



CAPSCA EUR-MID/12

(19-20 May 2025)

EGYPTIAN CIVIL AVIATION AUTHORITY



AIRCREW HEALTH CONCERNS

OUTLINES

- ❑ Health Definition.
- ❑ Aircrew Health Concerns
- ❑ Communicable and Non-Communicable Diseases
- ❑ Egyptian Civil Aviation Authority (ECAA) & Aeromedical Council Roles.
- ❑ Mitigation Strategies for Communicable and Non Communicable diseases and other Health concerns.

Health Definition

The World Health Organization (WHO) Defines health as a state of complete physical , mental, and social well-being and not merely the absence of disease or infirmity.

AIRCREW HEALTH CONCERNS

Aircrew is exposed to a unique Health Concerns and demanding work environment.

So we have to understand the Aeromedical Landscape

- The unique health challenges of aviation personnel
- Environmental factors: e.g. altitude, circadian disruption, radiation
- Occupational hazards: e.g. style of life, jet lag, stress, long duty hours
- Increased risk of infectious disease transmission due to global travel

HAZARD DEFINITION

The term hazard is defined in the ICAO Safety Management Manual (SMM) (Doc 9859) as: **A condition or object with the potential of causing injuries to personnel, damage to equipment or structures, loss of material, or reduction of ability to perform a prescribed function.**

AIR CREW HEALTH CONCERNS



Health hazards that can face the Aircrew can be **physical, biological, psychosocial, chemical, or environmental**, and they may impact both short-term functioning and long-term well-being.

AIR CREW HEALTH CONCERNS



PHYSICAL HAZARDS

Noise Exposure: Prolonged exposure to engine and cabin noise can lead to hearing loss and fatigue.

Cosmic Radiation: Increased risk of exposure at high altitudes, especially on polar routes; linked to cancer and reproductive risks.

Vibration and Turbulence: Can lead to musculoskeletal injuries or motion-related discomfort.

AIR CREW HEALTH CONCERNS



Jet Lag and Circadian Disruption: Irregular sleep patterns, fatigue, and hormonal imbalances.

Barometric Pressure changed: e.g. Barotrauma, Sinus or Ear problems

AIR CREW HEALTH CONCERNS



BIOLOGICAL HAZARDS

Infectious Diseases:

Air-born disease: Risk of exposure to communicable diseases (e.g., COVID-19, influenza, tuberculosis) due to international travel and confined spaces.

Foodborne and Waterborne Illnesses: During layovers in areas with limited food safety.

Vector-Borne Diseases: Malaria, dengue in endemic destinations.

AIR CREW HEALTH CONCERNS



PSYCHOSOCIAL HAZARDS

Mental Health Stress: Extended periods away from home (home sickness), irregular schedules, and high responsibility can lead to anxiety, depression, and burnout.

Fatigue: A leading cause of human error in aviation; affected by long duty hours and inadequate rest.

Substance Use Risk: Self medication problems, Potential coping mechanism in response to chronic stress or sleep disruption.

AIR CREW HEALTH CONCERNS



CHEMICAL HAZARDS

Cabin Air Quality: Possible exposure to ozone, fumes, or engine oil contaminants (fume events).

Disinfectants and Cleaning Agents: Repeated exposure may cause skin or respiratory irritation

AIR CREW HEALTH CONCERNS



ERGONOMIC & OCCUPATIONAL HAZARDS

Musculoskeletal Injuries: Repetitive lifting (especially for cabin crew), awkward postures, and standing for long durations.

Slip and Fall Injuries: Common during turbulence or in confined aircraft spaces.

AIR CREW HEALTH CONCERNS



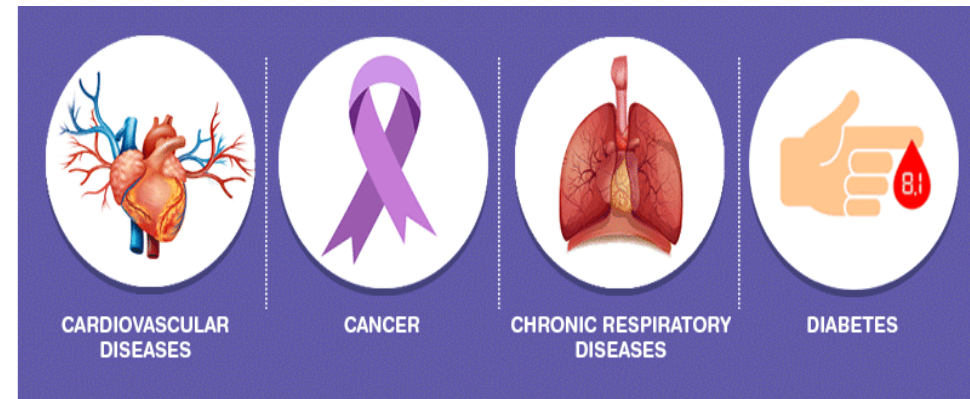
So Understanding and mitigating these hazards is critical for maintaining **aircrew health**, ensuring **aviation safety**, and supporting global **public health resilience**, in line with **ICAO** and **CAPSCA** priorities

