



**DR LESEGO BOGATSU**

**SENIOR MANAGER: AVIATION MEDICAL DEPARTMENT**

**SACAA: MEDICAL CERTIFICATION PROCESSES**

# SINGLE AFRICAN AVIATION OFFICE



# Critical Elements Aeromedical Processes



# SACAA MANDATE - CIVIL AVIATION ACT

## MANDATE (CONTEMPORARY TRANSLATION)

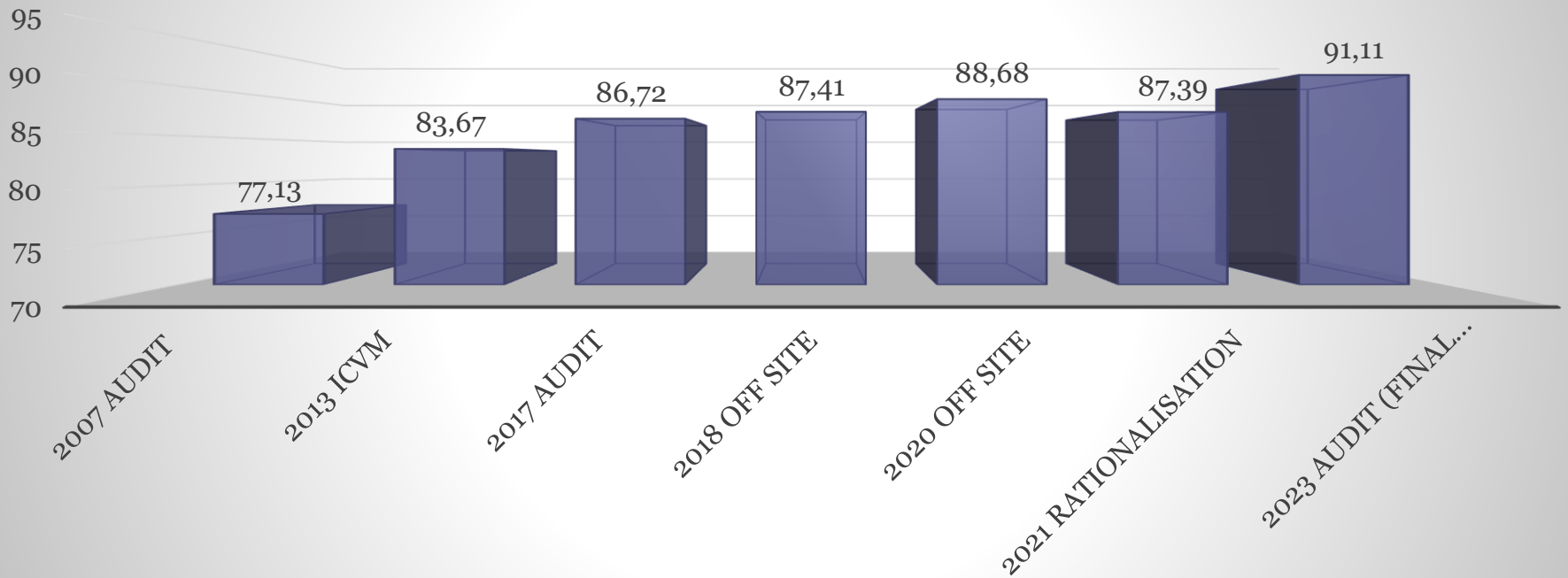
“Regulating the civil aviation industry to ensure security and safety by complying with the International Civil Aviation Organization (ICAO) SARPs, taking into consideration the local context.”

## OBJECTS OF THE CIVIL AVIATION AUTHORITY

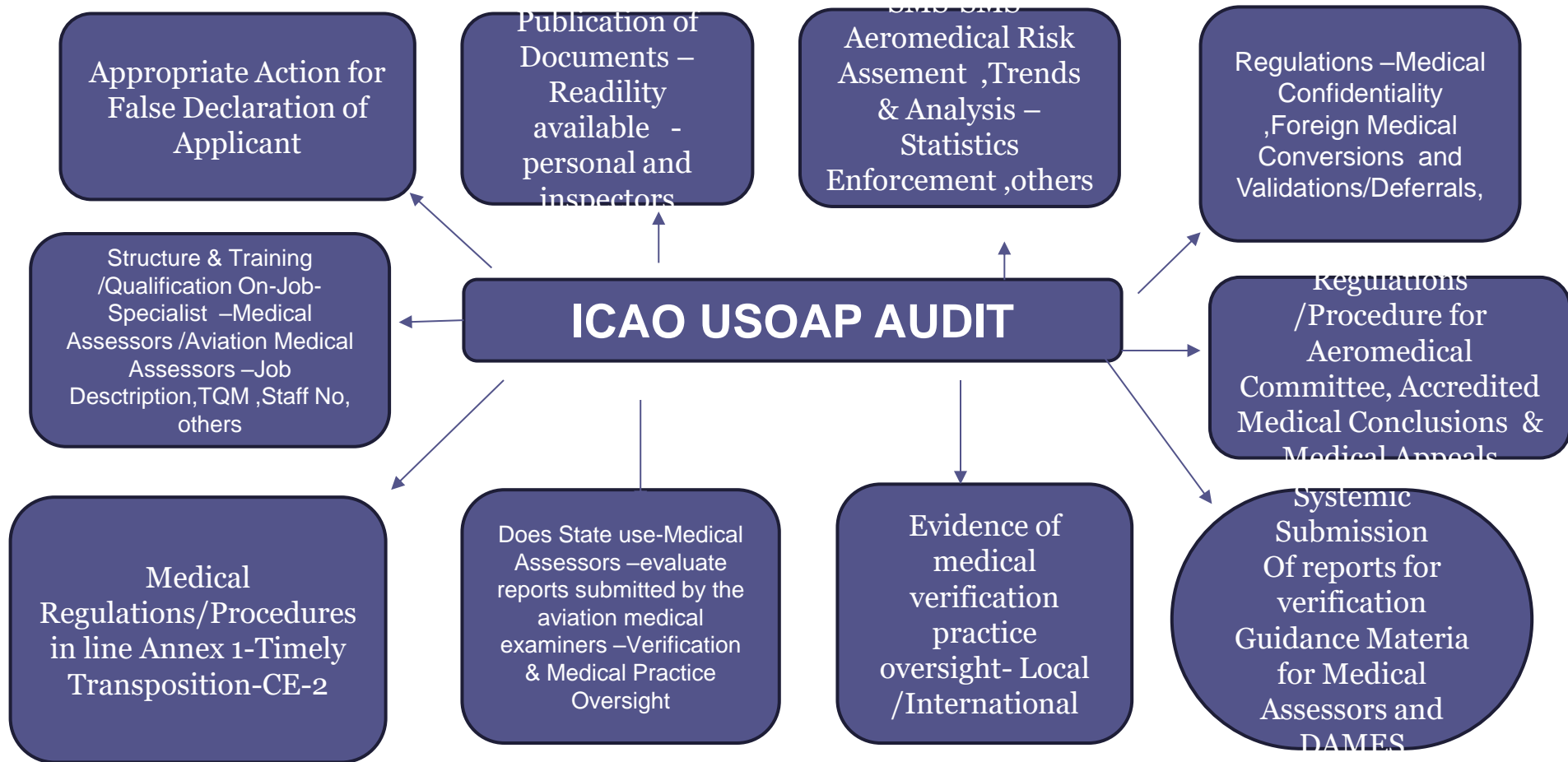
- a) **Control and regulate civil aviation safety and security**
- b) **Oversee the implementation and compliance with the National Aviation Security Program;**
- c) **Oversee the functioning and development of the civil aviation industry;**
- d) **Promote civil aviation safety and security;**
- e) **Develop any regulations that are required in terms of this Act; and**
- f) **Monitor and ensure compliance with this Act and the Convention.**

# USOAP CMA AUDIT RESULTS

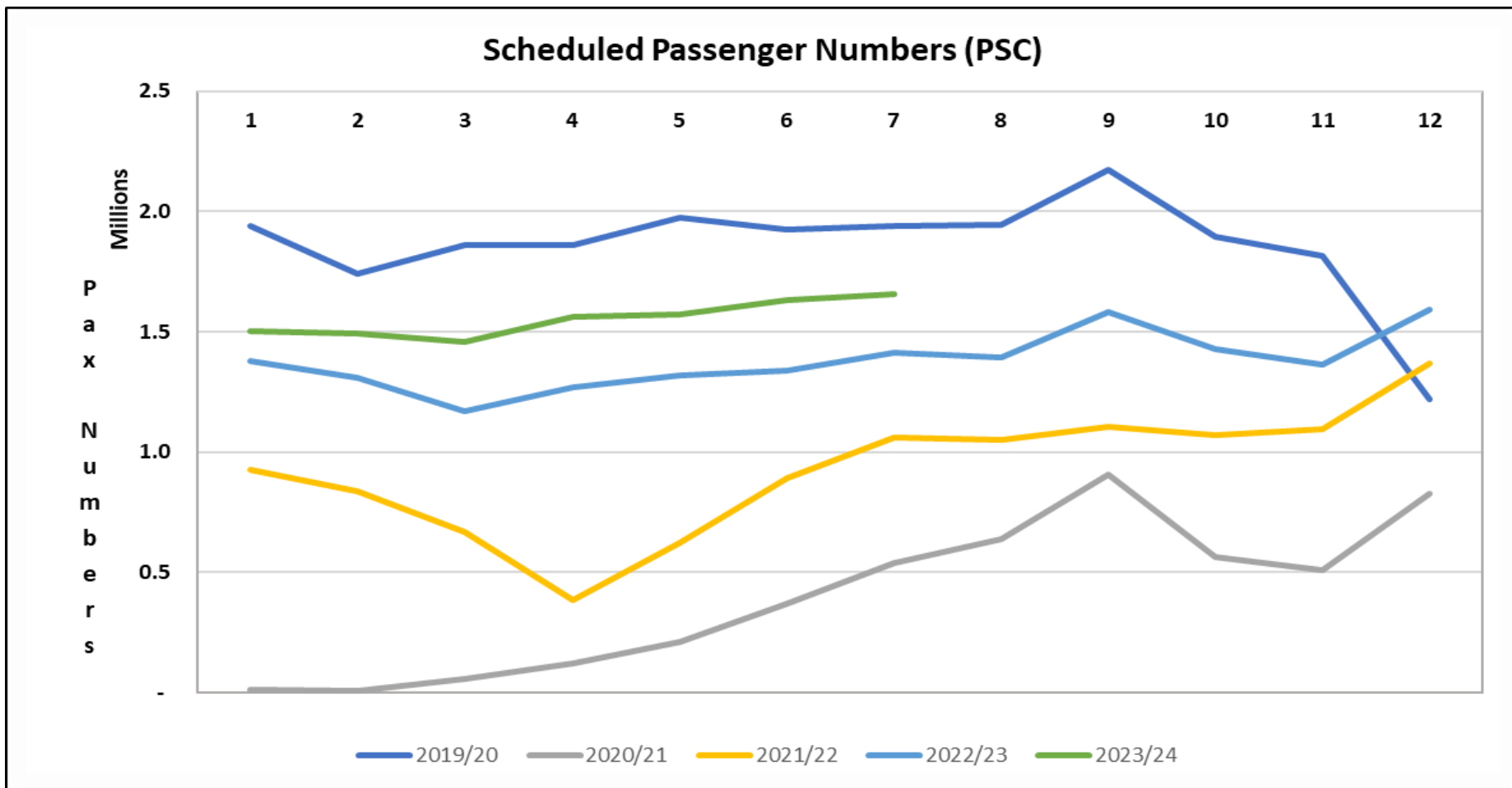
## RSA USOAP CMA Audit History 2007-2023



