AAVBC

American Academy
of Value Based Care

Heart Failure

Quick Reference Guide

2025

AAVBC Heart Failure Quick Reference Guide

1. CLINICAL SNAPSHOT

Definition: Syndrome of cardiac structural/functional impairment causing inadequate output and/or elevated intracardiac pressures → dyspnea, fatigue, fluid retention; categorized by EF (HFrEF ≤40%, HFmrEF 41–49%, HFpEF ≥50%)[1]

ICD-10 Codes: I50.2x (systolic/HFrEF), I50.3x (diastolic/HFpEF), I50.4x (combined), I50.81x (right HF), I50.84 (end-stage); I11.0 (hypertensive with HF)[2]

HCC V28 Mapping: HCC 226 (Heart Failure, Except End-Stage and Acute) HFrEF I50.2x, HFpEF I50.3x, combined I50.81x, right HF I50.81x with RAF (0.36); **HCC 224** (Acute on Chronic Heart Failure) I50.23 (systolic) & 150.33 (diastolic) with RAF (0.36); **HCC 222** (End-Stage HF) I50.84 with RAF (2.505.)[3–5]

Prevalence: approx 127.9M Americans (48.6%) ≥20 years of age have CVD, including coronary heart disease, heart failure, stroke, or hypertension. 10-14% adults over 70 have a form of HF. Depending on the stage of disease, costs $8,000-$50,000+ ($24,383 median) PMPY, 30-day readmission 23.5%, 5-year mortality ~50%[6–8]

2. RECOGNITION & DIAGNOSIS

Medicare Screenings[9-11]

Test	Coverage	Frequency	Code (estimated cost)	Notes
Echo complete	Covered if suspected or established HF	PRN, Annual if HF	CPT 93306 ($380)[9]	Document EF%, includes 2D, M-mode, spectral & color Doppler
BNP/NT-proBNP	Covered with symptoms	PRN	CPT 83880 ($45)[10]	Age-adjust cutoffs
ECG 12-lead	Covered for HF evaluation/management	Baseline + PRN	CPT 93000 ($17)[11]	Check QRS width
6-minute walk	Covered to assess functional capacity/response to therapy	Baseline + PRN	CPT 94618 ($45)[12]	Ensure standardized protocol; capture distance, SpO_2, HR, symptoms

Subtle Early Signs in Adults >65 yrs

- **Nocturia**→ Early non-cardiac symptom; daytime recumbency improves renal perfusion[12]
- **Fatigue mistaken for aging** → Check BNP >35 pg/mL or NT-proBNP >125 pg/mL even if asymptomatic[1]
- **Rapid weight gain (≥2–3 lb/24 hr)** → early fluid retention[1]
- **Bendopnea** → Dyspnea within 30 seconds of bending forward (specificity 88%, sensitivity 29%)[13]
- **Cognitive decline** → 1.6x dementia risk with HF[14]
- **Abdominal bloating/early satiety** → Right heart failure causing hepatic congestion[1]

Geriatric Risk Factors for Stage B or Higher

Factor	Odds or Hazard Ratio	Notes
Polypharmacy (>5 meds)[15]	OR 2.24	Each additional med ↑ fall and rehospitalization risk; reconcile meds every visit; taper non-essential agents.
Frailty[16]	HR 2.8	Independently predicts progression to overt HF. Screen with functional exercise; consider early cardiac rehab/PT referral
Cognitive impairment[16]	OR 4.14	Cognitive deficits often signal neurohormonal dysfunction or hypoperfusion. Evaluate adherence, safety, driving, and caregiver needs.
Falls History/Orthostatic hypotension[16,17]	OR 1.5-2.0	HF & arrhythmias double fall risk; evaluate orthostatic BP, diuretic load, and balance; review meds (loop diuretics, nitrates, beta-blockers).
Sleep apnea[18,19]	HR 2.2	Moderate–severe OSA doubled HF risk independent of BMI, age, and hypertension.

