



ICAO developments in Aviation Medicine

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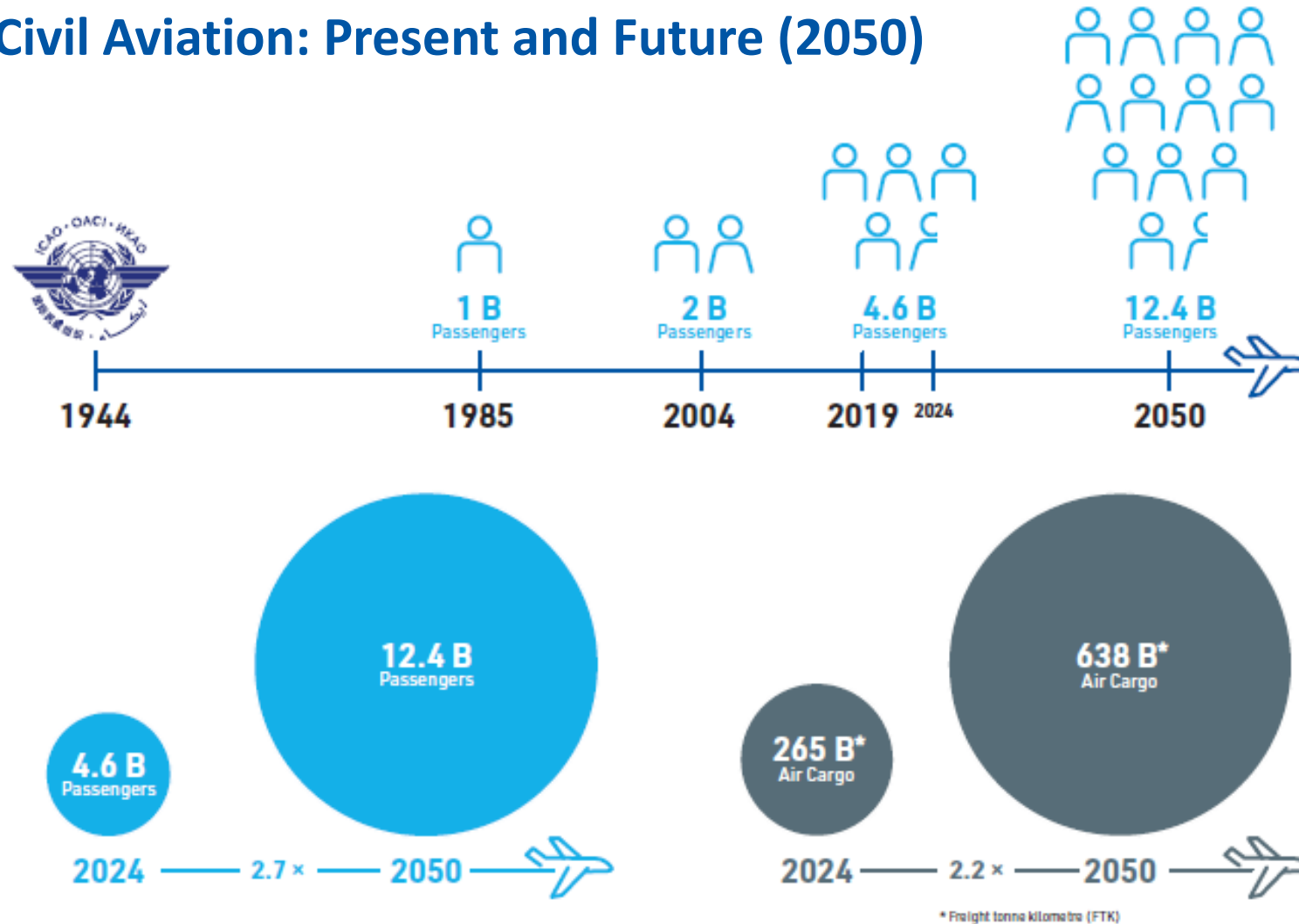


**INTERNATIONAL
CIVIL AVIATION
ORGANIZATION**



— The ICAO Strategic Plan (2026 – 2050)

Context of Civil Aviation: Present and Future (2050)



— News report 23 July 2026

Record air traffic

- 153,359 flights
- Highest number ever in 24 hours
- Despite conflict in the Middle East with overflight restrictions
- Confirms trend of increased traffic despite geopolitical crises & climate emergencies



— ICAO Flight Safety Report (2026)

Passenger (billion):	4.950
Flights (million):	38.08
Accidents:	85
Fatal accidents:	4
Fatalities:	387
Serious injuries:	143
Global accident rate:	2.23 accidents per million flight departures
Global fatal accident rate:	0.11 fatal accidents per million departures
Global Fatality rate:	78 fatalities per billion passengers
Injury rate:	29 serious injuries per billion passengers

Figure 1. | Safety Overview 2025

ICAO Flight Safety Report (2026)

