HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH

Occupational & Environmental Medicine

Return to the Friendly Skies: Post-COVID Flight Clearance for Airmen

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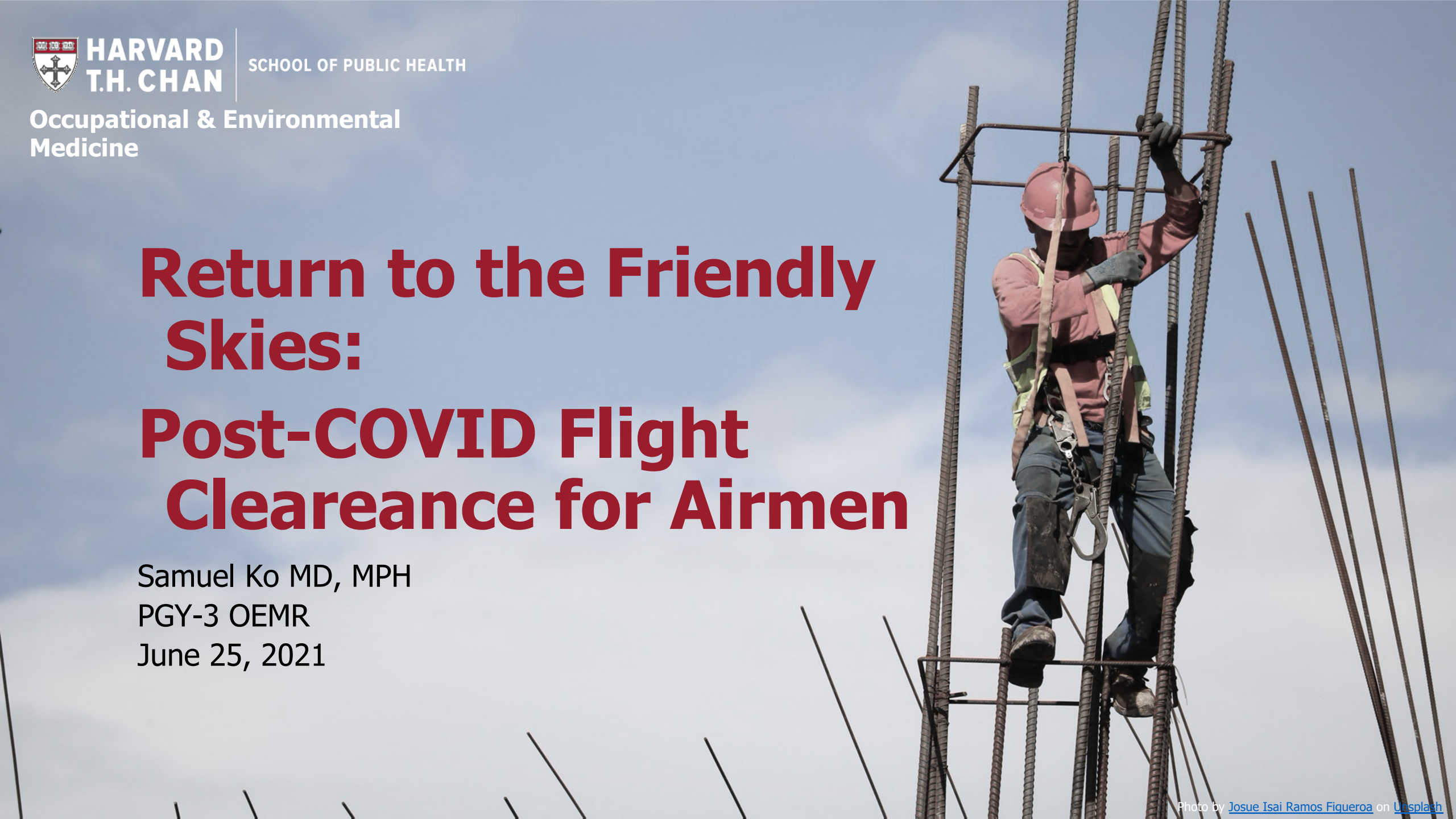


Photo by Josue Isai Ramos Figueroa on Unsplash

Disclosures

These opinions are those of the authors and not that of the United States Navy, Department of Defense, Federal Aviation Administration, or US Government

IRB Exemption Category 4 (45 CFR 46), The data utilized in this study is publicly available and approved for unrestricted general use. No research data was collected specifically for our study. No research team member had access to subject identifiers linked to data.