Red Flags - Urgent Action

- **Cardiogenic shock:** Sustained SBP <90mmHg ≥ 30min, cool/clammy, lactate >2mmol/L→ immediate ICU/ED transfer, begin vasopressor[1]
- **Severe dyspnea at rest, cyanosis**: SpO_2 < 90%, acute pulmonary edema→ activate ED/EMS; O_2 for hypoxemia; consider NIV[1,24]
- **Rapid weight gain:** ≥5 lbs/wk or ≥2 lbs/day → Immediate diuretic adjustment[1]
- **Syncope, acute confusion/delirium, or new fall** →ED evaluation; rule out hypoperfusion/arrhythmia; check lactate/ABG[1]

Diagnostic Thresholds

Test	Diagnostic Value	Notes
BNP[1]	≥100 pg/mL acute, >35 chronic	Sensitive marker for decompensation; obesity lowers values — interpret cautiously
NT-proBNP age <50[1]	≥450 pg/mL (acute)	Rule-in/rule-out acute HF
NT-proBNP age 50-75[1]	≥900 pg/mL (acute)	Rule-in/rule-out acute HF
NT-proBNP age >75[1]	≥1800 pg/mL (acute)	Rule-in/rule-out acute HF
ECG - Echo EF[1]	≤40% HFrEF, 41-49% HFmrEF, ≥50% HFpEF: E/e' > 9	Crucial for HF diagnosis. Reassess EF after ≥ 3 mo of GDMT or if clinical change; document category for coding
Chest Radiography[20]	Cardiomegaly, plural effusion	Pulmonary edema (cephalization of pulmonary vessels and Kerley B lines, w/ or w/o peribronchial cuffing)

Clues to Dig Deeper

- **GFR 50-59:** Repeat in 3mo with urine ACR; 50% have cardiorenal syndrome[1,20]
- **Unexplained anemia (Hgb <10):** Check ferritin <100 + TSAT <20% = iron deficiency in 50%[20]

- **ALT elevation:** NAFLD in 70% HF patients; consider SGLT2i/GLP-1 RA[21]
- **Elevated uric acid:** Gout risk with diuretics; check before starting[21]
- **Physical examination:** Arrhythmia, "extra heart sounds", narrow pulse pressure, diaphoresis, and peripheral vasoconstriction[1,20]
- **Medical History:** coronary artery disease, myocardial infarction, atrial fibrillation, hypertension, or obesity[20]

Common Oversights

- **Attributing dyspnea to "deconditioning"** → check BNP/NT-proBNP if any doubt[1,22]
- **Missing HFpEF (52% of all HF!)** → Use H2FPEF score: BMI>30 (2pts), HTN on ≥2 meds (1pt), AF (3pts), PASP>35mmHg (1pt), Age>60 (1pt), E/e'>9 (1pt); Score ≥6 = 90% probability[1,22]
- **"Normal" BNP in obesity** → BMI >35 falsely lowers by ≈40-60%; adjust cutoff[23]
- **HF + lung/systemic disease →** In flash PE/very early presentations, NP may be lower initially—treat clinically and repeat NP as needed[1]

Key Differentials in Elderly[1,15,18,20,21]

Presentation	Differential Diagnosis	Key Tests
Dyspnea on exertion	COPD/asthma vs **HF** vs anemia vs pneumonia	BNP/NT-proBNP, ECG, CXR, spirometry (if stable), CBC, basic metabolic panel, transthoracic echo
Edema/ascites	**HF** vs chronic venous insufficiency/lymphedema vs renal/hepatic disease vs meds (CCB, TZDs)	Echo, venous duplex, BMP, LFTs/albumin, urinalysis (protein), review meds
Fatigue/exertional intolerance	Depression vs hypothyroidism vs anemia vs **HF**	PHQ-9, TSH, CBC, BNP/NT-proBNP, echo if suspicion persists
Confusion	Infection (UTI, pneumonia) vs hypoglycemia/electrolyte disorder vs **low-output HF**/hypoperfusion vs meds (anticholinergics, sedatives)	Glucose first, vitals/orthostatics, BMP, UA ± culture, CXR if respiratory symptoms, consider BNP/echo if HF suspected
Syncope/presyncope	Arrhythmia (AF, brady, VT), aortic stenosis, orthostatic hypotension, medication effect (diuretics, vasodilators, β-blockers), **HF**	ECG, orthostatic BPs, troponin if ischemia, echo (valves/EF), Holter/event monitor as indicated

