken at each base, similar to Round 1

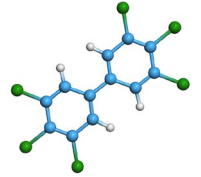


- **Polychlorinated Biphenyls (PCB) not detected**
  - Missile Procedures Trainers (MPTs) sampled at each base (108 total surface swipes & 2 air tests)
  - MAFs not re-sampled as the persistent nature of PCBs does not change seasonally and cleaning efforts still underway
  - Vandenberg SFB sampling includes Launch Facilities (LFs), which will help inform further LF testing at the MWs



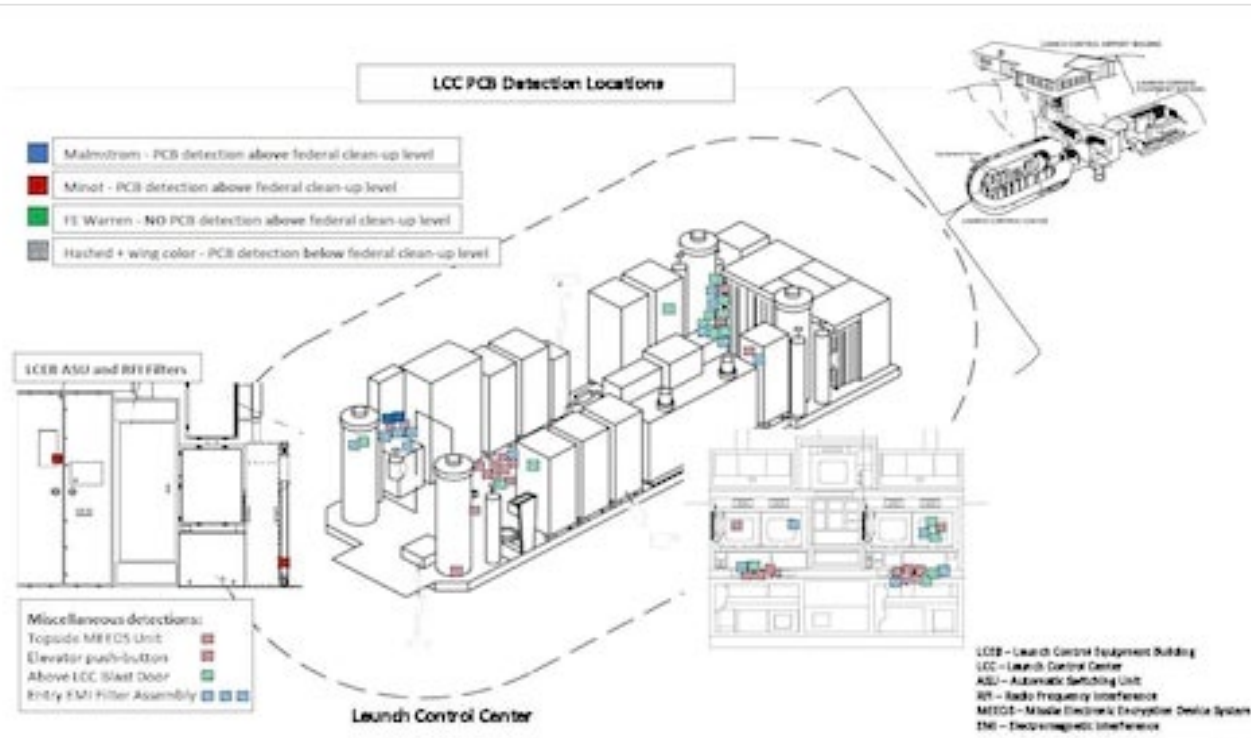


# PCB Mitigation



## ■ Cleaning efforts continue

- In Round 1 sampling, 3 MAFs (4 surface samples) over  $10 \mu\text{g}/100 \text{ cm}^2$ , a stringent EPA standard applicable in similar settings
- AFGSC/A4, 20 AF/A4, Minuteman SPO & USAFSAM developed protocols using iterative process
- **2 MAFs successfully cleaned to below  $10 \mu\text{g}/100 \text{ cm}^2$  and re-opened**



