

Non-home discharge

- Risk analysis index-measured frailty as a critical predictor of outcomes in patients with non-normal pressure hydrocephalus undergoing first-time shunt surgery: A nationwide study
- Lumbar Fusion and Decompression in American Indian, Alaskan Native, Native Hawaiian, and Pacific Islander Populations: Healthcare Disparities in Spine Surgery
- Discriminatory Value of the Risk Analysis Index Versus the 5-Factor Modified Frailty Index for Major Outcome Measures in Degenerative Cervical Myelopathy
- Characterizing Comprehensive Cleft Care in the United States: A National Inpatient Sample Study
- Cerebral cavernous Malformation Surgery: National trends in Volume, Complications, and costs
- Preoperative prediction of postoperative needs after spinal tumor surgery
- Achondroplasia Status and Adverse Short-Term Postoperative Outcomes in Elective Spinal Decompression Surgery: A Propensity Score-Matched Case-Control Study
- The economic burden of diabetes in spinal fusion surgery: a systematic review and meta-analysis

Non-home [discharge](#) typically refers to a situation where a patient is discharged from a [hospital](#) or healthcare [facility](#) to a location other than their home, such as a skilled nursing facility, long-term care facility, [rehabilitation](#) center, or hospice care facility.

Whether or not a patient will be discharged to a non-home location will depend on a variety of factors, including the patient's medical condition, the severity of their illness or injury, their support system and ability to care for themselves at home, and the availability of appropriate care facilities. The decision to discharge a patient to a non-home location will be made by their healthcare team, based on their assessment of the patient's needs and the available options for care.

2227 patients undergoing elective ACDF from 2008 to 2019 were identified from a single institutional database. A machine learning model was trained on preoperative variables, including [demographics](#), [comorbidity](#) indices, and levels fused. The [validation](#) technique was repeated stratified K-Fold cross validation with the area under the receiver operating curve (AUROC) statistic as the performance metric. Shapley Additive Explanation (SHAP) values were calculated to provide further explainability regarding the model's decision making.

The preoperative model performed with an AUROC of 0.83 ± 0.05 . SHAP scores revealed the most pertinent risk factors to be age, medicare insurance, and American Society of Anesthesiology (ASA) score. Interaction analysis demonstrated that female patients over 65 with greater fusion levels were more likely to undergo NHD. Likewise, ASA demonstrated positive interaction effects with female sex, levels fused and BMI.

Geng et al. validated an explainable machine learning model for the prediction of NHD using common preoperative variables. Adding transparency is a key step towards clinical application because it demonstrates that our model's "thinking" aligns with clinical reasoning. Interactive analysis demonstrated that those of age over 65, female sex, higher [ASA](#) score, and greater fusion levels were more predisposed to NHD. Age and ASA score were similar in their predictive ability. Machine learning

may be used to predict NHD, and can assist surgeons with patient counseling or early [discharge planning](#) ¹⁾.

¹⁾

Geng EA, Gal JS, Kim JS, Martini ML, Markowitz J, Neifert SN, Tang JE, Shah KC, White CA, Dominy CL, Valliani AA, Duey AH, Li G, Zaidat B, Bueno B, Caridi JM, Cho SK. Robust prediction of nonhome discharge following elective anterior cervical discectomy and fusion using explainable machine learning. Eur Spine J. 2023 Feb 28. doi: 10.1007/s00586-023-07621-8. Epub ahead of print. PMID: 36854862.

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