

How PROM Computes a PACE Risk Score

Methodology white paper v1.0 — from the diagnosis to the dollar CMS pays, with every step cited

Renovatio Intl, Inc — PROM

4 September 2026 · engine build r41-org-frailty · for PACE finance leaders, actuaries and auditors

Summary

A PACE organization is paid, for each Medicare participant, a county rate multiplied by the sum of that participant's risk score and the organization's frailty score. The risk score comes from CMS's Hierarchical Condition Category (CMS-HCC) model, which CMS publishes in full — software, coefficients and diagnosis mappings — every year. There is no separate “industry” model: every actuary, vendor and PACE organization that quotes a risk score computes it with CMS's model, and the only questions are whether the arithmetic is right and whether the last steps CMS applies before paying — normalization, the coding pattern adjustment, and the organization frailty score — are shown.

PROM computes the score with CMS's own tables, verifies its arithmetic against CMS's software before every release (840 of 840 scores, 120 of 120 diagnosis mappings at the last run), applies the PACE-specific model blend rather than the Medicare Advantage one, then normalizes, applies the coding pattern adjustment, blends, and adds the organization frailty score — in CMS's order, with CMS's rounding — and shows the raw score beside the paid-equivalent one. This paper sets out each step, the CMS document it comes from, a worked example, and what remains labeled rather than computed.

1. What CMS pays

42 CFR 460.180: CMS “makes a prospective monthly payment to the PACE organization of a capitation amount for each Medicare participant”; the amount “is based on the Part A and Part B payment rates established for purposes of payment to Medicare Advantage organizations” and is adjusted “based on a risk adjustment that reflects the individual's health status,” and “CMS ensures that payments take into account the comparative frailty of PACE enrollees relative to the general Medicare population.” The PACE Manual, chapter 13 §30.1, gives the formula: “Prospective payments are made up of the pre-ACA county rate, unadjusted for Indirect Medical Education (IME), and multiplied by the sum of the individual risk score and the organization frailty score.”

So: **payment = county rate × (risk score + organization frailty score)**. Everything below is about producing those two numbers the way CMS does.

2. The risk score, step by step

CMS's own training material (CSSC, *Risk Adjustment Methodology — Sample Risk Score Calculations*, Module 6) names the stages: **raw risk score** → **normalized risk score** → **MA coding-pattern-adjusted risk score** → **final blended risk score**. PROM's Methodology screen follows the same seven steps.

Step 1 — Diagnoses, not category labels. PROM takes the ICD-10 codes on the organization's accepted encounters (MAO-002 submissions gated by MAO-004 acceptance). It does not trust a supplied HCC column; it derives categories itself and reports where the two disagree.

Step 2 — Map to condition categories, per model. CMS's published ICD-10-to-CC mappings, with their age and sex edits, run separately for the 2017 CMS-HCC model (V22) and the 2024 model (V28), which map the same code differently and number their categories differently. PROM loads the mappings from the CMS model-software packages (2026 initial and midyear/final releases) and records each file's hash.

Step 3 — Hierarchies. A more severe category suppresses the less severe ones beneath it, so a condition is paid once. CMS's hierarchy tables: 79 rules in the 2017 model, 115 in the 2024 model.

Step 4 — Payment segment. CMS publishes seven coefficients for every variable: six community segments (aged or disabled × non-dual, partial-benefit dual, full-benefit dual) and long-term institutional. Age is "as of February 1st of the payment year" (Medicare Managed Care Manual, chapter 7 §70.2.3). Where the enrollment facts that decide the segment have not yet arrived (the MMR carries them), PROM assumes a segment and names the member under that assumption.

Step 5 — Sum the terms. Demographic factor for age, sex and segment; the coefficient of every surviving category; CMS's interaction terms for the combinations present (25 in the 2017 model, 11 in the 2024 model); and the 2024 model's payment-HCC-count and long-term-Medicaid terms. The sum is the **raw risk score** for that model.

