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hMetrix

ECIP Technical Review

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Webinar Recordings

All webinars will be recorded and available for download at

https://hscrc.maryland.gov/Pages/CareRedesign.aspx

Questions can be directed to

Care.Redesign@crisphealth.org

Agenda

- Episode Construction (15 minutes)
- Target Pricing (20 minutes)
- Reconciliation (20 minutes)
- Composite Quality Score (CQS) (15 minutes)
- Questions & Discussion (20 minutes)

Detailed specifications for most of today's content can be found on the CRS Portal:

ECIP Card > Technical References & Specifications

All numbers and examples in this presentation are for illustrative purposes only and do not represent real data for any hospital. Some examples have been simplified for brevity. See above specifications for full details of all steps.

Episode Construction

Clinical Episode Categories

Merged due to APR DRG conversion:

Clinical Episode under BPCI Advanced	Clinical Episode under ECIP
Cervical spinal fusion	Cervical spinal fusion / Combined anterior posterior spinal fusion / Spinal fusion (non-cervical)
Combined anterior posterior spinal fusion	
Spinal fusion (non-Cervical)	
Major joint replacement of the lower extremity	Major joint replacement of the lower extremity / Double joint replacement of the lower extremity
Double joint replacement of the lower extremity	
Lower extremity and humerus procedure except hip, foot, femur	Lower extremity and humerus procedure except hip, foot, femur / Major joint replacement of upper extremity
Major joint replacement of upper extremity	

Excluded due to low volume:

- Cardiac defibrillator
- Disorders of liver except malignancy, cirrhosis or alcoholic hepatitis

No outpatient episode categories

Included otherwise unmodified:

- Acute myocardial infarction (AMI)
- Back and neck except spinal fusion
- Cardiac arrhythmia
- Cardiac valve
- Cellulitis
- Chronic obstructive pulmonary disease (COPD), bronchitis/asthma
- Congestive heart failure (CHF)
- Coronary artery bypass graft surgery (CABG)
- Fractures, femur and hip/pelvis
- Gastrointestinal hemorrhage
- Gastrointestinal obstruction
- Hip and femur procedures except major joint
- Major bowel procedure
- Pacemaker
- Percutaneous coronary intervention (PCI)
- Renal failure
- Sepsis
- Simple pneumonia and respiratory infections
- Stroke
- Urinary tract infection (UTI)

Episode Construction - Summary

- All payments associated with inpatient admissions (anchor stay + readmissions) excluded
- Same basic episode inclusion / exclusion criteria and method as BPCI Advanced otherwise
- Payments standardized prior to target price generation to ensure comparability (same as BPCI Advanced)
- Payment update factor method used also the same as BPCI Advanced
    - Only exception hospital outpatient payments, which use a specific method to address GBR

Episode Construction - Overview

1. Identify potential anchor stays
    a) Triggered by inpatient anchor stays for the listed APR DRGs in each clinical episode category
    b) Limited to inpatient stays with positive standardized payment amounts
2. Construct post-anchor period
    a) 90 days following discharge from the anchor stay
    b) Episode shells truncated by beneficiary death date where appropriate
3. Exclude clinical episode shells
    a) Episodes with anchor stays that end outside the relevant period
    b) Episode post-anchor periods that end outside the relevant period
    c) Not continuously enrolled in Medicare Part A / B, covered by managed care plan (Medicare Advantage), or has a primary payer other than Medicare during episode period
    d) Beneficiary receiving ESRD services during episode period
    e) Beneficiary dies during anchor stay
    f) Anchor stay lasts 60 days or more
    g) Beneficiaries aligned with Next Generation ACO, MSSP Track 3, or ESRD Seamless Care Organization

Episode Construction - Overview

4. Assign services & associated payments
   a) Consider all Part A and B claims
   b) Limit to eligible claims
      i. Standardized payment amount greater than zero
      ii. Service dates overlap with at least one day of clinical episode or one day prior to clinical episode
5. Excluded payments
   a) All payments associated with inpatient anchor and readmission stays (*ECIP-specific*), including:
      i. New technology add-ons
      ii. All Part A and B payments occurring during inpatient readmissions based on excluded readmission MS-DRG list
   b) Blood clotting factors for hemophilia
   c) OPPS pass-through payments
   d) Carrier and Hospice per-beneficiary-per-month payments

Episode Construction - Overview

6. Prorate claims
    1. Identify claims that overlap with clinical episode but end after clinical episode to determine if subset of payments are assignable
    2. For assignable payments, prorate on per diem, GMLOS, or non-proration basis by PPS as appropriate
7. Calculate total clinical episode payment amounts
8. Calculate standardized payments for constructed episodes

Payment Standardization - Summary

- Preserves differences that result from health care delivery choices such as the:
  - Setting where the service is provided (e.g., physician office versus outpatient hospital)
  - Type of healthcare provider who provides the service (e.g., physician versus nurse practitioner)
  - Number of services provided in the same encounter
  - Outlier cases
- Excludes geographic differences in regional labor costs and practice expenses, as measured by hospital wage indexes and geographic practice cost indexes
- Excludes payment adjustments from special Medicare programs that are not directly related to resource use for the service (e.g. IME, DSH, VBP)
- Not intended to directly compare or 'penalize' Maryland hospitals for costs relative to other states or the rest of the nation – only to remove artifacts of prospective payment systems and geographic variation
  - Payments are re-normalized for in final step of target price calculation prior to reconciliation