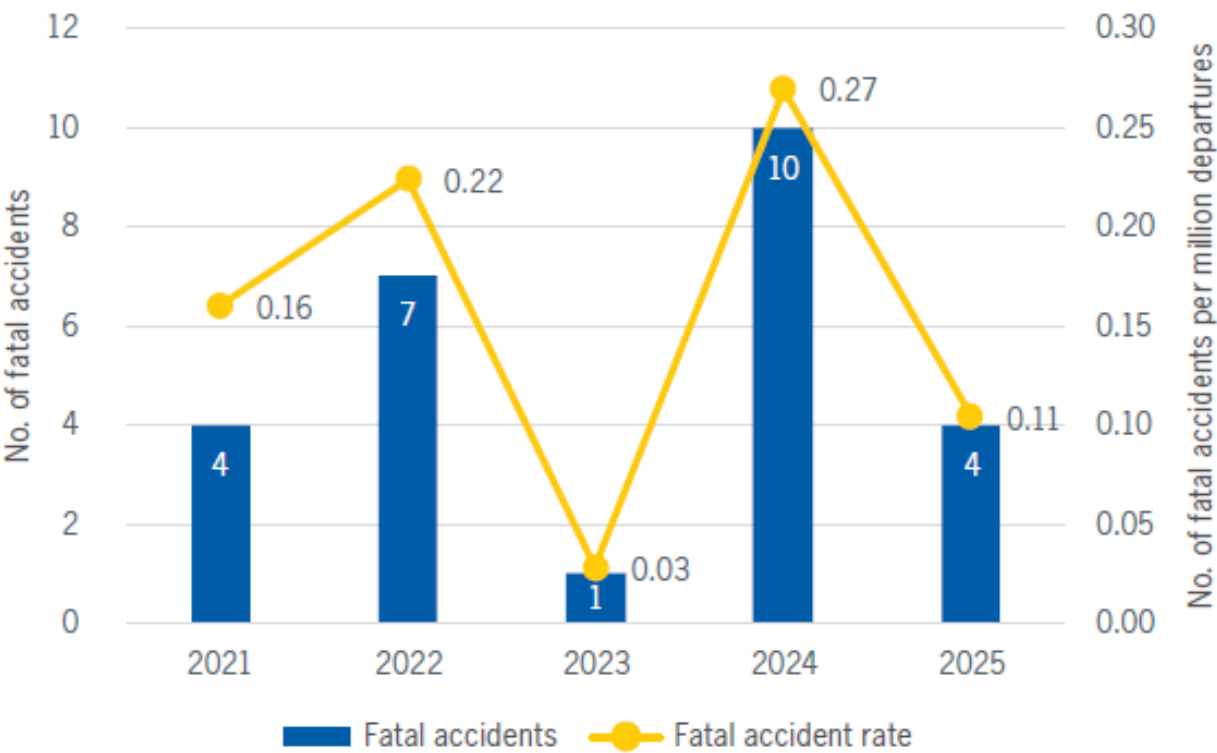


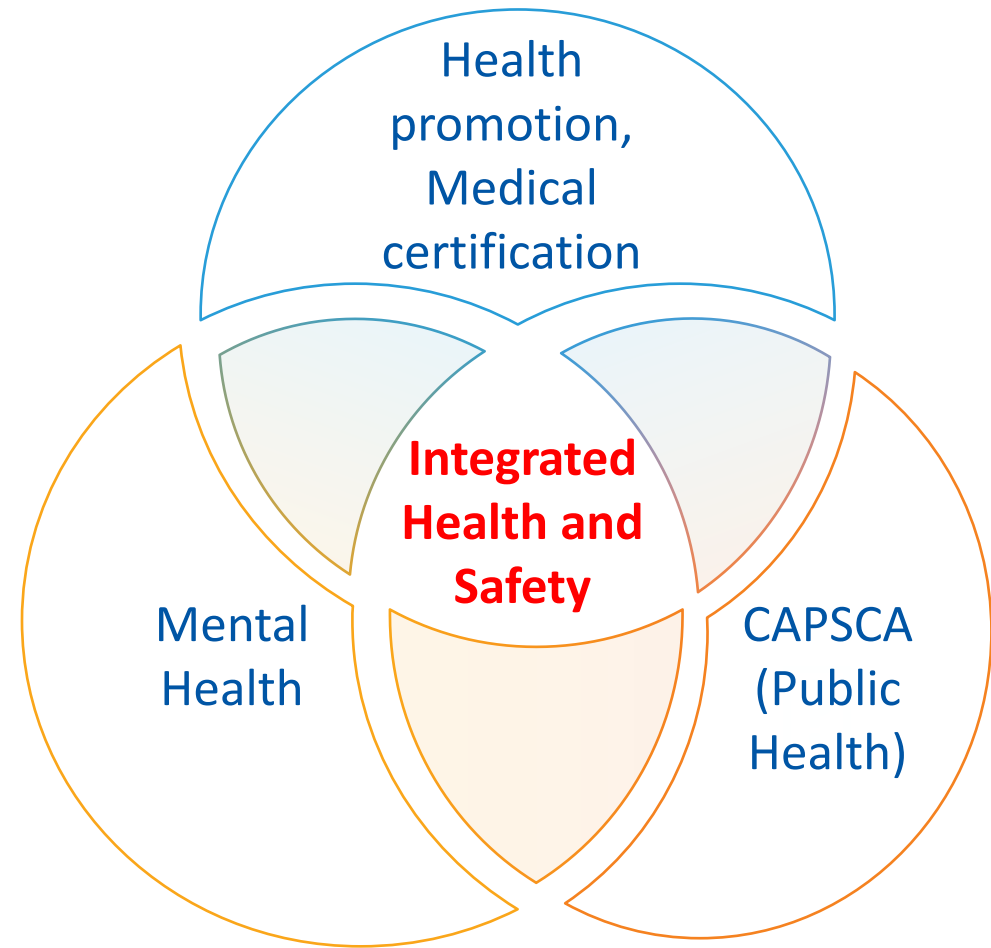
