



| ICAO

# INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

## Mental Health in International Context

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# Mental Health and Human Performance in ICAO

Aviation Medicine  
Mental Health  
CAPSCA  
Health promotion  
Occupational health

Annex 1: Personnel Licensing  
Annex 6: Operation of Aircraft  
Annex 13: Accident Investigation  
Annex 19: Safety Management

**Manual: Civil Aviation Medicine (8984)**

**Manual: Alcohol & substances (9654)**

Manual: Human Performance (10151)

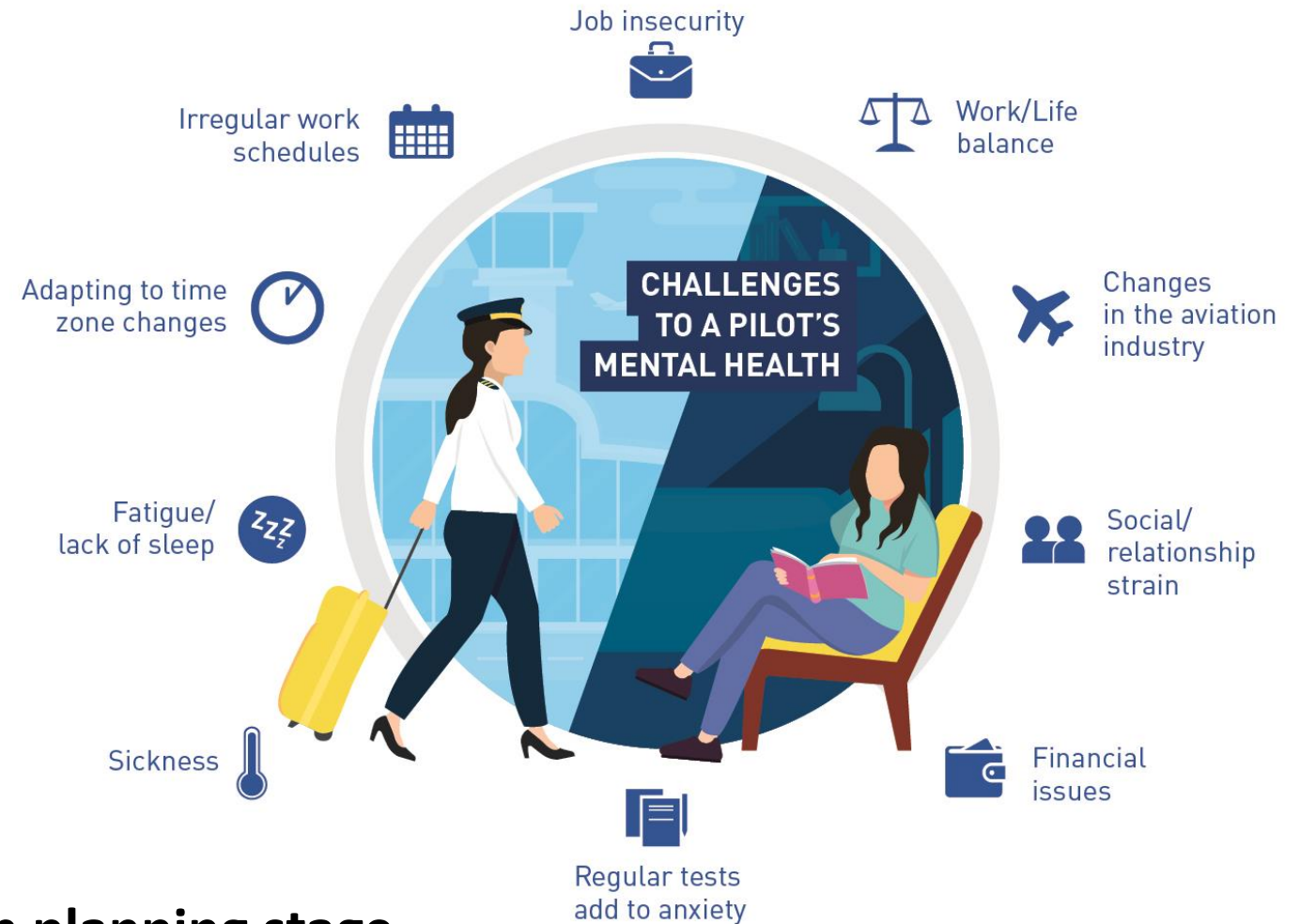
Manual: Safety Management (9859)