## ■ Additional mitigation efforts in LCCs

- Verification of PCB-containing materials
- Environmental upgrades & deep cleaning
- PCB cleaning contract

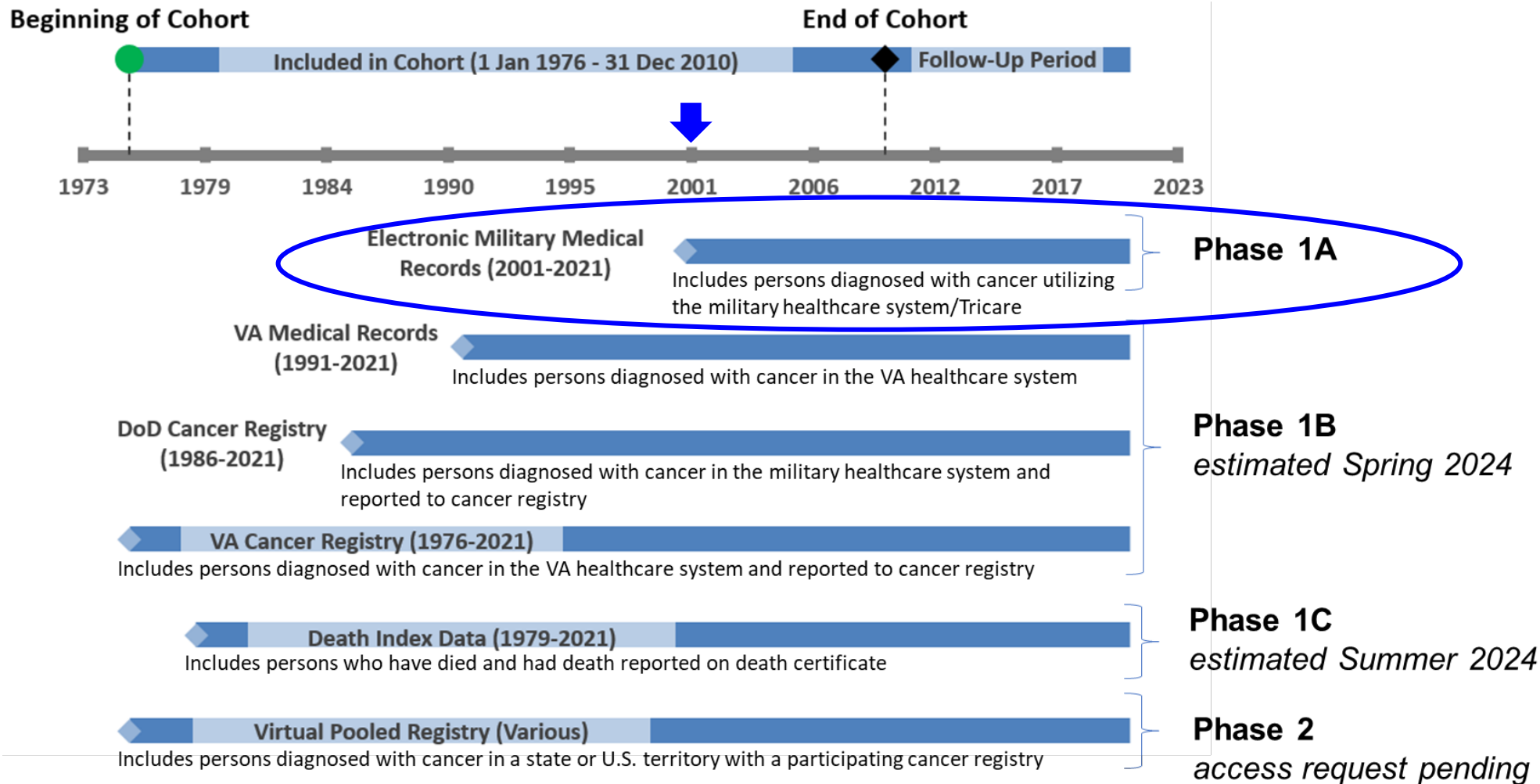
## ■ Next steps

- Create standard PCB response procedures for areas of concern identified in future
  - MX Technical orders (TOs)
  - Bioenvironmental response checklists
  - Civil Engineering (CE) manuals
- LF sampling plan





