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AEROMEDICAL SERVICES

Risk-based Aeromedical Evaluation

A risk-based aeromedical evaluation is an approach to assessing the medical fitness of aviation personnel

- **individual risk factors,**
- **operational requirements, and**
- **safety considerations.**

Rather than applying a one-size-fits-all approach, a risk-based evaluation tailors the assessment to the specific needs and circumstances of the individual and the aviation role they perform.

Step 01

Identification of Risk Factors

- What may impact the individual's aeromedical fitness
- medical conditions,
- lifestyle factors,
- occupational hazards,
- operational requirements

Step 02

Risk Assessment

- Evaluate the potential impact of identified risk factors on flight safety
- severity of the condition,
- the likelihood of adverse events occurring,
- the operational context in which the individual performs aviation duties.

Step 03

Risk Classification

Classify individuals into different risk categories based on the severity and complexity of their risk factors.
classifying individuals as

- low risk,
- moderate risk, or
- high risk

based on their medical history, current health status, and other relevant factors.

Step 04

Tailored Evaluation Approach

Customize the aeromedical evaluation process to address the specific risk profile of the individual.

- focusing on particular medical assessments,
- specialized testing, or
- additional consultations with specialists based on the individual's risk factors and operational requirements.

Step 05

Decision making

- Use a risk-based approach to inform decision-making regarding the individual's aeromedical certification, fitness, and any restrictions or accommodations.
- Consider the balance between the individual's ability to perform aviation duties safely and the potential risks associated with their medical condition or other risk factors.

Step 06

Mitigation Strategies

Implement mitigation strategies to manage identified risks and enhance the individual's aeromedical fitness.

- medical treatment,
- lifestyle modifications,
- ongoing monitoring, or
- targeted interventions to minimize the impact of risk factors on flight safety.

Step 07

Documentation and Reporting

Document the rationale for the risk-based evaluation approach and any decisions made regarding the individual's aeromedical certification or fitness for duty.

- clear and transparent communication of findings, recommendations, and
- any necessary restrictions or limitations to the individual, aviation authorities, and other relevant stakeholders.

Step 08

Follow-Up and Monitoring

Establish a plan for ongoing follow-up and monitoring of the individual's aeromedical fitness, including

- periodic assessments,
- medical reviews, and
- reassessment of risk factors over time.

Adjust the aeromedical evaluation and management plan as needed based on

- changes in the individual's health status,
- operational requirements, or other relevant factors.

Effective communication with individuals undergoing medical assessments.

It is essential for ensuring clarity, transparency, and mutua throughout the evaluation process

Establish Rapport

- Create a welcoming and supportive environment to help individuals feel comfortable.
- Greet individuals warmly,
- introduce yourself, and
- explain your role in the aeromedical evaluation process.

Active Listening

- Listen attentively to the individual's concerns, questions, and preferences.
- Validate their experiences and demonstrate empathy and understanding.

Clear Explanati

- Provide clear and concise explanatio of the purpose, procedures, and expectations of the aeromedical assessment.
- Use layman's term and avoid medical jargon to ensure comprehension.

Transparency

Be transparent about the assessment process, including

- what will be evaluated,
- any potential outcomes, and
- the individual's rights and responsibilities.
- Discuss privacy and confidentiality measures to reassure individuals about the confidentiality of their medical information.

Encourage Questions

- Encourage individuals to ask questions and express any concerns they may have about the assessment.
- Create a supportive environment where individuals feel comfortable voicing their questions or uncertainties.

Provide Reassurance

- Offer reassurance and emotional support to individuals who may be feeling anxious or apprehensive about the assessment.
- Address any fears or misconceptions they may have about the process or its implications.

Empowerment

- Empower individuals to participate actively in the assessment process by encouraging them to share relevant medical history, symptoms, or concerns.
- Involve individuals in decision-making processes and respect their autonomy and preferences.

Written Materials

- Provide written materials or resources to supplement verbal explanations and reinforce key information.
- Use visual aids, diagrams, or pamphlets to enhance understanding of complex concepts or procedures.

Follow-Up Communication

- Clarify any instructions, recommendations, or next steps at the conclusion of the assessment.
- Provide contact information and encourage individuals to reach out with any further questions or concerns after the assessment.

Cultural Sensitivity

- Be mindful of cultural differences and individual preferences when communicating with individuals from diverse backgrounds.
- Adapt your communication style and approach to accommodate cultural norms and values.

Professionalism and Respect

- Maintain a professional demeanor and demonstrate respect for the individual's dignity, autonomy, and confidentiality.
- Avoid making assumptions or judgments based on personal biases and treat all individuals with fairness and respect.

Aeromedical deviations which may be considered following comprehensive risk assessments

There may be certain deviations from standard aeromedical guidelines or restrictions that can be considered following a comprehensive risk assessment of a pilot, without jeopardizing flight safety.

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Assessment s

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duties is dependent on compliance with such limitation or limitations.

6.3.2.5.1 An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

These deviations should be carefully evaluated on a case-by-case basis, taking into account the individual pilot's specific circumstances, medical history, operational requirements, and risk mitigation strategies.

Conditional Medical Certification:

Issuing a conditional medical certificate s
based on the pilot's medical condition o

By imposing a restriction or limitation, aim is to mitigate the risk factors

For example

allowing the pilot to fly under certain conditions (e.g., daytime VFR only, within a specified altitude range) or with additional monitoring requirements.

Medical Monitoring

Implementing a medical monitoring program to closely monitor the pilot's health status and ensure ongoing compliance with medical standards.

This may involve **regular medical assessments, diagnostic testing, or consultations with healthcare providers** to track the pilot's progress and adjust management strategies as needed.

