AAVBC

AMERICAN ACADEMY OF VALUE BASED CARE

Pancreatic Cancer

Quick Reference Guide

2026

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1 CLINICAL SNAPSHOT

Definition: Pancreatic ductal adenocarcinoma (PDAC) is the most common malignant neoplasm of the pancreas (~90% of cases), arising from **exocrine ductal epithelial cells** with KRAS as the defining driver mutation in ~92% of tumors, followed by CDKN2A, TP53, and SMAD4 alterations.[1,2] The natural history is aggressive and largely **asymptomatic in early stages**: approximately 80% of patients are diagnosed at locally advanced or metastatic disease when **curative resection is no longer feasible**, and the median age at diagnosis is 71 years, making PDAC particularly **relevant to older adults** in the Medicare population who often present with greater comorbidity burden, frailty, and complex care needs that affect treatment selection and outcomes.

ICD-10 Codes

Primary tumor: **C25.0** (head, ~60–70% of PDAC), **C25.1** (body), **C25.2** (tail), **C25.3** (duct), **C25.4** (endocrine pancreas — islet/adeno only; not PanNET), **C25.7** (other parts), **C25.8** (overlapping), **C25.9** (unspecified **AVOID when subsite is documentable**). Metastatic site coding (**each separately documented**): **C78.7** (liver = most common, **~75–80%** of metastatic disease), **C78.89** (other digestive), **C78.6** (peritoneum), **C78.00**–**C78.02** (lung), **C79.51** (bone). **Comorbidities frequently co-documented**: exocrine pancreatic insufficiency (**EPI**; **K86.81**), diabetes mellitus (**DM**, secondary or pre-existing; **E11.x** or **E13.x**), deep vein thrombosis (**DVT**; I82.4x), pulmonary embolism (**PE**; I26.x), biliary obstruction (**K83.1**), depression (**F32.x**), malnutrition (**E44.0**/**E43**), weight loss (**R63.4**). Personal history Z-code (**Z85.07**) applies only **after treatment completion** with no evidence of active disease = never during active treatment or surveillance.

Prevalence and Burden: Approximately **66,440 new cases** and **51,750** pancreatic cancer-related **deaths** are projected in the United States in 2026.[3] Pancreatic cancer is the 10th most common cancer by incidence and the **3rd leading cause of cancer death**.[3] The 5-year relative survival across all stages is less than 13%; ~44% for localized disease, ~15% for regional, and ~3% for distant disease.[3] Up to 50% of patients with newly diagnosed pancreatic cancer have diabetes at diagnosis;[4,5] new-onset diabetes ≥50 years carries an adjusted HR of 9.07 (95% CI 8.33–9.87) for PDAC diagnosis within 1 year. Slight male predominance (M:F ~1.3:[1]); modestly higher incidence in Black Americans than White Americans.[2] There is currently no recommended population-wide screening strategy for pancreatic cancer (**USPSTF Grade D recommendation**); therefore, early recognition relies largely on **pattern-based clinical suspicion**, particularly in patients with unexplained weight loss and new-onset diabetes later in life.

HCC/RAF V28 Mapping

ICD-10 CODE(S)[6]	HCC CATEGORY (V28)[7]	RAF (CNA)[8]	DOCUMENTATION REQUIREMENT
C25.0–C25.8 (specific subsite)	**HCC 20** Lung and Other Severe Cancers	1.136	Document active malignancy confirmed by pathology or imaging **with anatomic subsite** from the imaging or pathology report: head, body, tail, duct, endocrine, other, or overlapping; **record histologic confirmation** (EUS-FNB preferred over CT-guided biopsy for non-metastatic disease)

ICD-10 CODE(S)[6]	HCC CATEGORY (V28)[7]	RAF (CNA)[8]	DOCUMENTATION REQUIREMENT
C25.9 (unspecified)	**HCC 20** Lung and Other Severe Cancers	1.136	**AVOID**: Only 22.2% of PDAC cases are currently coded to a specific subsite **despite ~60–70% arising in the head**; review imaging and pathology to assign C25.0–C25.8 whenever the location is documented
C78.7	**HCC 17** Metastatic Cancer	4.209	Liver metastases from pancreatic primary: **most common distant site** (~75–80% of metastatic PDAC); code separately from the primary; document 'liver metastases from pancreatic primary' from imaging or pathology
C78.89	**HCC 18** Metastatic Cancer to Bone/ Other	2.341	Secondary malignancy of other digestive organs (incl peritoneal/omental sites); code each documented metastatic site **separately**
C79.51	**HCC 18** Metastatic Cancer to Bone/ Other	2.341	Secondary malignancy of bone; less common in PDAC than visceral metastases; document **specific bone site** when available
Z85.07	**No HCC**	—	Personal history of pancreatic cancer; use **only after treatment completion** with no evidence of active disease; never during active treatment or active surveillance for known disease (**use C25.x while active**)

ABBREVIATIONS: HCC = Hierarchical Condition Category; CMS = Centers for Medicare & Medicaid Services; CNA = Community Non-Dual Eligible, Aged; PDAC = pancreatic ductal adenocarcinoma; PanNET = pancreatic neuroendocrine tumor; RAF = Risk Adjustment Factor; V28 = CMS-HCC Model Version 28; EUS-FNB = endoscopic ultrasound-guided fine needle biopsy

RAF values represent the Community Non-Dual Eligible Aged (CNA) coefficient from the 2024 CMS-HCC model; values vary across patient populations based on eligibility and care setting

The impact of this condition varies across patient populations, particularly in individuals with disability, dual eligibility, or those receiving care in institutional settings.

Risk-Adjusted Care Resources

Pancreatic cancer care spans rapid diagnostic workup, multidisciplinary surgical evaluation, multi-line systemic therapy, supportive care for EPI, VTE, and biliary obstruction, palliative care integration, and bereavement support, all across a typical **6–24-month disease trajectory** in Medicare patients. Therapeutic options are stratified by **performance status** and **molecular profile**, making risk-adjusted resource allocation central to care planning: FOLFIRINOX or modified FOLFIRINOX (median OS ~11 months; **ACCORD-11/PRODIGE-24**),[9] NALIRIFOX (median OS 11.1 months; **NAPOLI-3**),[10] gemcitabine + nab-paclitaxel (median OS ~9 months; **MPACT**)[11] for ECOG 0–1 patients; olaparib maintenance after platinum-based therapy in BRCA1/2-mutated disease (**POLO**)[12]. Early palliative care integration (within 30 days of diagnosis) is associated with fewer ED visits and lower inpatient costs without compromising survival;[13] NCCN and ASCO recommend integration throughout all stages.[14,15]

Risk-Adjusted Care Resources per Patient/Year[6,7]

Risk-adjusted care resource allocation — MA base rate ($10,402.34) × RAF coefficient

Stage I–II (Localized)	Stage III (Regional)	Stage IV (Metastatic)
$11.8K	**$60–$80K**	**$150K+**
HCC 20 · RAF 1.136	HCC 18 · +chemo costs	HCC 17/18/22 · RAF up to 4.209

RAF values represent the Community Non-Dual Eligible Aged (CNA) coefficient from the 2024 CMS-HCC model; values vary across patient populations based on eligibility and care setting

RAF values represent the Community Non-Dual Eligible Aged (CNA) coefficient from the 2024 CMS-HCC model;[8] values vary across patient populations based on eligibility and care setting

2 RECOGNITION AND DIAGNOSIS

Diagnostic Workups Covered Under Medicare Part B (older adults, at-risk population)

TEST	FREQUENCY	CPT CODE	CLINICAL INDICATION
Pancreatic protocol CT (contrast, dual-phase)	Symptom- or risk-prompted	74160/ 74178	Imaging modality of choice; diagnostic accuracy 89% (95% CI 85–93);[14] A negative standard abdominal ultrasound does **NOT** rule out PDAC: up to **62%** of cases involve missed conventional imaging findings
MRI/MRCP (high-risk surveillance	Annually from defined initiation age*	74183/ S8037	High-risk syndromes per AGA 2020:[16] Peutz-Jeghers, hereditary pancreatitis (**PRSS1**), **CDKN2A**/**FAMMM**, **BRCA2**/**PALB2**, **Lynch**, **ATM**, familial PDAC ≥2 FDRs;[16] MRI sensitivity 83% for liver metastases vs 45% for CT[14]
EUS with fine-needle biopsy	**Single procedure** (may repeat for non-diagnostic samples)	43242	Preferred over CT-guided biopsy **for non-metastatic disease** = higher diagnostic yield, lower peritoneal seeding risk; core biopsy preferred to allow **molecular profiling** (KRAS, BRCA1/2, PALB2, NTRK, NRG1, MSI/ dMMR, TMB)[14]
CA 19-9 (tumor marker)	Per oncology treatment plan**	86301	Measure after adequate biliary drainage (obstruction **falsely elevates**); undetectable in **Lewis antigen-negative** individuals (~5–10% of population) = consider CEA and CA-125 in non-secretors[14]

TEST	FREQUENCY	CPT CODE	CLINICAL INDICATION
Genetic counseling referral	Once at diagnosis; updated as family history evolves	96040	Recommended for **any confirmed PDAC** regardless of family history: inherited mutations in **~10% of cases**; BRCA1/2 and PALB2 inform **olaparib maintenance eligibility** per POLO trial[12,14]
Advance care planning (ACP)	Annually + when goals change	99497, 99498	Document advance directives, surrogate decision-maker, code status; ASCO 2024 recommends ACP integration for **all advanced cancers**[15]

ABBREVIATIONS: ACP = advance care planning; AGA = American Gastroenterological Association; ASCO = American Society of Clinical Oncology; AWV = annual wellness visit; CA 19-9 = carbohydrate antigen 19-9; CEA = carcinoembryonic antigen; CT = computed tomography; CYP3A4 = cytochrome P450 3A4; dMMR = mismatch repair deficient; EUS = endoscopic ultrasound; FDR = first-degree relative; MAC = Medicare Administrative Contractor; MRCP = magnetic resonance cholangiopancreatography; MRI = magnetic resonance imaging; MSI = microsatellite instability; NRG1 = neuregulin 1; NTRK = neurotrophic tyrosine receptor kinase; OS = overall survival; PDAC = pancreatic ductal adenocarcinoma; POLO = Pancreas Cancer Olaparib Ongoing trial; TMB = tumor mutational burden; USPSTF = United States Preventive Services Task Force
***Screening covered for hereditary high-risk individuals; **Test covered for monitoring known malignancy, not for screening**

Subtle Early Signs in Older Adults

SIGN/SYMPTOM	CLINICAL SIGNIFICANCE
New-onset diabetes ≥50 years with unexplained weight loss	~50% of pancreatic cancer patients have **diabetes at diagnosis**; new-onset DM ≥50 carries **HR 9.07** for PDAC within 1 year and a **OR 2.6** within 3 years; AGA 2020 recommends pancreatic protocol CT + CA 19-9 or shortened surveillance in high-risk individuals;[16] especially suspicious **without typical metabolic risk factors**
Unexplained weight loss (>5% body weight in 6 months) with vague abdominal symptoms	Often **misattributed** to age, depression, or polypharmacy in older adults; Combined with risk factors warrants pancreatic protocol CT, **NOT** standard ultrasound; document weight trajectory, albumin trend, and dietary intake before imaging escalation
Persistent epigastric or mid-back pain unresponsive to empirical reflux therapy	Upper abdominal pain radiating to mid-back is **classic but late**;[1,2] typical of body/tail tumors without biliary obstruction; persistent symptoms after 4–6 weeks of **acid suppression** warrants dedicated pancreatic imaging **within 1–2 weeks**
Painless jaundice (new onset)	Highly specific for **biliary obstruction**: ~70% of head-of-pancreas tumors present this way;[14] warrants pancreatic protocol CT and surgical oncology referral within 24–48 hours;[14] **Charcot's triad** (fever + jaundice + RUQ pain) is an ED-transfer indication for emergent biliary decompression[14]

