Estimated Rate of Failure to Disclose Select Cardiac Conditions During FAA Aeromedical Exams

Safety Council

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FAA Aeromedical Certification Exams

- **Civilian aviators seeking First, Second, or Third Class FAA Medical Certificates are required to submit to periodic medical examinations, including:**
  - physical examination
  - clinical tests (vision, blood pressure, etc)
  - review of medical history and medications
- **Medical history is <u>self-reported.</u>**
  - The rate of failure to disclose medical information is unknown, since there is no requirement to provide private medical records unless needed for review of a potentially disqualifying medical condition.

Research Proposal

- **It is possible to assess accuracy of self-reported aeromedical certification information using post-mortem data in FAA custody.**
  - MANTRA: an electronic database of post-mortem extracts of pilot FAA aeromedical certification and autopsy records searchable by diagnosis with ICD-10 (2017 version) and by procedure with CPT
  - Between 10/1/2008 and 12/31/2022, there were 3930 fatally injured pilots and pilot-rated passengers entered in MANTRA
    - 536-1st Class, 977-2nd Class, 1413-3rd Class, 129-BM, 77-deferred/denied, 798-other
    - 2926 had current medical certificates at time of death, 3627 had autopsies, 2718 had both autopsies and current medical certificates at time of death

PART 1 – If evidence of old myocardial infarction was detected at autopsy, how often was this condition reported during FAA aeromedical certification exams?

MANTRA was queried for myocardial infarction ICD code I25 (ICD 10-2017) reported at autopsy. Identified cases were reviewed to determine if the pilot had a current medical certificate at the time of death and if they reported a corresponding history at any time on their certification medical exams in 8500-8, block “18m”.

Part 1 - I25 Old Myocardial Infarction

- **There were 85 fatally injured pilots with gross or microscopic evidence of old MI at autopsy**
  - 1-1st Class, 18-2nd Class, 28-3rd Class, 38-others
  - 2.3 % (85/3627) of all fatally injured pilots with autopsies
- **Of the 47 of these pilots who also had current medical certificates at time of death, 10 (21%) reported a history of old MI at some time on their certification exams in 8500-8, block "18m".**
  - 79% (37/47) of these pilots did not report a history of MI (knowingly or unknowingly) and passed their certification exams with the condition undetected.

PART 2 – If evidence of coronary stent or bypass graft was detected at autopsy, how often was this procedure reported during FAA aeromedical certification exams?

- **MANTRA was queried for autopsy codes:**
  - CPT code 33517 “coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft”
  - CPT code 92933 “percutaneous transluminal coronary atherectomy, with intracoronary stent, with coronary angioplasty when performed; single major coronary artery or branch”
- **Identified cases were reviewed to determine if the pilot had a current medical certificate at the time of death and if they reported a corresponding history at any time on their certification medical exams in 8500-8, block “18m”.**

PART 2 - CPT 33517 CABG on Autopsy

- **There were 68 fatally injured pilots with evidence of coronary artery bypass grafts at autopsy**
  - 3-1st Class, 8-2nd Class, 24-3rd Class, 31-others
  - 1.8 % (66/3627) of all fatally injured pilots with autopsies
- **Of the 25 of these pilots who also had current medical certificates at time of death, 23 (92%) reported a history of CABG at some time on their certification exams in 8500-8, block "18m".**
  - 8% (2/25) of these pilots did not report a history of CABG and passed their certification exams with the condition undetected.

PART 2 - CPT 2033 Stent on Autopsy

- **There were 66 fatally injured pilots with evidence of coronary stent at autopsy**
  - 3-1st Class, 5-2nd Class, 17-3rd Class, 43-others
  - 1.9 % (68/3627) of all fatally injured pilots with autopsies
- **Of the 35 of these pilots who also had current medical certificates at time of death, 24 (69%) reported a history of stent placement at some time on their certification exams in 8500-8, block "18m".**
  - 31% (11/66) of these pilots did not report a history of stent and passed their certification exams with the condition undetected.

SUMMARY

- **For fatally injured medically certificated pilots:**
  - Among pilots with old MI on autopsy- 21% reported a history of MI on exam, but 79% did not report it and passed their exam with the condition undetected
  - Among pilots with CABG on autopsy- 92% reported a history of MI on exam, but 8% did not report it and passed their exam with the condition undetected
  - Among pilots with coronary stent on autopsy- 69% reported a history of MI on exam, but 31% did not report it and passed their exam with the condition undetected

Safety Assurance

- **If each instance of a fatally injured pilot with an unreported history of MI, CABG, or stent constitutes a safety assurance case:**
  - 37-MI, 2-CABG, 11-stent = 50 cases
  - 50 cases / 171 months = 0.3 fatal cardiac-related safety assurance cases per month, or **3.6 cases / year**
  - Proportion of cases among pilots with autopsy and current exams at time of death 50/2718 = 0.018

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