# Epidemiology Review

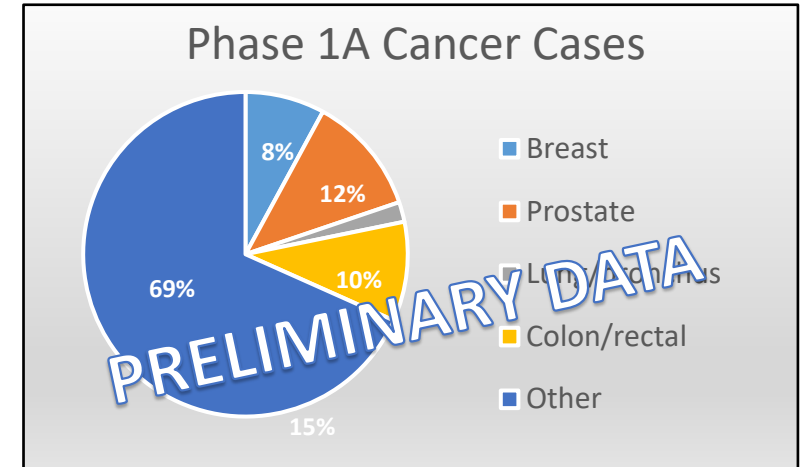


Core AFSCs Working in MAFs	
1D7	Cyber Defense Operations
2M0	Missile & Space Systems Maintenance/Facilities
2W2	Nuclear Weapons
3F1	Services
3P0	Security Forces
8S0	Missile Facility Manager
21M	Munitions/Missile Maintenance Officer
13N	Missileer
13S	Space & Missile Operations
31P	Security Forces Officer



# Phase 1A Results

- Comparison of MCCS Phase 1A cancer rates to the general population is **difficult at this time** due to incomplete case counts within this data set (Electronic Military Medical Records)
- With this limited data, breast and prostate cancer are trending towards increased incidence in the missile community
  - Breast and prostate cancer are the two most common US cancers
  - This trend is similar to other findings in the military population based on recent independent research (Bytnar *et al*)



**Conclusion:** Higher rates of breast and prostate cancers in servicemembers 40–59 years of age than in the general population may result from greater cancer screening utilization or cumulative military exposures. Lower incidence of other cancers in servicemembers may be associated with better health status.

- There is **no increased incidence** of non-Hodgkin Lymphoma (NHL) in Phase 1A; the next phase will **continue to analyze** additional data



# Health Surveillance Timeline

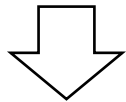
## ■ Missile-related career fields in DOEHRS

- Most missile field jobs already included, e.g. Maintenance, Facility Mgrs, Security Forces
- Missileers not previously tracked; now added
- BE updating all workplace Health Risk Assessments by end of CY24

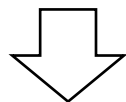
## ■ ILER compiles data through career & after