SIGN/SYMPTOM	CLINICAL SIGNIFICANCE
Trousseau syndrome: migratory or unprovoked superficial thrombophlebitis	Migratory thrombophlebitis or **unprovoked DVT/PE** in patients ≥50 raises suspicion for occult malignancy, **classically pancreatic cancer** (one of highest VTE rates among solid tumors); workup with pancreatic protocol CT **after VTE confirmation**
Loss of appetite, early satiety, persistent nausea, or steatorrhea	Often attributed to depression or polypharmacy in elderly; **steatorrhea suggests EPI** and may indicate undiagnosed pancreatic head tumor or chronic pancreatitis; anchor workup with weight, albumin, and fat-soluble vitamin levels[14]

ABBREVIATIONS: aOR = adjusted odds ratio; AGA = American Gastroenterological Association; CT = computed tomography; CI = confidence interval; DM = diabetes mellitus; DVT = deep vein thrombosis; ED = emergency department; EPI = exocrine pancreatic insufficiency; GI = gastroenterology; HR = hazard ratio; PDAC = pancreatic ductal adenocarcinoma; PE = pulmonary embolism; RUQ = right upper quadrant; VTE = venous thromboembolism

Risk Factors

FACTOR	RISK SIGNAL	NOTES
Peutz-Jeghers syndrome	**RR = 132** vs general population[16]	Begin EUS/MRI surveillance **from age 35**
Hereditary pancreatitis (PRSS1)	**SIR = 53**; up to 60–87× general population[16]	Surveillance **from age 40**;[16] risk increases with disease duration; confounded by smoking: counsel smoking cessation[17]
CDKN2A/FAMMM syndrome	**RR = 13–39**[16]	EUS/MRI surveillance **from age 40**[16]
Familial pancreatic cancer (≥3 FDRs)	**RR = 32**[16]	Surveillance **from age 50** or 10 years before youngest affected relative[16]
BRCA2/PALB2 mutation	**RR = 3.5–6.2**[16]	Surveillance from age 50;[16] mutation status informs olaparib maintenance eligibility per POLO trial[12]
Lynch syndrome	**RR = 8.6–11**[16]	Surveillance **from age 50**;[16] if confirmed PDAC, NGS for MSI/dMMR may identify candidates for pembrolizumab
ATM gene mutation	**RR = 3.92**[16]	Surveillance **from age 50**;[16] emerging interest in PARP-inhibitor eligibility
BRCA1 mutation	**RR = 2.26**[16]	Surveillance **from age 50**;[16] lesser olaparib evidence than BRCA2[12]

FACTOR	RISK SIGNAL	NOTES
Chronic pancreatitis	**RR 6.09–13.3**;[18] **SIR 22.6** (95% CI 14.4–35.4)[19]	Mass-forming chronic pancreatitis can **mimic PDAC on imaging** = diagnostic confounder;[18] risk increases with disease duration
Postpancreatitis diabetes	**HR 6.94** (95% CI 4.09–11.77) vs T2DM alone[20]	**Highest-risk diabetes subgroup** for subsequent PDAC;[20] consider expedited evaluation if weight loss or jaundice emerges
New-onset diabetes (≤3 yrs) in patient ≥50	**aOR = 2.6**;[4] adjusted **HR 9.07** within 1 yr of diagnosis	Order pancreatic protocol CT + CA 19-9 + GI referral **within 1–2 weeks**[16]
Cigarette smoking (current)	**RR 1.8** (95% CI 1.7–1.9)[17]	**Leading modifiable risk factor**;[17] ~21% of PDAC deaths attributable; cessation counseling **at every visit**

ABBREVIATIONS: aOR = adjusted odds ratio; AGA = American Gastroenterological Association; ATM = ataxia-telangiectasia mutated gene; BRCA1/2 = breast cancer 1/2 genes; CDKN2A = cyclin-dependent kinase inhibitor 2A; CI = confidence interval; CT = computed tomography; CA 19-9 = carbohydrate antigen 19-9; dMMR = mismatch repair deficient; EUS = endoscopic ultrasound; FAMMM = familial atypical multiple mole melanoma; FDR = first-degree relative; HR = hazard ratio; MRI = magnetic resonance imaging; MSI = microsatellite instability; NGS = next-generation sequencing; PALB2 = partner and localizer of BRCA2; PARP = poly(ADP-ribose) polymerase; PDAC = pancreatic ductal adenocarcinoma; POLO = Pancreas Cancer Olaparib Ongoing trial; PRSS1 = cationic trypsinogen gene; RR = relative risk; SIR = standardized incidence ratio; T2DM = type 2 diabetes mellitus

Diagnostic Tests and Pancreatic Cancer Staging Thresholds

Pancreatic cancer management hinges on **three pillars** assessed at diagnosis: (**1**) anatomic resectability (NCCN classification); (**2**) tumor biology (molecular profiling and biomarkers); (**3**) patient fitness (performance status and frailty screening). The tables below summarize the diagnostic workup, staging systems, and functional assessment tools that inform management decisions.

Diagnostic Tests and Biomarkers

TEST/MARKER	DIAGNOSTIC METRICS	NOTES
Pancreatic protocol CT (dual-phase, contrast)	Diagnostic accuracy **89%** (95% CI 85–93)[11]	**Imaging modality of choice**;[14] order if PDAC suspected and assess resectability per NCCN criteria (arterial vs venous contact, vascular encasement >180°)[14]
MRI abdomen ± MRCP	Sensitivity **83%** for liver metastases vs **45%** for CT[14]	Preferred for indeterminate liver lesions, CT contrast contraindication, or hereditary high-risk surveillance[14,16]

TEST/MARKER	DIAGNOSTIC METRICS	NOTES
EUS-guided fine-needle biopsy	Preferred over CT-guided biopsy **for non-metastatic disease**[14]	Higher diagnostic yield + lower peritoneal seeding risk;[14] core biopsy preferred to enable molecular profiling and therapy selection[12]
CA 19-9	Measure AFTER adequate biliary drainage	**Falsely elevated** by biliary obstruction, infection, inflammation;[14] **undetectable** in Lewis antigen-negative patients (~5–10%) = consider CEA and CA-125 in non-secretors[14]
NGS tumor/ somatic molecular profiling	Recommended **for all candidates** for anti-cancer therapy[14]	Assess **KRAS** (G12C → adagrasib/sotorasib), **BRCA1/2** and **PALB2** (olaparib eligibility per POLO),[12] **MSI/dMMR** and **TMB-H** (pembrolizumab/dostarlimab/ipi+nivo), **NTRK** (larotrectinib/entrectinib), NRG1 (zenocutuzumab), **HER2** (T-DXd), **RET** (selpercatinib), **FGFR** (erdafitinib), **BRAF** V600E (dabrafenib + trametinib)
Germline genetic testing	Recommended for all confirmed PDAC regardless of family history	Comprehensive panel: ATM, BRCA1, BRCA2, CDKN2A, MLH1, MSH2, MSH6, PALB2, PMS2, STK11, TP53; genetic counseling if positive or positive family history

ABBREVIATIONS: CT = computed tomography; CI = confidence interval; PDAC = pancreatic ductal adenocarcinoma; NCCN = National Comprehensive Cancer Network; MRI = magnetic resonance imaging; MRCP = magnetic resonance cholangiopancreatography; EUS = endoscopic ultrasound; FNB = fine-needle biopsy; CA 19-9 = carbohydrate antigen 19-9; CEA = carcinoembryonic antigen; CA-125 = cancer antigen 125; NGS = next-generation sequencing; KRAS = Kirsten rat sarcoma viral oncogene homolog; G12C = glycine-to-cysteine substitution at codon 12; BRCA1/2 = breast cancer gene 1/2; PALB2 = partner and localizer of BRCA2; POLO = Pancreas Cancer Olaparib Ongoing; MSI = microsatellite instability; dMMR = mismatch repair deficient; TMB-H = tumor mutational burden-high; NTRK = neurotrophic tyrosine receptor kinase; NRG1 = neuregulin 1; HER2 = human epidermal growth factor receptor 2; T-DXd = fam-trastuzumab deruxtecan-nxki; RET = rearranged during transfection; FGFR = fibroblast growth factor receptor; BRAF = B-Raf proto-oncogene; V600E = valine-to-glutamic acid substitution at codon 600; ATM = ataxia-telangiectasia mutated; CDKN2A = cyclin-dependent kinase inhibitor 2A; MLH1 = MutL homolog 1; MSH2 = MutS homolog 2; MSH6 = MutS homolog 6; PMS2 = PMS1 homolog 2; STK11 = serine/threonine kinase 11; TP53 = tumor protein p53

NCCN PC Resectability Classification

The NCCN resectability classification is the primary system used in US clinical practice to determine treatment approach for PDAC: it **directly dictates** whether a patient proceeds to upfront surgery, neoadjuvant therapy, or palliative systemic therapy.[14] **Only ~20%** of PDAC is resectable at diagnosis.

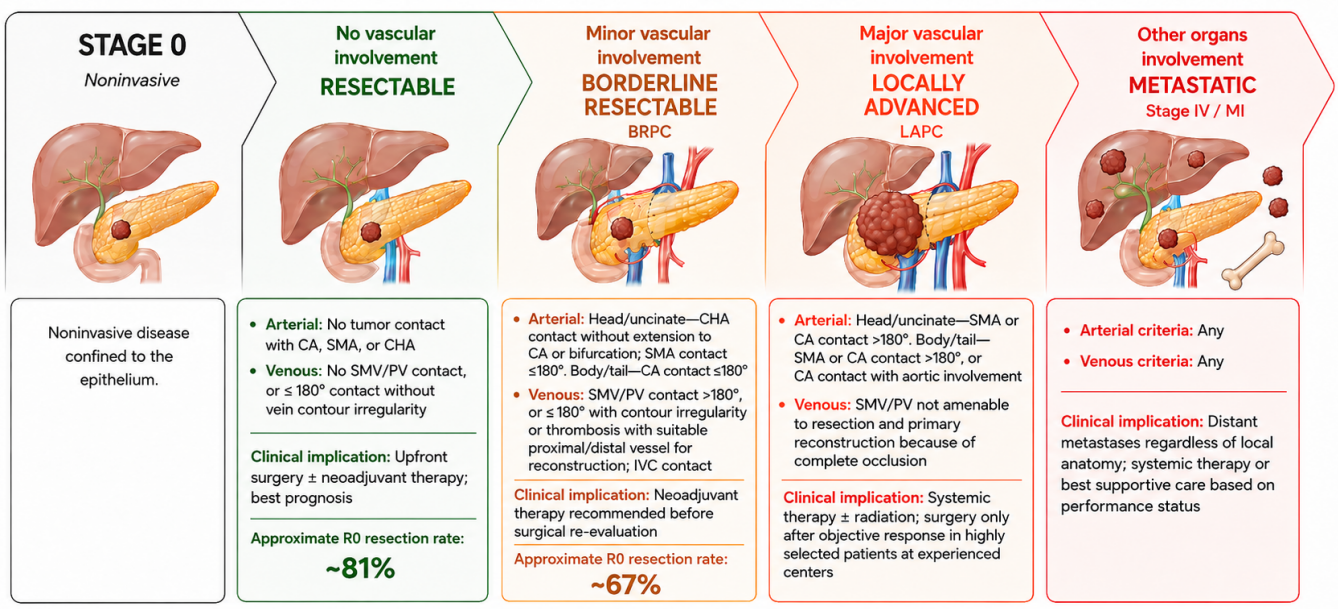
RESECTABILITY STATUS[14]	ARTERIAL CRITERIA[14]	VENOUS CRITERIA[14]	CLINICAL IMPLICATION[14]
Resectable	**No arterial tumor contact** (CA, SMA, or CHA)	**No tumor contact** with SMV/PV, or ≤180° contact without vein contour irregularity	Upfront surgery ± neoadjuvant therapy; **best prognosis** (R0 rate ~81%)