Comorbidity Screening[1,18,21,24]

Condition	Screening	Frequency
DM (~40% prevalence)	Hemoglobin A1c, fasting glucose (consider OGTT if borderline)	q3-6 months or with medication/intensity changes
CKD (~50% prevalence)	Serum creatinine +eGFR + urine ACR; if stage 3+: PTH/Vit D	Annually or more often if eGFR < 60 mL/min/1.73 m^2 or on RAASi/MRA
Depression (~20-40%)	PHQ-9 (score ≥ 10 = positive)	Annual or if functional decline noted

Condition	Screening	Frequency
Sleep apnea (~50%)	STOP-BANG or Berlin questionnaire → polysomnography if high risk	At baseline; repeat if weight gain > 10% or new daytime somnolence
Iron deficiency (30-50%)	Ferritin + Transferrin saturation; diagnostic if ferritin < 100 ng/mL or 100–299 + TSAT < 20%	Every 6–12 months or with symptom worsening

Staging/Severity by Frailty[1,15,21,25,26]

Status	NYHA Target	A1c Target	BP Target	Management Focus
Robust elderly	Aim for improvement to **I–II**	<7%	<130/80 mmHg if tolerated	Full GDMT (ARNI/ACEi/ARB, β-blocker, MRA, SGLT2i); optimize exercise and nutrition; manage comorbidities aggressively
Pre-frail	Maintain **II–III**; prevent decline	<8%	<140/90 mmHg; avoid symptomatic hypotension	Avoid overtreatment or rapid med escalation; review fall risk; deprescribe non-essential meds.
Frail	Prioritize comfort/quality of life	<8.5%	Avoid orthostatic symptoms rather than fixed target	Simplify regimen (fewer daily doses, stop duplications); consider home visits, palliative integration, and shared decision-making.

3. MEAT DOCUMENTATION ESSENTIALS[1,3-5,27-29]

MONITOR: "Daily weights: 182 lbs today (↑8 lbs from dry weight 174 lbs documented [past date]), BNP 850 pg/mL (↑ from baseline 340 on [past date, 2-4wks]), BP log shows SBP 95-105, NYHA Class III (dyspnea walking <1 block), 6MWT 180 meters (↓ from 350 meters 6mo ago)"

EVALUATE: "Echo 3/15/24: HFrEF40% by Simpson's biplane (decreased from 45% on [past date]), moderate MR, RVSP 45 mmHg, LAE 4.8cm; Physical exam: JVD 12cm at 45°, positive HJR, bilateral crackles to mid-lung fields, S3 gallop present, 2+ pitting edema to knees bilaterally; CXR shows cardiomegaly (CTR 0.6), pulmonary vascular congestion"

ASSESS: "Acute on chronic systolic heart failure (I50.23), HFrEF 40%, NYHA Class III, Stage C, due to medication non-adherence during holidays (missed 5 days of furosemide), complicated by stage 3a CKD (eGFR 52) and moderate functional MR, 10-pound weight gain over 4 days"

TREAT: "Admitted for IV diuresis: Furosemide 80mg IV BID with goal net negative 2L today, strict I&O, daily weights, 2g sodium diet; Optimizing GDMT: Started sacubitril/valsartan 24/26mg BID after 36hr ACE-I washout, continuing carvedilol 6.25mg BID (HR 68, BP tolerating), added spironolactone 12.5mg daily (K 4.2, Cr 1.4), initiated dapagliflozin 10mg daily (eGFR 52); Referred to HF clinic for follow-up in 7 days"

Clinical Documentation Elements

Reflecting clinical judgment, disease trajectory, and physiologic status

- **Link clinical relationship:** "Hypertensive heart disease with heart failure" (I11.0) NOT "HTN and HF" separately
- **Include onset:** Include timing and underlying cause to contextualize progression and management decisions "HF diagnosed 2018, ischemic etiology from prior anterior MI 2017"
- **Show control:** Using physiologic findings rather than nonspecific terms "Compensated, euvolemic, weight at dry weight" NOT just "stable"
- **Specify complications:** When comorbid conditions meaningfully interact with HF (eg, diabetes-related CKD), document them clearly (within the clinical narrative to reflect overall complexity and care needs [E11.22 for diabetic CKD with HF, not separate codes]