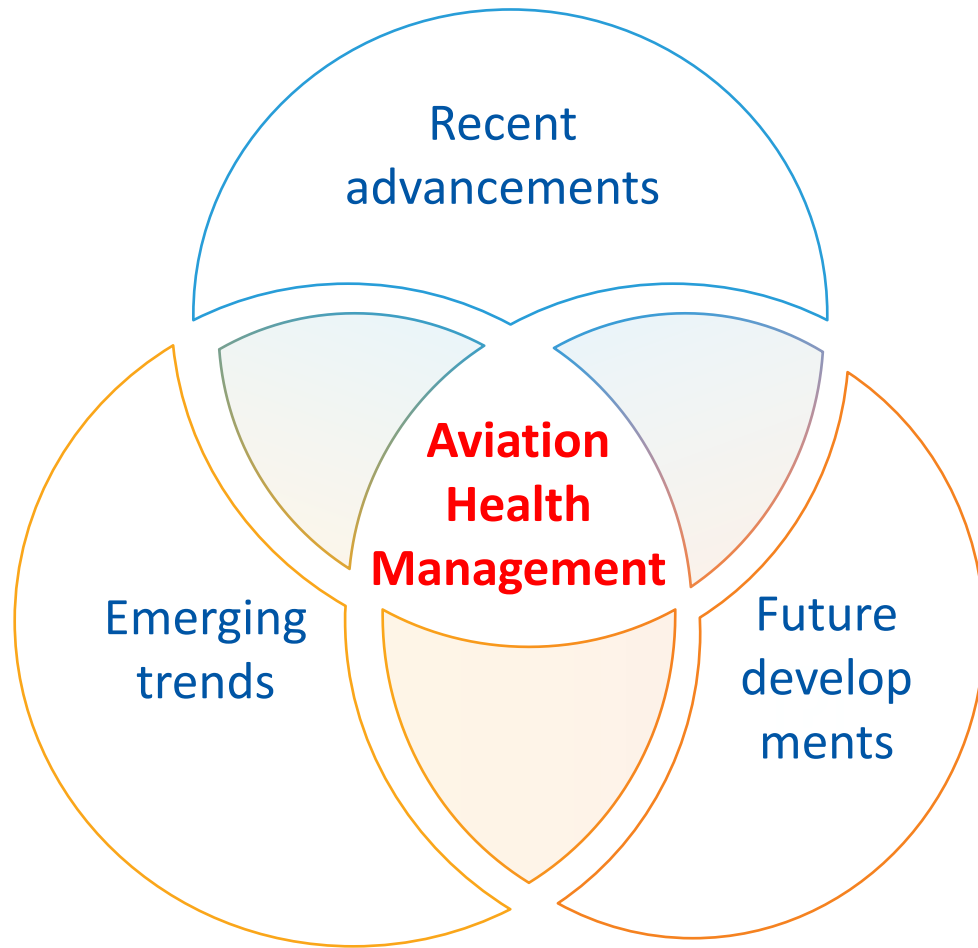
Figure 2. | Number of fatal accidents by ICAO Region in 2025

