Certification and Preventive medicine

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• No financial conflicts of interest

• All expressed views are my own
Overview

• Why do we work with pilots

• Is screening for disease helpful?

• Can we release added value to the medical examination?

• Some possibilities
The background for my views

• Institute of Aviation Medicine Oslo 22 years

• Military authority on flight medical standards
  – Rulemaking and clinical evaluation

• Civilian aeromedical centre (JAA – now EASA) in Norway 13 years.

• AME – military and civilian experience

• Specialist in occupational health.
Why have we done medicals for 100 years?

1. Flight safety
2. Flight safety
3. Flight safety
The simple question is:

• Can we make a better contribution to flight safety?
Are we dealing with a high risk population here?

- Civilian airline aircrew
- Relative risk
Standardised mortality

- From disease – Low risk
  - Pilot SMR 0.56 (0.54-0.58)*

- From occupation – High risk
  - Pilot SMR 46 (39-54)*
  - Fatal occupational accident rate 0.7/1000/yr (US)

At the moment

• We are only really working on the low-risk issues: the diseases

• Could we improve our work on the high-risk pilot occupation?
Clinical methods

• Based on diagnostic tests for disease

• Screening doesn’t improve health outcomes, only in high risk populations

• Sudden incapacitation events only relevant for a few conditions and the preventable risk is low
  – Cardiovascular, neurological
  – Only “physical” conditions screened

• What about 80% of accident causes which are human factors?
  – Fatigue, life problems, stress, etc etc
Important facts:

- Most pilot health issues that lead to loss of licence are currently not picked up at periodic medical examinations.

- Longitudinal follow-up (ie knowing the pilot and his/her work) increases the chance of picking up relevant health issues early – improving the chance of mitigation.

- Prevention is efficient in reducing risks in groups:
  - Cardiovascular risk (> 40)
  - Mental health problems*

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*"Mental health promotion and mental illness prevention: The economic case". London School of Economics and Political Science. 2 February 2011."
• How do we as medical people think about risk?
Risk models

• Statistical risk and severity of outcome (e.g. 1% rule)
  – Assess risk level /Matrix – colorcoding
  – Often used in Health and Safety work

• Threats, vulnerabilities and barriers:
  – Mitigation, threat reduction, threat containment etc
  – Often used in military analysis
  – Prevention issues are integrated
So what are the possibilities for preventive efforts?

• Pick up on psychological issues, home/work problems, subtle depression etc.

• Cardiovascular prevention may reduce incapacitation events.

• More long –term outlook – “keep`em flying!”
  – We know that prevention actually works
  – Experienced pilots are valuable for flight safety
Psychological factors – how?

• Need better methods, Aeromedical examiners need more structured tools and knowledge.

• TRUST between pilot and doctor must be improved to achieve meaningful meetings between pilot and flight doc.

• Reduce pilot´s disempowerment: Decisions have to be more transparent.
Transparent decision-making

- Collaborative process between pilot and AME with the aim of keeping the pilot in the air safely.
- Clearly defined processes, pilot involvement in process
- Reduces “unknowns” – improve trust
- BETTER decisions
Conclusions

- Aviation is still a high risk occupation, but not primarily from disease

- There are preventive tools we may more systematically apply to add value to Flight safety

- We should think long-term risk in our contact with pilots – experienced pilots are valuable

- More transparent decision-making processes, involving pilots themselves.