Reframing Common Documentation Shortcuts

Instead of...	Prefer documenting...
"Stable HF"	"Chronic HFrEF, EF 35%, NYHA II, weight stable at 165 lbs, no orthopnea"
"Exam normal"	"JVD flat at 30°, lungs clear to auscultation, no S3/S4, no peripheral edema"
"Doing well"	"Tolerating GDMT without hypotension (BP 118/72), K 4.3, Cr stable at 1.2"
"Noncompliant"	"Missed medications x3 days due to pharmacy closure, refills obtained today"

4. TREATMENT & REFERRAL QUICK GUIDE

Therapy Escalation Criteria[1,21,30,31]

Trigger	Action	Notes
New HFrEF diagnosis	Begin quadruple GDMT promptly (ARNI/ACEi/ARB, evidence β-blocker, MRA, SGLT2i); up-titrate as tolerated	Rapid sequencing saves lives, start multiple pillars in days–weeks rather than months
EF ≤35% after ≥3 mo of optimized GDMT	Refer for device eval: ICD for primary prevention; CRT if LBBB with QRS ≥150 ms (or ≥120 ms with specific criteria)	ICD ↓ mortality in ischemic/non-ischemic HFrEF; CRT improves survival/symptoms with wide LBBB
Persistent congestion (weight ↑, edema, orthopnea) despite oral loop	Switch to IV loop and/or add thiazide-type (e.g., metolazone) for sequential nephron blockade; assess adherence/dietary sodium	Consider diuretic resistance, renal function/K^+, and precipitating causes; escalate if no response.
K^+ ≥5.5 mEq/L limiting RAASi/MRA	Add patiromer($$$) or SZC($) to permit continuation/uptitration	Both agents effectively ↓ K^+; guidelines support use to maintain life-prolonging therapy. Monitor Mg^{2+} w/ patiromer; edema/Na^+ load awareness w/ SZC.

ACC/AHA 2022-Aligned Recommendations[1,21,32,33]

Clinical Scenario	First Choice	Target Dose	Alternative
HFrEF (initial or newly diagnosed)	Sacubitril/valsartan + β-blocker (Carvedilol/Metoprolol succinate/Bisoprolol) + MRA (Spironolactone or Eplerenone) + SGLT2i (Dapagliflozin or Empagliflozin)	• Sacubitril/valsartan 97/103 mg BID • Carvedilol 25 mg BID (50 mg BID if >85 kg) • Spironolactone 25 mg qd • Dapagliflozin 10 mg qd	Use ACEi if ARNI unavailable or not tolerated (start lisinopril 20–40 mg qd or enalapril 10 mg BID
HFmrEF (LVEF 41–49%)	Same 4 pillars as HFrEF (ARNI + β-blocker + MRA + SGLT2i)	Same targets as HFrEF but individualize uptitration	Weaker evidence
HFpEF (LVEF ≥50%)	SGLT2i + diuretics as needed	Dapagliflozin 10 mg qd or Empagliflozin 10 mg qd	Treat HTN, AF, obesity, OSA; avoid volume depletion
HF with ASCVD or Type 2 DM	Add SGLT2i first; consider GLP-1 receptor agonist (second) for ASCVD benefit	Dapagliflozin 10 mg or Empagliflozin 10 mg qd	GLP-1 RA (liraglutide 1.8 mg daily/semaglutide 1 mg weekly) reduces CV events and aids weight control.