Individualized Risk Management Plan

Developing an **individualized risk management plan** in collaboration with the Licence Holder, Aviation Authority, and Treating Specialist to address specific risk factors and mitigate potential safety concerns.

This plan may include **tailored interventions, contingency measures, and emergency protocols** to manage risks effectively in flight operations.

Respiratory Conditions

Mild to moderate respiratory conditions, such as asthma, may be considered if well-controlled and unlikely to impair pilot performance.

Cardiovascular Conditions

- Certain heart conditions may be considered with appropriate medical documentation and evaluation,
- such as controlled hypertension or certain types of arrhythmias

Diabetes

- Pilots with diabetes may be considered for certification if their condition is well-controlled and stable, without significant risk of hypoglycemia.

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When to impose limitations, restrictions, Decreased medical fitness

Imposing limitations, restrictions, or acknowledging decreased aeromedical fitness for pilots should be done

- **cautiously and**
- **in accordance with established standards & guidelines,**
- **taking into account the safety implications of the individual's medical condition or risk factors.**

Medical Condition or Disability

When a pilot has a medical condition or disability that may affect their ability to safely perform aviation duties, limitations or restrictions may be necessary.

Examples include cardiovascular conditions, neurological disorders, musculoskeletal injuries, or vision impairment that may impact a pilot's physical or cognitive capabilities.

Medication Use

Some medications, even if necessary for managing medical conditions, may have side effects that affect a pilot's cognitive function, alertness, or coordination.

Restrictions on flying or operational limitations may be warranted for pilots taking certain medications, especially those with sedative, hypnotic, or psychoactive effects.

Temporary Health Issues

Following an acute illness, injury, or surgical procedure, a pilot may experience temporary decreased aeromedical fitness.

Temporary restrictions on flying duties or operational limitations may be imposed until the pilot has fully recovered and regained their functional capacity.

Chronic Health Conditions

Chronic health conditions such as diabetes, hypertension, or asthma may be manageable with appropriate treatment and monitoring but may still require limitations or restrictions on flying activities.

Individualized risk assessments should be conducted to determine the level of risk associated with the condition and establish appropriate management strategies.

Aging and Declining Health

As pilots age, they may experience age-related declines in physical or cognitive function that could impact their aeromedical fitness.

Regular medical assessments and age-related screening tests may be necessary to identify and address age-related health issues and establish appropriate limitations or restrictions.

Psychological or Behavioral Factors

Psychological factors such as stress, anxiety, depression, or substance abuse can affect a pilot's mental well-being and performance.

Restrictions on flying duties or requirements for psychological evaluation and treatment may be necessary to ensure flight safety and mitigate the risk of adverse events.

Risk Management Considerations

In situations where there is **uncertainty** about the safety implications of a pilot's medical condition or risk factors, **precautionary limitations or restrictions** may be imposed to minimize potential risks.

The principle of risk management should guide decision-making, balancing the potential risks associated with decreased aeromedical fitness against the benefits of continued access to aviation opportunities.

Safety-Critical Situations

In safety-critical situations where there is an **immediate risk** to flight safety, such as during in-flight emergencies or when a pilot's health status deteriorates unexpectedly, operational limitations or restrictions may be necessary to ensure the safety of the flight and its occupants.

Regulatory Compliance

All decisions regarding limitations, restrictions, or decreased aeromedical fitness shall be made in compliance with established regulatory standards and guidelines set forth by National Aviation authorities or relevant governing bodies.

It's essential to prioritize safety, transparency, and regulatory compliance in all aeromedical certification decisions.

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Aeromedical Services, Civil Aviation Authority of Sri Lanka.

Scenario 1

A pilot has recently undergone surgery to repair a torn ligament in his knee. He is eager to return to flying. What action should be taken regarding his aeromedical fitness?

a) **No action required, they can resume flying immediately.**

b) **Place retriction on flying until the knee fully heals and rehabilitates.**

c) **Allow unrestricted flying, but with regular medical check-ups.**

Scenario 2

A pilot has been diagnosed with mild hypertension. His blood pressure is well-controlled with medication. What action should be taken regarding his aeromedical fitness?

a) **Allow unrestricted flying, as long as the pilot continues taking medication.**

b) **Impose restrictions on flying until the blood pressure is consistently within normal range without medication.**

c) **Decrease aeromedical fitness and suspend flying privileges indefinitely.**

Scenario 3

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sy
hi
a)
b)
c)

Explanation:

Migraine with aura is considered a significant medical condition in aviation due to its potential to impair cognitive function and decision-making, even in the absence of symptoms. Aeromedical guidelines generally require a minimum period of being symptom-free, typically one year, before considering unrestricted flying. Monitoring for migraine symptoms alone is insufficient due to the unpredictable nature of the condition. Permanent prohibition would be excessive if the condition is manageable and symptom-free for an extended period.

Scenario 4

A pilot has developed a minor visual impairment in one eye due to a recent injury. What action should be taken regarding his aeromedical fitness?

a) **Allow unrestricted flying, as long as the impairment does not significantly affect vision in both eyes.**

b) **Impose restrictions on flying until the impairment resolves completely.**

c) **Decrease aeromedical fitness and suspend flying privileges until further notice**

Scenario 5

A pilot has been diagnosed with type 2 diabetes. Her blood sugar levels are well-controlled through diet and exercise. What action should be taken regarding her aeromedical fitness?

a) **Allow unrestricted flying, as long as the pilot maintains stable blood sugar levels.**

b) **Place limitations on flying until the diabetes is under control with medication.**

c) **Decrease aeromedical fitness and suspend flying privileges indefinitely.**


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THANK YOU!