## SOME OF ICAO MEDICAL PROTOCOL QUESTIONS



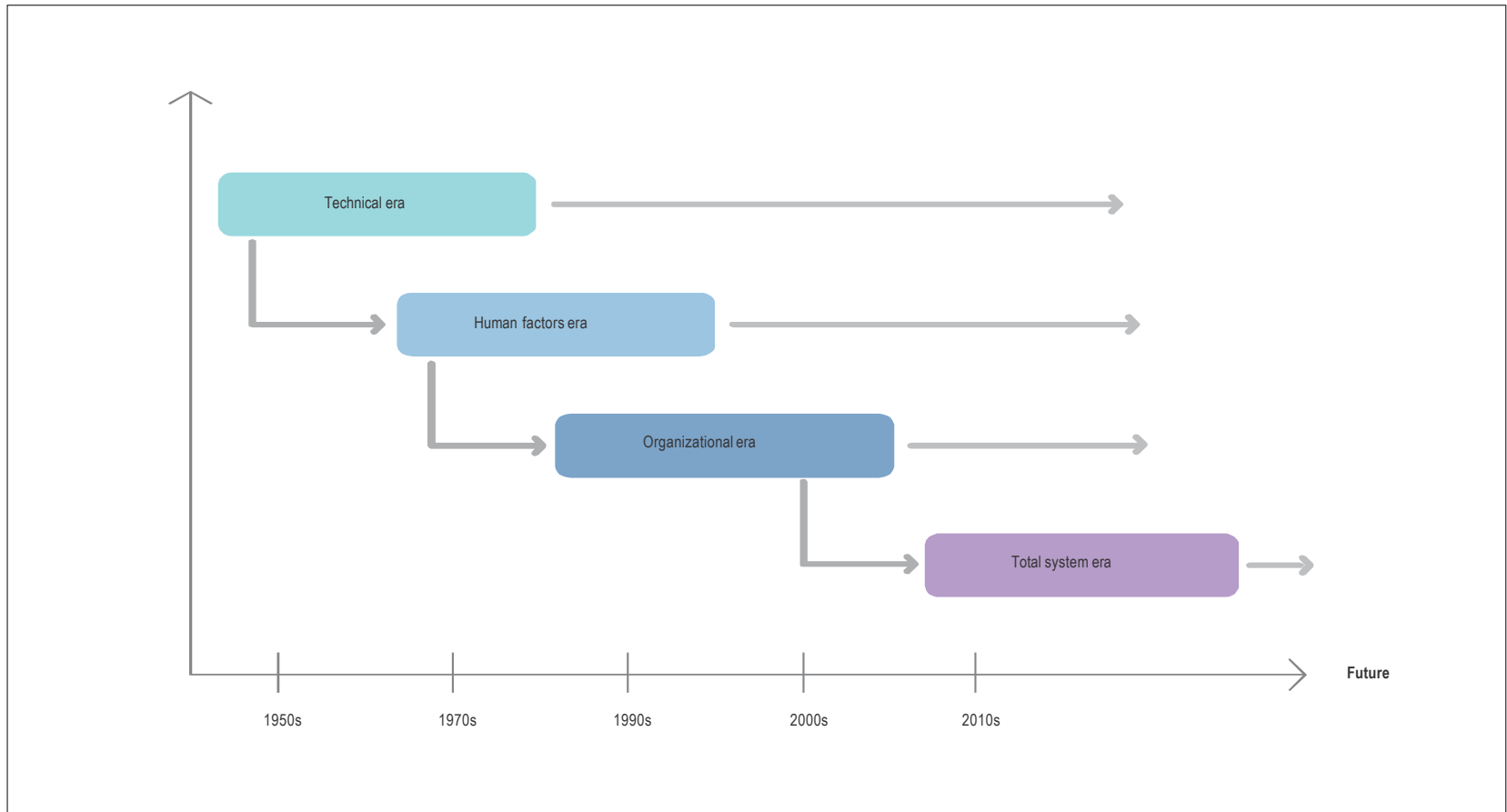
## POSSIBLE IMPLICATIONS ICAO SSC ON PASSENGER NUMBERS – REPUTATIONAL DAMAGE DUE TO AN AIRCRAFT ACCIDENT SOUTH AFRICA



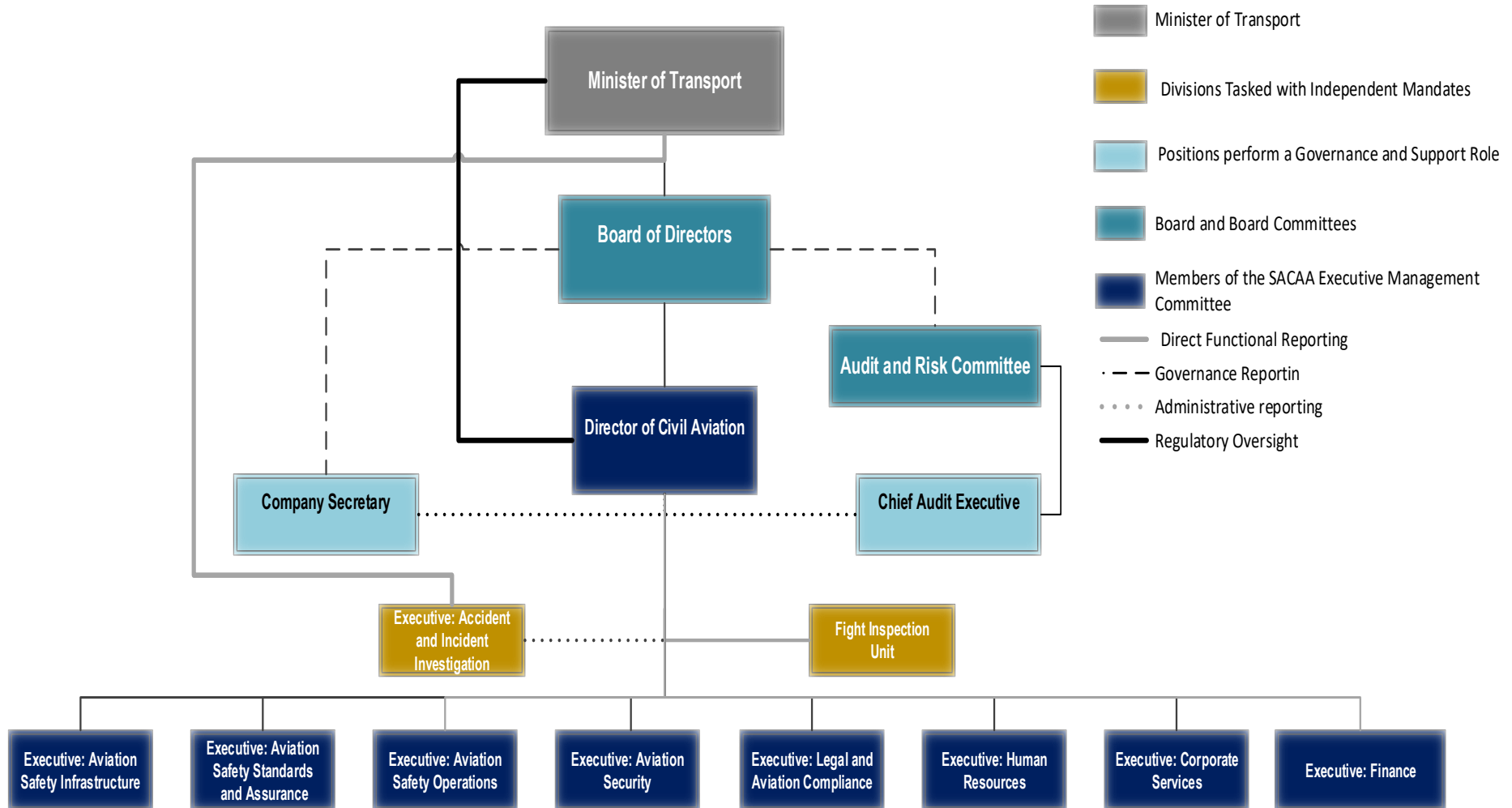
## CAA CONCERN AVIATION ACCIDENTS –LOSS OF LIVES



# AVIATION SAFETY EVOLUTION OF SAFETY



# SACAA STRUCTURE



# PART 67.00.3 SACAA REGULATIONS

## Functions of Director regarding medical examinations

### The Director must-

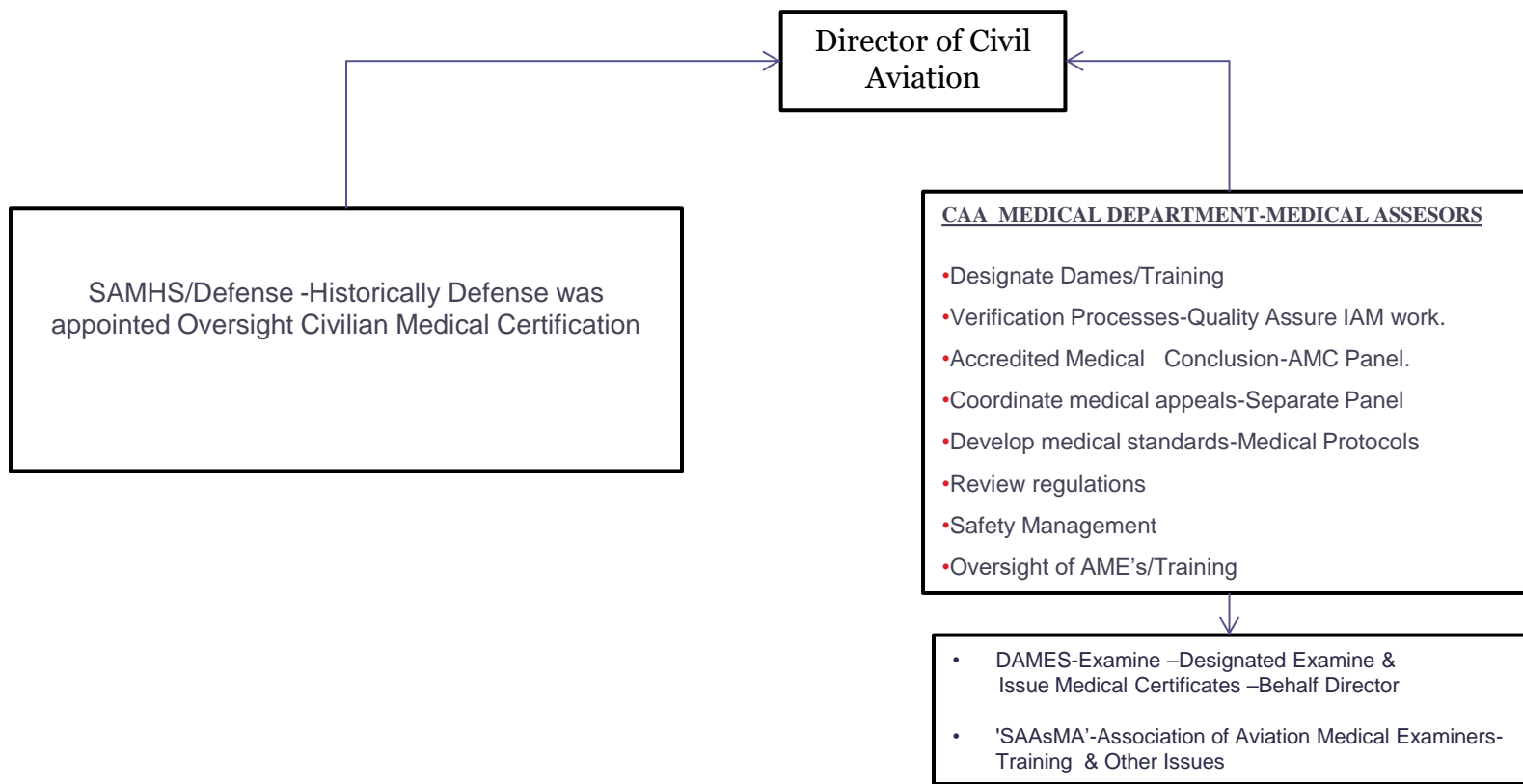
- Exercise control over medical examinations or tests and over aviation medical examiners performing such examinations or tests;
  - Determine standards for such examinations or tests and for the training of such aviation medical examiners;
  - Issue or amend medical certificates and keep all books or documents regarding such examinations or tests;
- apply basic safety management principles to the medical assessment process of licence holders by *inter alia*—
- routinely collecting and analysing medical findings during medical assessments to identify areas of increased medical risk;
- continuously re-evaluating the medical assessment process to concentrate on identified areas of increased medical risk & routinely collecting and analysing incapacitation in-flight and on active duty; and
  - ensuring that accredited medical conclusions are reached.

