

# AsMA 2015 ICAO Session

**Prevention is better than cure - in  
regulatory aviation medicine too!**

## **The Role of Preventive Medicine in Regulatory Aviation Medicine**

Jarnail Singh

Chairman, Civil Aviation Medical Board  
Civil Aviation Authority of Singapore



**The Obesity –  
Diabetes Pandemic....**

**...Diabesity Pandemic**

**Based on BMI:**

**Worldwide ----- upto 24% Overweight**

**----- upto 7% Obese**

**Incidence of Diabetes ---- upto 35% in some populations / ethnic groups**



**We should expect this to be reflected in our pilots and ATCOs**





**When Tony Evans took the reins in ICAO**

.....

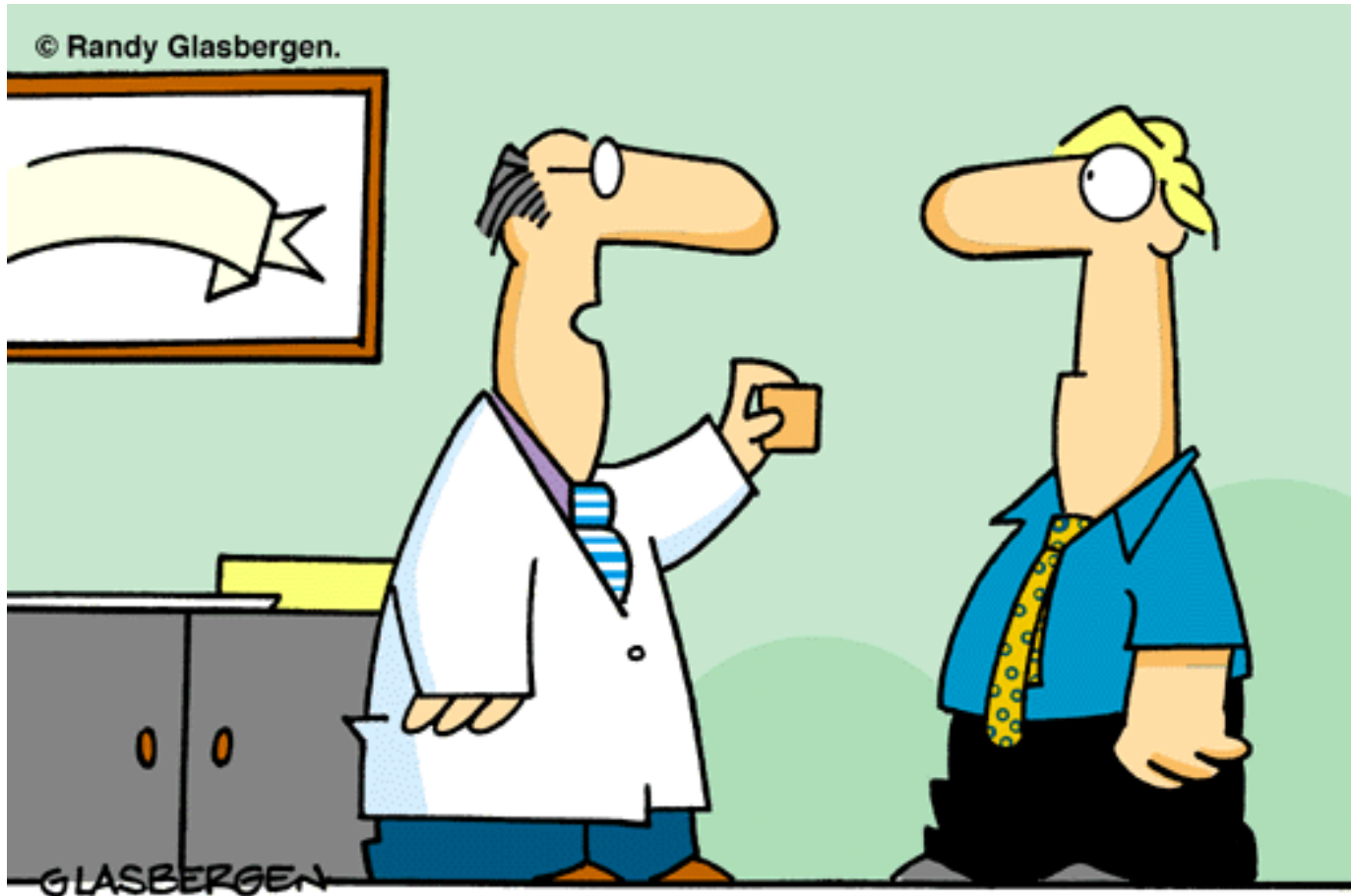
**Regulatory Medicine in vogue**

**Prescriptive rules .... Pass / Fail**

**Together with like minded regulatory folk.....  
.....Should we look at introducing / enhancing  
preventive health into the medical assessment  
for pilots and ATCOs**

From “should we do it” .....