Manual: Critical Incident Response Programme for Cabin Crew (10185)

Manual: Accident investigation

**New Manual: Promoting Health and Mental Well-being in Aviation**

# Fitness to Fly



Second edition in planning stage

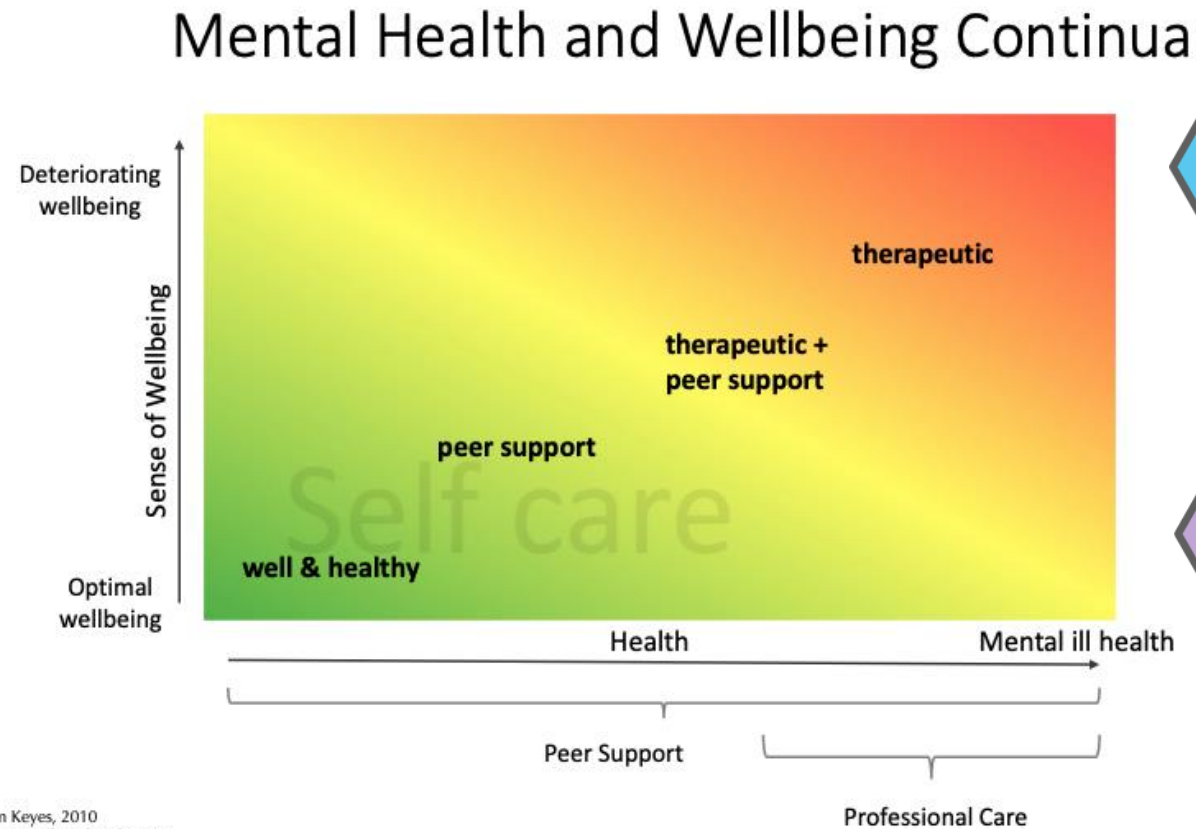
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## During COVID-19