Health diseases that facing aviation personnel are categorized into:

COMMUNICABLE DISEASE



NON-COMMUNICABLE DISEASES



COMMUNICABLE DISEASES

Aircrew are at increased risk due to frequent international travel, close contact with passengers, and confined cabin environments.

Common Airborne Infections

Influenza, Tuberculosis, COVID-19 pose significant risks in flight.

Gastrointestinal Infections:

Hepatitis A

Vector Born Disease

e.g. Yellow fever, Malaria,
Dengue Fever

NON-COMMUNICABLE DISEASES

Due to irregular schedules, circadian disruption, and occupational stress, aircrew are vulnerable to several chronic conditions.

 **Cardiovascular diseases**
Hypertension, coronary artery disease

 **Anxiety, depression, sleep disorder**

 **Metabolic disorders**
Diabetes Mellitus, Obesity

IMPLICATIONS FOR AVIATION SAFETY



Both communicable and non-communicable conditions can impair performance, decision-making, and fitness to fly.

Early detection, continuous medical surveillance, and adherence to ICAO medical standards are essential.

COMMUNICABLE DISEASES AMONG AIRCREW

MITIGATION STRATEGIES FOR COMMUNICABLE DISEASE:



- 1- Set policies, procedures and preparedness plan for public health Emergency based on ICAO , WHO and National Aviation authority standards. Egyptian Civil Aviation Authority (ECAA) established an emergency plan in coordination with public health Authority and other Stakeholder
- 2- Vaccination, stringent hygiene, and early detection reduce transmission.
- 3- Direct and indirect awareness through workshops and training in coordination with ministry of Health based on ICAO and WHO instructions.

MITIGATION STRATEGIES FOR COMMUNICABLE DISEASE:



- 4- Distributing bulletins to all Aviation personnel about the risk of any infectious disease and the preventive measures through Occupational Health and Safety Department in the Airlines Companies incase of spread of any infectious disease.

These bulletins include:

- The country of Origin.
- Mode of transmission.
- Preventive measures.

VACCINATION



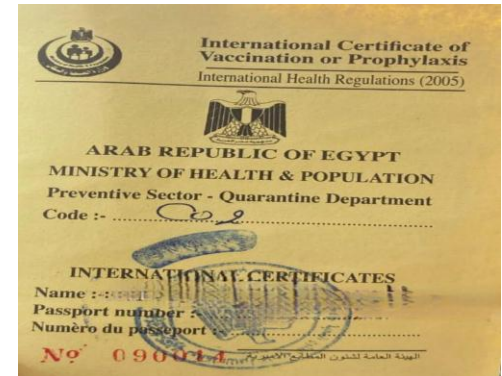
- **Vaccination is essential for aircrew exposed to international travel and public health risks.**
- **Proof of vaccination**, especially during outbreaks or when entering endemic areas.
- **Yellow Fever vaccination** is the **only WHO-mandated vaccination** under IHR (2005).

VACCINATION:



The vaccination should be documented in the International Certificate of vaccination or Prophylaxis.
And it should include :

- Full Name , national ID/Passport
- Type of the Vaccine /Prophylaxis,
- Batch No. of the Vaccine, Date of vaccination
- Signature of the supervising physician



VACCINATION:

Recommended Vaccinations for Aircrew (Based on Risk Assessment & Destination):

Yellow Fever

COVID-19

Hepatitis A & B

Influenza (annual)

Tetanus-Diphtheria-Pertussis (Tdap)

Typhoid (for certain travel destinations)

Meningococcal vaccine (for travel to endemic regions like Hajj)

Rabies (if exposed to animals during layovers)

Vaccination offices in Egypt distributed all over the country.

..

Air-Crew can also get any information about any infectious disease, vaccinations and other requirements before travelling to any country through the **Health Traveler Guide** at the Ministry of public health website

QR Code:



NON-COMMUNICABLE DISEASES AND OTHER HEALTH CONCERNS

NON COMMUNICABLE DISEASE



Noncommunicable diseases (NCDs), also known as **chronic diseases**, tend to be of **long duration** and are the result of a combination of genetic, physiological, environmental and behavioral factors.