RESECTABILITY STATUS[14]	ARTERIAL CRITERIA[14]	VENOUS CRITERIA[14]	CLINICAL IMPLICATION[14]
Borderline resectable (BRPC)	**Head/uncinate**: CHA contact without extension to CA or bifurcation; SMA contact ≤180°. **Body/tail**: CA contact ≤180°	SMV/PV contact **>180°**, or **≤180° with contour irregularity** or thrombosis with suitable vessel proximal/distal for reconstruction; IVC contact	Neoadjuvant therapy recommended before surgical re-evaluation; R0 rate ~67%
Locally advanced (LAPC)	**Head/uncinate**: SMA or CA contact >180°. **Body/tail**: SMA or CA contact >180°, or CA contact with aortic involvement	SMV/PV **not amenable** to resection and primary reconstruction due to complete occlusion	Systemic therapy ± radiation; surgery only **after objective response** in highly selected patients at experienced centers
Metastatic (MI)	Any	Any	Distant metastases regardless of local anatomy; **systemic therapy** or BSC based on performance status

ABBREVIATIONS: TNM = tumor-node-metastasis; NCCN = National Comprehensive Cancer Network; Tis = carcinoma in situ; T = tumor depth; N = regional lymph node involvement; M = distant metastasis; CAPEOX = capecitabine + oxaliplatin; FOLFOX = leucovorin + 5-fluorouracil + oxaliplatin; CRS = cytoreductive surgery; HIPEC = hyperthermic intraperitoneal chemotherapy

Pancreatic Cancer Progression

How vascular and metastatic involvement guide staging and treatment approach



AJCC TNM Staging and Alternative Assessment Tools

SYSTEM	WHAT IT MEASURES	KEY VALUES	WHEN TO USE
AJCC TNM 8th Edition (2017)[21,22]	Tumor size (**T1** ≤2 cm; **T2** >2–4 cm; **T3** >4 cm; **T4** = vascular involvement), nodal status (**N0**/**N1**: 1–3 nodes/**N2**: ≥4 nodes), distant metastases (**M0**/**M1**)	Prognostic stage groups 0–IV; N stage strongest survival discriminator	Pathologic reporting **post-resection**; prognostication; clinical trial stratification; required for cancer registry documentation
ECOG Performance Status[23]	Functional capacity on 0–4 scale	Primary NCCN **treatment stratifier**: ECOG 0–1 → multi-agent regimens; ECOG 2 → GnP or gemcitabine mono; ECOG 3–4 → BSC ± single-agent	Every clinical encounter; determines **chemotherapy eligibility**; documented in oncology referral
G8 Geriatric Screening (≥65)[24]	8-item screen; score ≤14 triggers CGA	**G8 ≥15** independently associated with higher PFS (7.9 vs. 5.3 mo) and OS (16.6 vs. 7.8 mo; HR 0.39) in patients ≥70 with advanced PDAC	All patients ≥65 at diagnosis; NCCN-recommended[14]
VES-13 (Vulnerable Elders Survey-13)[25]	13-item self-administered; score ≥3 = vulnerable	NCCN-listed screening tool; can be completed in waiting room	**Alternative to G8** for geriatric screening prior to oncology visit
CARG Chemotherapy Toxicity Calculator[26]	Predicts grade 3–5 **toxicity risk**: low (30%), intermediate (52%), high (83%)	Integrates geriatric variables (falls, hearing, IADL, social activity), labs (Hgb, CrCl), and treatment factors; outperforms KPS alone	Before initiating chemotherapy in older adults; NCCN-recommended[14]

ABBREVIATIONS: AJCC = American Joint Committee on Cancer; TNM = tumor, node, metastasis; T = tumor size/depth; N = regional lymph node involvement; M = distant metastasis; ECOG = Eastern Cooperative Oncology Group; NCCN = National Comprehensive Cancer Network; GnP = gemcitabine + nab-paclitaxel; BSC = best supportive care; G8 = Geriatric 8 screening tool; CGA = comprehensive geriatric assessment; PFS = progression-free survival; OS = overall survival; mo = months; HR = hazard ratio; PDAC = pancreatic ductal adenocarcinoma; VES-13 = Vulnerable Elders Survey-13; CARG = Cancer and Aging Research Group; IADL = instrumental activities of daily living; Hgb = hemoglobin; CrCl = creatinine clearance; KPS = Karnofsky Performance Status

Comparison of Pancreatic Cancer Patient Functional Status Scales

ECOG PS is the primary scale used by both NCCN and ASCO to determine **chemotherapy eligibility** in pancreatic cancer: it directly dictates whether a patient receives multi-agent therapy, single-agent therapy, or best supportive care alone.[14,15] **KPS** is an alternative 100-point scale sometimes used in clinical trials and prognostic studies; a KPS below 70% (roughly equivalent to ECOG ≥2) identifies patients who derive **only marginal benefit** from chemotherapy and may be

better served by supportive care alone. Both scales measure a patient's functional capacity; notable distinctions are provided below at similar staging thresholds between ECOG and KPS:

ECOG PERFORMANCE STATUS[23]	KARNOFSKY PERFORMANCE STATUS (KPS; %)[27]
0—Fully active, able to carry on all pre-disease performance without restriction	**100**—Normal, no complaints; no evidence of disease **90**—Able to carry on normal activity; minor signs or symptoms of disease
1—Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work	**80**—Normal activity with effort, some signs or symptoms of disease **70**—Cares for self but unable to carry on normal activity or to do active work
2—Ambulatory and capable of all selfcare but unable to carry out any work activities; up and about more than 50% of waking hours	**60**—Requires occasional assistance but is able to care for most of personal needs **50**—Requires considerable assistance and frequent medical care
3—Capable of only limited selfcare; confined to bed or chair more than 50% of waking hours	**40**—Disabled; requires special care and assistance **30**—Severely disabled; hospitalization is indicated although death not imminent
4—Completely disabled; cannot carry on any selfcare; totally confined to bed or chair	**20**—Very ill; hospitalization and active supportive care necessary **10**—Moribund
5—Dead	**0**—Dead

Pancreatic Cancer Diagnosis and Survival Rates Over Time and By Stage

	% Diagnosed	5-Year Survival	Change (2004–2015)
Stage 1 & 2 Localized	14	44–46%	24% → 46%
Stage 3 Regional	33	12–16%	Modest improvement
Stage 4 Distant	53	3%	2% → 3%
Combined	100	12%	6% → 12%

AAVBC PERSPECTIVE

*Pancreatic cancer is one of the deadliest cancers and is **rarely detected** at localized, potentially resectable stages. **From the AAVBC's perspective**, value-based care in pancreatic cancer should prioritize earlier detection through **heightened clinical suspicion** when a patient ≥50 presents with any combination of unexplained weight loss, new-onset diabetes, persistent back or epigastric pain, or painless jaundice; these presentations should trigger **immediate action without waiting for specialist input**, including pancreatic protocol CT (not standard ultrasound), CA 19-9 testing, and concurrent gastroenterology or surgical oncology referral. Reliance on "watch and wait" approaches or incomplete initial workups contributes to **delayed diagnosis** and missed opportunities for intervention in a disease where survival declines sharply at advanced stages. Integrated, **closed-loop pathways** linking primary care, oncology, gastroenterology, nutrition, and supportive care services can reduce downstream hospitalization, minimize diagnostic delay, and improve outcomes in aging populations.*

Common Oversights

OVERSIGHT/SHORTCUT	WHY IT MATTERS — WHAT TO DO INSTEAD
Relying on negative abdominal ultrasound to rule out pancreatic cancer	Conventional ultrasound **lacks the sensitivity** to detect early PDAC, particularly in **body and tail**; up to 62% of cases involve missed imaging findings on conventional studies → order pancreatic protocol CT (or MRI for liver characterization) **when PDAC suspected**
Attributing new-onset weight loss in an older adult to deconditioning or depression without imaging	Unexplained weight loss >5% in 6 months **with new-onset DM**, back/epigastric pain, or smoking history warrants **pancreatic imaging within 1–2 weeks**, NOT empirical antidepressants or supplements alone
Coding C25.9 (unspecified) when imaging or pathology supports a subsite	**Only ~22%** of PDAC is coded to a specific subsite despite **~60–70%** arising in the head = review imaging/pathology and **assign C25.0–C25.8** when location is documented; **C25.9 obscures complexity** and impairs continuity
Soft documentation language for confirmed disease ('consistent with,' 'compatible with,' 'suggestive of')	These phrases limit accurate ICD-10 coding once pathology confirms disease: **document directly**: 'Moderately differentiated PDAC, head of pancreas (C25.0), confirmed by EUS-FNB [date].'
Coding only the primary tumor when metastatic sites are confirmed on imaging or pathology	Each confirmed metastatic site (C78.7 liver, C78.6 peritoneum, C79.51 bone) should be **coded individually**: reflects **true clinical complexity**, not a billing strategy
Confusing C25.4 (endocrine pancreas adenocarcinoma) with PanNETs	**PanNETs** have a separate AJCC 9th Ed staging system and distinct treatment pathway;[28] C25.4 applies only to **confirmed islet/endocrine adenocarcinoma**; confirm histology before code assignment
Defaulting to FOLFIRINOX in vulnerable older adults without geriatric assessment	ACCORD-11 enrolled only patients ≤75 with ECOG 0–1;[9] G8 ≤14 → **comprehensive geriatric assessment**; consider modified GnP (biweekly) in patients ≥75[29,30]
Delaying palliative care referral until cessation of cancer-directed therapy	Early palliative care (within 3 months of diagnosis) reduces ED visits, ICU admissions, and hospitalizations in PDAC; ASCO and NCCN recommend palliative care integration early in the treatment process for all patients with advanced pancreatic cancer = **not** as a signal of "giving up" but as **concurrent supportive care** that improves QOL and symptom burden[14,15]

ABBREVIATIONS: 1L/2L = first-line/second-line; CT = computed tomography; ECOG = Eastern Cooperative Oncology Group; EUS-FNB = endoscopic ultrasound-guided fine-needle biopsy; G8 = Geriatric 8 screening tool; GnP = gemcitabine + nab-paclitaxel; MEAT = monitor/evaluate/assess/treat; MRI = magnetic resonance imaging; PanNET = pancreatic neuroendocrine tumor; PDAC = pancreatic ductal adenocarcinoma; COA = Care for Older Adults