# ICAO USOAP AUDIT Medical Assessors CE 4,6 & 7

## WHAT IS A MEDICAL ASSESSOR?

- a) Contracting States shall use the services of medical assessors to evaluate reports submitted to the Licensing Authorities by medical examiners.
- b) The medical examiner shall be required to submit sufficient medical information to the Licensing Authority to enable the Authority to undertake Medical Assessment audits.
- c) Note.— The purpose of such auditing is to ensure that medical examiners meet applicable standards for good medical practice and aeromedical risk assessment. Guidance on aeromedical risk assessment is contained in the Manual of Civil Aviation Medicine (Doc 8984)
- d) Medical assessors, because of their functions as employees of or consultants for the Licensing Authorities and as supervisors for the designated medical examiners, will normally have advanced training in the specialty of aviation medicine and extensive experience in regulatory and clinical civil aviation medicine
- e) Medical Assessors –Sign a Declaration of Conflict of Interest Annually, NOT allowed to conduct medical examinations

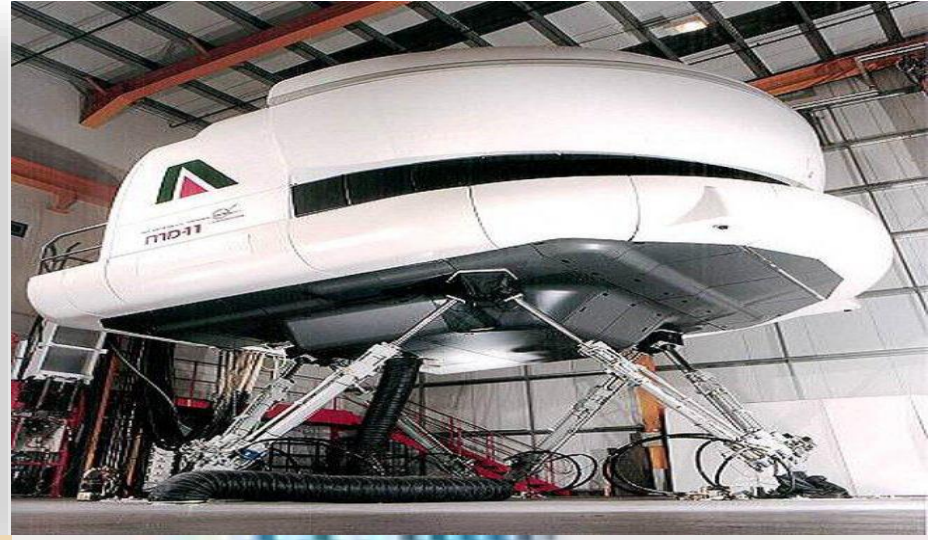
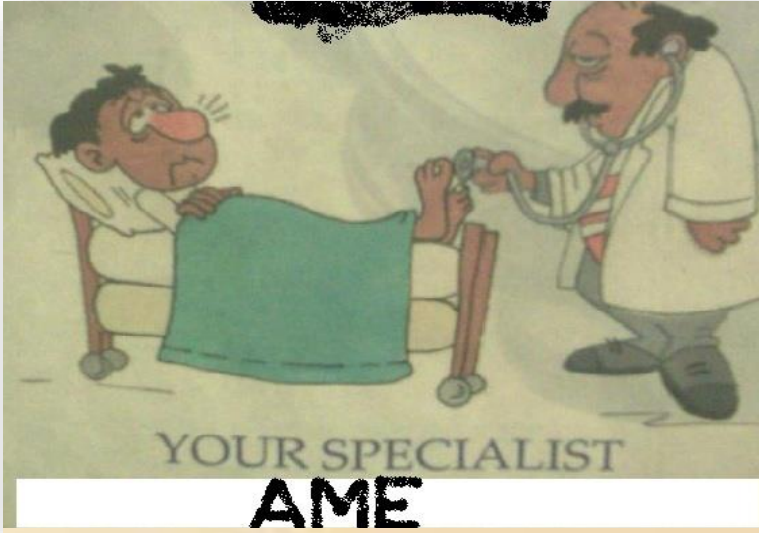
## CURRENT CIVILIAN MEDICAL CERTIFICATION PROCESSES IN SA



