UK Civil Aviation Authority guidance on aeromedical certification for HIV-positive applicants

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COMPETING INTEREST DISCLOSURE

I am an employee of the UK Civil Aviation Authority and have no other pecuniary or non-pecuniary interests. Any views that I express are my own and do not necessarily represent those of the CAA.
HIV and Commercial Aviators

- Before 2000 – having a positive HIV test disqualifying

- European Joint Aviation Authorities (JAA) from circa 2000 possible for existing pilots who acquired HIV to keep flying as part of a multi-pilot operation
Developing a policy for aeromedical certification....

- International Civil Aviation Organization
- World Health Organization
- UK HIV experts across a range of specialist areas
  - CASCADE Collaboration
  - EuroSIDA data
- other national aviation authorities
...requires an understanding of the working environment.....

Stratosphere up to ~150,000ft

Cabin altitude up to 6000-8000ft

Gas filled spaces:
- lungs, GI tract, middle-ears and sinuses

Air temperature ~ -60°C

Troposphere sea-level up to 26,000-58,000ft

Susceptibility to incapacitation as a result of:
- Sudden pressure changes/decompression
- hypoxia

Time of useful consciousness
… and the tasks.

Flying needs satisfactory **musculoskeletal function, senses** and intact **cognition**:

- **Language and communication**
- **Attention/Concentration**
- **Executive functioning** - judging, reasoning, planning, decision-making and behavioural control.
- **Memory** – visual, verbal, motor, learning/recall
- **Sensory and motor functioning** *(visuospatial processing)* – making sense of the visual world, gross, manual fine-motor skills
Assessment of fitness for an aeromedical certificate

- Current functional ability
  - vision, hearing, musculoskeletal capability…..

- Risk of aeromedically relevant incapacitation
  - sudden/slow
  - overt/subtle
  - complete/partial
  - permanent/temporary
Assessing risk

1% rule based on:

- a target *all cause* fatal accident rate of 1 in $10^7$ flying hours (half the actual rate in 1980s)
- the failure rate of aircraft systems and the pilot as one of those systems
- multi-pilot operations
- the ability of the second pilot to take over during a critical phase of flight

Consider conditions and their treatment and the risk of:

- physical impairment (e.g. altered hearing or vision)
- cognitive impairment incl. altered risk behaviour
- disorientation/visual illusions
- fatigue, mood, irritability

Common Causal Factors in Aircraft Accidents

- Omission/inappropriate action
- Flight handling
- Lack of positional awareness
- Failure in Crew Resource Management
- Poor judgement/airmanship – “Press-on-itis”
Factors to consider

**Current functional ability**

- Asymptomatic
  - Cognitive/Neuropsychology
  - Neurology
  - Psychiatry & Cardiology assessments as clinically indicated

- No side-effects from medication
Factors to consider

Risk of aeromedically relevant incapacitation

- Disease progression – risk of secondary conditions
  - Serology
  - AIDS defining conditions

- Changes in cognition
  - risk of change likely to affect safe flying

- Medication
  - compliance
  - changes (dose and drug)
  - new regimens
HIV and Commercial Aviators

- European Commission Regulation:
  - Implemented in 2012
  - Class 1 medical certificate must have a limitation for multi-pilot operations only
  - Such a limitation can only be added to the certificates of existing CPL, ATPL, MPL licence holders

- Latest – UK decides to issue initial Class 1 certificates with multi-pilot limitations
Working towards unrestricted medical certification for commercial pilots

- **Likelihood of disease progression/incapacitating illness:**
  - Seroconversion to commencing ART
  - Serology
  - Seroconversion illness/co-infection
  - Age

- **Changes in cognition:**
  - should we still be concerned?
  - if so, who and what should we be concerned about?
  - Spectrum of subtle -> overt

- **Changes to drug regimens:**
  - Which drugs are acceptable?
  - Period of “grounding” after commencing treatment
  - Managing aeromedical certification and new drugs as they come into use
What next?

- PrEP guidance for pilots and ATCOs developed with advice from BHIVA & now published on CAA website

- Working with BHIVA to update guidance for applicants living with HIV

- CAA looking to develop “alternative means of compliance” to current EU requirements

- CAA supporting EASA with a review of EU requirements
Thank you. Any questions?