Key Differentials in Elderly

PRESENTATION	DIFFERENTIAL	KEY TESTS
New-onset diabetes ≥50 with weight loss	PDAC; type 2 diabetes; pancreatic exocrine insufficiency; hyperthyroidism; chronic pancreatitis with islet damage[18]	**Pancreatic protocol CT**;[14] CA 19-9 (after drainage **if obstructed**); HbA1c trend; TSH; weight trajectory and risk factor review
Painless jaundice	Pancreatic head tumor (~70% of head PDAC presents with biliary obstruction); **cholangiocarcinoma**; chronic pancreatitis with mass; choledocholithiasis; ampullary carcinoma	Pancreatic protocol CT **or** MRCP;[14] **LFTs** (cholestatic pattern); CA 19-9 after drainage; EUS-FNB; ERCP with stent
Persistent epigastric/mid-back pain	PDAC (especially body/tail); chronic pancreatitis;[18] peptic ulcer disease; AAA; musculoskeletal	**Pancreatic protocol CT**; lipase; CT angiography if vascular suspected; review NSAID history
Unexplained weight loss + cachexia	PDAC; other GI/hematologic malignancies; chronic infection (TB, HIV); depression with anorexia; hyperthyroidism; medication-induced	**Pancreatic protocol CT**; CBC, CMP, TSH; nutritional and depression screening (PHQ-9); weight history with timeline
Trousseau syndrome: migratory or unprovoked DVT/PE	Occult visceral malignancy (classically PDAC); **inherited thrombophilia**; **antiphospholipid syndrome (APS)**	Pancreatic protocol CT **after VTE confirmation**; consider thoracic and pelvic imaging; **lupus anticoagulant** if young patient (APS)

ABBREVIATIONS: AAA = abdominal aortic aneurysm; CA 19-9 = carbohydrate antigen 19-9; CBC = complete blood count; CMP = comprehensive metabolic panel; CT = computed tomography; DVT = deep vein thrombosis; ERCP = endoscopic retrograde cholangiopancreatography; EUS-FNB = endoscopic ultrasound-guided fine-needle biopsy; GI = gastrointestinal; HbA1c = glycated hemoglobin; HIV = human immunodeficiency virus; LFT = liver function test; MRCP = magnetic resonance cholangiopancreatography; NSAID = nonsteroidal anti-inflammatory drug; PDAC = pancreatic ductal adenocarcinoma; PE = pulmonary embolism; PHQ-9 = Patient Health Questionnaire-9; TB = tuberculosis; TSH = thyroid-stimulating hormone; VTE = venous thromboembolism

Comorbidity Screening

CONDITION	PREVALENCE/ ASSOCIATION	SCREENING APPROACH
Exocrine pancreatic insufficiency (K86.81)	Majority of patients **after pancreatic head resection**; many with unresectable disease[18]	Symptom screening (**steatorrhea**, weight loss, **fat-soluble vitamin deficiency**); potential eligibility for pancreatic **enzyme replacement**: 48,000–72,000 units lipase per meal;[31] code K86.81 when documented

CONDITION	PREVALENCE/ ASSOCIATION	SCREENING APPROACH
Venous thromboembolism (I82.4x, I26.x)	Among the highest VTE rates of any solid tumor[14]	Symptom-prompted workup; **consider VTE prophylaxis** during chemotherapy or hospitalization; LMWH preferred over warfarin; DOACs may be considered without luminal tumors
Major depression (F32.x)	**25–50%** = among the highest of any cancer[14]	PHQ-2/PHQ-9 at every visit; **C-SSRS** if PHQ-9 Item 9 positive;[15] pharmacologic and psychotherapy referral; **do not attribute** persistent low mood to 'poor performance status' or 'normal aging'
Cancer cachexia/ malnutrition (E44.0, E43, R63.4)	Affects **the majority of PDAC patients**;[14] independent predictor of poor treatment tolerance[32]	Track weight, albumin, prealbumin, dietary intake; **registered dietitian referral**; consider nutritional supplements + pancreatic enzyme optimization (**and potential enzyme replacement**) to address malabsorption
Diabetes (E11.x pre-existing or E13.x secondary)	**Up to 50%** of PDAC patients have DM at diagnosis[4,16]	**Trend HbA1c**; manage corticosteroid-induced hyperglycemia during chemotherapy cycles;[33] consider insulin during cycles; coordinate with oncology on dexamethasone-attributable spikes[33]
Biliary obstruction (K83.1)	Present in **~70%** of head-of-pancreas tumors at diagnosis	Endoscopic metal stent (**preferred over plastic** for patency);[14] required before chemotherapy initiation in most head-of-pancreas tumors; **monitor for stent occlusion** (recurrent jaundice, cholangitis)

ABBREVIATIONS: C-SSRS = Columbia Suicide Severity Rating Scale; DM = diabetes mellitus; DOAC = direct oral anticoagulant; HbA1c = glycated hemoglobin; LMWH = low-molecular-weight heparin; PDAC = pancreatic ductal adenocarcinoma; PHQ = Patient Health Questionnaire; VTE = venous thromboembolism

2026 NCCN Resectability Criteria For Localized Pancreatic Cancer

CATEGORY	CRITERIA/ FEATURES[14]	ACTION REQUIRED
Resectable (RPC)	**No arterial contact**; **≤180°** venous contact without irregularity =**~20%** of PDAC diagnoses[14]	Upfront **surgical resection** (**Whipple pancreaticoduodenectomy** or **distal pancreatectomy**) at a high-volume center; adjuvant chemotherapy: **mFOLFIRINOX preferred** (PRODIGE-24) if fit;[34] gemcitabine + capecitabine as alternative
Borderline resectable (BRPC)	**Limited** arterial contact; **>180°** venous contact or venous irregularity	Neoadjuvant chemotherapy **± radiation** to downstage;[14] reassess at multidisciplinary tumor board;[11] surgical resection **if response permits**

CATEGORY	CRITERIA/ FEATURES[14]	ACTION REQUIRED
Locally advanced (LAPC) =not resectable	**>180°** arterial contact or unreconstructible venous involvement	Systemic therapy (**same regimens as metastatic**);[14] **SBRT** for local control in select patients (**cost-effective**, 1–5 fractions); resection **rarely achievable**

ABBREVIATIONS: BRPC = borderline resectable pancreatic cancer; ECOG = Eastern Cooperative Oncology Group; FOLFIRINOX = 5-FU, leucovorin, irinotecan, oxaliplatin; GnP = gemcitabine + nab-paclitaxel; LAPC = locally advanced pancreatic cancer; mFOLFIRINOX = modified FOLFIRINOX; NALIRIFOX = liposomal irinotecan, 5-FU, leucovorin, oxaliplatin; NCCN = National Comprehensive Cancer Network; PDAC = pancreatic ductal adenocarcinoma; PRODIGE-24 = ACCORD-11 adjuvant trial; RPC = resectable pancreatic cancer; SBRT = stereotactic body radiotherapy

⚠ RED FLAG — EMERGENCY/ACTIVATE CRISIS RESPONSE

These emergency conditions must be **immediately addressed** for patients with pancreatic cancer:

- **Acute cholangitis** (Charcot's triad — fever, jaundice, RUQ pain)
  - Emergent **biliary decompression** and **ED transfer**; broad-spectrum antibiotics
  - **Mortality** without intervention **is high**
- **Massive GI hemorrhage** from tumor erosion into duodenal or peripancreatic vessels
  - **ED transfer**; urgent **endoscopy** or IR consult
- **Acute pulmonary embolism or massive DVT**
  - **Initiate anticoagulation** (LMWH preferred); pancreatic cancer is a high-risk VTE malignancy
- **Bowel perforation or peritonitis** =acute abdomen with sepsis signs
  - **Emergent surgical evaluation**
- **Febrile neutropenia on chemotherapy** (ANC <500 + temp ≥38.3°C)
  - Immediate evaluation and empiric **broad-spectrum antibiotics**

⚠ RED FLAG — EMERGENCY/ACTIVATE CRISIS RESPONSE

These emergency conditions must be **immediately addressed** for patients with pancreatic cancer:

- **New painless jaundice without sepsis**
  - → Pancreatic protocol CT and GI/surgical oncology referral within 24–48 hours
- **Acute gastric outlet obstruction** (intractable vomiting, inability to tolerate oral intake)
  - → Urgent endoscopic or surgical intervention
- **New severe abdominal/back pain unresponsive to baseline analgesia**
  - Consider **celiac plexus invasion** or disease progression → Urgent palliative care/pain management referral
  - Consider EUS-guided celiac plexus neurolysis
- **Rising CA 19-9 during surveillance**
  - → Contact oncology for restaging imaging within 1–2 weeks
- **Functional decline on active treatment**
  - → Expedited geriatric assessment to identify reversible causes (EPI, depression, delirium, polypharmacy, dehydration)
  - Falls and grade 2 neuropathy in older adults can precipitate permanent loss of independence[32,35]

3 MEAT DOCUMENTATION ESSENTIALS

When pancreatic cancer documentation is vague or incomplete, it creates **real downstream problems:** missed referrals, undertreated complications, and care plans that don't reflect what's actually happening clinically. The most frequent pitfalls include **soft language** for confirmed disease ("**consistent with**" instead of a definitive diagnosis), defaulting to **C25.9** (unspecified) when imaging clearly shows a head or tail lesion (only ~22% of cases are coded to a specific subsite),[36] omitting **confirmed metastatic sites**, and charting active disease as "**history of**."The MEAT framework below ties each element into **appropriate clinical action**:

*A 74-year-old patient with recent **unexplained 7% weight loss** over 4 months and **new-onset hyperglycemia** (HbA1c 8.1) presents for routine diabetes follow-up. Examination reveals **subtle scleral icterus**. Pancreatic protocol CT identifies a 2.8 cm hypoenhancing mass in the head of the pancreas with peripancreatic lymphadenopathy and two hepatic lesions. EUS-FNB confirms **moderately differentiated PDAC**. CA 19-9 is 412 U/mL after biliary drainage. ECOG 1; G8 score 13 (cutoff ≤14 triggers comprehensive geriatric assessment per Trovato et al. 2026).*

MONITOR: "Weight: 78 → 72.5 kg over 4 months (−7%). HbA1c: 5.8 → 8.1 over 10 months. CA 19-9: 412 U/mL post-stent (pre-stent value unreliable per NCCN). Bilirubin: 4.1 → 1.4 post-stent. ECOG 1; G8 = 13 → CGA ordered. Baseline CTCAE: neuropathy 0, fatigue 0, nausea 1."

EVALUATE: “Pancreatic protocol CT (5/2): 2.8 cm head mass, >180° SMV contact (borderline resectable); two hepatic lesions. EUS-FNB (5/8): moderately differentiated PDAC. MRI liver (5/10): confirms hepatic metastases → M1. NGS: KRAS G12D, TP53; BRCA1/2 WT, MSS, TMB-low, no fusions. Germline testing pending (counseling 5/22).”

ASSESS: “Moderately differentiated PDAC, head of pancreas, with hepatic metastases — C25.0 + C78.7. Borderline resectable by anatomy but M1 → systemic therapy per NCCN. Associated: biliary obstruction s/p metal stent (K83.1, resolved); new-onset diabetes attributed to PDAC (E13.9); EPI with weight loss and steatorrhea (K86.81).”