# RESPONSIBILITIES OF THE MEDICAL DEPARTMENT OF THE CAA



# ROLE MEDICAL CERTIFICATION DEPARTMENTS



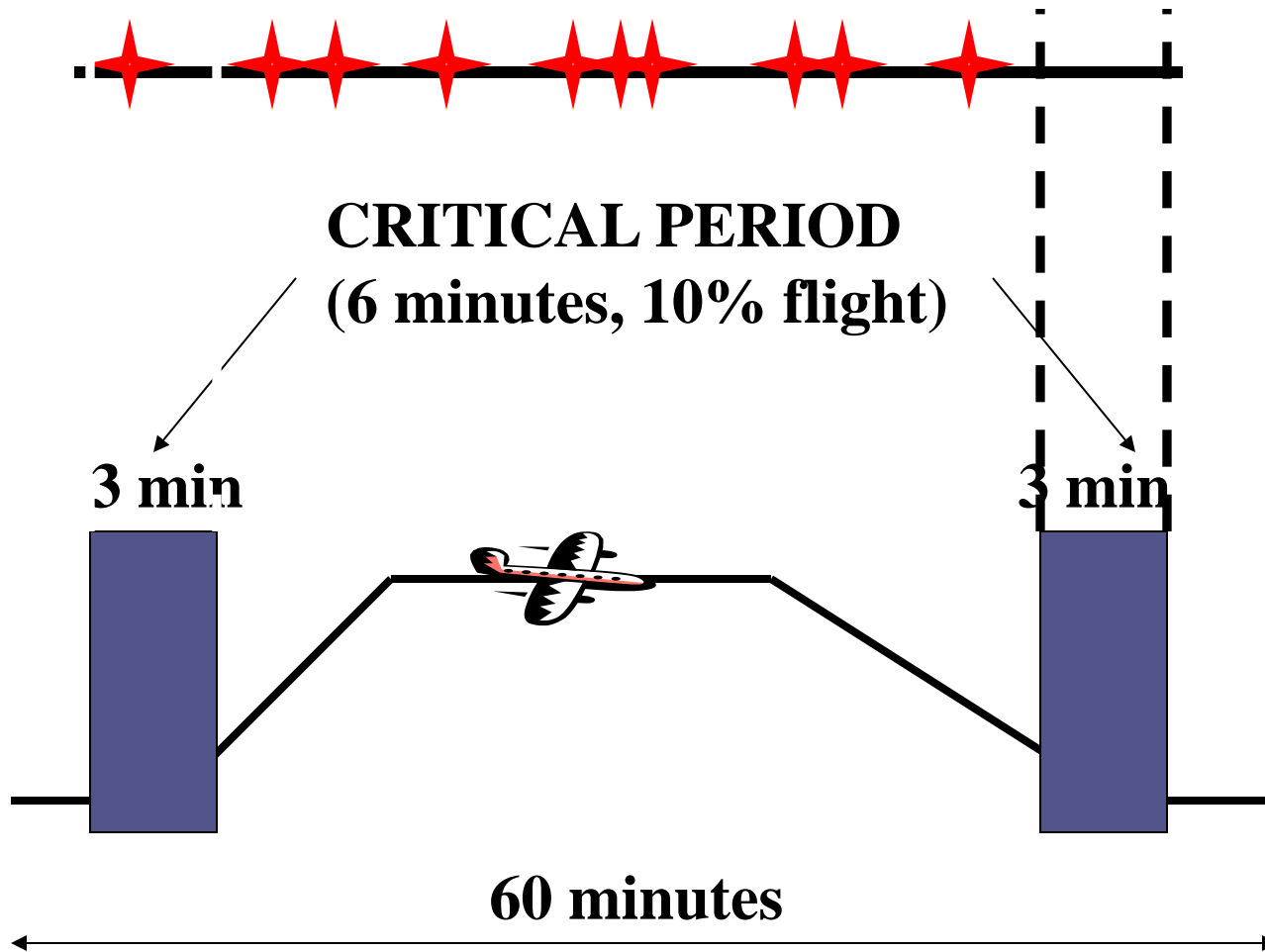
# CAA MEDICAL TEAM AUTHORIZED OFFICERS

HR Policy for all  
staff

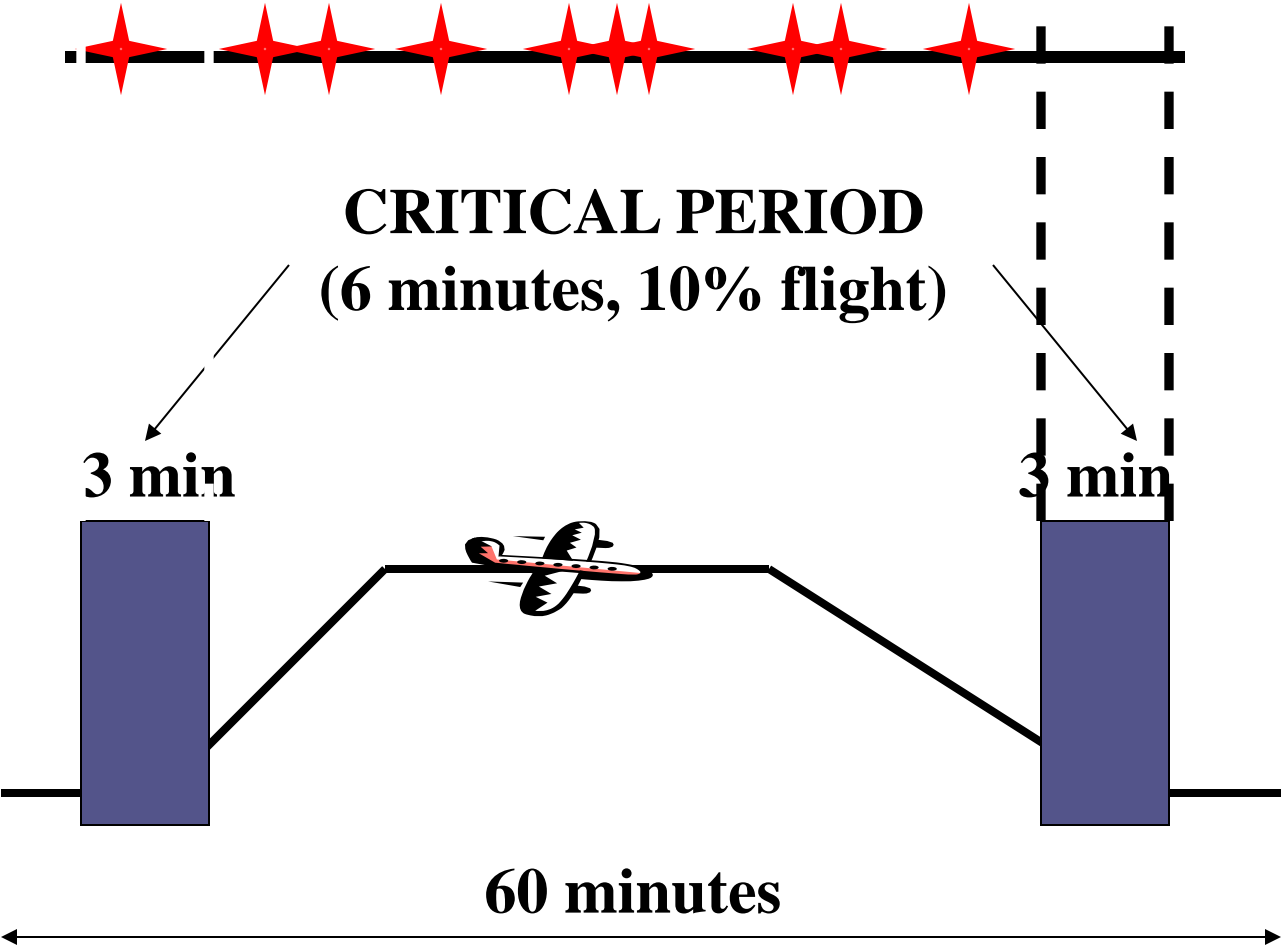
Annual Declaration  
of policy

Not allowed to  
participate as a  
Aviation Medicine  
Examiners & others

# Medical Incapacitations Occur Randomly



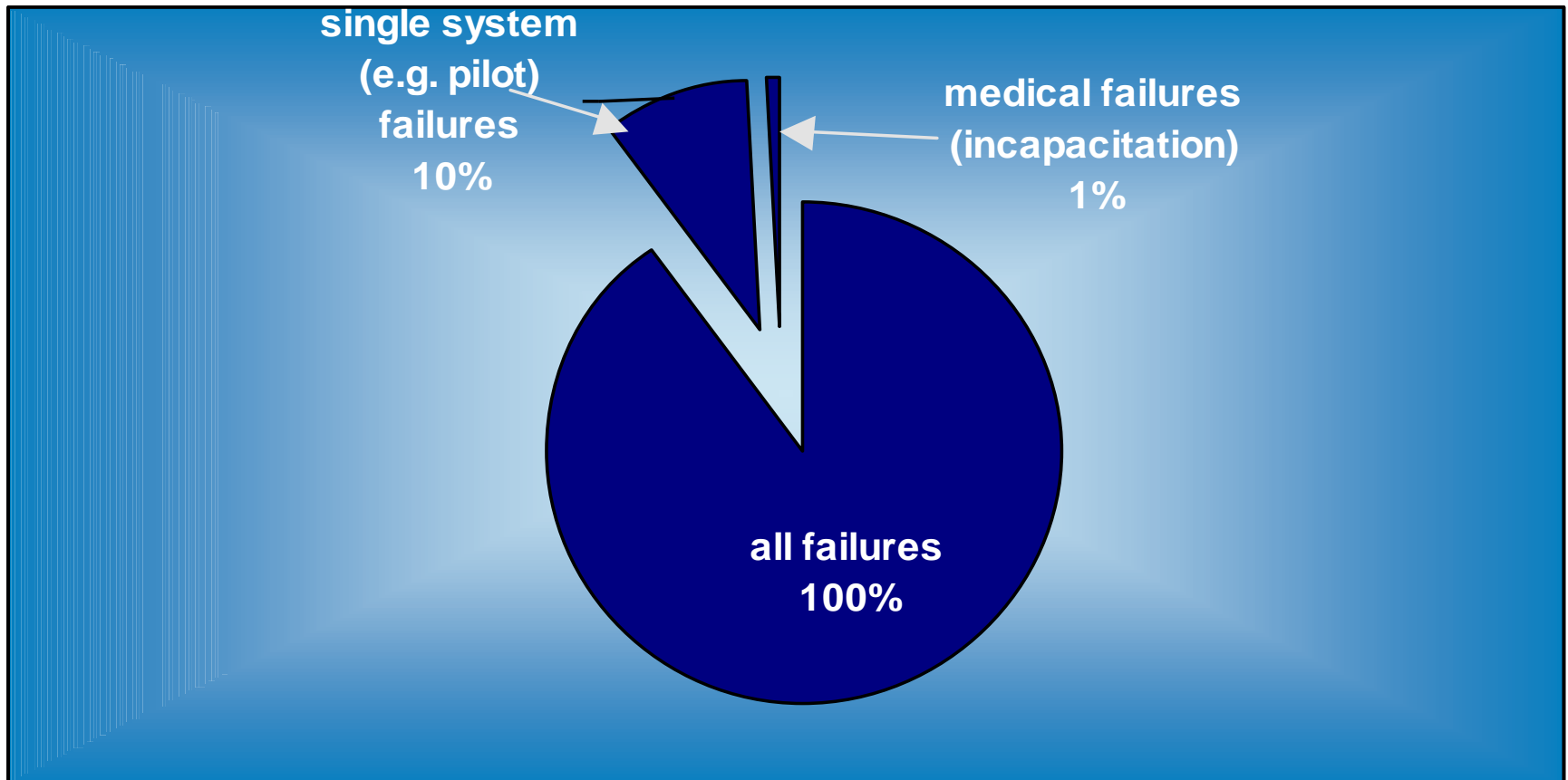
.....incapacitations occur randomly



# Risk during “critical period”

- How often will the second pilot fail to take over safely?

# 1% Rule Risk of Medical Incapacitation- Comm Pilots



## CODE OF CONDUCT AVIATION MEDICAL EXAMINERS & CONFLICT OF INTERST



The aviation personnel are legally required to assess the medical fitness in order to assess ability to carry out their professional duties



DAMEs conduct an examination & Issue a Medical Certificate



Must act in the best interests of clients and safety of aviation



**AVOID UNDUE INFLUENCE CAUSED BY A LONG STANDING RELATIONSHIP WITH THEIR CLIENTS**



Applicants must ensure that the DAMEs are designated and are issuing appropriate medical certificates in accordance their respective designations

## Redundancies

Class I (CPL & ATPL): 12 months (no change)

- After age 40: Reduce to 6 months only for Single Crew operations
- Age 60: Reduce to 6 months



Class II (PPL): 60 months (24 months)

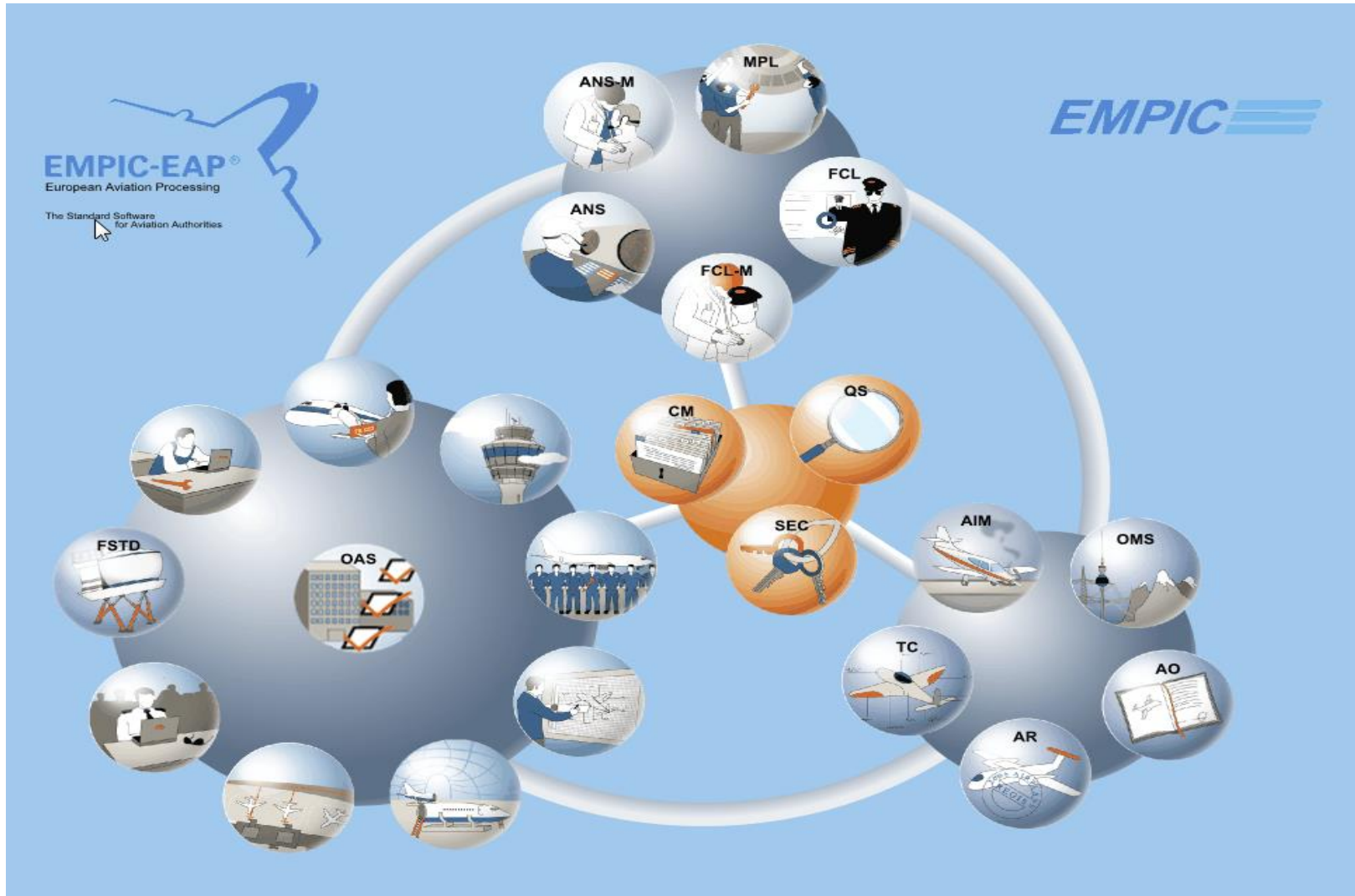
After age 40: Reduce to 24 months;  
After age 50: Reduce to 12 months

Class III (ATC): 48 months (24 months)

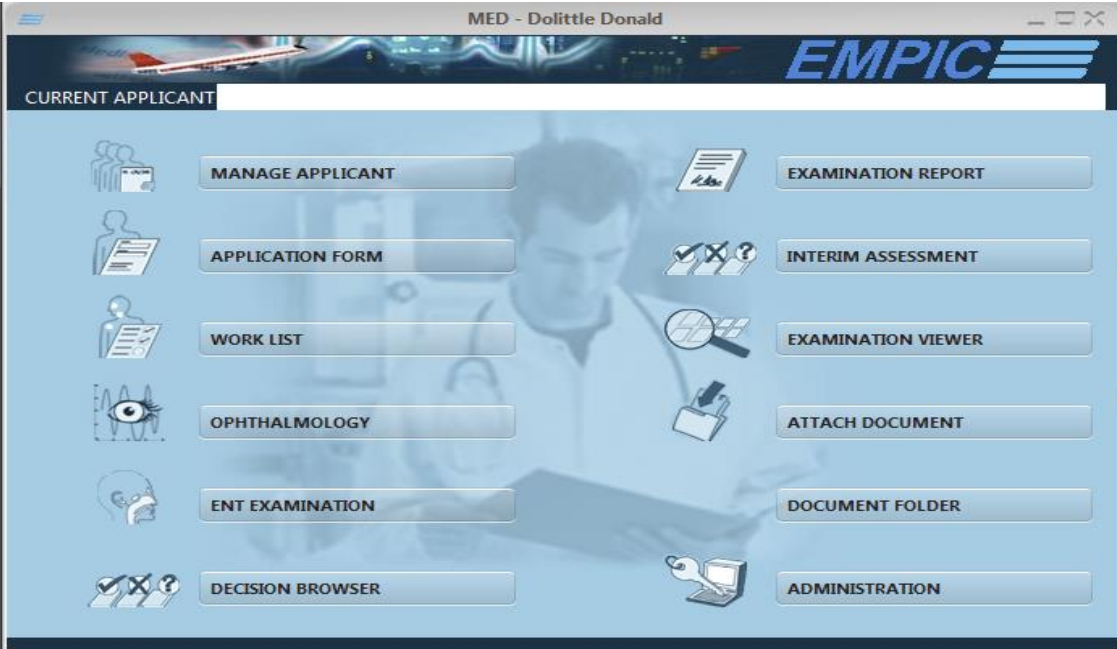
After age 40: Reduce to 24 months;  
After age 50: Reduce to 12 months