Non-Rx Treatment Documentation

"Enrolled in Medicare-covered cardiac rehab (36 sessions over 18 weeks); Daily weight log provided with instructions to call if gain >3 lbs; Dietary consult for 2g sodium education (3 hours year 1 covered); Sleep study ordered for OSA screening (50% prevalence in HF); Vaccinations current (flu, pneumonia, COVID)"

When to Refer[1,21,]

Specialty	URGENT (<1 week)	ROUTINE (2-4 weeks)
HF/Advanced HF	≥2 admits in 6mo, NYHA IV, inotrope need, low output, or hypotension despite GDMT	EF ≤35% after ≥3 months GDMT, peak VO_2 <14 mL/kg/min, rising NT-proBNP, or persistent class III symptoms
Electrophysiology	Sustained VT/VF, syncope due to arrhythmia, recurrent ICD shocks, electrical storm	EF ≤35% for ICD/CRT, AF rate/rhythm control
Nephrology	Creatinine doubling, K^+ ≥6.0 mEq/L, or acute kidney injury with diuretics/RAASi	eGFR <30 mL/min/1.73 m^2 or decline >5 mL/min/year, persistent albuminuria (ACR >300 mg/g)
Palliative Care	Stage D HF with comfort goals, inotrope, or hospice consideration	Recurrent admissions, advanced frailty, or refractory symptom burden despite GDMT

Follow-up Timing[1,21,34]

- **New diagnosis**: 2–4 weeks for GDMT initiation/uptitration and safety labs. Early multi-drug sequencing is recommended
- **Post-discharge**: Within 7 days (reduces readmission 30%)
- **Medication change**: 2–4 weeks to assess symptoms, BP/HR, weight, and earlier labs for RAASi/MRA/diuretic changes (often at 1–2 weeks per drug class)

- **Stable controlled (NYHA class I-II)**: follow-up every 3–6 months or 6–12 months, based on judgment and patient risk level. Repeat echo if clinical status changes or ≥3 months after GDMT optimization to reassess EF/device eligibility.

Patient Education & Adherence Documentation

"Taught 'Heart Failure Zones': Green (baseline weight, no symptoms), Yellow (gain 3+ lbs, call clinic), Red (SOB at rest, chest pain = call 911); Demonstrated home BP monitoring technique; Medication adherence assessed—using pill box, pharmacy sync program enrolled; Written action plan provided in patient's language—document all education for RADV support"

Comorbidity Management[1,15,21,2]

Condition	Avoid	Reason	Alternative
EF <40% (HFrEF)	TZDs (pioglitazone, rosiglitazone)	Fluid retention, ↑ HF admission	Metformin if eGFR ≥30; add SGLT2i (dapagliflozin, empagliflozin) for CV benefit
eGFR <30mL/min/1.73 m²	Metformin	Risk of lactic acidosis; reduced clearance at low eGFR	GLP-1 RA (liraglutide, semaglutide) or insulin SGLT2i may be continued down to eGFR ≥20 if tolerated
Recurrent UTIs or genital infections	SGLT2i	Genital mycotic infections and UTIs may worsen	If intolerant, optimize other GDMT pillars (ARNI, β-blocker, MRA); review hygiene and fluid intake
Orthostatic hypotension	α-blockers (e.g., doxazosin, terazosin)	Syncope, falls, hypotension	Use other BP agents (ACEi/ARB/ARNI) if tolerated, amlodipine for hypertension
Gout or hyperuricemia	Loop/thiazide diuretics (high dose)	Increase serum urate, precipitate gout	Lower diuretic dose if possible; consider SGLT2i or losartan (mild uricosuric effect)
COPD or reactive airway disease	Nonselective β-blockers (carvedilol cautiously)	May cause bronchospasm	Prefer β1-selective agents (metoprolol succinate, bisoprolol)
CKD + hyperkalemia risk	NSAIDs, dual RAAS blockade	Worsen renal function / ↑ K^+	Continue single RAASi; monitor K^+ and creatinine; add patiromer or SZC if needed

Cost-Smart Options[35,36]

Brand	Generic/Alternative	Estimated Monthly Savings
Entresto	Lisinopril + spironolactone	~$600
Coreg CR	Carvedilol generic	~$200
Farxiga/Jardiance	Dapagliflozin generic	~$300
Lasix	Furosemide generic	~$30

Quality Metrics Tie-In[1,37,38]

Measure	Target	Impact
Evidence β-blocker at discharge/active for HFrEF	>95%	HEDIS/Stars measure; Class I therapy per AHA/ACC/HFSA; improves survival and rehospitalization; tracked in ACC/AHA performance measures.
ACE-I/ARB/ARNI prescribed for HFrEF	>90%	CMS quality bonus; Core Class I therapy; aligns with ACC/AHA performance measures and payer quality reviews; lowers mortality/hospitalization.
30-day all-cause readmission	<15%	Lower rates reduce patient harm and mitigate CMS HRRP hospital penalties (up to 3% of base DRG for excess readmissions)
Post-discharge follow-up (clinic/telehealth)	<7 days for ≥80% of HF discharges	Early visits are associated with ~30% lower 30-day readmission in Medicare cohorts; visit may qualify for TCM (CPT 99495/99496) billing.

