

PREOPERATIVE GERIATRIC RISK FACTOR SCREENING: THE ASSOCIATION BETWEEN POSITIVE SCREENING AND POSTOPERATIVE CLINICAL AND FUNCTIONAL OUTCOMES AFTER PANCREATECTOMY FOR CANCER

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Background: A growing proportion of geriatric patients undergo pancreatectomy for cancer and are at particular risk for postoperative delirium and functional decline, prompting development of targeted perioperative interventions. Which preoperative screening variables best predict these adverse outcomes remains unclear.

Methods: Using 2021–2025 ACS NSQIP pancreatectomy-targeted data, we identified patients aged ≥75 undergoing resection for pancreatic or periampullary malignancy (N=5,630). Multivariable GEE models (clustered by hospital; adjusted for demographics, BMI, ASA class, comorbidities, stage, and operative factors) assessed associations between four geriatric screening variables — living alone, recent falls, dementia, and preoperative functional dependency — and length of stay, postoperative functional decline, major morbidity, 30-day readmission, and delirium (2024–2025 subset).

Results: Mean length of stay was 9.2 days (median 7, IQR 5–11), 30.0% experienced functional decline by discharge, 25.9% had a major complication, 16.0% were readmitted within 30 days, and 12.0% screened positive for delirium. After adjustment, dementia was independently associated with functional decline (OR 2.93), longer length of stay, and postoperative delirium (OR 3.13); preoperative functional dependency was independently associated with longer length of stay and delirium (OR 2.53); a recent fall history and living alone were independently associated with functional decline (OR 1.69 and 1.39 respectively).

Table 1. Adjusted associations between geriatric screening variables and postoperative outcomes after pancreatectomy for cancer in patients ≥75 (ACS NSQIP, 2021–2025, N=5,630)

Geriatric Variable	Functional Decline (aOR, 95% CI)	Length of Stay (aRR, 95% CI)	Major Morbidity (aOR, 95% CI)	30-Day Readmission (aOR, 95% CI)	Postoperative Delirium* (aOR, 95% CI)
Lives alone (vs. not)	1.39 (1.22–1.58)	1.03 (0.99–1.08)	1.06 (0.89–1.25)	1.01 (0.80–1.27)	0.79 (0.52–1.20)
Fall history, 6 mo (vs. none)	1.69 (1.25–2.32)	1.02 (0.95–1.10)	0.94 (0.70–1.26)	0.92 (0.60–1.42)	1.62 (0.81–3.23)
Dementia (vs. none)	2.93 (1.89–4.54)	1.18 (1.05–1.32)	0.82 (0.51–1.33)	1.21 (0.75–1.94)	3.13 (1.60–6.12)
Preop functional dependency (vs. independent)	— (inclusion criterion)	1.27 (1.15–1.40)	1.38 (0.92–2.07)	1.35 (0.79–2.32)	2.53 (1.10–5.83)

aOR = adjusted odds ratio; aRR = adjusted rate ratio (negative binomial, length of stay). Bold/shaded values indicate statistically significant associations ($p < 0.05$). All models estimated using GEE with empirical standard errors, clustered by hospital.

**Postoperative delirium model restricted to the 2024–2025 subset with documented delirium screening ($n = 1,487$).*

Conclusions: Dementia was the strongest, most predictive risk factor of adverse outcomes — associated with functional decline, longer hospitalization, and delirium — followed by functional dependency, which predicted longer hospitalization and delirium. Fall history and living alone were associated only with functional decline. Preoperative screening should prioritize cognitive and functional status to guide interventions.