- Electronic Bulletin: Promoting, maintaining and supporting mental well-being in aviation during the Covid-19 pandemic (EB2020/55)
- Electronic Bulletin on Post-Covid 19 infection protocol for medical certification (EB2022/8)



# Mental Wellbeing and Peer Support (COVID-19)



## Working Group Activities (2023-2024)

Aviation mental health taxonomy  
Peer support  
Mental health Risk Assessment  
SARPs Review  
Update Manual of Civil Aviation  
Update Manual on Alcohol and  
substance use  
New manual – wellbeing and  
mental health  
Human Performance

COVID-19  
Telehealth  
Age limitations  
Medical classes of examination  
Airship license  
**Risk assessment and risk mitigation methodologies**  
Neurology  
**Training and support of aviation medical assessors**  
Effects of radiation  
Cardiovascular risk assessment  
Insulin dependent diabetes  
Colour vision review

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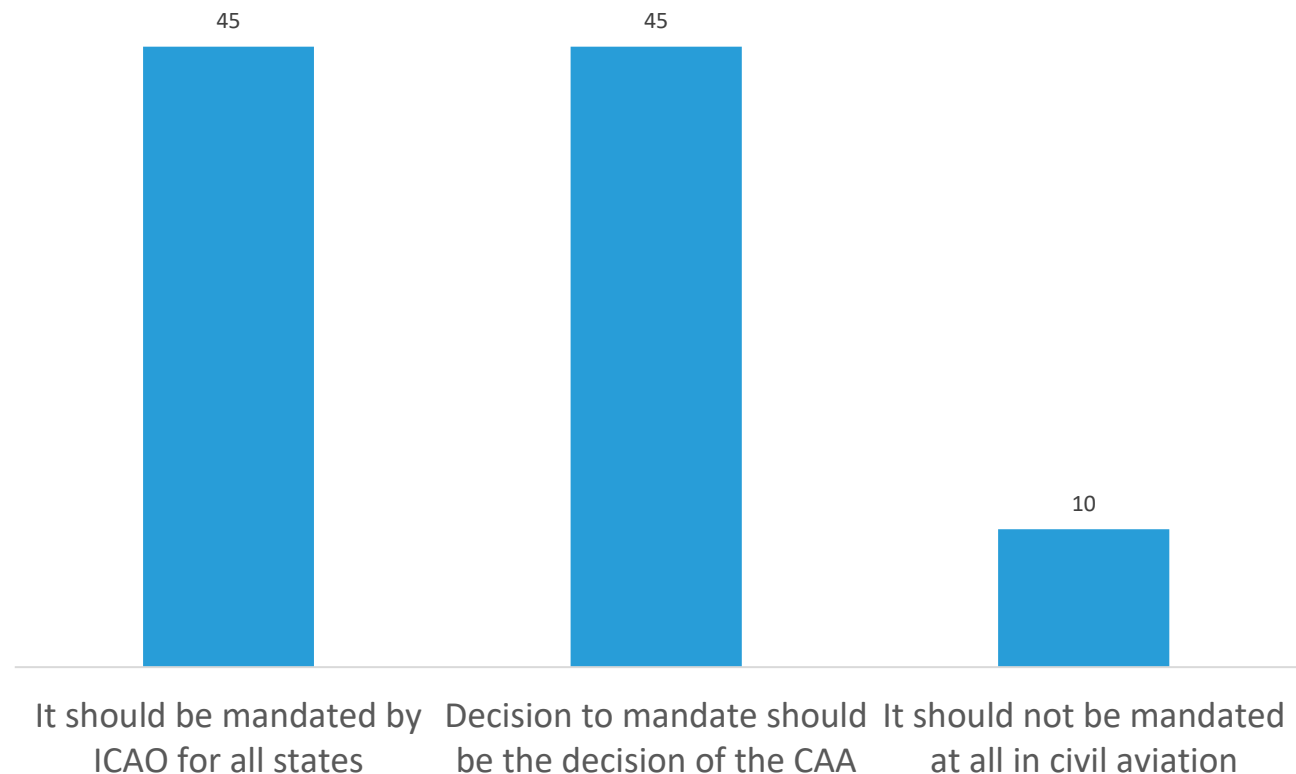
## ICAO 41<sup>st</sup> Assembly (Sept-Oct 2022)