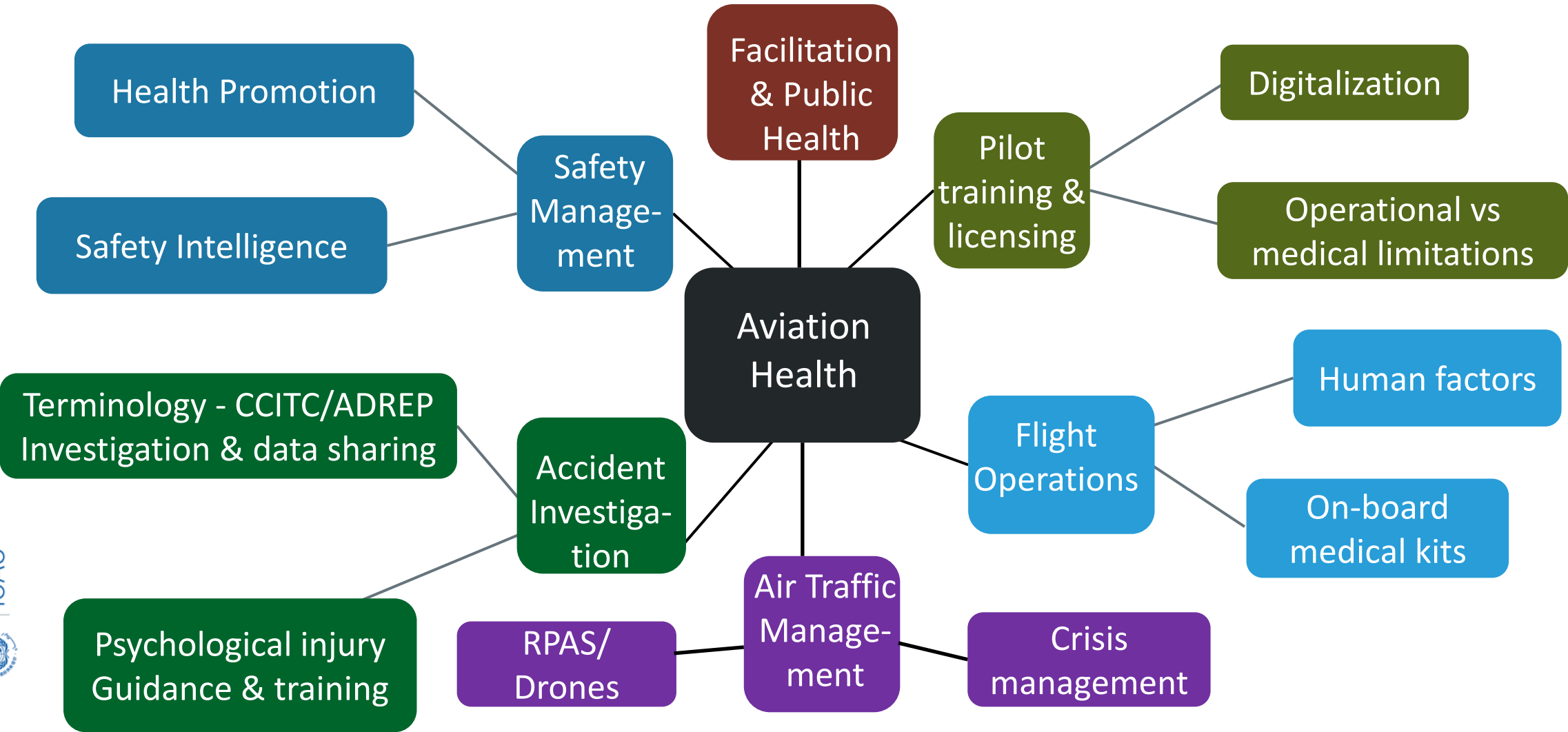
Chart 4. | Fatal accident records: 2021–2025 scheduled commercial operations

— ICAO Flight Safety Report (2025)

- Focus efforts on most critical categories of accidents
- Continue investments in:
 - **pilot training**
 - on-board systems
 - **safety management**
 - **human factors**
 - improving ground proximity warning systems
 - **crew situational awareness**

From Health Management to Integrated Health and Safety





— Discussion Accident Investigation Panel

- Standardized terminology and collaboration between stakeholders
- Share data and information on pilot incapacity or impairment due to medical or psychological factors
- Share human factors trends
- Share substance abuse trends
- Recognize the complexity of cognitive function evaluation
- Recognize the difficulties to detect mental ill health
- Early referral to AVMED department

— Discussion Accident Investigation Panel

- Access to medical reports for accident investigation purposes
 - Fatality (post-mortem reports) vs. no fatality (medical records)
 - Medical confidentiality issues - not available, aviation regulation, court order
- Development process to exchange data between AIA and AVMED
- Develop training for accident investigators.
- Closer working relationship between Accident Investigation Panel and Medical Provisions Study Group

Aviation Medical Certification and Flight Operations

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SARPs

- New SARPs
- Amended SARPs
- Panel outcomes
- Other questions

No country left behind

- Guidance material
- Implementation assistance

Medical

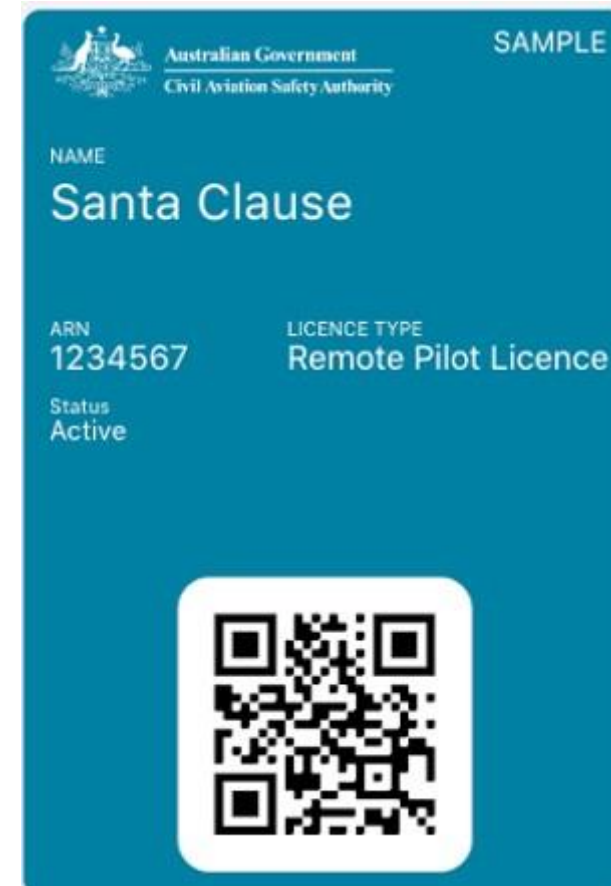
- System
- Risk- based
- Science based
- Evidence based