5. CODING REMINDERS & CASE EXAMPLES[1-3,39,40]

Specificity Requirements

- **Type**: Must specify systolic (I50.2x), diastolic (I50.3x), or combined (I50.4x) HF
- **Acuity:** Acute (I50.x1), chronic (I50.x2), or acute on chronic (I50.x3)
- **Laterality:** Right HF (I50.81x) must specify if secondary to left (I50.814)
- **Stage:** Document Stage A-D (structural classification) and NYHA Class I-IV for functional limitation; Use ICD-10 150.84 for end-stage heart failure (NYHA IV/ACC D)

Annual Clinical Review and Confirmation

Ensuring the medical record reflects current heart failure status

- **Annual review**: Heart failure must be reassessed once per calendar year via face-to-face or synchronous audio-video encounter, with MEAT documented by 12/31.
- **Visit modality**: In-person or audio-video telehealth encounters qualify when they support meaningful assessment of symptoms, volume status, and GDMT response.
- **Clinical context**: Under HCC V28, HF risk varies by severity (acute/chronic ≈ 0.36; end-stage ≈ 2.505). Clinically present comorbidities (eg, diabetes with CKD, COPD) should be documented to reflect overall disease burden.

Good Documentation is Comprehensive Coding

Denial Reason	Fix
"CHF stable"	→ "Chronic systolic HF, EF 35%, NYHA II, euvolemic at 165 lbs"
Missing acute	→ "Acute-on-chronic HF, required IV furosemide 80mg BID"
No supporting data	→ Add exam findings, BNP value, echo date/EF

Unspecified type	→ Always document EF% to support systolic vs diastolic

EHR Tips

- **".HFMEAT"** template auto-populates EF from recent echo
- **Problem list:** Flag as "HCC_REQUIRED" for annual alerts
- **Best Practice Alert:** Fires when echo >12 months old
- **Order set:** "HF_ADMIT" includes all Medicare quality measures

Brief Case Examples

SUCCESS CASE:
"78yo female with acute on chronic systolic heart failure, with (insert symptoms) at rest, EF 28% (echo last performed[date]), NYHA III, 3rd readmission w/ 12 lb weight gain over 5 days, BNP 1847 (baseline 400), treated with IV furosemide 80mg BID achieving 3L diuresis, discharged on optimized GDMT"
Result: Proper ICD-10 150.84 maps HCC 222 capture (2.505 RAF = $26,058), quality measures met, clear RADV support

PITFALL CASE:
"82yo male with stable CHF, doing well"
Result: Increased documentation risk, potential $3,745 clawback, incomplete clinical picture (I50.23)
FIX: "82yo with chronic HFpEF (I50.32), EF 55% with E/e' 16 on echo 1/8/24, NYHA Class II (dyspnea with 2 flights stairs), H2FPEF score 7, managed with furosemide 40mg daily, weight stable at 178 lbs"