# EMPIC-EAP - MODULE VIEW



# EMPIC MEDICAL SYSTEM



**MED**

# The EMPIC Community



**Austro Control**  
Austria



**FOCA**  
Switzerland



**NTA**  
Hungary



**HCAA**  
Greece



**ILenT**  
The Netherlands



**SAF**  
Sweden



**DAC**  
Luxembourg



**KCAA**  
Kenya



**ENAC**  
Italy



**CAA**  
Slovenia



**Transportstyrelsen**  
Sweden



**IAA**  
Ireland



**Luftfartstilsynet**  
Norway



**CAA**  
Latvia



**BHDCA**  
Bosnia and Herzegovina



**MLA**  
The Netherlands



**FOMV**  
Belgium



**CASA**  
Australia



**OSAC**  
France



**DSAÉ**  
France



**TRAFI**  
Finland



**DGAC**  
France



**CCAA**  
Croatia



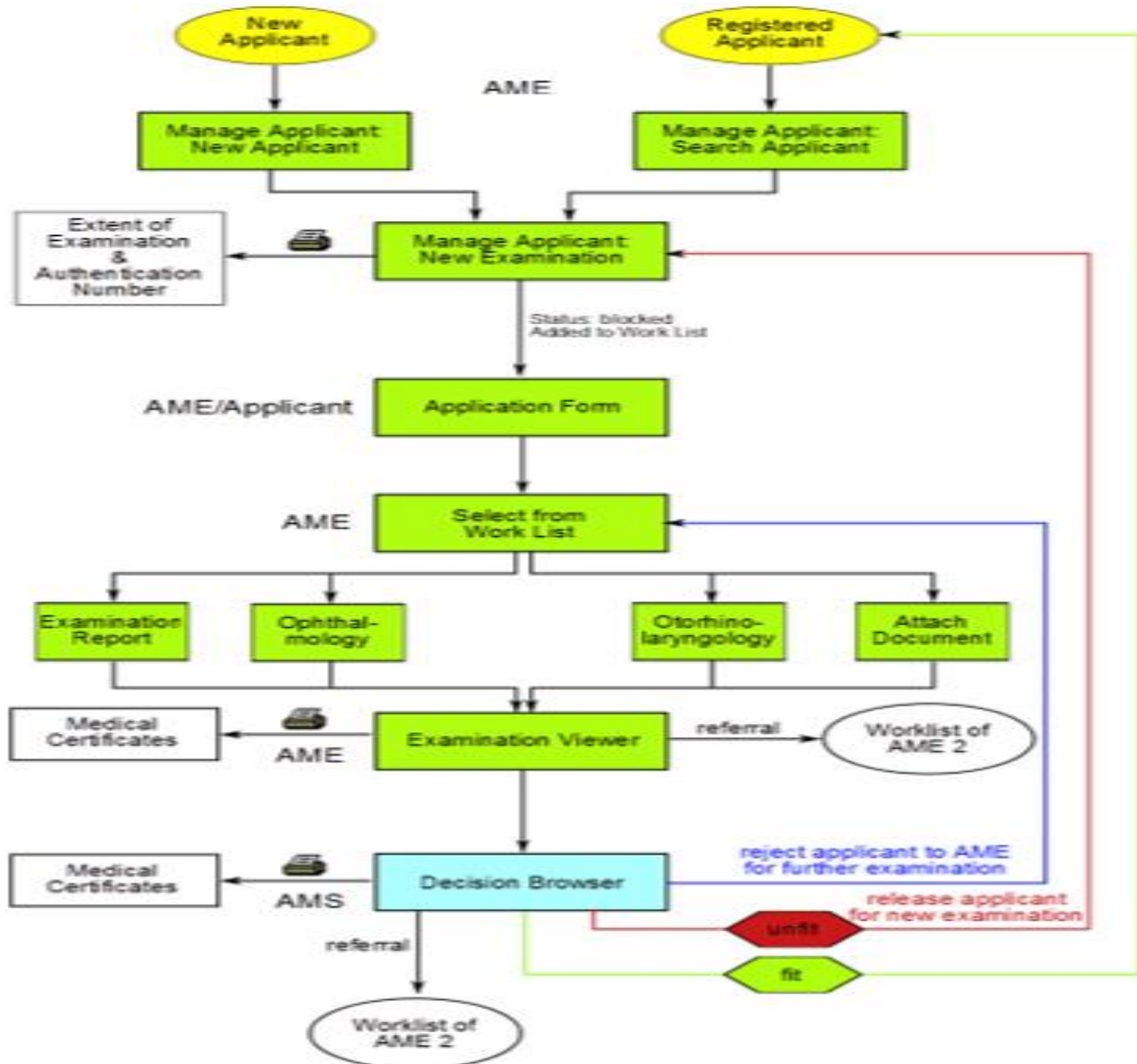
**SACAA**  
South Africa



**DCA**  
Myanmar



**DCA**  
Namibia



# MANUAL SYSTEM ONLY DRONES

- Currently no ICAO medical standards for RPAS
- SA Class 3 Medical Certificate
- Operational Considerations
- CAA Issue Manual Certificate
- Control Sheet to monitor the certificate
- Documents send to a dedicated e-mail for verification

## Duties of a Holder of a Medical Certificate & Non-Compliance of Aviation Personal

Non-Disclosure Medical Conditions

Medical Tourism & delay tactics – testing alcohol/substance

Delay in presenting themselves for testing

Flying under the influence Alcohol /Substance Use

Does not familiarize selves with duties of a holders

Flying medically unfit

Flying with expired medicals

Intimidation of CAA staff – Legal Action

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Examination of Family /Friends

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Examinations of colleagues

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Financial Interest must not influence the DAMES Opinion

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Does not excuse themselves when there is potential interest

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AMC –previously participated ,due to conflict of interest –excused from the panel

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Fail to disclose medical info of applicants aware of off

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Send applicants to AMC specialist on purpose –in an attempt to speed processing

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Potential influence avoid undue influence caused by a long-standing relationship with their clients

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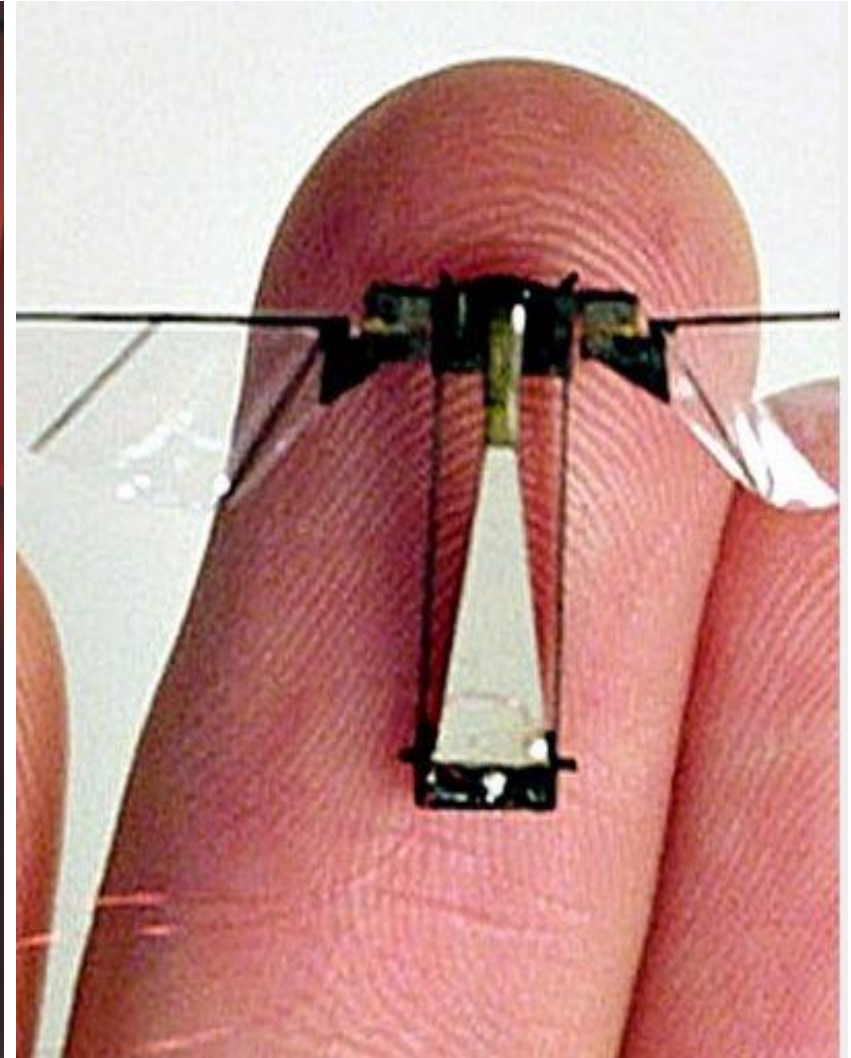
False info provided to applicants for reasons for medical unfitness

# Operational Considerations Medical Assessment

www.spotter-cgn.de ACE 2001



# Operational Considerations Medical Assessment



# Operational Considerations Medical Assessment

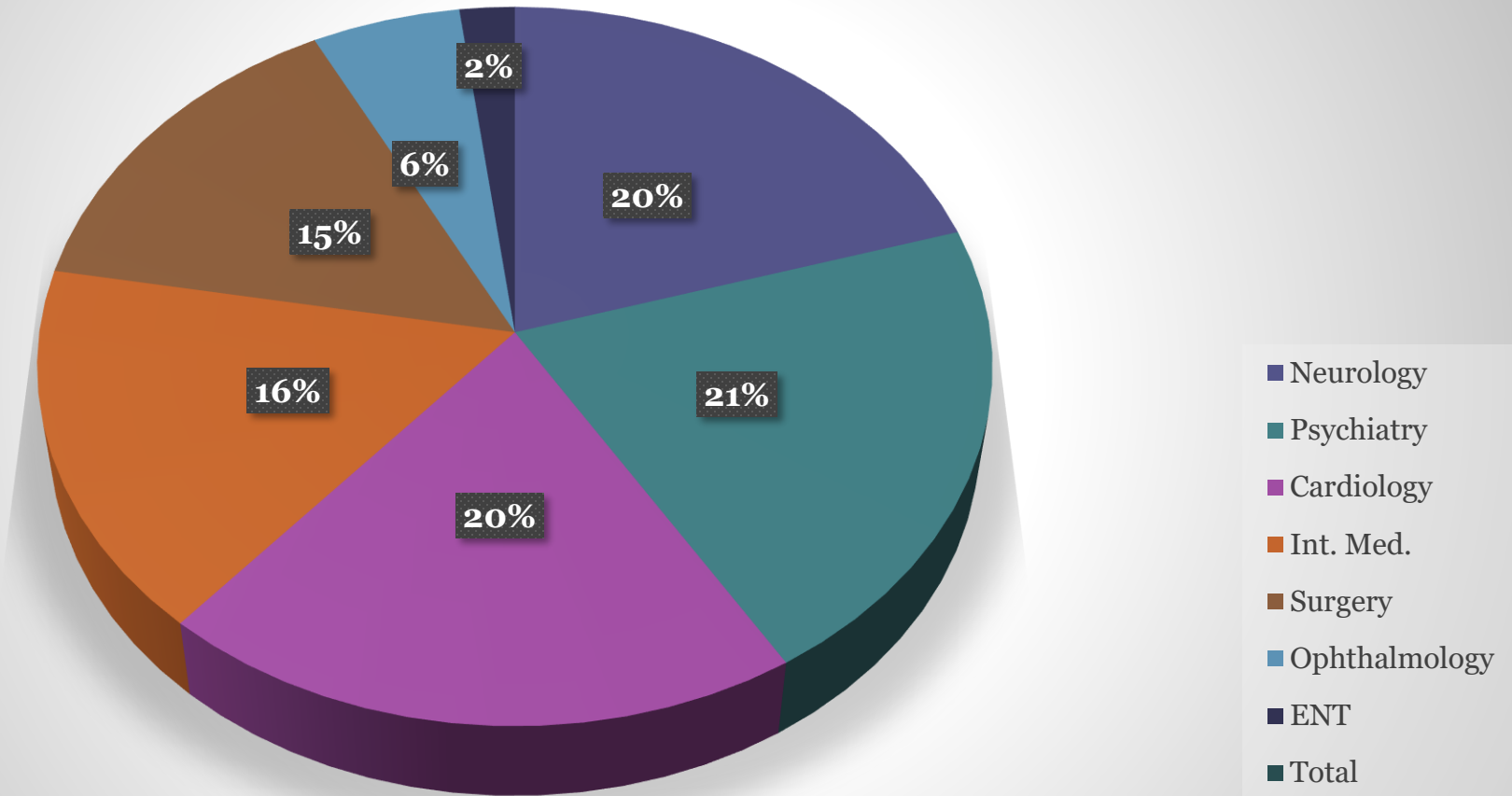


# ACCREDITED MEDICAL CONCLUSION



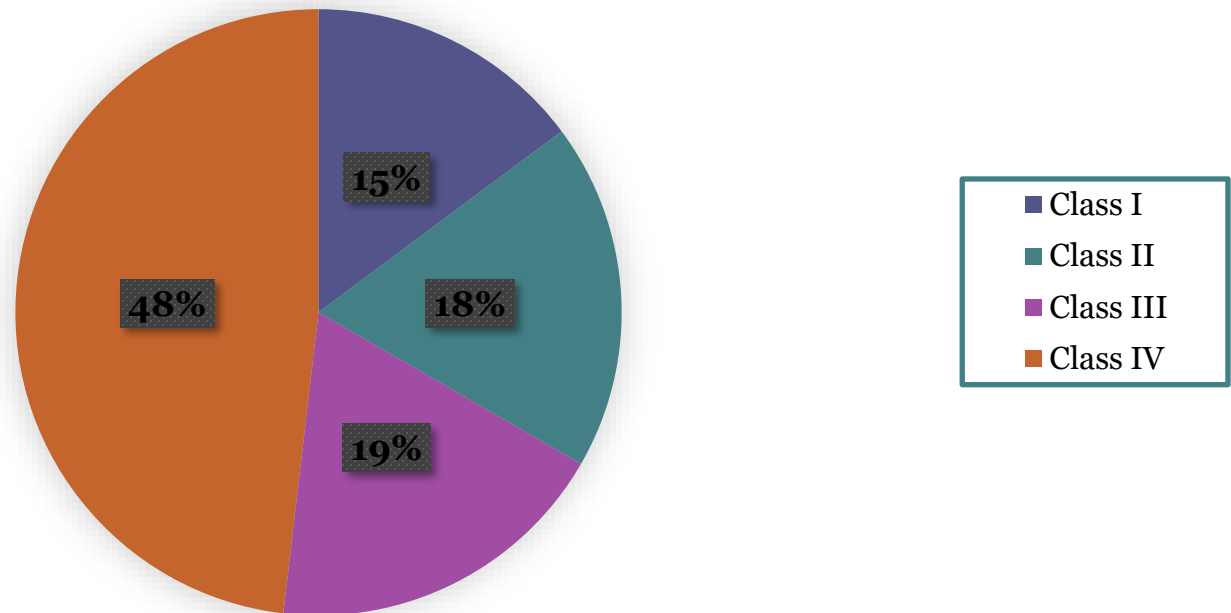
## TOTAL CASES PRESENTED IN AMC 2010 JUN - 2016 MAY

