ORIGINAL RESEARCH · AIR MEDICAL JOURNAL · 2026

Pressure to Fly and Phase of Flight in Helicopter Air Ambulance Accidents

Accidents on the flight back to base were the most likely to be fatal.

194

US HAA accidents classified by phase, NTSB records 1984 to 2025

BACKGROUND

1 in 3
HAA accidents that were fatal

1 in 7
Other helicopter accidents that were fatal

FAA review of two decades of NTSB records

Pressure to fly is the real or perceived force, external or internal, that pushes a crew to accept, launch, or continue a flight despite reasons to decline or abort.

For 25 years the industry has treated it as a patient problem. Its main countermeasures act on the decision to accept a patient flight.

- Turn-down policies
- Withholding patient details from pilots
- Dispatch risk assessment
- CRM at launch

Question. When an accident occurs, does the chance it is fatal differ by phase of flight, and do the patient phases carry the highest risk?

METHOD

Archival study of every NTSB air medical record, January 1984 through June 2025.

Air medical investigations	405
Helicopter only	322
Accidents, not incidents	295
Classified by phase	194

101 excluded, including mechanical failure (65), wildlife strike (11), and training flights (11).

Response
To the patient, before contact

Transport
Patient aboard

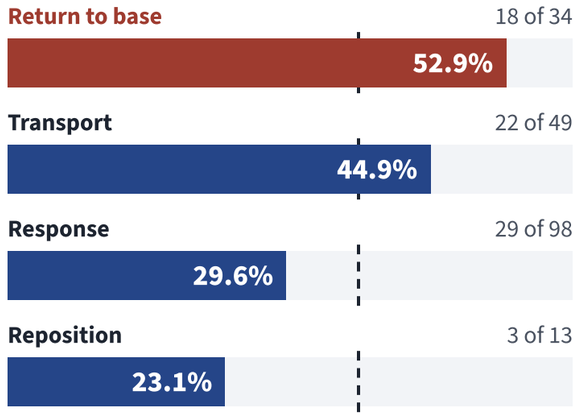
Return to base
No patient, bound for home base

Reposition
No patient, bound elsewhere (fuel, staging)

Case fatality = fatal accidents ÷ accidents in that phase. It measures how often an accident, once it happens, kills someone aboard. It is not a rate per flight hour. The NTSB does not record exposure.

RESULTS

Case fatality by phase of flight



Dashed line marks all phases combined, 72 of 194 (37.1%). χ^2 = 8.39, df = 3, P = .039, read descriptively. The ordering carries the finding.

Frequency and severity point different ways

147	51	152
of 194 accidents	of 72 fatal accidents	of 201 deaths

Response and transport produced most accidents, fatal accidents, and deaths. Return to base produced the highest chance that an accident was fatal.

CONCLUSION

The phase with the highest case fatality came after patient care ended, with no patient aboard and no clinical urgency left. Response ranked third.

Pressure to fly may extend past the patient and change form. After transport, plausible sources include restoring aircraft availability, fatigue late in the duty cycle, weather that has worsened since launch, and the pull to finish.

IMPLICATION

Apply the same structured risk assessment to return-to-base and repositioning launches that patient flights receive.

READ WITH CARE

- Pressure to fly was not measured. The pattern is consistent with it, not proof of it.
- Grouping by patient presence blurs the signal. Return to base and reposition sit at the top and bottom (44.7% vs 34.7% grouped, OR 1.52, 95% CI 0.78 to 2.96).
- No exposure data. The 40-year window is treated as one period.

Griffin RE. Pressure to fly and phase of flight analysis in helicopter air ambulance accidents. *Air Med J.* 2026. doi:10.1016/j.amj.2026.09.009

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