Operational

- Type of operation
- Operational processes
- Technology
- Training
- Operational imitations

— Aviation Medical Certification and Flight Operations

- Digital licenses
- Digital medical certificates optional
 - Confidentiality
 - Integration into licensing systems
 - Ramp inspections
- Type of limitations
 - Operational limitations
 - Medical limitations



Data provided by the states (ICAO age survey)

- State confidentiality
- Some states did not provide permission to share the data:
 - Not complete
 - Not verified for accuracy
 - Not authorized
- Provision of data
 - Some states provided good quality data, but could not provide detailed analysis
 - Paper based records and in the process of digital transformation

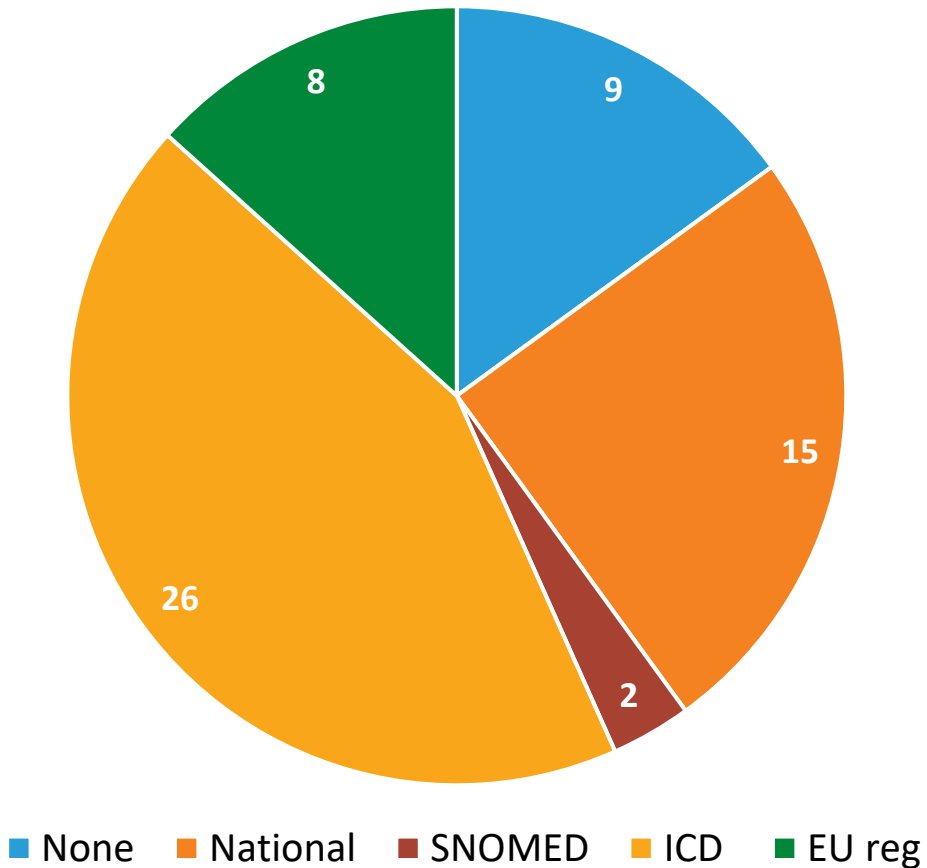
Data provided by the states (ICAO age survey)

- Medical certificate data
 - Limited representative data available
 - Data that is available is not standardized or comparable
 - Consider additional sources – occupational health data, pilot post-mortem
- Health data
 - No data on pilots choosing not to renew – or the reason for non-renewal
 - No visibility what happens after 65 - when pilots stop flying due to age limitation
- No active monitoring data or trend analyses

Need exit and post retirement data to identify and mitigate medical risk

Different disease classification systems

Disease classification system (60 States)



Advantages of comparable disease classification systems

- Consistent data categories
- Reliable data
- Comparable data analysis
- Evidence based decision-making
- Informs areas of potential risk
- Informs health promotion areas
- Enables risk-based medical policies and guidance

Improve harmonization

Data provided by the states (ICAO age survey)

- **Data system**
 - No electronic system to capture data
 - In process of digital transformation that will allow better analysis
 - System not currently equipped to identify or extract the data
- **Legislation and resources**
 - No regulations or resources to keep such data
 - Legislated separation between regulators and investigators reduces access to data
 - Availability of data can be improved by data governance policy, data protection and capacity building in data analysis to support decision making
 - Resource constraints – human and financial

Data provided by the states (ICAO summary)