REFERENCES

1. Heidenreich PA, Bozkurt B, Aguilar D, et al. 2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure. *Circulation*. 2022;145(18):e895-e1032. doi:10.1161/CIR.0000000000001063
2. Centers for Medicare & Medicaid Services; National Center for Health Statistics. *ICD-10-CM Official Guidelines for Coding and Reporting, FY 2025*. Updated October 1, 2024.
3. Centers for Medicare & Medicaid Services. Risk Adjustment—Medicare Advantage: model information & software (V28). Updated October 24, 2024. https://www.cms.gov/medicare/payment/medicare-advantage-rates-statistics/risk-adjustment
4. Centers for Medicare & Medicaid Services. ACO REACH & KCC Models PY2025 Risk Adjustment (V24 and V28 overview). Published September 27, 2024. https://www.cms.gov/aco-reach-kcc-py2025-risk-adjust-paper
5. Centers for Medicare & Medicaid Services. *Risk Adjustment Documentation Guidelines*. CMS; 2024. https://www.cms.gov/files/document/risk-adjustment-technicalspecifications2024.pdf
6. Martin SS, Aday AW, Almarzooq ZI, et al. 2024 Heart Disease and Stroke Statistics: A Report of US and Global Data from the American Heart Association. *Circulation*. 2024;149(8). doi:10.1161/CIR.0000000000001209
7. Urbich M, Globe G, Pantiri K, et al. A Systematic Review of Medical Costs Associated with Heart Failure in the USA (2014-2020). *Pharmacoeconomics*. 2020;38(11):1219-1236. doi:10.1007/s40273-020-00952-0
8. Madanat L, Saleh M, Maraskine M, Halalau A, Bukovec F. Congestive Heart Failure 30-Day Readmission: Descriptive Study of Demographics, Co-morbidities, Heart Failure Knowledge, and Self-Care. *Cureus*. 2021;13(10):e18661. Published 2021 Oct 11. doi:10.7759/cureus.18661
9. Centers for Medicare & Medicaid Services. *Clinical Laboratory Fee Schedule*. CMS; 2024. https://www.cms.gov/medicare/payment/fee-schedules/clinical-laboratory-fee-schedule-clfs

10. Centers for Medicare & Medicaid Services. *Medicare Physician Fee Schedule (PFS) Look-Up Tool*. 2025. https://www.cms.gov/medicare/physician-fee-schedule/search/overview
11. Centers for Medicare & Medicaid Services. *Local Coverage Determinations (LCDs) and Articles for Cardiac Diagnostics*. 2025. https://www.cms.gov/medicare/coverage/determination-process/local
12. Fonarow GC, Yancy CW. Heart failure clinical presentation. Medscape. Updated September 6, 2023. https://emedicine.medscape.com/article/163062-clinical
13. Thibodeau JT, Turer AT, Gualano SK, et al. Characterization of a novel symptom of advanced heart failure: bendopnea. *JACC Heart Fail*. 2014;2(1):24-31. doi:10.1016/j.jchf.2013.07.009
14. Wolters FJ, Segufa RA, Darweesh SKL, et al. Coronary heart disease, heart failure, and the risk of dementia: A systematic review and meta-analysis. *Alzheimers Dement*. 2018;14(11):1493-1504. doi:10.1016/j.jalz.2018.01.007
15. American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. *J Am Geriatr Soc*. 2023;71(7). doi:10.1111/jgs.18372
16. Zheng PP, Yao SM, He W, Wan YH, Wang H, Yang JF. Frailty related all-cause mortality or hospital readmission among adults aged 65 and older with stage-B heart failure inpatients. *BMC Geriatr*. 2021;21(1):125. Published 2021 Feb 16. doi:10.1186/s12877-021-02072-6
17. Jansen S, Bhangu J, de Rooij S, Daams J, Kenny RA, van der Velde N. The Association of Cardiovascular Disorders and Falls: A Systematic Review. *J Am Med Dir Assoc*. 2016;17(3). doi:10.1016/j.jamda.2015.08.022
18. Yeghiazarians Y, Jneid H, Tietjens JR, et al. Obstructive Sleep Apnea and Cardiovascular Disease: A Scientific Statement from the American Heart Association. *Circulation*. 2021;144(3). doi:10.1161/CIR.0000000000000988
19. Gottlieb DJ, Yenokyan G, Newman AB, et al. Prospective study of obstructive sleep apnea and incident coronary heart disease and heart failure: The sleep heart health study. *Circulation*. 2010;122(4). doi:10.1161/CIRCULATIONAHA.109.901801
20. Colucci WS, Borlaug BA. Heart failure: Clinical manifestations and diagnosis in adults. In: Gottlieb SS, Dardas TF, eds. *UpToDate*. Waltham, MA: UpToDate Inc. Updated April 21, 2025. https://www.uptodate.com
21. McDonagh TA, Metra M, Adamo M, et al. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *Eur Heart J*. 2021;42(36):3599-3726. doi:10.1093/eurheartj/ehab368
22. Tsutsui H, Tsuchihashi K, Kinugasa Y, et al. Natriuretic peptides: role in the diagnosis and management of heart failure: a scientific statement from the Heart Failure Association of the European Society of Cardiology, Heart Failure Society of America and Japanese Heart Failure Society. *J Card Fail*. 2023;29(5):787-804. doi:10.1016/j.cardfail.2023.02.009
23. Bachmann KN, Gupta DK, Xu M, et al. Unexpectedly low natriuretic peptide levels in patients with heart failure. *JACC Heart Fail*. 2021;9(3):192-200. doi:10.1016/j.jchf.2020.10.003
24. Lichtman JH, Froelicher ES, Blumenthal JA, et al. Depression as a risk factor for poor prognosis among patients with acute coronary syndrome: Systematic review and recommendations: A scientific statement from the American Heart Association. *Circulation*. 2014;129(12). doi:10.1161/CIR.0000000000000019
25. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2024. *Diabetes Care*. 2024;47. doi:10.2337/dc24-S011
26. Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults. *J Am Coll Cardiol*. 2018;71(19). doi:10.1016/j.jacc.2017.11.006
27. Clinical Documentation Best Practices. AHIMA.org; 2024. https://bok.ahima.org/topics/clinical-documentation-integrity/
28. Centers for Medicare & Medicaid Services; National Center for Health Statistics. *ICD-10-CM Official Guidelines for Coding and Reporting, FY2024*. CMS.gov; 2024. https://www.cms.gov
29. Off of Inspector Gen. *Medicare Advantage RADV Report*. OEI-03-17-00470. 2023. https://oig.hhs.gov/documents/evaluation/10028/OEI-03-23-00380.pdf