TREAT: “1L: gemcitabine + nab-paclitaxel (age 74, ECOG 1, G8 13 → modified dose schedule). **Supportive care**: PERT 72,000 units lipase with meals; enoxaparin VTE prophylaxis on treatment; antiemetics with glucose monitoring given steroid component. Palliative care consult placed at diagnosis. **Referrals**: medical oncology, surgical oncology MDT, genetic counseling, dietitian, palliative care. ACP documented (CPT 99497): surrogate named, code status discussed.”

Clinical Documentation Elements

- **Specify subsite and laterality:** Document 'pancreatic ductal adenocarcinoma of the head of the pancreas (**C25.0**)' rather than 'pancreatic cancer'; **only 22.2%** of pancreatic cancers are currently coded to a specific subsite despite **~60–70%** arising in the head[36]
- **Code each metastatic site separately:** When liver, peritoneal, and other visceral metastases are present, document and code **each separately** (C78.7, C78.6, C78.89) = reflects the patient's **real clinical complexity**
- **Link comorbidities to the cancer when causal:** Document the temporal and causal relationship for **secondary diabetes** ('new-onset secondary DM attributed to pancreatic adenocarcinoma; **E08.9**'), EPI, biliary obstruction, and cachexia = supports **continuity and accurate care planning**
- **Document chronicity and performance status:** Record time from symptom onset, current ECOG and G8,[35] weight trajectory, treatment line, current cycle, and toxicity grade (CTCAE) = supports both clinical decision-making and HEDIS COA composite documentation
- **Active vs personal history:** Use C25.x while disease is **active or under surveillance**; Z85.07 (personal history) applies **only after treatment completion** with no evidence of active disease — **NEVER** on active treatment or surveillance

Reframing Common Documentation Shortcuts

INSTEAD OF…	DOCUMENT…
'Pancreatic mass, likely malignant'	'Moderately differentiated pancreatic ductal adenocarcinoma of the head of the pancreas (**C25.0**), confirmed by EUS-FNB on 5/8; NCCN **borderline-resectable by anatomy**, M1 by hepatic metastases (**C78.7**)’

INSTEAD OF…	DOCUMENT…
'Metastatic pancreatic cancer'	'Pancreatic ductal adenocarcinoma of the head of the pancreas (**C25.0**) with hepatic metastases (**C78.7**, two lesions confirmed on MRI 5/10); ECOG 1; first-line gemcitabine + nab-paclitaxel initiated 5/14'
'History of pancreatic cancer'	'Active pancreatic ductal adenocarcinoma on first-line gemcitabine + nab-paclitaxel (cycle 2, day 1; 5/14)= **C25.0**' (**Z85.07** only after treatment completion + no evidence active disease)[6]
'On chemotherapy'	'First-line gemcitabine + nab-paclitaxel for metastatic PDAC; cycle 2 day 1 administered 5/14; tolerating with grade 1 peripheral neuropathy and grade 2 fatigue (CTCAE); **pancreatic enzyme replacement** 72,000 units lipase with meals (K86.81)
'Diabetes'	'New-onset type 2/secondary diabetes mellitus attributed to pancreatic adenocarcinoma (**E13.9**); HbA1c 8.1 on 5/2; insulin glargine + dexamethasone-attributable hyperglycemia during chemotherapy cycles; coordinated with oncology'
'Doing OK on treatment'	'PDAC, head of pancreas with hepatic metastases (**C25.0** + **C78.7**), first-line GnP cycle 2 day 1. ECOG 1 (stable); G8 13 → CGA placed; CA 19-9 trending down from 412 → 268 U/mL; grade 1 neuropathy, no febrile events. Next imaging restaging in 8 weeks'

ABBREVIATIONS: CGA = comprehensive geriatric assessment; CTCAE = Common Terminology Criteria for Adverse Events; EUS-FNB = endoscopic ultrasound-guided fine-needle biopsy; G8 = Geriatric 8 screening tool; GnP = gemcitabine + nab-paclitaxel; HbA1c = glycated hemoglobin; NCCN = National Comprehensive Cancer Network; PDAC = pancreatic ductal adenocarcinoma

DOCUMENTATION IS COMPREHENSIVE CODING

*Every active pancreatic cancer encounter should state the diagnosis with anatomic subsite ('**C25.0 head of pancreas**'), name each documented metastatic site (C78.7, C78.89, C78.6 as applicable), record c**urrent performance status** (ECOG, G8), describe the **active management plan** (regimen, line, cycle, toxicity), and list **comorbidity linkages** (EPI K86.81; secondary DM E13.x; biliary obstruction K83.1; VTE I82.4x/I26.x; depression F32.x). Each line of documentation corresponds to clinical work the team is actually doing.*

4 TREATMENT AND REFERRAL QUICK GUIDE

Treatment in pancreatic cancer is driven by resectability category and performance status, **not chronological age**. NCCN's 2026 pancreatic adenocarcinoma guidelines[14] organizes treatment strategies as first-line, second-line, maintenance, and supportive care **by PS and biomarker status**. The primary care role is detection and rapid referral, coordination of comorbidities (DM, EPI, VTE, biliary obstruction, depression, malnutrition), and early integration of palliative care.[13,14] Shared decision-making is anchored by **objective longitudinal measures** (CA 19-9 trend, performance status, weight trajectory, CTCAE toxicity grading, and G8/CGA in older adults), which together guide treatment modifications and goals-of-care conversations.

NCCN-Aligned Therapy Selection and Escalation Criteria

TRIGGER	ACTION
Suspected PDAC on clinical pattern (new-onset DM ≥50 + weight loss; persistent back/epigastric pain; painless jaundice; Trousseau syndrome)	Order pancreatic protocol CT and CA 19-9 simultaneously with GI/surgical oncology referral **within 1–2 weeks** (within **24–48 hours for painless jaundice**); do not wait for the specialist visit to begin imaging
Confirmed PDAC on imaging or biopsy	Refer to multidisciplinary team at a high-volume center; place genetic counseling referral; initiate **palliative care consult**; order NGS tumor and **germline testing**
ECOG 0–1, no metastases, resectable or borderline resectable	Surgical evaluation at high-volume center; adjuvant or neoadjuvant **mFOLFIRINOX** (PRODIGE-24);[34] G8/CGA for any patient ≥70 to inform tolerability[35]
ECOG 0–1, metastatic disease	FOLFIRINOX or modified FOLFIRINOX (mOS ~11 months) per ACCORD-11/PRODIGE;[9,34] NALIRIFOX (mOS 11.1 months) per NAPOLI-3;[10] gemcitabine + nab-paclitaxel (mOS ~9 months) per MPACT;[11] all category 1; **BRCA1/2** or **PALB2** → cisplatin/gemcitabine or FOLFIRINOX preferred for platinum exposure[12]
ECOG 2 or G8 ≤14 in older adults	**Reduced-intensity regimens**: gemcitabine + nab-paclitaxel category 1; modified biweekly GnP schedule for patients ≥75 (grade 3/4 AE **17.6% hematologic**/**29.4% non-hematologic**; no treatment-related deaths); or gemcitabine monotherapy
ECOG 3/poor PS/advanced frailty	Palliative and best supportive care preferred; gemcitabine monotherapy (category 1) **if treatment pursued**[14]
BRCA1/2 or PALB2 germline; no progression after ≥16 weeks platinum-based therapy	**Olaparib maintenance**;[12] prolongs PFS (median 7.4 vs 3.8 months, HR 0.53); no OS benefit demonstrated; weekly CBC initial monitoring
Disease progression on first-line therapy	Second-line **per prior regimen**: post-gemcitabine → 5-FU/leucovorin/liposomal irinotecan (category 1 metastatic); post-fluoropyrimidine → GnP; **biomarker-directed**: pembrolizumab (MSI-H/dMMR/TMB-H), zenocutuzumab (NRG1), larotrectinib (NTRK), dabrafenib + trametinib (BRAF V600E), adagrasib/sotorasib (KRAS G12C)

ABBREVIATIONS: AE = adverse event; BRCA1/2 = breast cancer 1/2 genes; CBC = complete blood count; CGA = comprehensive geriatric assessment; CT = computed tomography; CA 19-9 = carbohydrate antigen 19-9; ECOG = Eastern Cooperative Oncology Group; dMMR = mismatch repair deficient; FOLFIRINOX = 5-FU, leucovorin, irinotecan, oxaliplatin; G8 = Geriatric 8; GI = gastroenterology; GnP = gemcitabine + nab-paclitaxel; HR = hazard ratio; mFOLFIRINOX = modified FOLFIRINOX; mOS = median overall survival; MPACT = nab-paclitaxel + gemcitabine pivotal trial; MSI-H = microsatellite instability high; NALIRIFOX = liposomal irinotecan + 5-FU + leucovorin + oxaliplatin; NAPOLI-3 = NALIRIFOX pivotal trial; NCCN = National Comprehensive Cancer Network; NRG1 = neuregulin 1; NTRK = neurotrophic tyrosine receptor kinase; OS = overall survival; PALB2 = partner and localizer of BRCA2; PDAC = pancreatic ductal adenocarcinoma; PFS = progression-free survival; POLO = olaparib maintenance pivotal trial; PRODIGE-24 = ACCORD-11 adjuvant trial; PS = performance status; TMB-H = tumor mutational burden high

Non-Pharmacologic Care and Supportive Interventions

INTERVENTION	TARGET/RECOMMENDATION	NOTES
Nutritional evaluation (registered dietitian)	Address **cachexia**, **sarcopenia**, **protein-calorie malnutrition**	Pre-existing sarcopenia **compounds cachexia risk** in elderly;[14,32] supports treatment tolerance and quality of life
Early palliative care integration	Within 30 days of diagnosis, **irrespective of stage**	**Reduces ED visits**, hospitalizations, and total cost **without compromising survival** per SEER-Medicare data;[13] NCCN/ASCO 2024 recommend early integration[14,15]
Geriatric assessment/G8 screening	**G8 ≤14** triggers comprehensive geriatric assessment; CGA-guided management reduces grade 3–5 toxicity (RR 0.78; 95% CI 0.70–0.86) per GAP70+ trial[32]	G8 ≥15 independently associated with **higher PFS** (7.9 vs 5.3 months) and **OS** (16.6 vs 7.8 months; HR 0.39; p <0.001) in patients ≥70 with advanced PDAC[35]

ABBREVIATIONS: ASCO = American Society of Clinical Oncology; CGA = comprehensive geriatric assessment; CI = confidence interval; DOAC = direct oral anticoagulant; ED = emergency department; EUS = endoscopic ultrasound; G8 = Geriatric 8 screening tool; GAP70+ = geriatric assessment cluster-randomized trial; HR = hazard ratio; LAPC = locally advanced pancreatic cancer; LMWH = low-molecular-weight heparin; NCCN = National Comprehensive Cancer Network; OS = overall survival; PDAC = pancreatic ductal adenocarcinoma; PERT = pancreatic enzyme replacement therapy; PFS = progression-free survival; RR = relative risk; SBRT = stereotactic body radiotherapy; VTE = venous thromboembolism