Evolved over the years to ... “how do we do it”



**“I’m prescribing a patch to help you quit smoking. Wear it over your mouth.”**

**In November 2009 Recommended Practice 6.3.1.2.1 in Annex 1 – *Personnel Licensing* became applicable.**

**The purpose of this provision was to encourage Licensing Authorities to more efficiently utilise the time devoted to periodic Class 1 medical examinations in applicants aged under 40 years by establishing procedures aimed at preventing the development of disease.**

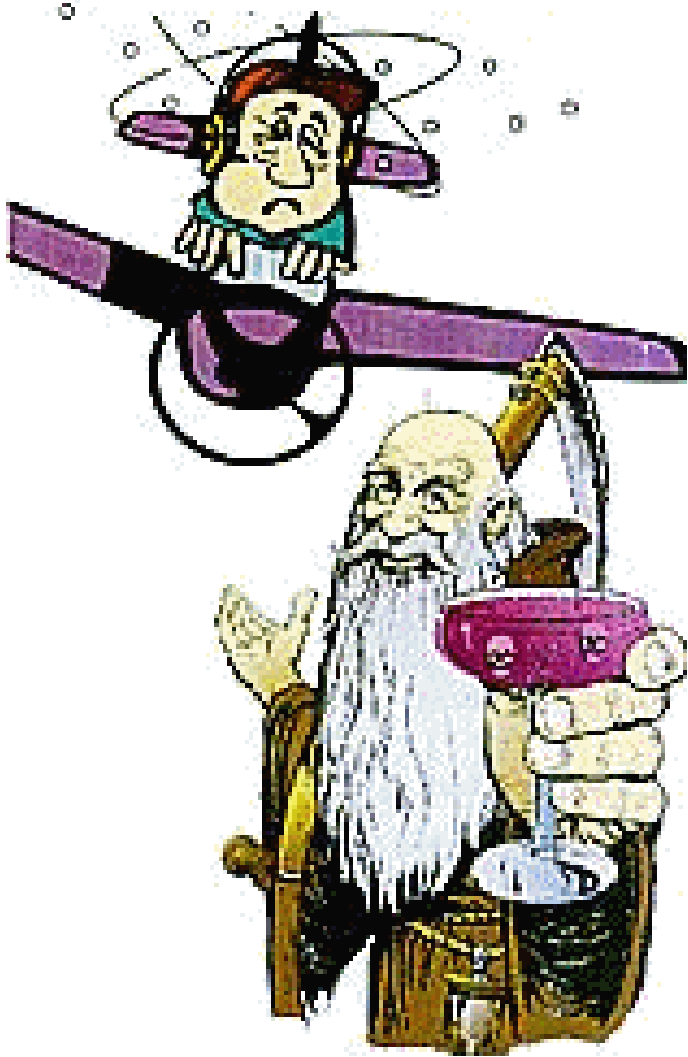
**This was expected to improve flight safety by reducing the amount of pathology present in Class 1 applicants.**

**6.3.1.2.1 Recommendation.—** *In alternate years, for Class 1 applicants under 40 years of age, the Licensing Authority should, at its discretion, allow medical examiners to omit certain routine examination items related to the assessment of physical fitness, whilst increasing the emphasis on health education and prevention of ill health.*

**Note.—** *Guidance for Licensing Authorities wishing to reduce the emphasis on detection of physical disease, whilst increasing the emphasis on health education and prevention of ill health in applicants under 40 years of age, is contained in the Manual of Civil Aviation Medicine (Doc 994)*



# Alcohol ....



# Addictive Drugs



**Subsequent informal feedback to C/MED was that States generally agreed with the principle behind 6.3.1.2.1 but few had implemented it due primarily to the difficulty in implementing it.**

**At a meeting of State Chief Medical Officers during an Aerospace Medical Association meeting in May 2014, support was indicated for reviewing the provision and strengthening it.**

**To help the Secretariat undertake such a review, C/MED reconvened a Medical Provisions Study Group (MPSG), which met in Montréal during 8 to 10 October 2014.**