Source:

Objectives

1. Discuss considerations regarding risk for flight environment

2. Review specific COVID sequelae relevant to flight physiology

Source:

COVID and Airman

Acute COVID – clear cut

Chronic illness/Sequelae – unclear, complicated
Severe Cases, Post Hospitalization/ICU

Purpose of the review: to create risk stratification strategy

**not transmission reduction measures*

Source:

Methods

PubMed Search – Long Term effects of COVID-19 (>60 days)

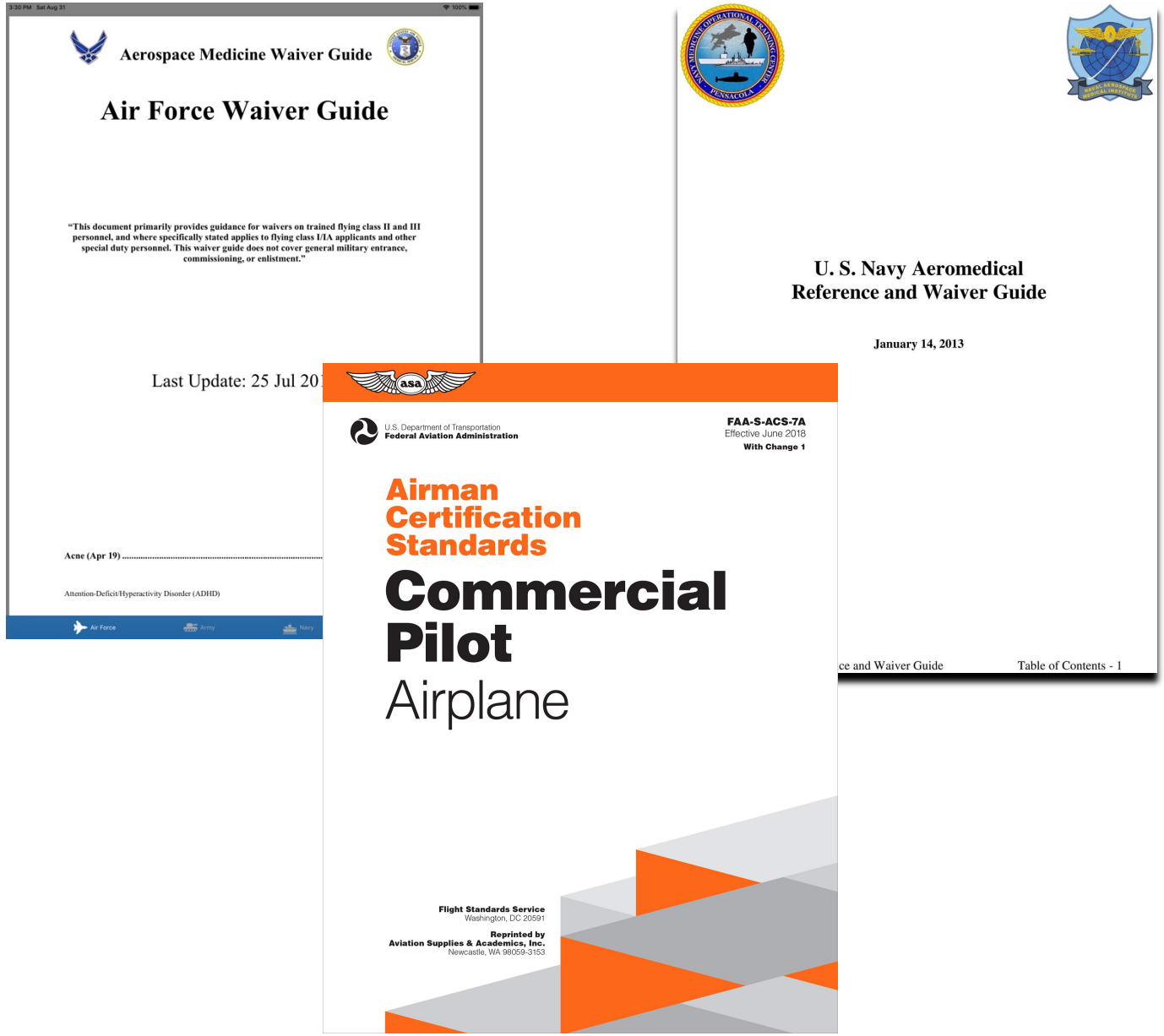
- Clinical signs and symptoms
- Epidemiology for frequency (incidences)
- Persistently abnormal lab tests or imaging studies
- Risk Factors for long term sequelae