- Visible to DoD & VA medical personnel

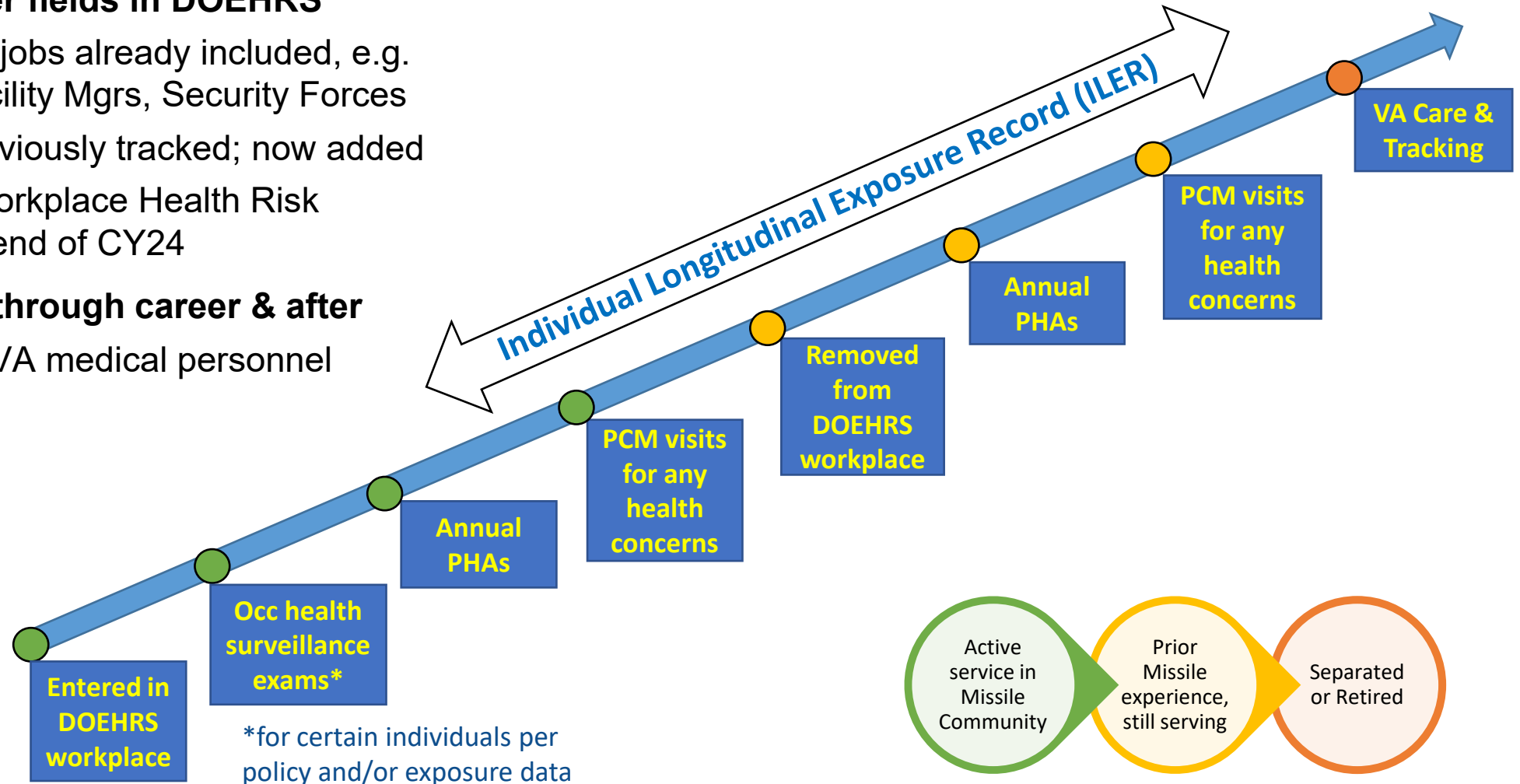
**DOEHRS**  
Defense Occupational &  
Environmental Health  
Readiness System



**ILER**



**Medical Record**





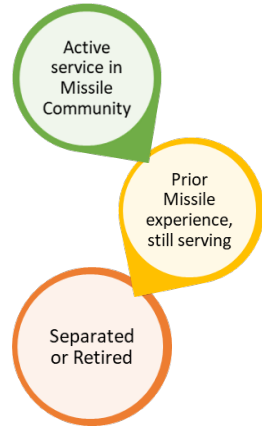
# Way Forward



ASK A QUESTION

Use the QR code to submit

## ■ Ensure appropriate hazard documentation for all missile-related personnel



- Currently serving, in or out of missiles – ILER (as depicted on previous slide)
  - USAFSAM team built tool/process to improve data transfer/accuracy
  - Hazards in ILER available by location, but not by individual – except for deployed OCONUS locations; working with DHA for alternate options
- Prior service
  - Developing an incident report to capture previous potential exposures
  - Notification through MCCA website, VA, and Veterans' Service Organizations

## ■ Reproductive Health concerns – MCCA results will help determine if further study is warranted

## ■ Stakeholder Engagement

- White House/VA PACT Act Discussions – completed in January; next due in June
- Monthly VA Coordination; Military Environmental Exposure Sub-Council – update in June

## ■ Complete Environmental Sampling – Round 3 this spring

## ■ Continue Epidemiology Review – Phase 1B data set analysis/integration underway