# INTERNATIONAL CIVIL AVIATION ORGANIZATION

## – MEDICAL PROVISIONS STUDY GROUP MEETING ON PREVENTIVE MEDICINE

8-10 October 2014



ICAO Headquarters, Montreal

# Participants

## State

## Name

Australia

Pooshan Navathe

Canada

David Salisbury

Egypt

Sanaa Abady

Japan

Hiroko Hayashi

Japan

Kazunori Takazoe

New Zealand

Dougal Watson

Norway

Anthony Wagstaff

Singapore

Chong Chun Hon

Singapore

Jarnail Singh (chair)

United Kingdom

Sally Evans

United States

Michael Berry



## International Organizations

**International Air Transport Association and  
International Academy of Aviation and Space Medicine**

**Claude Thibeault**

**International Federation of Airline Pilots' Associations** **Antti Tuori**

**Aerospace Medical Association** **Susan Northrup**

**Industry**

**Virgin Atlantic**

**Tim Stevenson**

**Secretariat**

**ICAO**

**Anthony Evans**

**The aim of the meeting was to discuss the feasibility of increasing the emphasis on preventive medicine in regulatory aviation medicine as applied primarily to pilots and air traffic controllers.**

**Participants would then be asked to consider a possible proposal for an amendment to Annex 1 – *Personnel Licensing*.**

**There was general agreement that the implementation of preventive medicine principles by licence holders should improve flight safety through a reduction in preventable medical conditions.**

**Discussions therefore focussed on the manner in which these could be integrated into the overall medical assessment system – the involvement of medical examiners as the main mechanism may not be the optimum method in some States.**



The consensus of the Group was that the Licensing Authority should be responsible for the implementation of a health education system for licence applicants.

This could be achieved through a programme of appropriate aviation related health education implemented by the Licensing Authority, which could include involvement of the medical examiners, if required.



**There was unanimous agreement that preventive medicine concepts could play a role in reducing the future pathology burden in licence applicants and thereby improve flight safety.**

**The challenge was how to introduce it, at zero or minimally increased cost, into the variety of regulatory systems that are in place in 191 ICAO member States.**

**Any changes to Annex 1 would need to be sufficiently flexible to permit implementation by all ICAO member States, using methods appropriate to their particular regulatory circumstances.**

**The MPSG supported the idea of applying safety management principles to Personnel Licensing.**

**It felt that for aviation medicine, this would require additional consideration by a dedicated task force.**



**At the MPSG meeting there was a general agreement that the implementation of health education principles by licence holders should improve flight safety through a *reduction in the prevalence of preventable medical conditions.***

**Since the medical assessment process does not reliably identify all licence holders with an increased medical risk of incapacitation, *if the prevalence of medical conditions is reduced the number of on duty incapacitations in licence holders should also be reduced.***

**The MPSG discussions focussed on the manner in which such principles could be integrated into the overall medical assessment system. It was apparent that the involvement of medical examiners as the main mechanism (as envisaged by the current paragraph 6.3.1.2.1) may not be the optimum method in some States**

# NEW FOOD PYRAMID



Multiple  
Vitamins  
for most



Alcohol in  
moderation  
unless  
Contraindicated

Red meat and  
butter  
Use Sparingly

White rice, white bread  
potatoes, pasta and  
sweets  
Use Sparingly

Dairy or calcium supplement  
1 to 2 Servings

Fish, poultry and eggs  
0 to 2 Servings

Nuts and legumes  
1 to 3 Servings

Vegetables  
In Abundance

Fruit  
2 to 3 Servings

Whole grain foods  
At most Meals

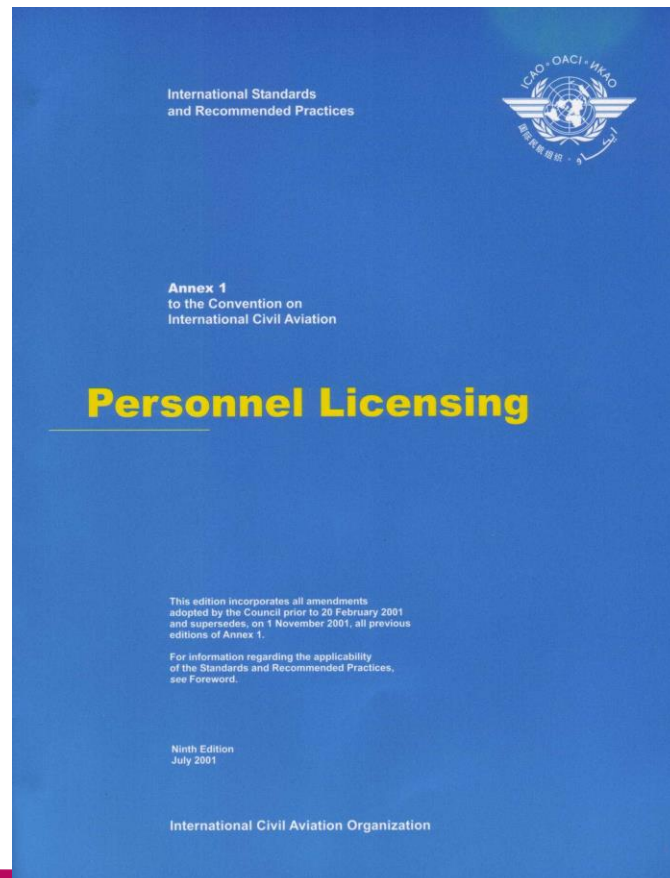
Plant oils (olive, canola,  
soy, corn, sunflower,  
peanut, and other  
vegetable oils)  
At most meals