The most common NCDs are **cardiovascular diseases** (such as heart attacks and stroke), **cancers**, **chronic respiratory diseases** (such as chronic obstructive pulmonary disease and asthma) and **diabetes**.

NON COMMUNICABLE DISEASE

Key Non-Communicable Diseases Relevant to Aircrew and its impact on Aviation

Category	Common Conditions	Aviation Impact
Cardiovascular	Hypertension, Ischemic Heart Disease, Arrhythmias	Sudden incapacitation, reduced performance
Metabolic	Diabetes Mellitus (Type 2), Obesity	Risk of hypoglycemia, fatigue, sleep apnea
Respiratory	Asthma, Chronic Obstructive Pulmonary Disease (COPD)	Hypoxia sensitivity, exercise limitation
Neurological	Epilepsy, Migraines, Stroke	Seizure risk, disorientation
Mental Health	Depression, Anxiety, Substance misuse	Reduced situational awareness, risk of suicide
Musculoskeletal	Chronic back pain, osteoarthritis	Functional limitation, distraction during operation

NON COMMUNICABLE DISEASES

Non-communicable diseases pose a **significant, often silent risk** to aviation safety. A **multifaceted approach** combining:

- proactive screening,
- lifestyle interventions,
- regulatory support,
- mental health care

Is essential to **maintain the operational health and fitness of Aircrew.**

THE INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)



The International Civil Aviation Organization (ICAO) as per (Annex 1) Personnel licensing requires:

- Medical assessments ensure no condition exists that could lead to sudden incapacitation or reduced alertness.
- States establish a process for periodic medical checks based on the class of license.
- Any medical unfitness must be reported and the certificate suspended or revoked until fitness is restored.

The **Egyptian Civil Aviation Authority (ECAA)**, **Egyptian Aeromedical Council** and **Aviation Medical Examiner (AME)** play **crucial roles** in maintaining **aviation safety** by **ensuring** that the Aircrew meet **medical standards** outlined by the International Civil Aviation Organization (ICAO)

, (Annex 1) mandates medical assessments for personnel licensing.

The Egyptian Civil Aviation Authority (**ECAA**) is the governmental agency responsible for regulating and overseeing Civil aviation in Egypt.

The ECAA also **works to ensure that all airports in Egypt meets the international safety regulations.**

And to ensure **Safety of aircrew members** of all classes **via proper monitoring** of application of **international regulations** especially **medical regulations.**

The ECAA is the national regulatory body that **oversees aviation medical certification processes.**

- **Reviews complex or borderline medical cases** where fitness for duty is uncertain or conditional.
- **Appeals Body:** Serves as a higher-level authority for appeals.

The Egyptian Aeromedical Council is considered the only accredited body authorized by the Egyptian Civil Aviation Authority to perform medical examination on the aircrews and Air Traffic Controllers in Egypt.

Proper Medical assessment, Proactive Screening and Prevention is the main Role of the Aeromedical Council under the Supervision of the Egyptian Civil Aviation Authority

EGYPTIAN AEROMEDICAL COUNCIL



The Egyptian Aeromedical Council is **one of the distinguished civil medical councils in the Middle East.**

The Egyptian Aero-Medical Council was **established in 2005.**

A special section has been prepared to grant flight authorization to Egyptian and foreign pilots according to the US Federal Aviation Administration 'FAA' medical regulations.

EGYPTIAN AEROMEDICAL COUNCIL

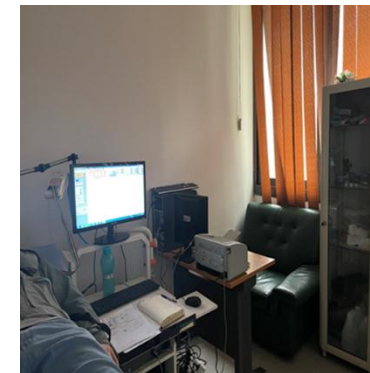


- The Medical Council is characterized by the presence of **highly qualified Consultants, specialists in different specialties and experts in the aviation medicine field, with continuous medical education and training in Aviation medicine.**



- Egyptian Aeromedical Council is **provided with sufficient space and reliable infrastructure** to perform its work, to ensure the quality, safety and efficacy of the services provided.

- **Well equipped Specialized Clinics**



THE AERO-MEDICAL COUNCIL 'S ROLE



- 1 — **Establishes policies and procedures** in line with **ICAO standards**, recommended practices (SARPs) and **national regulations**.
- 2 — **Coordination with Egyptian Civil Aviation Authority (ECAA)** to **ensure medical decisions align** with **national aviation safety** goals.
- 3 — **Monitoring Emerging Health Hazards:** Identifies and responds to new health risks (e.g., mental health issues, communicable diseases) that may affect aviation safety

THE AERO-MEDICAL COUNCIL 'S ROLE



4 — **Medical Licensing**

ICAO Annex 1 mandates medical assessments for personnel licensing.