Step 6 — Normalize and apply the coding pattern adjustment. "Divide the Raw Risk Score by the applicable model's normalization factor" and "multiply the normalized risk score by (1 – MA Coding Pattern Adjustment Factor)" (CSSC, CY2026 Rate Announcement user group, slides 33–34). CMS rounds the normalized score to three decimals (Module 6: "Divide raw score 1.365 by 2024 normalization factor 1.045 to get normalized score 1.30622", then "multiply rounded normalized score 1.306 by (1 minus MA coding pattern adjustment 0.059)"). The factors are set each April in the Rate Announcement:

Payment year	2017 model (V22)	2024 model (V28)	Coding pattern adjustment	Source
CY2026	1.187	1.067	5.90%	CY2026 Rate Announcement pp. 4–5
CY2027	1.202	1.079	5.90%	CY2027 Rate Announcement

Payment year	2017 model (V22)	2024 model (V28)	Coding pattern adjustment	Source
pp. 3–5				

The 2017-model factor exists only because PACE is still paid on that model; CMS’s CSSC deck labels it “(for PACE only)”. The coding pattern adjustment — “the statutory minimum MA coding pattern difference adjustment of 5.90 percent” — is applied, per the same CSSC deck (slide 34), “for both non-PACE and PACE organizations” to the Part C and ESRD functioning-graft models. It is not applied to Part D scores and not to the frailty score.

Step 7 — Blend at the PACE weights, then add frailty. PACE is on a slower transition to the 2024 model than Medicare Advantage. CY2026 Rate Announcement: “For PACE organizations: ... 10 percent of the risk score calculated using the 2024 CMS-HCC risk adjustment model and 90 percent ... using the 2017 CMS-HCC risk adjustment model.” CY2027: 50 percent each. Each model is scored, normalized and coding-adjusted on its own, then weighted (CMS, *Report to Congress: Risk Adjustment in Medicare Advantage*, December 2018: “A blended risk score is calculated by first calculating separate risk scores with each model in the blend then summing each risk score weighted by the proportion”). The organization frailty score is added last, un-adjusted.

3. The organization frailty score

CMS does not compute frailty per member. PACE Manual chapter 13 §30.3: the frailty score “is calculated at the contract-level, using the aggregate counts of ADLs among HOS-M survey respondents enrolled in a specific organization”; it is added “only for community-based and short-term institutionalized enrollees (i.e., the frailty adjustment for long-term institutionalized enrollees is zero)”; “Updated frailty factors are published in the Rate Announcement for the payment year in which they are first used.” CMS’s frailty memo of 11 May 2023: “CMS adds each plan’s frailty score to the risk score of non-ESRD, community residing enrollees aged 55 and over,” and “A flag on the Monthly Membership Report (MMR) will indicate that the frailty score has been applied.” The applied factor appears on the MMR in field 80, Part C Frailty Score Factor.

The construction goes back to CMS’s frailty model (Kautter and Pope, “CMS Frailty Adjustment Model,” *Health Care Financing Review*, Winter 2004–05; recalibrated in Kautter, Ingber and Pope, Winter 2008–09): residual expenditures not explained by the CMS-HCC model are regressed on counts of activities of daily living with difficulty, producing an additive factor per ADL group (0, 1–2, 3–4, 5–6), and “the MCO average frailty score is added to the risk score.” The HOS-M survey that supplies the ADL counts is fielded each summer and fall to community-residing, non-ESRD PACE participants aged 55 and over, and CMS notifies each organization’s score the following spring. Like the risk score, the frailty score is blended between the 2017-model and 2024-model factor sets at the PACE weights (CY2026 Rate Announcement: “90 percent of the frailty score calculated with the 2017 CMS-HCC model frailty factors and 10 percent ... 2024”).

PROM holds one frailty score per organization per payment year — entered by a Renovatio Admin from the CMS notice, or read from the MMR field once the data mart carries it — and

adds it to community, non-ESRD members aged 55 and over; long-term institutional members get zero. Until a score is on file PROM uses 0.129, the PACE minimum frailty score CMS published for PY2023, and labels every figure that rests on it as illustrative. PROM does not compute a frailty score from ADL data today; projecting next year's score from an organization's own assessments is a roadmap item that needs the published factor tables (Rate Announcement, Attachment III).

4. A worked example

One member of the demo tenant, community segment, CY2026. The figures are the engine's own output for member 001-M0009.

Step	2017 model (V22)	2024 model (V28)
Raw score (demographics + categories + interactions)	2.609	2.365
÷ normalization factor, rounded to 3 decimals	$2.609 \div 1.187 = \mathbf{2.198}$	$2.365 \div 1.067 = \mathbf{2.216}$
× (1 – 0.059)	$2.198 \times 0.941 = \mathbf{2.0683}$	$2.216 \times 0.941 = \mathbf{2.0853}$
× PACE weight	$\times 0.90 = 1.8615$	$\times 0.10 = 0.2085$
Blended paid-equivalent risk score	2.070	
+ organization frailty score (demo default, labeled)	+ 0.129	
Risk score + frailty	2.199	
× base rate × 12 (demo base \$1,500)	\$39,582 per year	

The raw blended score for the same member is 2.585; without the two adjustments the annual figure would have read \$52,700 with the old per-member frailty term — the “one-fifth high” the audit of 4 September 2026 identified and this build removed.