Medication Safety and Key Interactions

DRUG/CLASS	INTERACTION/TOXICITY	CLINICAL ACTION
FOLFIRINOX/ modified FOLFIRINOX	**Highest toxicity burden**: grade ≥3 neutropenia ~15–17% (modified) to ~46% (full);[37] febrile neutropenia ~5%; diarrhea OR 27.9 vs gemcitabine; **significant neuropathy and fatigue**; ACCORD-11/PRODIGE enrolled only ECOG 0–1 patients ≤75[9]	Generally avoided in vulnerable elderly;[9,37] G-CSF prophylaxis often required; proactive dose modification; monitor for diarrhea (loperamide, hydration)
Gemcitabine + nab-paclitaxel (GnP)	**Most common regimen in elderly** (~83.3% of patients ≥75);[30] all-grade **anemia 79–92%** in patients ≥65; **peripheral neuropathy** more common ≥70 (61.9% vs 40.4%); grade 3/4 neutropenia ~25%[9]	**Biweekly modified schedule** (days 1, 15 of 28-day cycle) in patients ≥75 reduces grade 3/4 hematologic AE to 17.6% and non-hematologic to 29.4%;[29] mild dose modifications of nab-paclitaxel in ≥65 preserve PFS/OS[30]

DRUG/CLASS	INTERACTION/TOXICITY	CLINICAL ACTION
NALIRIFOX	**Grade ≥3 diarrhea** ~20%;[37] thrombocytopenia notably **lower than FOLFIRINOX/GnP** (<2% vs ~12%)[37]	Newer **phase III regimen** (NAPOLI-3);[10] **lower hematologic burden** but higher GI toxicity = monitor for diarrhea, hydration[37]
Corticosteroid antiemetics (dexamethasone)	Destabilize glucose control;[33] precipitate or worsen hyperglycemia in patients with diabetes[33]	**Monitor glucose** during chemotherapy cycles; coordinate insulin titration with primary care; **consider corticosteroid-sparing antiemetic** strategies in fragile glycemic control[33]
Warfarin	**Variable PK** in pancreatic cancer; nutritional status changes; food interactions; difficult INR control	LMWH preferred over warfarin for VTE in active PDAC;[14] DOACs may be considered **without luminal tumors**
Olaparib (maintenance)	**Myelosuppression** (anemia, neutropenia, thrombocytopenia);[12] nausea; rarely MDS/AML; CYP3A4 interactions (**avoid strong inducers/inhibitors**)[12]	BRCA-confirmed patients only;[12] weekly CBC initially, then monthly; counsel on **long-term hematologic monitoring**; review concomitant medications for **CYP3A4 inducers** (rifampin) and inhibitors (azoles, clarithromycin)
Opioids	**Constipation** in setting of EPI;[14] respiratory depression in advanced disease	Bowel regimen at initiation; coordinate with palliative care for **refractory pain**;[15] consider EUS-guided celiac plexus neurolysis **early** in body/tail disease[14]

ABBREVIATIONS: ACCORD-11 = FOLFIRINOX pivotal trial; AE = adverse event; CBC = complete blood count; CYP3A4 = cytochrome P450 3A4; DOAC = direct oral anticoagulant; EPI = exocrine pancreatic insufficiency; EUS = endoscopic ultrasound; FOLFIRINOX = 5-FU, leucovorin, irinotecan, oxaliplatin; G-CSF = granulocyte colony-stimulating factor; GI = gastrointestinal; GnP = gemcitabine + nab-paclitaxel; INR = international normalized ratio; ISTH = International Society on Thrombosis and Haemostasis; LMWH = low-molecular-weight heparin; MDS/AML = myelodysplastic syndrome / acute myeloid leukemia; NALIRIFOX = liposomal irinotecan + 5-FU + leucovorin + oxaliplatin; NAPOLI-3 = NALIRIFOX pivotal trial; NCCN = National Comprehensive Cancer Network; OS = overall survival; PDAC = pancreatic ductal adenocarcinoma; PFS = progression-free survival; PK = pharmacokinetics; PRODIGE = ACCORD-11 adjuvant trial; VTE = venous thromboembolism

When to Refer

CRITERION	SPECIALIST	URGENCY
New painless jaundice; acute cholangitis; gastric outlet obstruction; massive GI hemorrhage; febrile neutropenia on chemo	Emergency department/ GI/surgical oncology	Emergent
Suspected PDAC on clinical pattern (new DM ≥50 + weight loss; persistent back/epigastric pain)	GI/multidisciplinary pancreatic team at high-volume center	Urgent (1–2 weeks)

CRITERION	SPECIALIST	URGENCY
Confirmed PDAC on imaging or pathology	Medical oncology, surgical oncology, multidisc. tumor board	Urgent (within 1 week)
Confirmed PDAC (any patient regardless of family history)	**Genetic counseling** — inherited mutations in ~10% of cases	Routine (within 4 weeks)
Confirmed PDAC: early palliative care integration	Palliative care	Routine (within 30 days of diagnosis)
Functional decline, polypharmacy, or G8 ≤14 in older adults	Geriatric oncology/ comprehensive geriatric assessment	Urgent (before next treatment cycle)
Refractory cancer-related pain unresponsive to opioids	Palliative care/ interventional pain (EUS celiac plexus neurolysis)	Urgent (1–2 weeks)
End-of-life trajectory, hospice eligible	Hospice (Medicare Hospice Benefit)	When goals align

ABBREVIATIONS: DM = diabetes mellitus; EUS = endoscopic ultrasound; G8 = Geriatric 8 screening tool; GI = gastroenterology; PDAC = pancreatic ductal adenocarcinoma

Follow-Up Timing

STAGE/CATEGORY	FREQUENCY	LABS/MONITORING[14]
Resectable PDAC post-op, adjuvant therapy	Every **2–4 weeks** during therapy; every 3 months × 2 years; every 6 months years 3–5	CA 19-9; CBC; CMP; LFTs; pancreatic protocol CT or MRI per oncology protocol; weight; performance status
Borderline resectable/ locally advanced, neoadjuvant therapy	Every **2 weeks** during therapy; restaging every 8–12 weeks	CA 19-9; CBC; CMP; pancreatic protocol CT or MRI; CTCAE toxicity grading
Metastatic, active palliative chemotherapy	Every **2 weeks** during cycles; symptom-based reassessment	CA 19-9; CBC; CMP; LFTs; **imaging every 8–12 weeks** or as symptoms dictate; weight, ECOG, G8 in older adults[35]
Off active treatment, surveillance	Per oncology plan; PCP every **3–6 months** for comorbidity, palliative coordination	**Symptom-focused review**; weight; glycemic control (HbA1c);[33] depression screening (PHQ-9); advance care planning update[15]

STAGE/CATEGORY	FREQUENCY	LABS/MONITORING[14]
BRCA-mutated on olaparib maintenance	**Weekly CBC × 4 weeks**, then monthly; symptom assessment monthly[12]	CBC weekly initial then monthly; CMP monthly;[12] CA 19-9 every 8 weeks; **restaging imaging every 8–12 weeks**

ABBREVIATIONS: BRCA = breast cancer gene; CBC = complete blood count; CMP = comprehensive metabolic panel; CA 19-9 = carbohydrate antigen 19-9; CT = computed tomography; CTCAE = Common Terminology Criteria for Adverse Events; ECOG = Eastern Cooperative Oncology Group; G8 = Geriatric 8; HbA1c = glycated hemoglobin; LFT = liver function test; MRI = magnetic resonance imaging; PCP = primary care provider; PDAC = pancreatic ductal adenocarcinoma; PHQ-9 = Patient Health Questionnaire-9

Comorbidity Management — Primary Care Role

COMORBIDITY	APPROACH	CAUTION
EPI (K86.81)	**Empiric pancreatic enzyme replacement** ≥48,000 units lipase per meal (preferably 72,000);[14] monitor for **steatorrhea**, **weight**, **fat-soluble vitamins**	**Frequently undertreated**;[14] affects chemotherapy tolerance through malabsorption and **compounding cachexia**
Type 2/secondary diabetes (E11.x/E13.x)	**Trend HbA1c**;[33] insulin or oral agent management; coordinate with oncology on **corticosteroid-induced hyperglycemia** during cycles	Soft glycemic control during active treatment can **compromise wound healing** and raise infection risk[33]
DVT (I82.4x)/PE (I26.x)	**LMWH preferred** for active malignancy;[14] DOACs may be considered **without luminal tumors**; consider **VTE prophylaxis** during hospitalization or chemo cycles[14,38]	**Balance bleeding risk**; PDAC carries one of the **highest VTE rates** among solid tumors[14]
Depression (F32.x)	PHQ-2/PHQ-9 **at every visit**; C-SSRS if Item 9 positive;[15] pharmacologic and psychotherapy referral; coordinate with palliative care	**25–50% prevalence** in PDAC;[14] often misattributed to 'normal aging' or 'poor PS'; **treatable contributor to functional decline**
Polypharmacy in older adults	Medication reconciliation **at every visit**; review **CYP3A4 substrates** with chemotherapy; deprescribe where evidence-aligned[32]	GAP70+ trial: CGA-guided management led to safe deprescription without compromising outcomes[32]
Cachexia/malnutrition (E44.0, E43, R63.4)	Track weight, albumin, prealbumin, dietary intake; registered **dietitian referral**; address EPI as **malabsorption contributor**	Independent predictor of **poor treatment tolerance**;[14] pre-existing sarcopenia **compounds risk** in older adults

COMORBIDITY	APPROACH	CAUTION

ABBREVIATIONS: C-SSRS = Columbia Suicide Severity Rating Scale; CGA = comprehensive geriatric assessment; CYP3A4 = cytochrome P450 3A4; DOAC = direct oral anticoagulant; DVT = deep vein thrombosis; EPI = exocrine pancreatic insufficiency; GAP70+ = geriatric assessment cluster-randomized trial; HbA1c = glycated hemoglobin; LMWH = low-molecular-weight heparin; PDAC = pancreatic ductal adenocarcinoma; PE = pulmonary embolism; PHQ = Patient Health Questionnaire; PS = performance status; VTE = venous thromboembolism

Cost-Smart Options

BRAND (EST. COST)	GENERIC/ ALTERNATIVE (EST. COST)	MO. SAVINGS	COST-SMART TIP
Brand pancrelipase Creon, Zenpep, Pancreaze (~$1,500–$3,000/mo without insurance at typical dosing)	Alternative brand (Pertzye, Zenpep) per formulary tier; manufacturer copay assistance	**~$200–$1,000/**mo	Switch brands per formulary; all FDA-approved PERT products **are equipotent**; do NOT substitute OTC enzymes
GnP: nab-paclitaxel + gemcitabine (~$7,200/cycle total cost of care)	Gemcitabine monotherapy (**~$1,400**/mo) **for ECOG 2–3**	**~$3,000–$5,000**/mo	Biweekly modified GnP in ≥75 reduces exposure; **FFX and GnP total cost of care similar** (**~$7,200**/cycle) despite different drug costs
Conventional RT (25–30 fx; ~$14,000–$27,000/course)	SBRT (1–5 fx; **~$7,000–$13,000**/course)	**~$4,000–$14,000** per course	Fewer sessions, less chemo interruption, equivalent local control
NK1 RA combos: fosnetupitant/palonosetron (~$600–$800/dose)	Generic ondansetron + dexamethasone ± olanzapine (**~$2–$6**/dose)	**~$300–$700**/cycle	Reserve NK1 RA for **high emetic risk** (FFX, cisplatin); ondansetron + dex is NCCN category 1 for moderate risk

ABBREVIATIONS: PERT = pancreatic enzyme replacement therapy; FDA = Food and Drug Administration; OTC = over-the-counter; GnP = gemcitabine + nab-paclitaxel; ECOG = Eastern Cooperative Oncology Group; FFX = FOLFIRINOX; RT = radiation therapy; fx = fractions; SBRT = stereotactic body radiotherapy; NK1 RA = neurokinin-1 receptor antagonist; NCCN = National Comprehensive Cancer Network

Patient Education and Adherence

EDUCATIONAL COMPONENT	KEY POINT	EXAMPLE LANGUAGE
Diagnosis treatment plan	Plain-language explanation of stage, goals of therapy, and next steps	"The cancer started in the head of the pancreas and has spread to the liver. Treatment will focus on controlling growth and maintaining quality of life."
Enzyme replacement (PERT)	(PERT)Take with EVERY meal and snack: most common point of **underuse**	"Take your pancreatic enzymes at the start of each meal and snack — skipping causes diarrhea, weight loss, and malnutrition."
When to call/ go to ED	Biliary stent occlusion, VTE, febrile neutropenia	"Call immediately for: new yellowing of skin/eyes; sudden leg swelling or shortness of breath; or fever ≥100.4°F with chills during chemo."
Palliative care framing	Supportive care **FROM** diagnosis, not end-of-life	"Palliative care is a team that helps manage pain, nausea, and stress alongside your cancer treatment, it is not hospice."
Advance care planning	Name surrogate; discuss goals early while patient can participate	"Let's talk about who would speak for you if you couldn't, and what matters most to you during treatment."
Caregiver navigation resources	PanCAN, hospice eligibility, Medicare Hospice Benefit	"PanCAN offers free case management and clinical trial matching. When the time is right, hospice is fully covered by Medicare."