- Lack of standardized definitions of medical outcomes
- Lack of standardized processes and levels of decision-making
- Limited availability of medical examiners
- Limited availability of and support for Medical Assessors
- Inconsistent use of accredited medical conclusion
- Inconsistent use of practical medical flight tests
- Legal case findings not always compatible with science

Develop tools, provide guidance material and provide implementation assistance

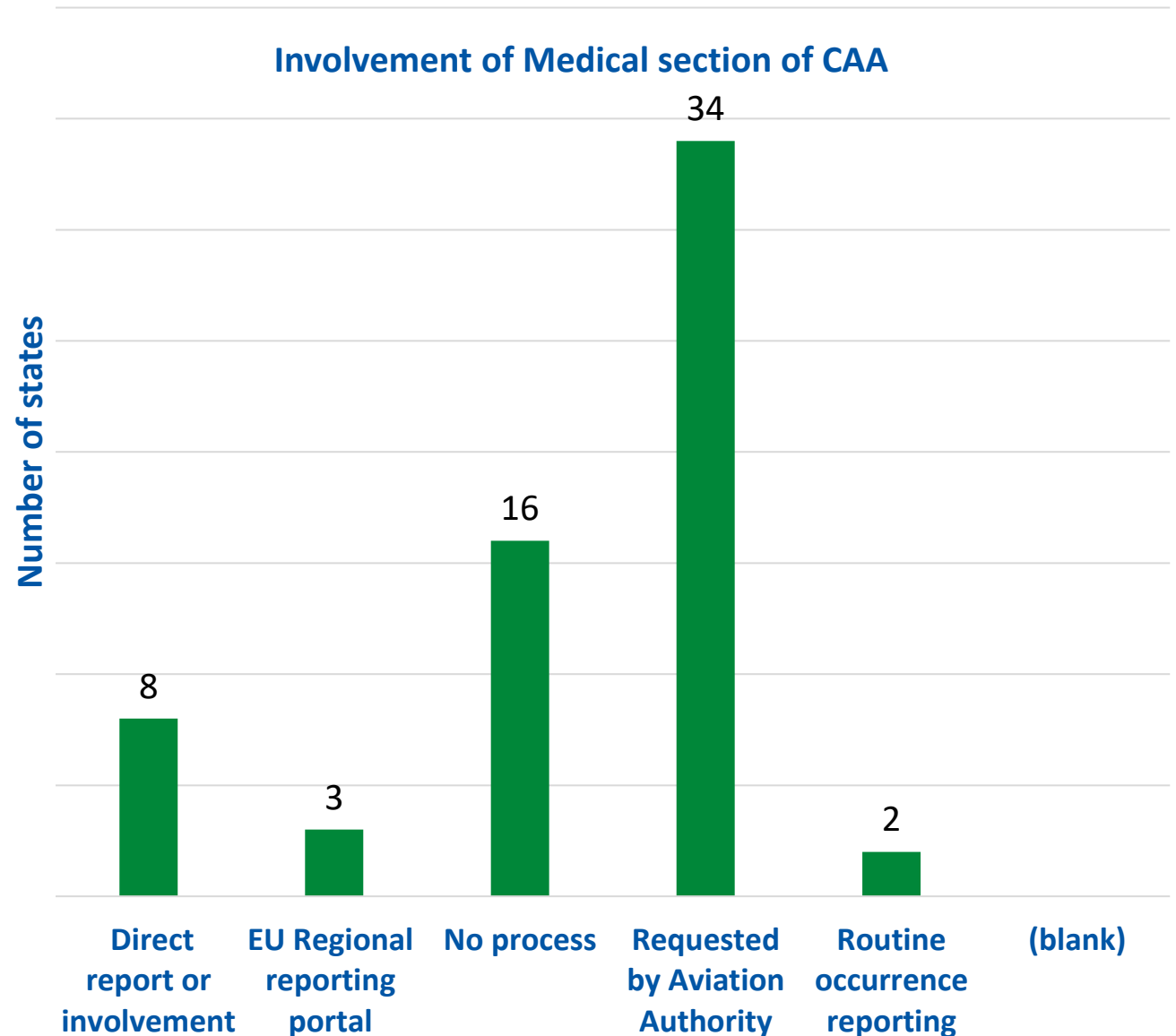
Data provided by the states (Accidents and incidents)

- In-flight incapacity data: not available to the aviation medical section
- Accident and incident data:
 - confidentiality issues
 - limited reporting to aviation medical sections
 - low numbers and seemingly rare – difficult to analyze statistically

Need data to determine and mitigate medical risk

Incapacitation manageme

- Many countries do not have specific definitions to differentiate between Subtle and Obvious incapacitation
- Inconsistent incapacitation reporting and investigation processes
- Limited involvement of medical sections in incapacitation investigations



Data survey outcome

- Absence of evidence is not evidence of absence
- With limited data it is difficult to demonstrate that a situation is safe or not safe
- Current aviation medical and operational data too limited to inform a decision on increasing the upper age limit

Create awareness of the value of aggregated data and trends

Improve Aviation Medical Data and Safety Intelligence

- Improve data collection tools and procedures – requires resources and time
- Harmonized practices and procedures
- Formulate a standardized framework to assess and manage risk
- Provide system support for decision-making and decision-makers
- Remove barriers within the system