30. Weir MR, Bakris GL, Bushinsky DA, et al. Patiromer in Patients with Kidney Disease and Hyperkalemia Receiving RAAS Inhibitors. *N Engl J Med*. 2015;372(3). doi:10.1056/nejmoa1410853
31. Packham DK, Rasmussen HS, Lavin PT, et al. Sodium Zirconium Cyclosilicate in Hyperkalemia. *N Engl J Med*. 2015;372(3). doi:10.1056/nejmoa1411487
32. Packer M, Anker SD, Butler J, et al. Cardiovascular and Renal Outcomes with Empagliflozin in Heart Failure. *N Engl J Med*. 2020;383(15). doi:10.1056/nejmoa2022190
33. McMurray J, Solomon S, Inzucchi S, et al. Dapagliflozin in Patients with Heart Failure and Reduced Ejection Fraction. *N Engl J Med*. 2019;381(21). https://doi.org/10.1056/NEJMoa1911303
34. Hernandez AF, Greiner MA, Fonarow GC, et al. Relationship between early physician follow-up and 30-day readmission among medicare beneficiaries hospitalized for heart failure. *JAMA*. 2010;303(17). doi:10.1001/jama.2010.533
35. GoodRx. *Prescription Drug Prices*. GoodRx.com; 2024. https://www.goodrx.com
36. Shrank WH, Rogstad TL, Parekh N. Waste in the US health care system: a systematic review. *JAMA*. 2019;322(15):1501-1509. doi:10.1001/jama.2019.13978
37. Centers for Medicare & Medicaid Services (CMS). *Hospital Readmissions Reduction Program (HRRP): Overview and Measures*. (Accessed 2025). https://www.cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientpps/readmissions-reduction-program
38. American Medical Association/CMS. *Transitional Care Management (TCM) Services CPT 99495/99496 (descriptor and billing guidance)*. (Accessed 2025). https://www.cms.gov/files/document/mln908628-transitional-care-management-services.pdf
39. American Academy of Professional Coders (AAPC). *Heart Failure Coding & Documentation 2025 Update*. Accessed October 2025. https://www.aapc.com/resources
40. National Committee for Quality Assurance (NCQA). *HEDIS & Stars: Heart Failure Quality Measures 2025*. https://www.ncqa.org/hedis

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