- WP256: Medical Certification and Mental Illness
- WP357: Measures for Assessing Psychological and Physical Fitness and Management of the Risk Associated with Mental Health
- WP396: Preventative Health Programmes for Air Traffic Controllers

**Work included in ICAO Aviation Medicine Section work programme**

## Air Navigation World: Session on Mental Health (Aug 2023)

What would you recommend in terms of Peers Support programmes for psychological wellbeing in aviation? (select one)





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## Air Navigation World: Session on Mental health (Aug 2023)

- The importance of continuing to build **trust in the system** is essential to create a psychologically safe aviation environment.
- Still a **problem to report** mental health issues in aviation due to the associated stigma and/ or the potential consequences for licence holders.

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## Air Navigation World: Session on Mental health (Aug 2023)

- Implementation of **peer support groups** will assist:
  - addressing the issues of trust and reporting
  - facilitating access to medical and psychological support
  - preventing mental health problems
  - prolonging aviation careers
- **Training** of aviation personnel and aviation medical examiners is imperative

## Risk management principles

Sudden incapacity or subtle in-flight impairment

- Literature review, incident and accident data, performance data, medical examinations, peer reports

Neuro-cognitive functioning

- Literature review, performance data, neuro-cognitive testing, peer reports

Risk assessment and Management

- Qualitative and quantitative, bow-tie, risk matrices, 1 % rule, acceptable risk threshold, Swiss cheese mitigation measures

Application or implementation

- Research, data analysis, data driven algorithmic risk modelling, automation, potential new operations: single pilot, extended multi-crew and remote pilots

**Vision for the future: individual risk assessment considering incapacitation and impairment risk, functional decline and type of operation.**

## Examples of medical-related risks/factors to consider

Physical	Cognitive and mental	Genetic and systemic
CVD	Executive functions	Ethnicity, disease prevalence
Gastro-intestinal	Medication, drugs	Age, gender and race
CNS	Reaction time	Health assessment capacities
Cancer	Anxiety	State resources
	Depression	Aviation Medicine capabilities
		Implementation and oversight

## Examples of aviation related risks/ factors to consider

Occupational	Operational	Socio-economic
Circadian rhythm	Crew complement	Country legislation
Shift and night work	Aircraft type	Social environment
Flight duration and fatigue	New technology	
Healthy worker effect	Aircraft automation	

Limitations, restrictions and additional requirements to be informed by both medical and aviation factors

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## Risk management considerations

- **Whole-society/industry approach** – aviation medicine, occupational health flight operations, safety, peer support
- Role of line check/ simulator performance/cognitive testing/ other **performance-based tests**
- Address **limitations of assessments** - health promotion, training, standardized protocols