— Aviation Medical Data and Safety Intelligence

Type of data

- Medical assessment outcomes
- Safety occurrences, incidents, accidents
- Peer support programmes
- Training and check-rides
- National and Occ Health data
- Aggregate, not individual data

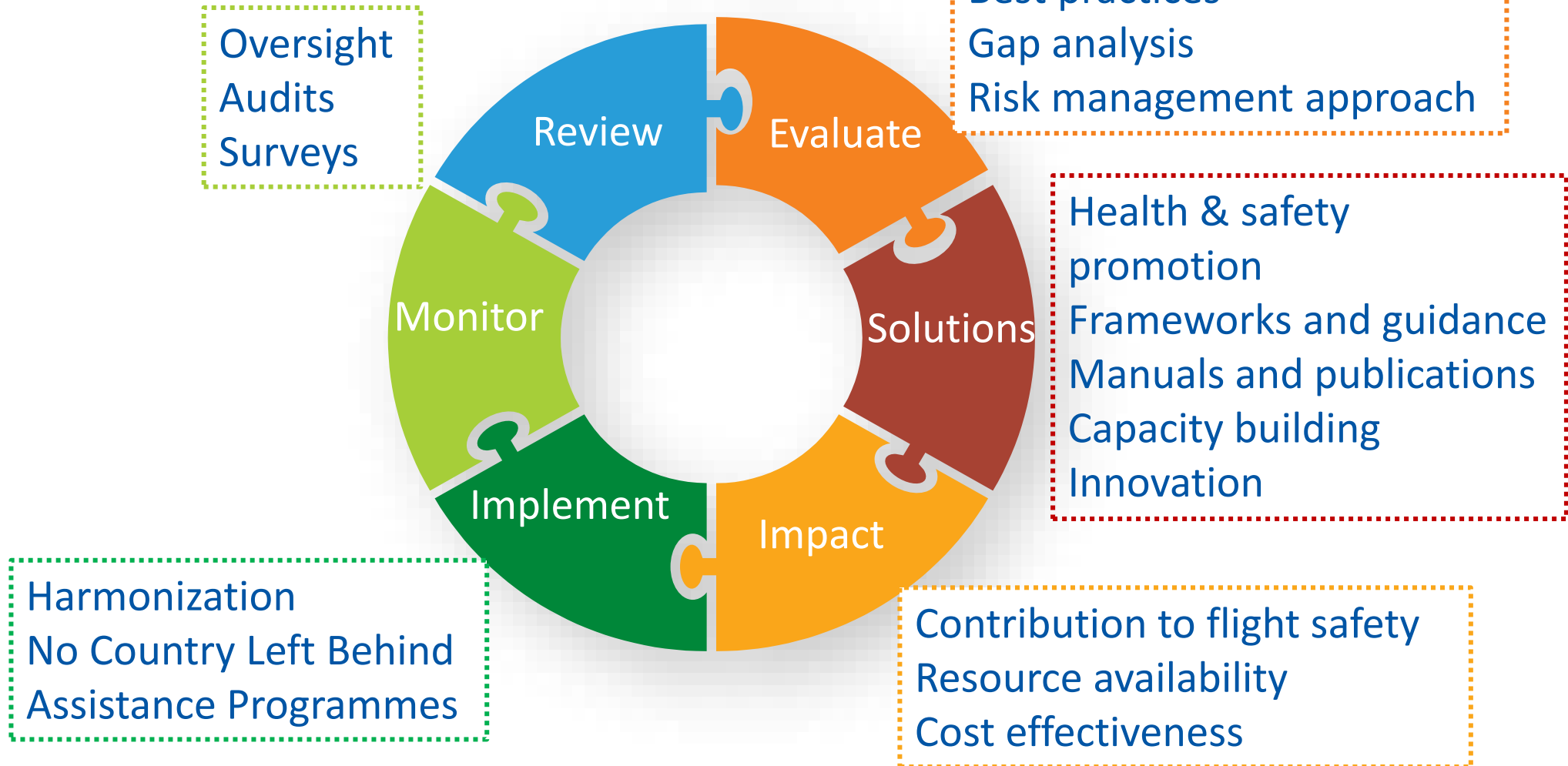
Transition from prescriptive to risk-based and evidence informed