DOCUMENTATION — PATIENT AND CAREGIVER EDUCATION

*Document **patient and caregiver** education provided, including diagnosis, treatment regimen, EPI management and enzyme dosing, palliative care integration, advance directives, materials distributed, and patient understanding/questions. **From a value-based care perspective**, thorough documentation supports **closed-loop multidisciplinary care**, while use of the **teach-back method** and identification of a clearly defined caregiver can improve adherence, continuity, and earlier recognition of emerging symptoms. CPT 99497/99498 are billable for advance care planning during the AWV without patient copay and may support COA composite quality measures and longitudinal care planning.*

Quality Metrics Tie-In

Pancreatic cancer sits at the intersection of **multiple quality measurement domains:** oncology-specific EOL metrics (**NQF #0210**, **#0213**, **#0215/0216**), chronic disease management (diabetes care, depression screening), care transitions (medication reconciliation, readmissions), and geriatric-focused measures (COA, advance care planning); pancreatic cancer care is one of the most quality-measure-dense diagnoses in Medicare. The disease's high mortality (**5-year survival ~13%**), frequent polypharmacy with high-risk drug interactions, need for early palliative

integration, and rapid functional decline mean that nearly every major HEDIS, MIPS, and CMS value-based program measure **applies simultaneously** across the care trajectory.

MEASURE	STANDARD	NOTES
HEDIS C08: Care for Older Adults (COA)- Medication Review	**Denominator**: MA enrollees ≥66, continuously enrolled; **Numerator**: 4 sub-measures documented annually: (1) functional status assessment, (2) medication review, (3) pain assessment, (4) advance care planning; **Exclusions**: hospice, ESRD	PDAC patients manage complex regimens (PERT, opioids, antiemetics, anticoagulants, insulin, olanzapine); annual review verifies VTE prophylaxis, opioid safety, PERT dosing, and ACP completion
HEDIS C09: Care for Older Adults (COA)- Pain Assessment	**Denominator**: enrollees ≥66 with SNP enrollment; **Numerator**: pain assessment documented during the year; **Exclusions**: hospice	Pain affects **>60%** of PDAC patients; structured assessment should distinguish tumor-related nociceptive pain from neuropathic pain (perineural invasion) = **determines:** opioid titration vs. adjuvant pregabalin/ duloxetine vs. celiac plexus neurolysis referral
HEDIS C12: Diabetes Care - Blood Sugar Controlled	**Denominator**: enrollees 18–75 with diabetes; **Numerator**: HbA1c tested + ≤8%; **Exclusions**: hospice, ESRD	New-onset diabetes occurs in **13–20%** of PDAC at diagnosis and may be paraneoplastic; T3cDM after pancreatectomy requires insulin with careful titration due to absent glucagon counter-regulation
HEDIS C17: Medication Reconciliation Post-Discharge (MRP)	**Denominator**: enrollees ≥18 discharged from inpatient; **Numerator**: medication reconciliation within 30 days; **Exclusions**: hospice	Post-discharge reconciliation must confirm PERT restart, VTE prophylaxis continuation, opioid regimen appropriateness, and antiemetic adequacy; infection, dehydration; failure = majority of **preventable PDAC readmissions**
HEDIS C18: Plan All-Cause Readmissions (PCR)[39]	**Denominator**: acute inpatient discharges for enrollees ≥18, discharged alive; **Numerator**: unplanned readmission within 30 days. **Exclusions**: planned readmissions, transfers, AMA discharges, cancer medical treatment admissions	PDAC patients have **high readmission rates**: biliary complications, VTE, infection, dehydration; cancer treatment admissions excluded from denominator

MEASURE	STANDARD	NOTES
MIPS #047: Advance Care Planning	**Denominator**: patients ≥65 with ≥1 qualifying encounter during reporting period. **Numerator**: advance care plan or surrogate decision-maker documented, OR documentation that ACP was discussed but patient declined. **Exclusions**: none specified	Topped-out measure; billable as CPT **99497/99498** during AWV
NQF #0210: Chemotherapy in Last 14 Days of Life	**Denominator**: patients who died of cancer during the measurement period. **Numerator**: patients who received chemotherapy (now expanded to all systemic therapy including targeted/IO) in last 14 days of life; **Lower is better**	National mean ~17%; NQF/ASCO-endorsed;[15] adopted in OCM/EOM Performance-Based Payment Quality Score; rates stable 2015–2019 despite benchmarking efforts
NQF #0213: ICU Admission in Last 30 Days of Life	**Denominator**: patients who died of cancer. **Numerator**: patients with ≥1 ICU admission in last 30 days of life; **Lower is better**	Aggressive care indicator; early palliative care **reduces ICU utilization** at EOL
NQF #0215/ #0216: Hospice Nonreferral/Late Referral	**Denominator**: patients who died of cancer. **Numerator**: #0215 = not referred to hospice; #0216 = hospice referral ≤3 days before death; **Lower is better**	OCM/EOM quality score includes hospice enrollment ≥3 days before death; **fewer than one-third** of Medicare cancer decedents receive timely hospice
MIPS #134: Depression Screening (PHQ-9)	**Denominator**: patients ≥12 with ≥1 qualifying encounter. **Numerator**: screened for depression using standardized tool (PHQ-9) AND follow-up plan documented if positive. **Exclusions**: active depression diagnosis with current treatment	Cross-cutting MIPS measure; NCCN recommends distress screening **at every visit** for all cancer patients; **PHQ-9 ≥10** has ~85% sensitivity/ specificity for MDD in cancer populations[40]
OCM/EOM: Chemotherapy-Associated ED Visits and Hospitalizations (OP-35 adapted)	**Denominator**: 6-month chemotherapy episodes. **Numerator**: episodes with ≥1 chemotherapy-associated ED visit or hospitalization within 30 days of treatment; **Lower is better**	Adapted from CMS Hospital Outpatient Quality Reporting Program; included in OCM/EOM performance scoring; no significant improvement observed with OCM participation
Annual Wellness Visit (AWV)	CPT **G0438** (initial)/**G0439** (subsequent); documents functional/ cognitive screen, fall risk, ACP, depression screen	ACP (CPT 99497/99498) billable during AWV **with no patient copay**; AWV receipt associated with 1.86× higher ACP initiation over 4 years[41]

MEASURE	STANDARD	NOTES

ABBREVIATIONS: HEDIS = Healthcare Effectiveness Data and Information Set; COA = Care for Older Adults; MA = Medicare Advantage; ESRD = end-stage renal disease; PDAC = pancreatic ductal adenocarcinoma; PERT = pancreatic enzyme replacement therapy; VTE = venous thromboembolism; ACP = advance care planning; SNP = Special Needs Plan; HbA1c = glycated hemoglobin; T3cDM = type 3c diabetes mellitus (pancreatogenic); MRP = Medication Reconciliation Post-Discharge; PCR = Plan All-Cause Readmissions; AMA = against medical advice; MIPS = Merit-based Incentive Payment System; CPT = Current Procedural Terminology; AWV = annual wellness visit; NQF = National Quality Forum; IO = immunotherapy/immuno-oncology; ASCO = American Society of Clinical Oncology; OCM = Oncology Care Model; EOM = Enhancing Oncology Model; ICU = intensive care unit; EOL = end of life; PHQ-9 = Patient Health Questionnaire—9; NCCN = National Comprehensive Cancer Network; MDD = major depressive disorder; ED = emergency department; CMS = Centers for Medicare & Medicaid Services; OP-35 = Outpatient Quality Measure 35

QUALITY OUTCOME

*When primary care recognizes the new-onset diabetes + weight loss pattern early, refers promptly to a high-volume multidisciplinary center, coordinates comorbidity management (EPI, VTE, biliary obstruction, depression, malnutrition), and integrates palliative care **within 30 days of diagnosis**, patients experience fewer ED visits, lower readmission rates, and **improved continuity of care**. Quality outcomes follow naturally from delivering and documenting the care the clinical picture demands: they are consequences of good care, not separate goals.*

DOCUMENTATION

*When a treatment decision is reached at a multidisciplinary tumor board, document the **recommendation**, the **clinical reasoning** (resectability category, performance status, geriatric assessment findings, biomarker status), the patient's **expressed preferences**, and the **agreed-upon plan**. This anchors subsequent care in a transparent clinical record rather than fragmented specialist notes.*

5 CODING REMINDERS AND CASE EXAMPLES

Coding Specificity

ELEMENT	DOCUMENTATION REQUIREMENT
Anatomic subsite (C25.0–C25.8)	**Document specific subsite** (head, body, tail, duct, endocrine pancreas, other parts, overlapping) from imaging or pathology;[14] **avoid C25.9** (unspecified) when subsite is available; **only 22.2%** of PDAC currently coded to specific subsite despite **~60–70%** arising in the head[36]

ELEMENT	DOCUMENTATION REQUIREMENT
Tumor histology	Confirm pancreatic ductal adenocarcinoma vs pancreatic neuroendocrine tumor (PanNET);[28] PanNETs have a separate AJCC 9th Ed staging system and distinct treatment;[28] **C25.4** (endocrine pancreas) applies only to confirmed **islet/endocrine adenocarcinoma**, not all endocrine pancreatic malignancies
Each metastatic site	Code each documented metastatic site separately (C78.7 liver = most common at ~75–80%;[14] C78.89 other digestive; C78.6 peritoneum; C78.0x lung; C79.51 bone); reflects **clinical complexity**, not a billing strategy
Resectability category	Document NCCN category (RPC, BRPC, LAPC, M1)[14] based on imaging review and multidisciplinary discussion
Performance and frailty status	Document ECOG performance status and G8 score (if obtained), with CGA findings when triggered;[35] drives **treatment intensity** and supports appropriate care planning
Biomarker status	Document NGS tumor and **germline results**: KRAS variants, BRCA1/2, PALB2, MSI/dMMR, TMB, NTRK/NRG1/FGFR/RET fusions, HER2 = informs **olaparib eligibility** (POLO)[12] and biomarker-directed second-line options[14]
Active vs personal history	Use C25.x for active malignancy and active surveillance; reserve **Z85.07** for **after treatment completion** with no evidence of active disease
Associated comorbidities	Code EPI (K86.81), VTE (I82.4x, I26.x), biliary obstruction (K83.1), depression (F32.x), cachexia/malnutrition (E44.0, E43, R63.4), and new-onset/secondary DM (E13.x) when documented