Source:

Risk Mitigation

Disruption of Civil Air Transportation vs Public Safety

Comparison to current standards - FAA, USN, USAF for sequelae relevance



Source:

Pulmonary

Concern – Dyspnea (36%), Hypoxemia/Diffusion Capacity (21%)

a) Post hospitalization O2 requirement (35%)

Consider – Symptomatic or O2 Sat <96%,

a) Pulmonary Function Test, Exercise Tolerance Test

Source:

Cardiac

Clinical Concern – Arrythmias, Ischemia, Cardiomyopathy

a) Cardiac involvement in Severe Cases (78%), A-fib, Heart Failure (10%)

b) Review Medications – Hydroxychloroquine, Azithromycin

Consider – EKG, Cardiac MRI, Event Monitor

Source:

Neurologic

Clinical Concern - Ischemic Events, Cognitive function, Guillain-Barre

a) Cerebrovascular Accident (5.9%), Neurologic Symptoms (18%)

b) Seizure (0.08%)

Consider – EEG, MRI, Neuro Evaluation

a) Waivers, challenging

Source:

Psychologic

Concern – Depression, PTSD (25%)

a) Suicidal Ideation 0.2%

Consider – Evaluation, Clinical course, and Medication use

Source:

Other

Hematologic
Concern – DVT (19.8%)/PE (18.9)

a) Waivers? 3 months after oral anticoagulation

Constitutional
Concern – "Long Haul" COVID

a) Consider – Vigilance Testing

Source:

Conclusion

- Hospitalization/ICU
- Pilot age, comorbid conditions, medications
- Pilot class and airframe

	CATASTROPHIC	CRITICAL	MODERATE	MARGINAL
FREQUENT			WEAKNESS FATIGUE	HEADACHE
PROBABLE				
OCCASIONAL		THROMBOEMBOLISM SHORTNESS OF BREATH DEPRESSION		COUGH PTSD
REMOTE	ARRHYTHMIA HYPOTENSION	DIZZINESS BRAIN FOG	NEUROPATHY INSOMNIA	ANOSMIA
IMPROBABLE	SEIZURES NEUROLOGICAL DEFICITS			FEVERS

Fig. 1. COVID-19 sequelae and aeromedical risk stratification.

Source:

Other Considerations

COVID Hospitalization/ICU

Pilot age, comorbid conditions, chronic medications

Pilot class (FAA certificate) and airframe

Vaccination?

Variants?

Source:

Future Direction

Review Accepted - Journal of Aerospace Medicine and Human Performance

FAA Technical Report forthcoming

Estimated full project: 12/31/2022

Estimated final report: Feb 2023

Source:

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Questions?