— Aviation Medical Data and Safety Intelligence

Using and sharing of data

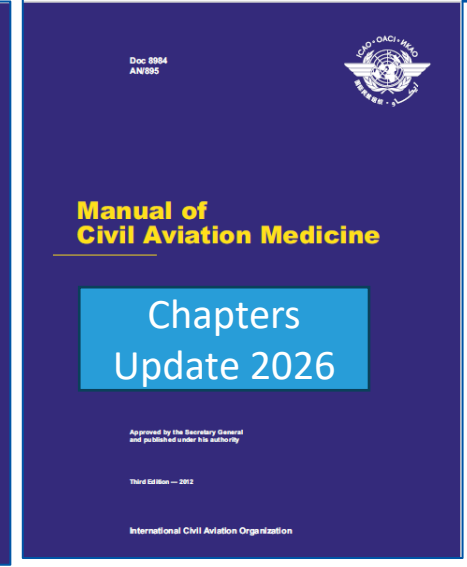
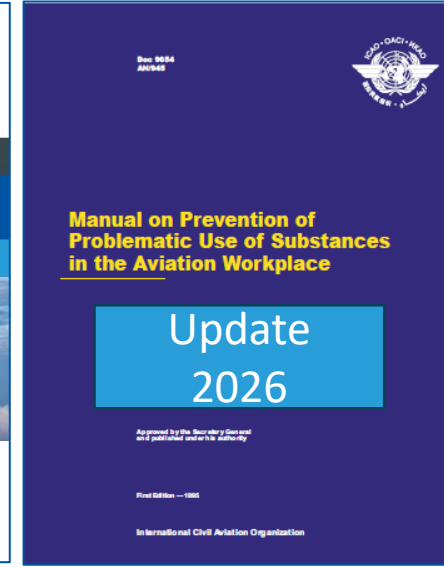
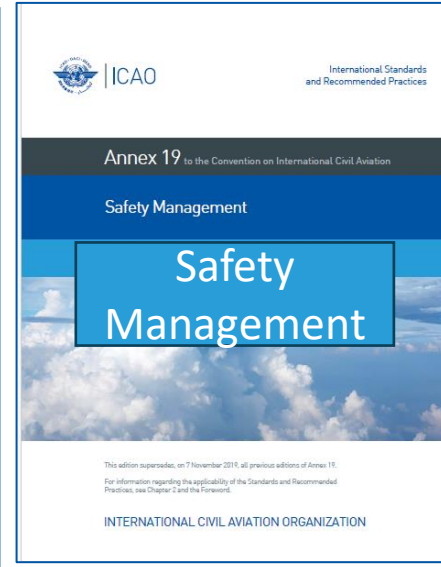
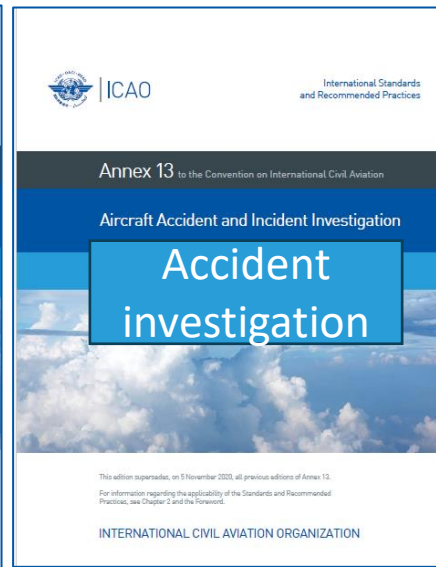
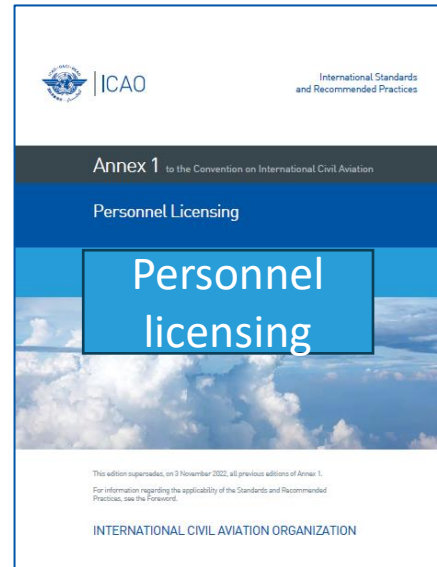
- Data governance and confidentiality
- Specific targeted data structure
- Standardized and relevant categories
- Application in multiple analyses
- Policies and procedures for:
 - data collection
 - data standardization
 - data recording
 - data sharing
 - data analysis
 - data reporting

SARPs Development



ICAO Annexes and Manuals

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— Manual Updates

- Health Promotion and Mental health (new)
- Medication and substance use (Doc 9654)
- Manual on Civil Aviation Medicine (Doc 9894)
 - Risk based and evidence informed SARPs (Integrated risk management and data)
 - Accident investigation
 - Age
 - Colour vision
 - Insulin Dependent Diabetes
 - Cardiovascular health
 - Telemedicine
 - HIV

- References to other ICAO manuals
- Publication schedule for guidance, ANC meetings and SARPs applicability

— Outcome of ICAO Women in Aviation Conference Angola: July 2026

- While progress is being made, women remain underrepresented in many aviation professions around the world
- Global representation:
 - 4 % of pilots
 - 3 % of aircraft maintenance engineers and technicians
 - 20.6 % of air traffic controllers

— Outcome of ICAO Women in Aviation Conference Angola: July 2026

- Participants emphasized the importance of:
 - improving the collection of data
 - use of sex-disaggregated data to better inform policy
 - strengthen accountability
 - measure progress
 - support evidence-based decision-making
- Participants explored ways to:
 - improve access to education, training, mentoring, and leadership development
 - particularly in senior technical, operational, and decision-making roles where women remain underrepresented

Thank You