ABBREVIATIONS: PDAC = pancreatic ductal adenocarcinoma; PanNET = pancreatic neuroendocrine tumor; AJCC = American Joint Committee on Cancer; NCCN = National Comprehensive Cancer Network; RPC = resectable pancreatic cancer; BRPC = borderline resectable pancreatic cancer; LAPC = locally advanced pancreatic cancer; M1 = distant metastases; ECOG = Eastern Cooperative Oncology Group; G8 = Geriatric 8 screening tool; CGA = comprehensive geriatric assessment; NGS = next-generation sequencing; BRCA1/2 = breast cancer 1/2 genes; PALB2 = partner and localizer of BRCA2; MSI = microsatellite instability; dMMR = mismatch repair deficient; TMB = tumor mutational burden; NTRK = neurotrophic tyrosine receptor kinase; NRG1 = neuregulin 1; FGFR = fibroblast growth factor receptor; RET = rearranged during transfection proto-oncogene; HER2 = human epidermal growth factor receptor 2; POLO = olaparib pivotal trial; EPI = exocrine pancreatic insufficiency; VTE = venous thromboembolism; DM = diabetes mellitus

Annual Clinical Review and Confirmation

- **Annual review:** Active pancreatic cancer must be reassessed annually with MEAT documented; in patients on active treatment or surveillance, the diagnosis is current and requires ongoing documentation each calendar year
- **Visit modality:** Face-to-face or synchronous audio-video telehealth qualifies when it supports meaningful clinical evaluation; chart updates **without an encounter** do not satisfy MEAT
- **Avoid rollover: Do not copy forward** last year's pancreatic cancer note without updating treatment status, current line of therapy and cycle, current resectability category, metastatic

sites, performance status, and active comorbidities: silent rollover **misrepresents** the care being delivered

AAVBC PERSPECTIVE

*The AAVBC supports comprehensive, specific, and up-to-date coding in pancreatic cancer care as an essential pillar to support a **closed-loop care model** that coordinates multidisciplinary treatment, symptom management, nutrition support, palliative care, and longitudinal follow-up across care settings. Active pancreatic cancer should continue to be coded with **C25.x** during treatment and surveillance phases; **avoid use of Z85.07** in patients with ongoing active disease and **avoid unspecified coding (C25.9)** when the pancreatic subsite can be documented. Accurate documentation of disease stage, treatment-related complications, malnutrition, cachexia, diabetes, pain burden, and ECOG Performance Status can support treatment selection, dose-intensity optimization, appropriate risk adjustment, quality metric performance, and reimbursement alignment while facilitating delivery of higher quality, patient-centered care.*

Good Documentation is Comprehensive Coding

EHR SHORTCUT/RISK	PREFERRED DOCUMENTATION LANGUAGE
Defaulting to C25.9 (unspecified) when imaging or pathology supports a subsite	'Pancreatic ductal adenocarcinoma of the head of the pancreas (C25.0), confirmed by EUS-guided fine-needle biopsy [date]'
Coding only the primary tumor when metastases are documented	'PDAC of the head (C25.0) with hepatic metastases (C78.7) and peritoneal metastases (C78.6) on imaging [date]'
Using Z85.07 (personal history) for a patient on active treatment or active surveillance	Use **C25.x** while disease is active or under surveillance: 'Active pancreatic ductal adenocarcinoma on first-line gemcitabine + nab-paclitaxel, cycle 2 (C25.0).'
Confusing C25.4 (endocrine pancreas adenocarcinoma) with PanNETs	**Confirm histology before code assignment**; PanNETs have separate AJCC 9th Ed staging (2023);[28] C25.4 applies to confirmed **islet/endocrine adenocarcinoma only** = not all endocrine pancreatic malignancies
Soft documentation phrasing ('consistent with,' 'compatible with,' 'suggestive of') once pathology is confirmed	Document the confirmed diagnosis directly: 'Moderately differentiated pancreatic ductal adenocarcinoma, head of pancreas (C25.0), confirmed by EUS-FNB [date]'

EHR SHORTCUT/RISK	PREFERRED DOCUMENTATION LANGUAGE
'Diabetes' without temporal/ causal linkage to cancer	'New-onset secondary diabetes mellitus attributed to pancreatic adenocarcinoma (E13.9); HbA1c 8.1 [date]; insulin glargine initiated; monitor for corticosteroid-induced hyperglycemia during chemotherapy cycles'
'On chemo' without regimen, line, cycle, or toxicity grade	'First-line gemcitabine + nab-paclitaxel for metastatic PDAC (C25.0 + C78.7); cycle 2 day 1 [date]; ECOG 1; grade 1 peripheral neuropathy and grade 2 fatigue (CTCAE); next imaging restaging in 8 weeks'

ABBREVIATIONS: EHR = electronic health record; EUS = endoscopic ultrasound; PDAC = pancreatic ductal adenocarcinoma; PanNET = pancreatic neuroendocrine tumor; AJCC = American Joint Committee on Cancer; EUS-FNB = endoscopic ultrasound-guided fine-needle biopsy; HbA1c = glycated hemoglobin; ECOG = Eastern Cooperative Oncology Group; CTCAE = Common Terminology Criteria for Adverse EventsAJCC = American Joint Committee on Cancer; CTCAE = Common Terminology Criteria for Adverse Events; ECOG = Eastern Cooperative Oncology Group; EUS-FNB = endoscopic ultrasound-guided fine-needle biopsy; HbA1c = glycated hemoglobin; PanNET = pancreatic neuroendocrine tumor; PDAC = pancreatic ductal adenocarcinoma

EHR Workflow Tips

[EHR TIP — Smartphrase] Build a .pdac dot phrase that auto-populates anatomic subsite (C25.0–C25.8), resectability category, NCCN regimen/cycle, ECOG and G8 scores, CA 19-9 trend, active comorbidities (EPI, DM, VTE, biliary stent status), and palliative care integration status — sourced from imaging, pathology, and oncology notes. Reduces unspecified C25.9 coding and supports MEAT documentation in a single paste.

[EHR TIP — Alert] No oncology visit in 90 days — configure a gap alert for any active C25.x without a documented oncology encounter in the last 90 days. Surfaces patients who may have fallen out of multidisciplinary follow-up during treatment transitions or hospitalizations.

[EHR TIP — Alert] No advance care planning documented — fire a secondary alert for active C25.x without ACP (CPT 99497) on file. Supports MIPS #047 compliance and early goals-of-care documentation.

[EHR TIP — Best Practice] Problem list hygiene — maintain active C25.x with specific subsite, each confirmed metastatic site coded individually (C78.7 liver, C78.6 peritoneum, C79.51 bone), and current treatment regimen. Mark resolved interim diagnoses (e.g., biliary obstruction K83.1 status-post stent) with resolution date to prevent carry-forward coding errors.

[EHR TIP — Workflow] Annual diagnosis confirmation — flag any active C25.x without a face-to-face or synchronous audio-video encounter and MEAT documentation in the past 12 months. Fires at year-end to support HCC capture and RAF continuity before the sweep deadline.

[EHR TIP — Order Set] Pancreatic cancer initial workup bundle: pancreatic protocol CT (or MRI), CA 19-9, CBC, CMP, LFTs, coagulation panel. New-diagnosis add-on bundle includes germline genetic testing referral, palliative care consult, registered dietitian referral, and multidisciplinary clinic referral — all triggered at C25.x problem list entry.

[EHR TIP — Auto-prompt] Triggered referral cascade at new C25.x diagnosis: medical oncology, surgical oncology (or multidisciplinary clinic at a high-volume center), genetic counseling, palliative care, and registered dietitian. During active treatment: G8 ≤14 fires a geriatric oncology referral prompt automatically.

Brief Case Examples

SUCCESS: COMPREHENSIVE DOCUMENTATION

SCENARIO

76-year-old patient with **new-onset diabetes** (HbA1c 8.4), **9% weight loss over 5 months**, and persistent epigastric discomfort attributed for 3 months to reflux. Primary care recognized the new-onset DM + weight loss pattern and ordered pancreatic protocol CT + CA 19-9 simultaneously with GI referral, **not standard ultrasound**.

Documentation: 'Pancreatic ductal adenocarcinoma of the head of the pancreas (**C25.0**), confirmed by EUS-guided fine-needle biopsy on 4/22; pancreatic protocol CT (4/20): 3.2 cm hypoenhancing mass with **borderline-resectable vascular involvement** (>180° venous, no arterial contact); CA 19-9 248 U/mL post biliary metal stent placement; ECOG 1; G8 12 → CGA placed. New-onset secondary diabetes (E13.9) attributed to PDAC; status-post biliary metal stent for K83.1 (resolved); **EPI on pancrelipase** 72,000 units with meals (K86.81). Palliative care consult **placed at diagnosis**. Patient enrolled in a multidisciplinary pancreatic clinic at a high-volume center. Germline testing pending.'

Outcome: HCC 20 (active malignancy) confirmed and mapped with **anatomic specificity**; new-onset diabetes documented with clinical linkage; biliary stent and CGA placement reflect the care actually delivered; palliative care integration **within 30 days** aligns with NCCN/ASCO recommendations.[14,15] CA 19-9 trend, ECOG, G8, and CGA findings support measurement-based care and HEDIS COA composite documentation

PITFALL: INSUFFICIENT DOCUMENTATION

Documentation as written: 'Pancreatic cancer, on chemotherapy.' **Coded as C25.9 (unspecified)**. The chart references 'diabetes' and 'weight loss' but **does not link them to the cancer**; biliary stent and EPI are not documented; metastatic liver lesions appear in oncology notes but were **not carried** into the primary care problem list; no ECOG, G8, or CA 19-9 trend documented.

Consequence: Anatomic subsite (C25.0 head) is **undocumented**; metastatic site (C78.7) is missing; secondary diabetes (E13.9), EPI (K86.81), and biliary obstruction (K83.1) are not represented in the active problem list. The chart understates the clinical complexity the team is actually managing and **impairs continuity** across primary care, surgical oncology, medical oncology, and palliative care.

RAF Impact: HCC 20 alone for **unspecified pancreatic cancer** (CNA RAF 1.136 ≈ $11,817/year illustrative); missed comorbidity documentation underrepresents the patient's clinical reality. With proper documentation (C25.0 + C78.7 + EPI + secondary DM + biliary stent history), the record reflects the substantive multi-specialty work the team is doing

Fix: Update problem list and assessment: 'Pancreatic ductal adenocarcinoma, head of pancreas (C25.0), with hepatic metastases (C78.7), on first-line gemcitabine + nab-paclitaxel, cycle 2; ECOG 1, G8 13 → CGA placed; new-onset secondary diabetes (E13.9); EPI on pancrelipase 72,000 units (K86.81); status-post metal biliary stent for prior K83.1.' Document MEAT for each at the next encounter; place palliative care consult if not already in place

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