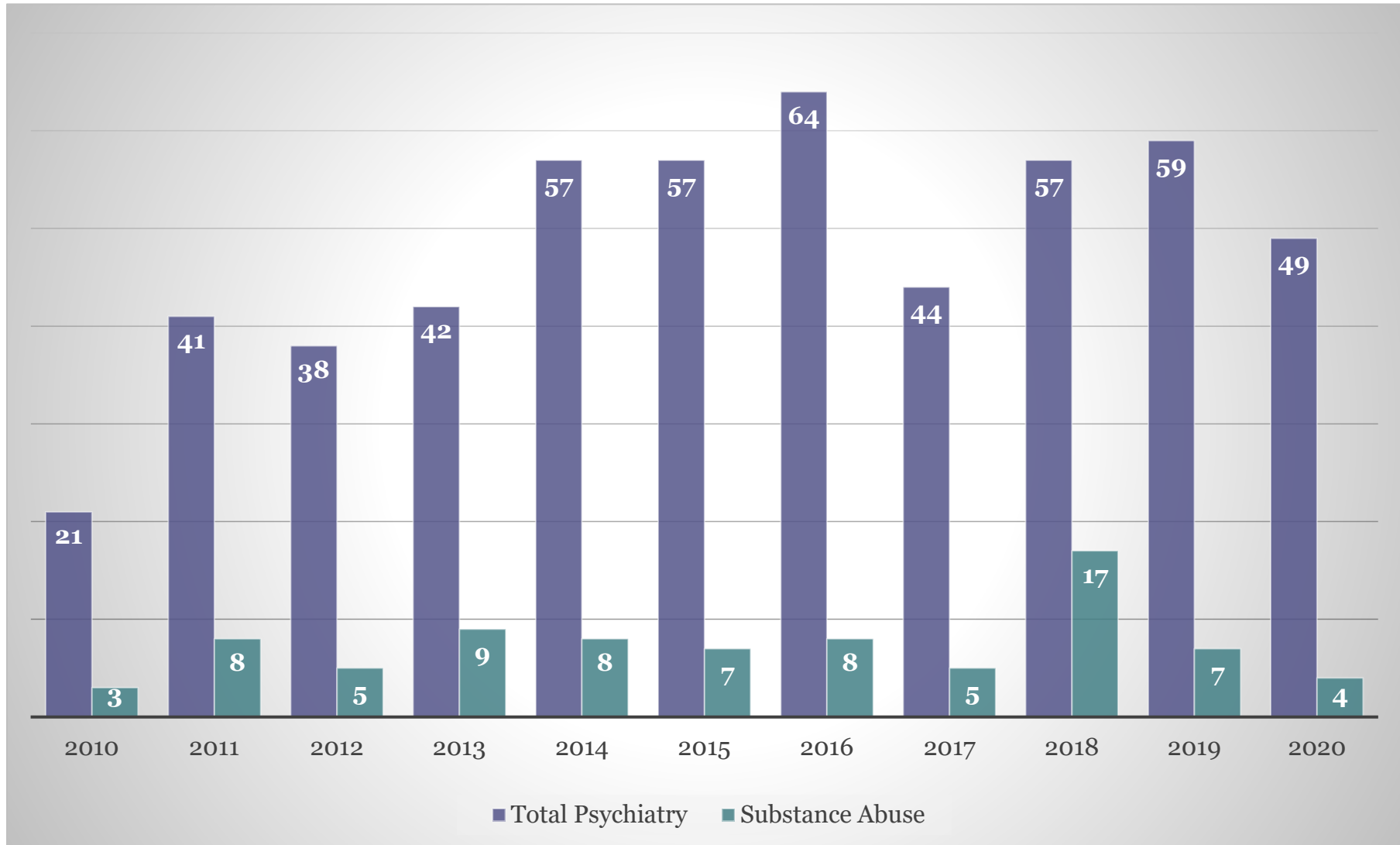
**Total of 1,613**



## ANALYSIS BASED ON CLASS OF MEDICAL CERTIFICATE

### Percentage of Different Classes Affected





'It deepened my suspicions that he was not mentally normal.'

EXPERT DEFENCE WITNESS STEPHEN PHANG (left), consultant psychiatrist at the Institute of Mental Health, on chopper murder accused G. Krishnasamy Naidu

'He was in full control of his thoughts and actions.'

EMERITUS CONSULTANT PSYCHIATRIST ANG AH LING (right), attached to the IMH and Woodbridge Hospital, on Krishnasamy

# Mentally ill? Experts differ

Accused knew it was 'wrong and bad' to kill wife: prosecution witness

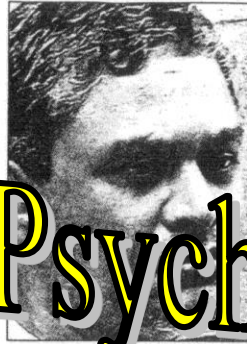
BY ELENA CHONG

The defence witness said that the accused knew it was "wrong and bad" to kill his wife, a prosecution witness yesterday told the High Court the man did not suffer from any mental disorder.

Emeritus consultant psychiatrist Ang Ah Ling said the 44-year-old former cabbie, accused of hacking his wife to death, had shown full control of his thoughts and actions.

The defence witness said that the accused knew it was "wrong and bad" to kill his wife, a prosecution witness yesterday told the High Court the man did not suffer from any mental disorder.

Dr Ang, attached to the Institute of Mental Health and Woodbridge Hospital, was rebutting the earlier evidence of expert defence witnesses George Fernandez and Stephen Phang. The IMH consultant psychiatrists had maintained that Krishnasamy was suffering from a delusional disorder commonly known as



UNSOOUND MIND?: Two defence witnesses say Krishnasamy suffered from morbid jealousy.

morbid jealousy.

Dr Fernandez had examined Krishnasamy when he was in custody for allegedly stabbing his wife, Neelam Chitrabathy Narayanan, 39, to death in April last year, after she accused him of hacking his wife with a chopper when she turned up for work at the Sony factory in Tuas Lane on the morning of May 17 last year — 10 days after he was bailed out for the alleged stabbing incident.

In his Dec 10 report, Dr Ang said Krishnasamy was

clear about why he had killed his wife, which he knew was "wrong and bad".

Krishnasamy had said she had made him very angry for talking to others about him, calling him mad and having him committed to the IMH, said Dr Ang.

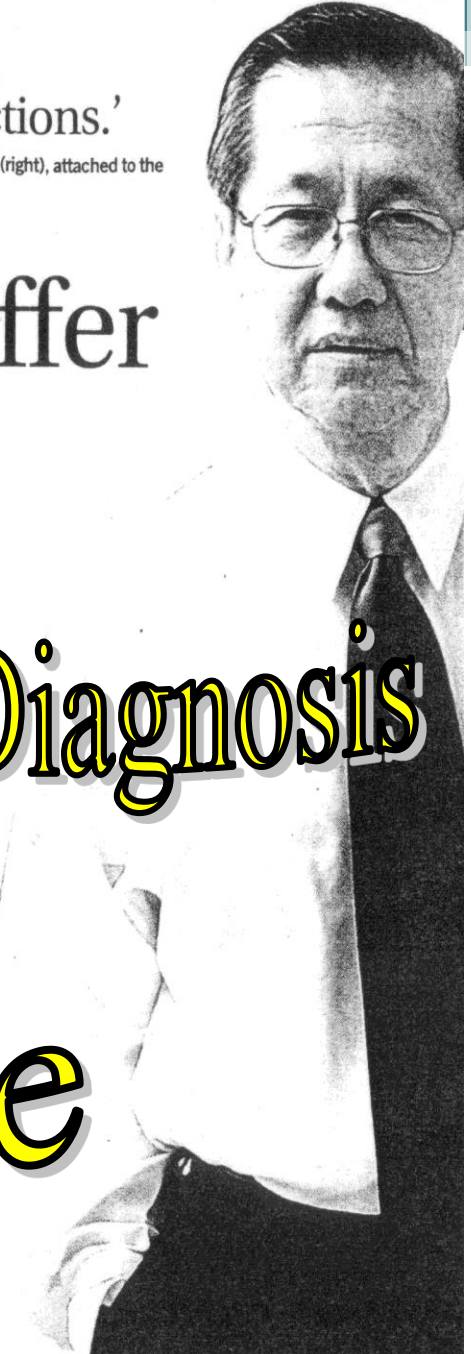
The accused said he would have forgiven her if she had done so previously if she had not done so. He said he had killed her because he was angered by her infidelity, and because she was defiant and provocative, even after he had forgiven her for her three other affairs in 1987, 2000 and 2001.

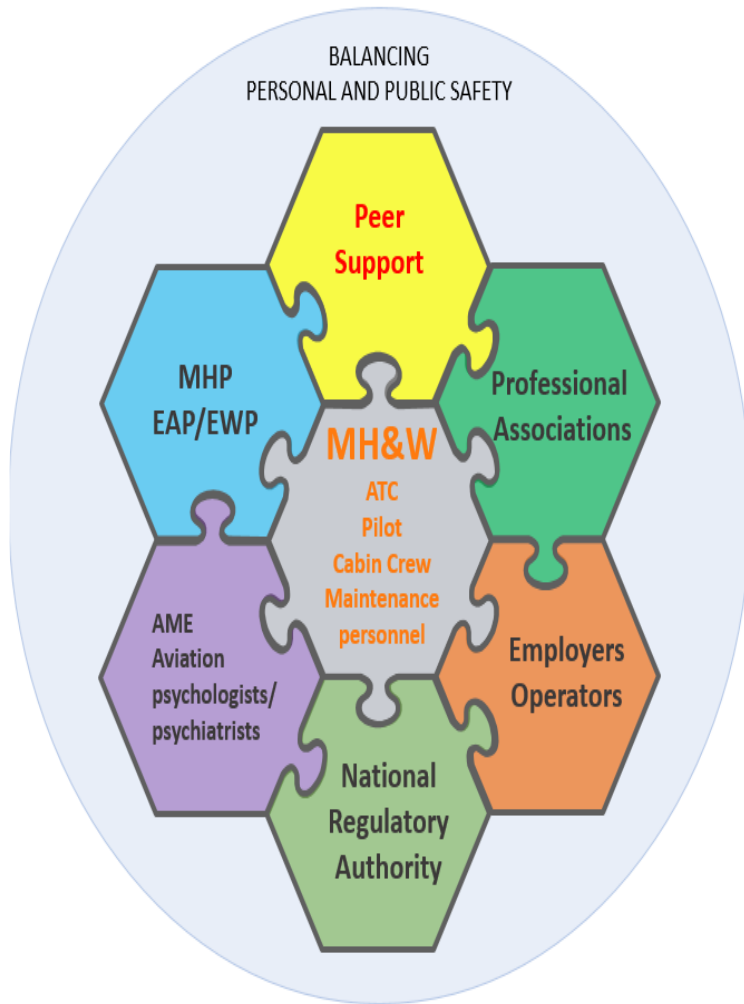
Dr Ang said there was nothing unusual about Krishnasamy's pattern of checking on his wife, including visiting her factory and calling her on her cellphone, in the light of his experiences with her.