5. What the MMR settles

The Monthly Membership Report is CMS's statement of what it paid on. Its risk adjustment factor fields carry the final normalized, coding-adjusted, blended score; its factor type code names the segment CMS used; field 80 carries the frailty factor applied; and the rate fields carry the county rate. When the data mart holds MMR rows, PROM reconciles its computed score to CMS's per member and reads segment, frailty and rate rather than assuming them. Until then the screens say *assumed segment*, *illustrative frailty* and *demo base rate*, and the Data Sources page lists which CMS file removes which label.

6. Validation

Before every release PROM is run against CMS's own model software on sixty synthetic beneficiaries per model across all seven segments; every score must match to the third decimal. Last run 26 August 2026: 840 of 840 scores, 120 of 120 diagnosis-to-category derivations, largest difference 0.000000. A second test reproduces CMS's published sample calculation for the normalization and coding-adjustment sequence ($1.365 \div 1.045 - 1.306 - 1.228946$) and the CY2026 and CY2027 PACE blends by hand. Both tests ship with the software and re-run after any change to a coefficient table, a factor, or the blend.

7. What PROM still labels rather than computes

ESRD participants are scored under the community model and flagged; the ESRD model (2019 and 2023 versions, PACE blend 90/10 then 50/50, with its own normalization factors) is not yet implemented. New enrollees (fewer than twelve months of Part B entitlement) are scored as continuing enrollees; the new-enrollee segment is not yet implemented. The 2017-model share of the blend should draw on RAPS as well as encounter data, and the 2024-model share on encounter data and fee-for-service claims only; PROM scores both on the same accepted-encounter set until the mart distinguishes RAPS-sourced diagnoses. Diagnoses reported on unlinked chart review records for PACE center services — which CMS instructs PACE organizations to use, and which the CY2027 exclusion does not remove for PACE — are not yet read. Part D (RxHCC) revenue is not modeled. Each of these is a row on the Methodology screen with its status and the CMS citation.

8. Sources

CY2026 Rate Announcement (CMS, 7 April 2025) — cms.gov/files/document/2026-announcement.pdf · CY2027 Rate Announcement (CMS, 6 April 2026) — cms.gov/files/document/2027-announcement.pdf · CSSC, *Risk Adjustment for EDS & RAPS User Group: CY2026 Rate Announcement* (8 May 2025) and *Module 6: Risk Adjustment Methodology — Sample Risk Score Calculations* — csscooperations.com · Medicare Managed Care Manual, chapter 7 “Risk Adjustment” — cms.gov/regulations-and-guidance/guidance/manuals/downloads/mc86c07.pdf · PACE Manual, chapter 13 “Payments to PACE Organizations” — cms.gov/regulations-and-guidance/guidance/manuals/downloads/pace111c13.pdf · 42 CFR 460.180 — ecfr.gov · CMS HPMS memo, “2023 Frailty Scores and 2022 HOS/HOS-M ADL Results” (11 May 2023) — cms.gov/files/document/2023frailtyscoreshpmsmemo582023508g.pdf · CMS, *Report to Congress: Risk Adjustment in Medicare Advantage* (December 2018) — cms.gov · Kautter J, Pope GC, “CMS Frailty Adjustment Model,” *Health Care Financing Review* 26(2), 2004–05; Kautter J, Ingber M, Pope GC, “Medicare Risk Adjustment for the Frail Elderly,” *HCFR* 30(2), 2008–09 · HOS-M overview — hosonline.org · CMS 2026 and 2027 model software and ICD-10 mappings — cms.gov/medicare/payment/medicare-advantage-rates-statistics/risk-adjustment · Wakely, *Summary of CY2026 Final Rate Announcement* (16 April 2025) and *Summary of the CY2027 Advance Notice* (February 2026) — wakely.com · MACPAC,

“Understanding the Program of All-Inclusive Care for the Elderly,” June 2025 Report to Congress, chapter 4 · Urban Institute, *The PACE Payment System* (June 2024).

PROM is a reporting and workflow assistance platform. Its figures are informational aids; the organization remains responsible for everything submitted to CMS and for the final values used in any filing, and revenue figures should be reviewed by the organization’s CFO or actuary before use.