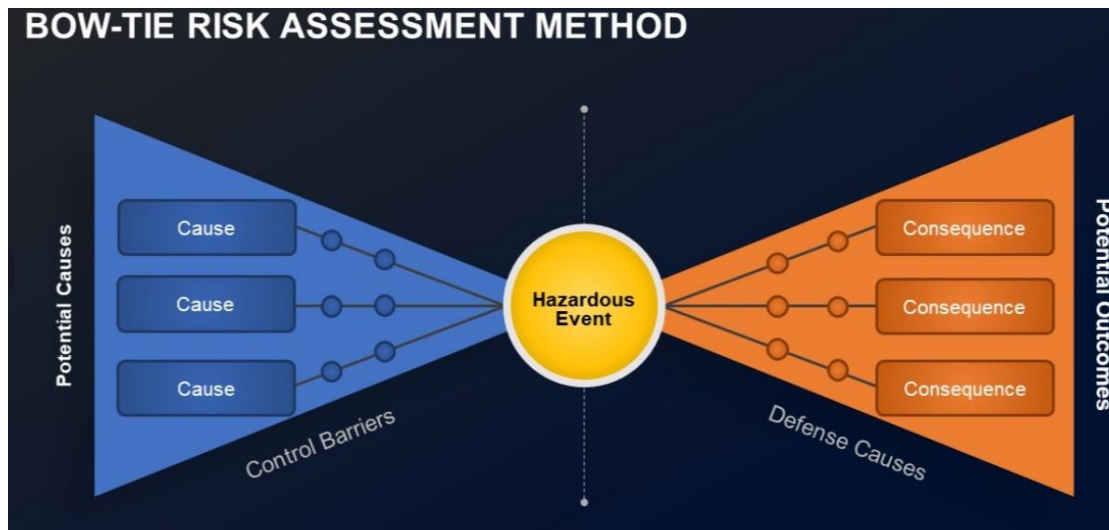


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## Risk management considerations

- Combination of **qualitative and quantitative risk assessment**
  - **Policy determination:** Stratified and tailor-made risk matrix, weight according to national considerations, combined with bow-tie assessment (evidence based and risk modelling)
  - **AME implementation:** risk matrix and guidance material e.g. prediction tools
  - **Risk threshold** to be decided by **State** (national sovereignty), but minimum threshold to be determined by **ICAO** for global application
  - Application to **future operational developments** in aviation e.g. single pilot operations

# Risk assessment and risk management



Aircrew role 1				
	Yellow	Red	Red	Red
	Yellow	Yellow	Yellow	Yellow
	Green	Green	Green	Green
Aircrew role 2				
	Yellow	Red	Red	Red
	Yellow	Yellow	Yellow	Yellow
	Green	Green	Green	Green
Aircrew role 3				
	Yellow	Yellow	Red	Red
	Yellow	Yellow	Yellow	Yellow
	Green	Green	Green	Green
Aircrew role 4				
	Green	Yellow	Yellow	Red
	Green	Green	Green	Green
	Green	Green	Green	Green

Risk matrices

Swiss Cheese Risk Mitigation Model



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## Challenges in mental health assessment

- Aviation (crew and regulators)
  - Trusting the process and decisions
  - Financial sustainability
  - Harmonised implementation of SARPs
  - No country left behind
- Aviation Medicine
  - Less objective measurement methods
  - Resources and capacity
  - Consistent decisions

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## Challenges in mental health assessment

- Individual countries
  - Acceptance of mental health diagnosis
  - Cultural differences
  - National regulations

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## Potential solutions

- Continued collaboration – multi-disciplinary on multiple levels
- Share success stories
- Focus on health promotion
- Awareness and training all stakeholders
- Peer support – also for AMEs and medical assessors
- Standardized procedures and protocols (to the greatest extent possible)
- Implementation support

## Potential practical tools and considerations

Assessment	Medical mitigation	Operational
<ul style="list-style-type: none"><li>▪ Incident and accident reports</li><li>▪ Safety reports<ul style="list-style-type: none"><li>• Peer reports</li><li>• Other operational reports</li><li>• Training reports</li><li>• Line check – trends/parameters</li><li>• Simulator check</li><li>• Medical assessment</li><li>• Specialist medical assessment</li><li>• Specialist tests</li></ul></li></ul>	<ul style="list-style-type: none"><li>▪ Who to do follow-up<ul style="list-style-type: none"><li>• Follow-up frequency</li><li>• Extent of follow-up</li><li>• Medical flexibility in terms of requirements and operations</li></ul></li></ul>	<ul style="list-style-type: none"><li>▪ PIC, multi-crew, crew pairing</li><li>▪ Adapted duties</li><li>▪ Type of aircraft</li><li>▪ Restricted: type of flights</li><li>▪ Restricted: flight &amp; duty hours</li><li>▪ Exceptional authorization</li></ul>





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Thank You!