EMS Helicopter Safety:
Viewpoint from U.S. NTSB

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NTSB Board Member
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• HEMS safely transports nearly 400,000 patients each year in U.S.

• HEMS performs a vital function of providing critical care
However:

• Current HEMS accident record is alarming and it is unacceptable

• Improvements must be made
Last 6 years - 85 accidents; 77 fatalities

- 2003 - 19 accidents; 7 fatalities
- 2004 - 13 accidents; 18 fatalities
- 2005 - 15 accidents; 11 fatalities
- 2006 - 13 accidents; 5 fatalities
- 2007 - 12 accidents; 7 fatalities
- 2008 - 13 accidents; 29 fatalities

49 weeks without a fatal HEMS accident UNTIL ...
September 25, 2009
3 Fatalities
Recent HEMS accidents

• Have gotten the attention of U.S. Congress, GAO, FAA, industry, media, public and NTSB
NTSB has longstanding concern of HEMS Safety

- 1988 Safety Study
  - Evaluated 59 HEMS accidents
  - Issued 19 safety recommendations to FAA, 2 associations and NASA
2006 Special Investigation Report

- Analyzed 55 EMS Accidents
  - 14 Airplane
  - 41 Helicopter

- Determined that 29 of the 55 accidents could have been prevented
  - if corrective actions in the report had been implemented
2006 Safety Recommendations

• To FAA:
  – Require operations under Part 135 for all legs of EMS missions.
  – Require flight risk evaluation for all EMS missions.
  – Require EMS operators to utilize flight dispatch procedures.
  – Require that EMS operators use TAWS.
NTSB MOST WANTED LIST
Transportation Safety Improvements

2009

Critical changes needed to reduce transportation accidents and save lives.
3 of 4 Recommendations

**NTSB Most Wanted List**

**Aviation:** The Federal Aviation Administration should:
- Improve Safety of Emergency Medical Services Flights
  - Conduct all flights with medical personnel on board in accordance with current regulations.
  - Develop and implement procedures to improve emergency medical services.
  - Require improved dispatch and flight-following procedures including up-to-date weather information.
  - Install terrain awareness and warning systems on aircraft.

Open - Unacceptable Response
NTSB Public Hearing on HEMS

- 41 witnesses representing
  - HEMS operators
  - industry associations
  - manufacturers
  - hospitals

Feb 3-6, 2009
Comprehensive look at HEMS industry

• Looked at HEMS business models
• Examined flight operations procedures including:
  – flight planning, weather minimums, preflight risk assessment
• Discussed safety enhancing technology such as TAWS and NVIS
• Discussed training, including use of flight simulators
• Probed corporate and government oversight of HEMS operations
2009 Safety Recommendations

• Recommendations to the FAA:
  – Develop and require scenario-based simulator training
  – Require SMS
  – Require flight data recorder devices; establish flight data monitoring programs
  – Require HEMS operators to report flight hours flown
  – Improves use of weather data sources
  – Evaluate development of low altitude airspace in infrastructure, and implement, if feasible
  – Require use of Night Vision Imaging Systems (NVIS) equipment and training
  – Require autopilots if second pilot not available
2009 Safety Recommendations

• Recommendations to public operators:
  – Require scenario-based simulator training
  – Require SMS
  – Install flight data recorder devices; establish flight data monitoring programs
  – Install and require NVIS equipment and training
  – Require autopilots if second pilot not available
• Recommendations to Federal Interagency Committee on EMS (FICEMS)
  – Develop national guidelines for the use and availability of HEMS by regional, state, and local authorities during emergency medical response system planning.
  – Develop national guidelines for selection of the most appropriate emergency transportation mode for urgent care.
2009 Safety Recommendations

• Recommendations to the Centers for Medicare & Medicaid:
  – Evaluate the HEMS reimbursement rate structure to determine if reimbursement rate should differ according to level of HEMS transport safety provided,
    • Establish new rate structure, if warranted
  – Develop minimum safety accreditation standards
  – Provide Medicare reimbursement only for HEMS transportation that meets accreditation standards