**Daily Exercising and Weight Control**

Harvard School of Public Health



# Expected changes to ICAO Annex 1



## 1.2.4 Medical fitness

**1.2.4.2 The Licensing Authority shall implement appropriate aviation related health education to reduce future medical risks to flight safety**

**Note 1 – Standard 1.2.4.3 indicates how appropriate topics for health education activities may be determined.**

**Note 2 – Guidance on the subject is contained in the Manual of Civil Aviation Medicine (Doc 8984)**

**1.2.4.23 Recommendation.—~~From 18 November 2010~~ States should shall apply, as part of their State safety programme, basic safety management principles to the medical assessment process of licence holders, that as a minimum include:**

- a) routine analysis of in-flight incapacitation events and medical findings during medical assessments to identify areas of increased medical risk; and**
- b) continuous re-evaluation of the medical assessment process to concentrate on identified areas of increased medical risk.**

**6.3.1.2.1 Recommendation.—** *In alternate years, for Class 1 applicants under 40 years of age, the Licensing Authority should, at its discretion, allow medical examiners to omit certain routine examination items related to the assessment of physical fitness, whilst increasing the emphasis on health education and prevention of ill health.*

**Note.—** *Guidance for Licensing Authorities wishing to reduce the emphasis on detection of physical disease, whilst increasing the emphasis on health education and prevention of ill health in applicants under 40 years of age, is contained in the Manual of Civil Aviation Medicine (Doc 9894)*



The MPSG indicated that the introduction of health education concepts into a State safety programme would be fully in line with generic safety management principles, since the aim was to reduce aeromedical flight safety risk by minimizing the number of applicants who develop a significant medical problem (which periodic medical examinations may not always detect).

# Medical Assessment SMS Requirements



1. Medical Assessment policy and documentation

- Identification of hazard
- Risk assessment
- Risk mitigation



2. Medical Assessment risk management processes

- Monitoring
- Trend analysis
- Validate effectiveness



3. Medical Assessment safety assurance processes

- Training
- Communication plan



4. Medical Assessment promotion processes

# Medical Assessment risk management processes

## • Identification of hazard

Obesity  
Depression  
Smoking  
Alcohol overuse  
Recreational  
drug use

### Predictive

### Proactive

### Reactive

• Evidence based assessment of likelihood of medical condition affecting license – intervene to stop condition from arising

• Health education

• Medical condition – investigate, treat and mitigate risk

**Young aviation professionals --- looking to a career that is going to span 45 years**

**Can we help them to achieve that goal?**

**Small doses of preventive advice given at the appropriate time can!**







Kevorkian Sticks



Kevorkian Sticks



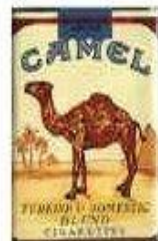
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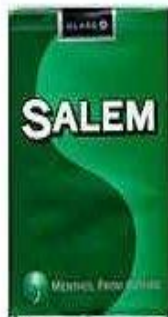
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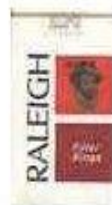
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Kevorkian Sticks



**YOU  
PAY  
THEM.**



**THEY  
KILL  
YOU.**



## Any other Business

Participants felt that further international meetings to discuss challenging case management with a view to improved harmonization of the implementation of ICAO SARPs would be valuable.

This will be pursued separately.

**"The doctor of the future will give no medication, but will interest his patients in the care of the human frame, diet and in the cause and prevention of disease."**

***- Thomas A Edison***

**Thank you for your  
kind attention!**