Dr Ang said the very detailed description of how Krishnasamy went about planning the killing showed he was in full control of his thoughts and actions. Defence counsel Peter Fernando will cross-examine Dr Ang on Monday.

# Subjectivity of Psychiatric Diagnosis

# Worrisome





## MITIGATION

- Training of Industry (FAA /UK) & National Aviation Seminar
- Shared Guidelines
- Mental Health Questionnaires
- Reporting DAMES/Industry /Anonymous Reporting

## Workshops –Amendment of Proposed Regulations

- Responsibility of DAMES & CAA Mental Health
- Responsibility Operators
- Peer Support
- Amendment of Part 67 Proposal  
(ADHD,Anxiety,Bipolar ,Personality Disorders, Psychotic Disorder )

# Medical Appeal Section 119 of the Act

- In terms of section with section 119(2) of the Civil Aviation Act, 2009 (Act No.13 of 2009).
- The Director is empowered to establish a medical appeal known as the Medical Appeal Panel (MAP) to adjudicate of medical appeal cases on ad hoc basis in line with medical practitioners
- Separate panel for applicants not satisfied with the decision of the DAME or Medical Assessor

# Applicants with Limb Disabilities

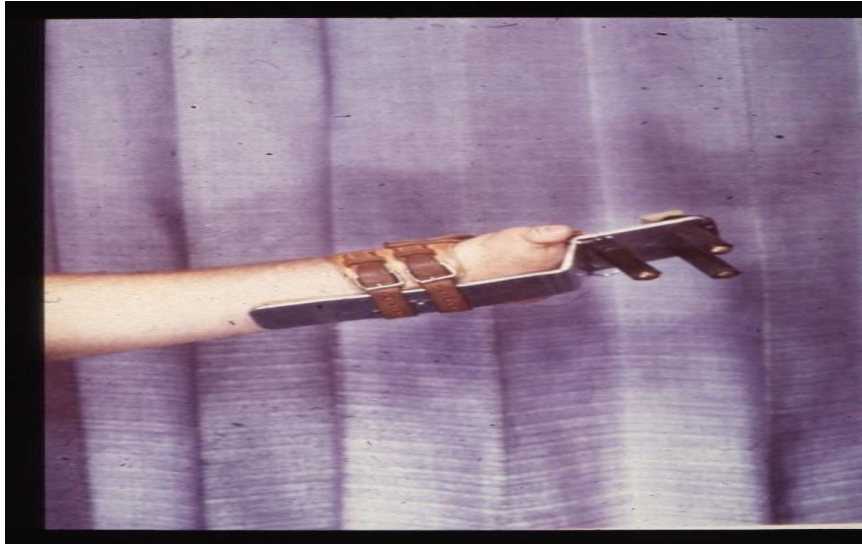
Elevated risk of incapacitation-  
Physical



Elevated risk of incapacitation-  
Physical



# What is of Aeromedical Significance

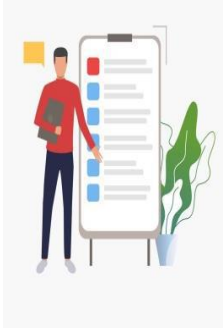


# MEDICAL CONFIDENTIALITY-ICAO STATE LETTER



- Balancing Medical Confidentiality- the protection of public safety(HPCSA)
- The sharing of aeromedical information and tackle the issue of pilot non-declaration(EMPIC Solution)
- Working with the associations and ATO's support and reporting systems
- Promotion of a framework of a non-punitive work environment
- Promoting Just Culture

## APPLICATION OF SAFETY MANAGEMENT IN THE MEDICAL CERTIFICATION PROCESSES



**Safety  
Manager**



**Accountable  
Manager**



**Compliance  
Monitoring  
Manager**

**Head of  
Aeromedical  
Centre**



**Aeromedical  
examiner**



# RISK BASED OVERSIGHT ON AVIATION MEDICAL PRACTICES

SACAA has embarked on a risk-based approach to oversight, this project will be fully implemented in the 2025.

Compliance Based Oversight is no longer effective

Safety risks still exist even in the most compliant systems

Introducing safety culture

Incorporation of flexibility into oversight

No need for more, but better oversight

Overregulation and safety gaps

## DESIGNATION

Rulation67.00.4, 67.00.5, 67.00.6 and 67.00.8 OF CAR, 2011

Assessments of the trainings.

Suitability of facilities

Equipment, Calibration

Securing of the records .

Training of personnel used by the DAMEs

Outsource-DAME Responsible

Is Equipment Calibrated



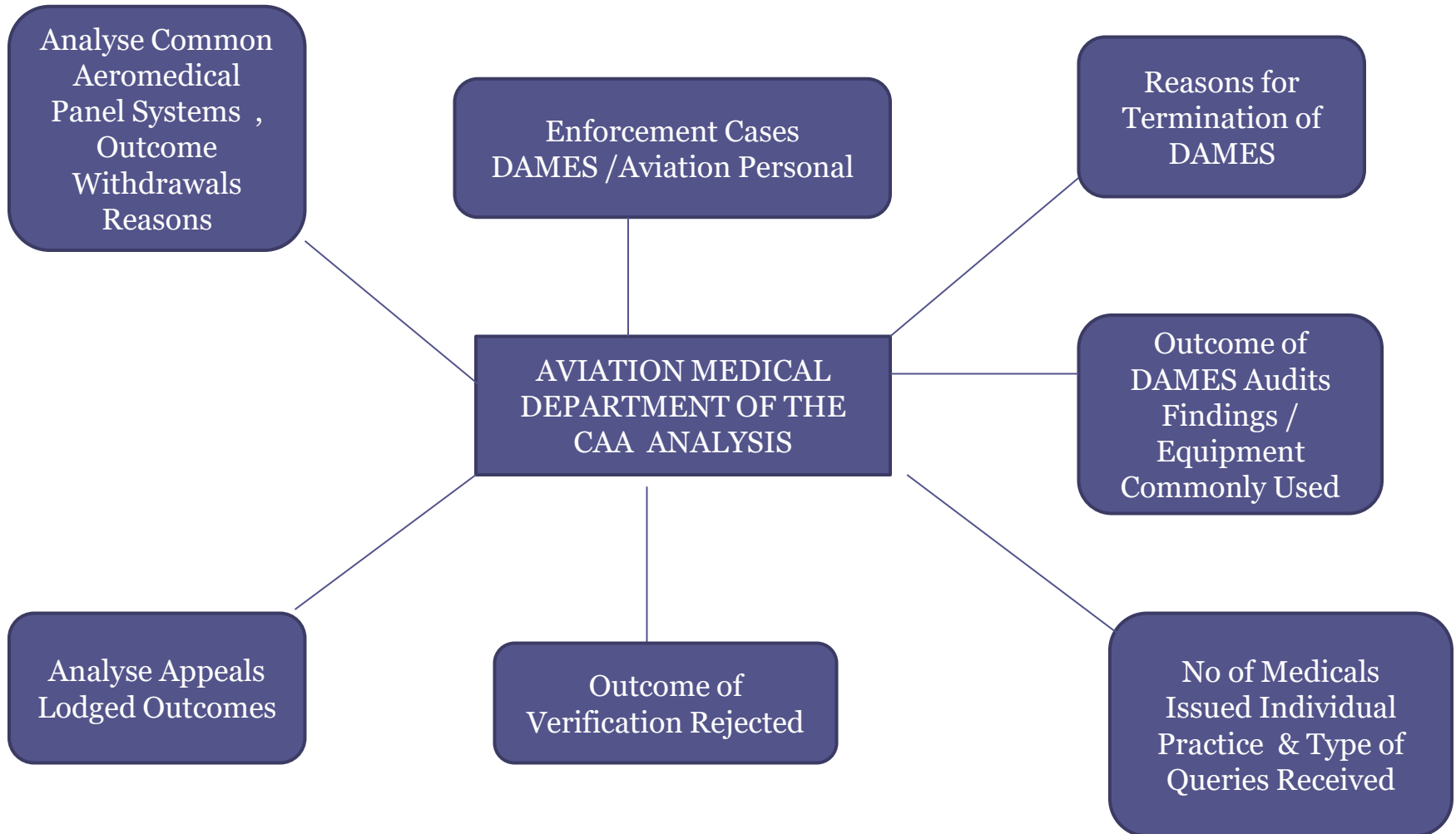
Patient takes a deep breath  
and blows as hard as possible  
into tube

Clip  
on nose

- The organisation may contract certain activities to external organisations for the provision of services related to the areas of organisation's operation.
- The ultimate responsibility for contracted activities, i.e. for the product or service provided by external organisations always remains with the organisation.



## Example of what the CAA Medical Department Analyses Risk /Mitigation



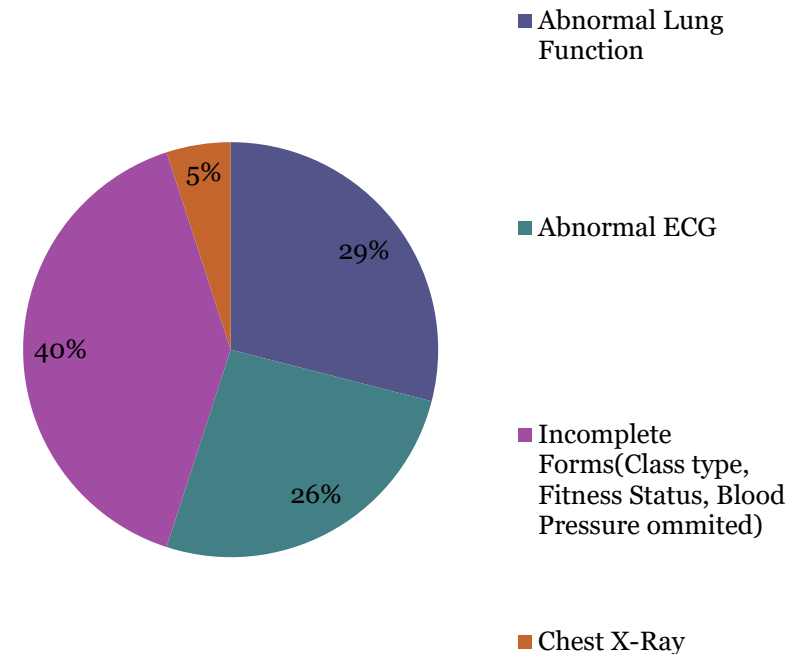
# NON-COMPLIANCE



- DAMES issuing medical certificates to applicants who do meet the requirements
- Knowledge DAMEs -Law
- Refresher
- Practicing without renewal of designation
- Potential Conflict of Interest (DAMEs claiming to have influence panel, others)
- Intimidation of the CAA Medical Team
- Implications Afraid to enforce the law, expected to sign without question

# DAMES ERRORS Verification Processes

- Delay in submission of medical records for verification
- Incomplete Medical Forms
- Limited information submitted-resulting delays in processing the medical documents
- CAA spends large amount of time addressing DAMEs Errors
- Costs Involved- Phone, Time-estimated 12 Admin Officers



## NON-COMPLIANCES AEROMEDICAL CENTRES - RISK RO THE CAA



Others

Issuance Cert Non  
Compliant Applicants

Conflict of Interest

Failure to Declare

Non-Designated Issuing Medical Cert

# MEDICAL CONFIDENTIALITY



- Balancing Medical Confidentiality- the protection of public safety(HPCSA)
- The sharing of aeromedical information and tackle the issue of pilot non-declaration(EMPIC Solution)
- Working with the pilot support and reporting systems
- Promotion of a framework of a non-punitive work environment
- Promoting Just Culture
- **Maintain records** with details of medical examinations and assessments performed for the issue, revalidation or renewal of medical certificates and their results, for a minimum period of **6 years-refer HPCSA after the last examination date**
- Keep all medical records in a way that ensures that **medical confidentiality is** respected at all times

# Tools Available for DAMEs

- Legislation-Website & EMPIC
- Summarized Protocols
- Reminders of new information
- Regional Meetings
- Conferences & Workshops
- DAMEs Guide-Specific Input of improvement must be provided-ICAO wanted to use our template as guidance for other State
- Discrepancies Must be communicated to our office