5 — **Medical Assessments**

Initial and recurrent exams ensure ongoing aircrew health.

6 — **Risk Identification**

AMEs detect and educate about any health risks affecting fitness.

7 — **Career and Safety Balance**

Maintain safety while supporting career continuity where possible.



MITIGATION STRATEGIES DONE BY THE EGYPTIAN AEROMEDICAL COUNCIL FOR COMMUNICABLE AND NON-COMMUNICABLE DISEASES AND ANY HEALTH CONCERNS IN AVIATION MEDICINE

MITIGATION STRATEGIES FOR NON-COMMUNICABLE DISEASES



1. Comprehensive Medical Screening

- **Early Detection of NCDs** and any **health concern** through:
Routine screening for **hypertension, diabetes, dyslipidemia, obesity, mental health conditions and any other health concerns**
- Use of standard tools:
 - **ECG, HbA1c, BMI, lipid profiles.**
 - **Audiometry**

2- Risk Stratification and Certification Decisions

- Evaluate severity and risk of the medical condition in the context of flight safety
- Issue appropriate certification

MITIGATION STRATEGIES FOR NON-COMMUNICABLE DISEASES



3. Counseling and Health Education:

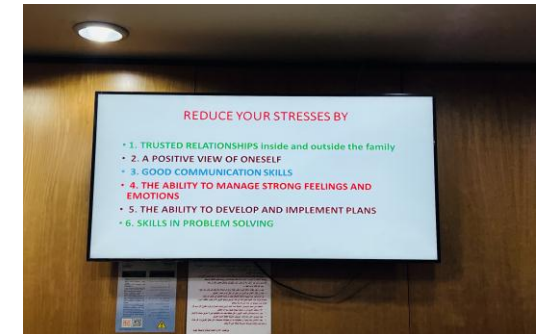
. Provide targeted lifestyle advice:

- **Diet**, and physical activity modifications
- **Stress management** and **sleep hygiene** , this happen during the routine examination and through instructions displayed on screens distributed in the Aeromedical council.

Health concerns that may face and educate them their preventive measures.

. Encourage treatment adherence:

- Reinforce the importance of medication compliance



MITIGATION STRATEGIES FOR NON-COMMUNICABLE DISEASES



4. Monitoring and Follow-Up:

- **Schedule regular follow-ups for:**
 - Chronic disease monitoring (e.g., diabetes, hypertension)
 - Reviewing progress in lifestyle modification
- **Adjust certification based on progress or deterioration according to ICAO standards.**

5. Mental Health and Substance Use Support

- Confidential mental health evaluations
 - Address conditions like depression, anxiety, and burnout
- Facilitate referral to specialists
 - Psychiatrists and follow up,
 - Educate about harms of self medication and random use of OTC medicines.
- Promote non-punitive disclosure culture
 - Ensure aircrew feel safe reporting concerns

6-Occupational and Regulatory Support

- **Medical Fitness-to-Fly Guidelines:**
 - Use ICAO Doc 8984 & national CAA regulations (**ECAR 67**)
- **Return-to-Work Protocols:**
 - Post-NCD event (e.g., myocardial infarction) evaluations
- **Collaborative Care Models:**
 - Involvement of aviation medical specialists, and different specialties.

MITIGATION STRATEGIES FOR COMMUNICABLE DISEASES



The **Egyptian Aeromedical Council** plays a **critical role in ensuring the health, safety, and operational readiness of the Aircrew** while supporting the public health framework within civil aviation.

1. Surveillance & Risk Assessment

AMEs are frontline agents in identifying communicable diseases during routine medical assessments.

Assists in assessing fitness to fly for the aircrew during or after public health events.

2. **Advisory Role in Public Health Emergencies**

Provides expert medical advice to Egyptian Civil Aviation Authorities (ECAA) during outbreaks (e.g., COVID-19,).

3. **Providing Medical Guidance and Education**

Advise the Aircrew on disease prevention, vaccination, and travel health.

Educate on hygiene, lifestyle risk factors, and emerging public health threats affecting performance or transmissibility.

CONCLUSION:

Enhancing Aircrew Health for Safety through

- **Proactive Health Management**
Early action prevents serious health issues and incidents.
- **Collaboration Essential**
Aircrew, airlines, and AMEs must work together closely.
- **Continuous Improvement**
Regular updates to aeromedical standards enhance safety.
- **Prioritize Health**
Healthy crew means safer skies for all.



THANK YOU