# Future of Aerospace Medicine





**ICAO and  
FAA SSC  
Audit  
Finding**



**Legal Liability CAA-  
Director**



**Insurance Non-  
Payment**

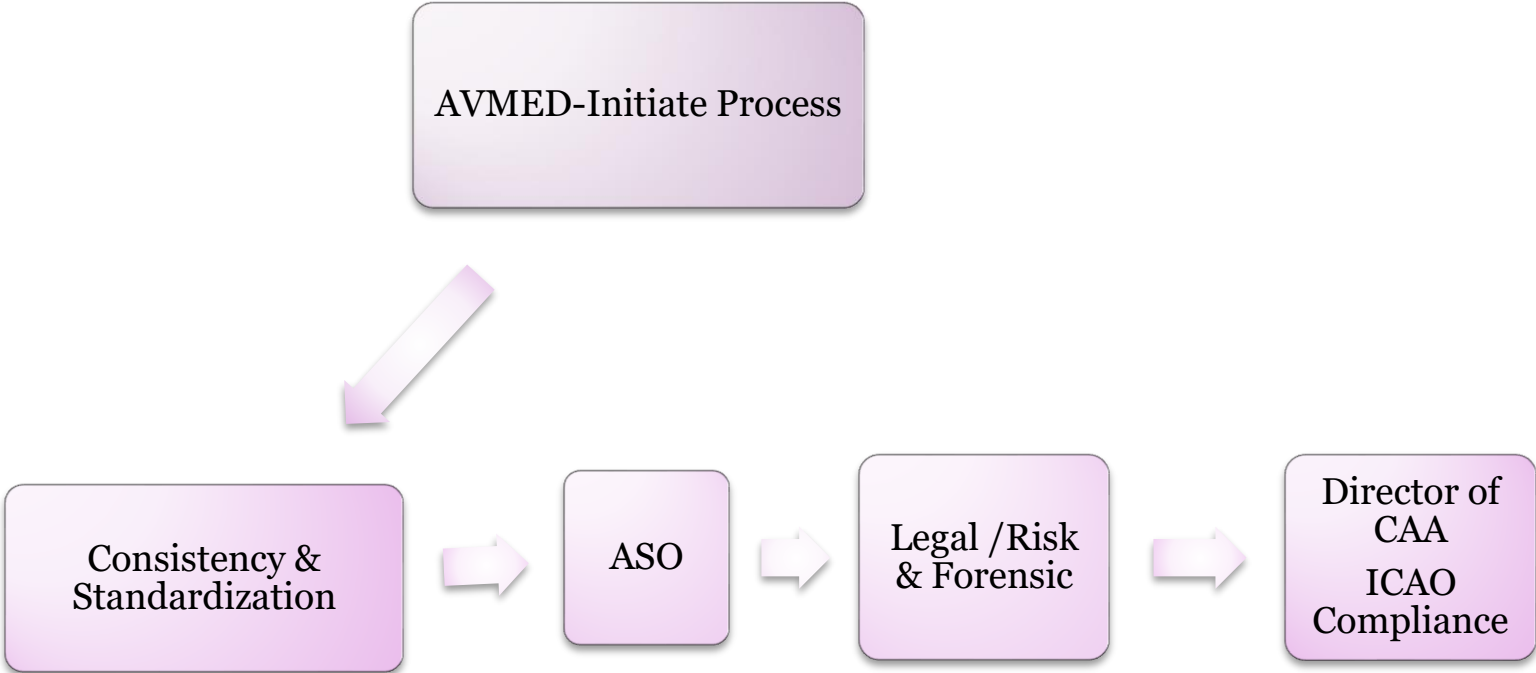


**Reputational  
Damage**



**Medical Assessors  
,AMC & Appeal  
Specialists  
Indemnified unless  
there is gross  
negligence**

# DESIGNATION PROCESS FOR DAMES



## SACAA Website & EMPIC

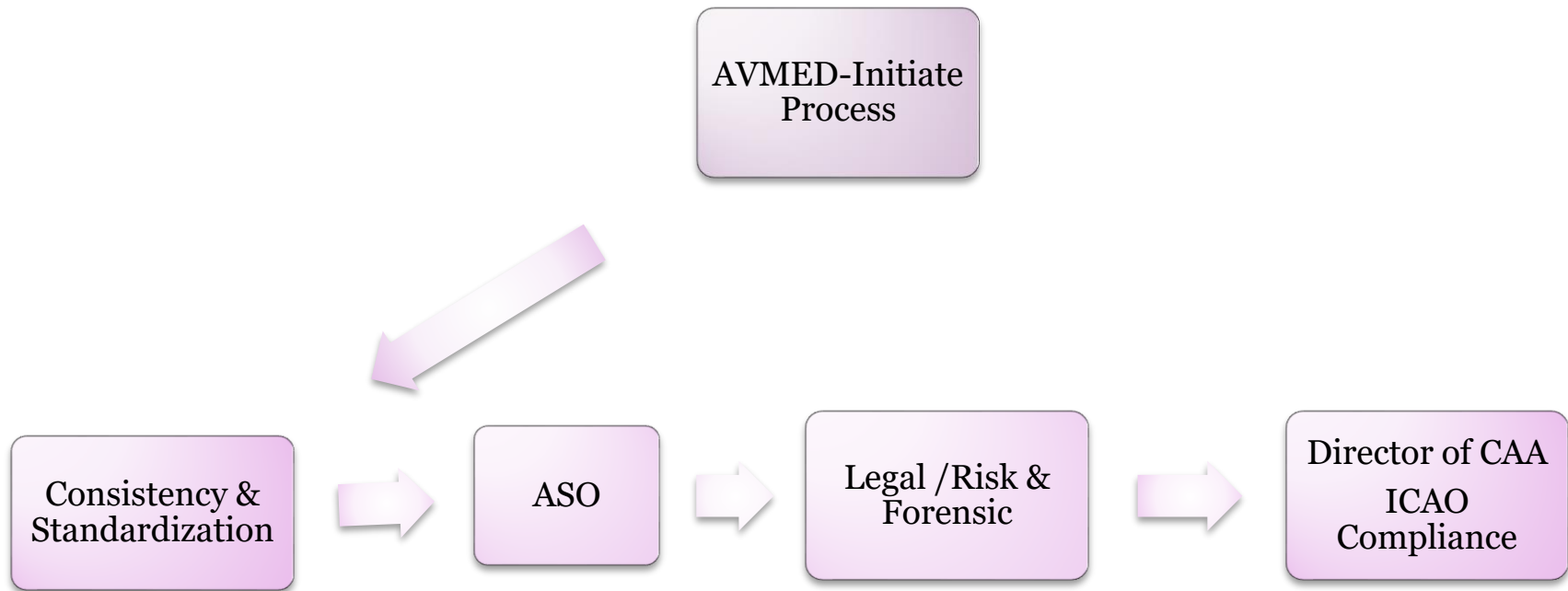
### Designation Process Part 67 Regulations & Technical Standards –SACAA

#### Documentation

- a) medical degree;
- b) certificate, diploma or degrees of any postgraduate professional training in aerospace medicine:
- c) Health Professions Council of South Africa registration certificate;
- d) Certificate of good standing from the Health Professions Council of South Africa;
- e) proof of the ability to read, write, speak, and understand the English language.
- f) there are no current restrictions of medical practice, and there are no adverse actions proposed or pending by the Health Professions Council of South Africa;
- g) there are no known investigations, charged indictments, or pending actions in any court of law



# Designation Process for DAMEs



# ROLE OF THE DAMES & MEDICAL ASSESORS

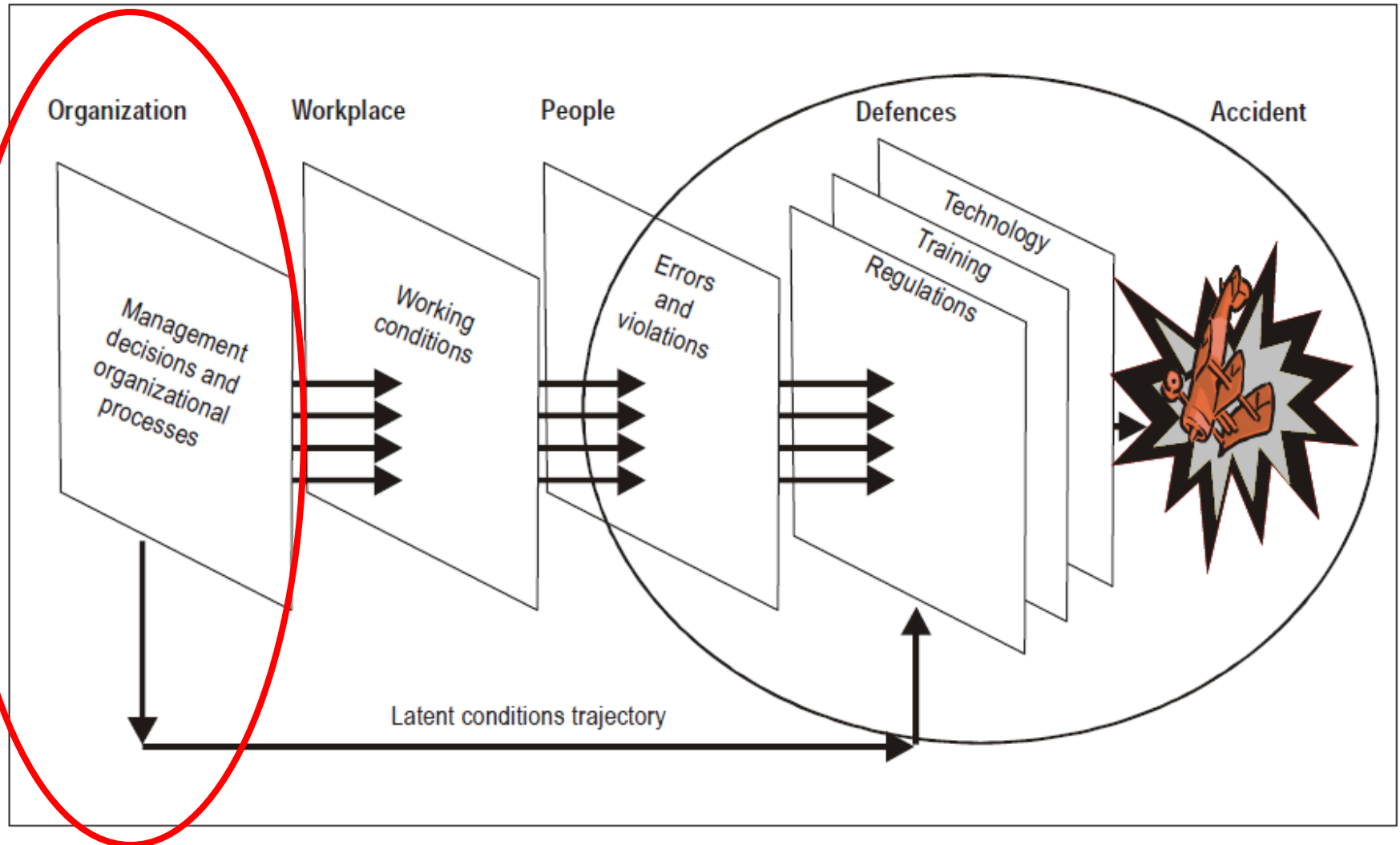


Figure 2-2. The concept of accident causation

# SACAA Contact Details

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<b>Dr Musa Ndukuya</b>	Medical Assessor	079 8948954	Ndukuyam@caa.co.za
<b>Dr.Siyabonga Ngcobo</b>	Medical Assessor	083 781 2546	ngcobos@caa.co.za
<b>Mr. Kgama Melesi</b>	Professional Aviation Nurse	0718060301	MelesiK@caa.co.za
<b>Sister Tshepo Masole</b>	Professional Aviation Nurse	083451-2665	masoleg@caa.co.za
<b>Nomcebo Thabebe</b>	Medical Assistant Officer	0834616032	ThabedeN@caa.co.za
<b>Sister Caroline Moja</b>	Professional Aviation Nurse		mojac@caa.co.za
<b>Mr.Khulekile Ndlovu</b>	Professional Aviation Nurse		ndlovuk@caa.co.za



**ARE THERE  
ANY  
QUESTIONS..?**