Payment Standardization & Update Factors

- For all settings of care other than inpatient and outpatient, ECIP will utilize CMS' standardization and update factor logic in the calculation of target prices
- Hospital outpatient payments
  - Post-acute HOPD payments are included in episode spend calculations
  - Outpatient payments will be standardized and updated using a simplified approach developed specifically for the context of Maryland GBR payments

Episode Construction - Overview

9. Calculate setting-specific price update factors
10. Update standardized payments using CMS update factor method
11. Finalize baseline period clinical episodes
    a) Winsorize extreme values at 1st and 99th percentile
    b) Assign clinical episodes to ECIP hospitals in the clinical episode categories in which they have elected to participate
12. Finalize performance period clinical episodes
    a) Apply 3(a) and 3(b) above
    b) Allow no more than one clinical episode to occur at a given time for a beneficiary
    c) Always select the second clinical episode for MJRLE episodes
        i. The first such episode in an overlap case is canceled, regardless of whether or not the second occurs at a participating hospital

Target Prices

Target Price Calculation - Summary

- 'Anchored average blend' approach adapted from CJR program for ECIP
  - Robustness given Maryland episode sample sizes
  - Ease of explanation, reporting, and interpretation
  - Builds on experience with existing federal model
- Target prices:
  - Are hospital- and clinical episode category- specific
  - Are based on Maryland state-level data (anchor factors) and hospital-specific data (all other calculations) during the baseline period 2015 – 2017
  - Will be retrospectively updated to reflect actual, experienced case mix during performance period
- Hospitals must have > 30 episodes during the baseline period to be eligible to participate in a given clinical episode category
- In rare cases where the target price is above projected spend, a hospital will be ineligible to participate in that clinical episode category

Target Price Calculation - Overview

1. Construct episodes using the BPCI Advanced episode creation specification, excluding all payments associated with the anchor index hospitalization and any inpatient readmissions
2. Standardize and update episode payments using the CMS standardization specification
    a) Hospital outpatient payments are standardized using a modified method that acknowledges the GBR
3. Cap high-cost (payment) episodes at 3 standard deviations from the mean
4. Calculate hospital-specific pooled payment values (*P_PMT*) for each clinical episode category
    a) Pooled payment value is the unweighted mean standardized, capped payment across all episodes for that clinical episode category at that facility

Target Price Calculation - Overview

5. Using the Maryland mean standardized, capped payment amounts, calculate state anchor factors (*AFAC*) for each APR DRG – severity level within each clinical episode category
    a) Anchor factors are intuitively the resource utilization of each APR DRG – severity level relative to that of the highest volume APR DRG – severity level combination

6. Calculate hospital-specific anchor weights (*AWeight*) for each clinical episode category using the state anchor factors and hospital baseline episode volumes as weights

$$AWeight_{ce,h} = \frac{\sum_{drg,soi} N_h}{\sum_{drg,soi}(N_h * AFAC)}$$

7. Multiply the hospital-specific anchor weight (*AWeight*) by hospital-specific pooled payment (*P_PMT*) for each clinical episode category to generate blended, updated payment amount (*BUP*)

Target Price Calculation - Examples

State anchor factor (AFAC) calculation

$$AFAC_{X,Y,1} = \frac{4{,}375}{12{,}500} = .35$$

$$AFAC_{X,Y,2} = \frac{11{,}250}{12{,}500} = .9$$

$$AFAC_{X,Y,3} = \frac{12{,}500}{12{,}500} = 1$$

$$AFAC_{X,Y,4} = \frac{27{,}500}{12{,}500} = 2.2$$

Clinical Episode Category	APR DRG	Level of Severity	Baseline Period Volume (MD)	Mean Standardized Payment (MD)	AFAC (MD)
Episode X	DRG Y	1	9,800	$4,375	.35
Episode X	DRG Y	2	12,000	$11,250	.9
Episode X	DRG Y	3	17,800	$12,500	1
Episode X	DRG Y	4	7,500	$27,500	2.2

$AFAC_{X,Y,1}$ = anchor factor for episode category X, APR DRG Y, severity level 1, etc.

Target Price Calculation - Examples

Hospital anchor weight (AWeight) and blended payment (BUP) calculation

$$AWeight_{ce,h} = \frac{\sum_{drg,soi} N_h}{\sum_{drg,soi}(N_h * AFAC)}$$

$$P\_PMT_{ce,h} \approx \$14{,}000$$

$$BUP_{ce,h} = AWeight_{ce,h} * P\_PMT_{ce,h}$$

Clinical Episode Category	APR DRG	Level of Severity	Baseline Period Volume (Hosp)	Mean Standardized Payment (Hosp)	AFAC (MD)
Episode X	DRG Y	1	10 (5%)	$5,265	.35
Episode X	DRG Y	2	90 (45%)	$11,475	.9
Episode X	DRG Y	3	75 (37.5%)	$13,500	1
Episode X	DRG Y	4	25 (12.5%)	$28,350	2.2

$$AWeight_{ce,h} = \frac{10 + 90 + 75 + 25}{10 * .35 + 90 * .9 + 75 * 1 + 25 * 2.2} = .932 \quad \Rightarrow \quad BUP_{ce,h} = .932 * 14{,}000 = \$13{,}053$$

$AWeight_{ce,h}$ = anchor weight for given episode category ce at hospital h, etc.

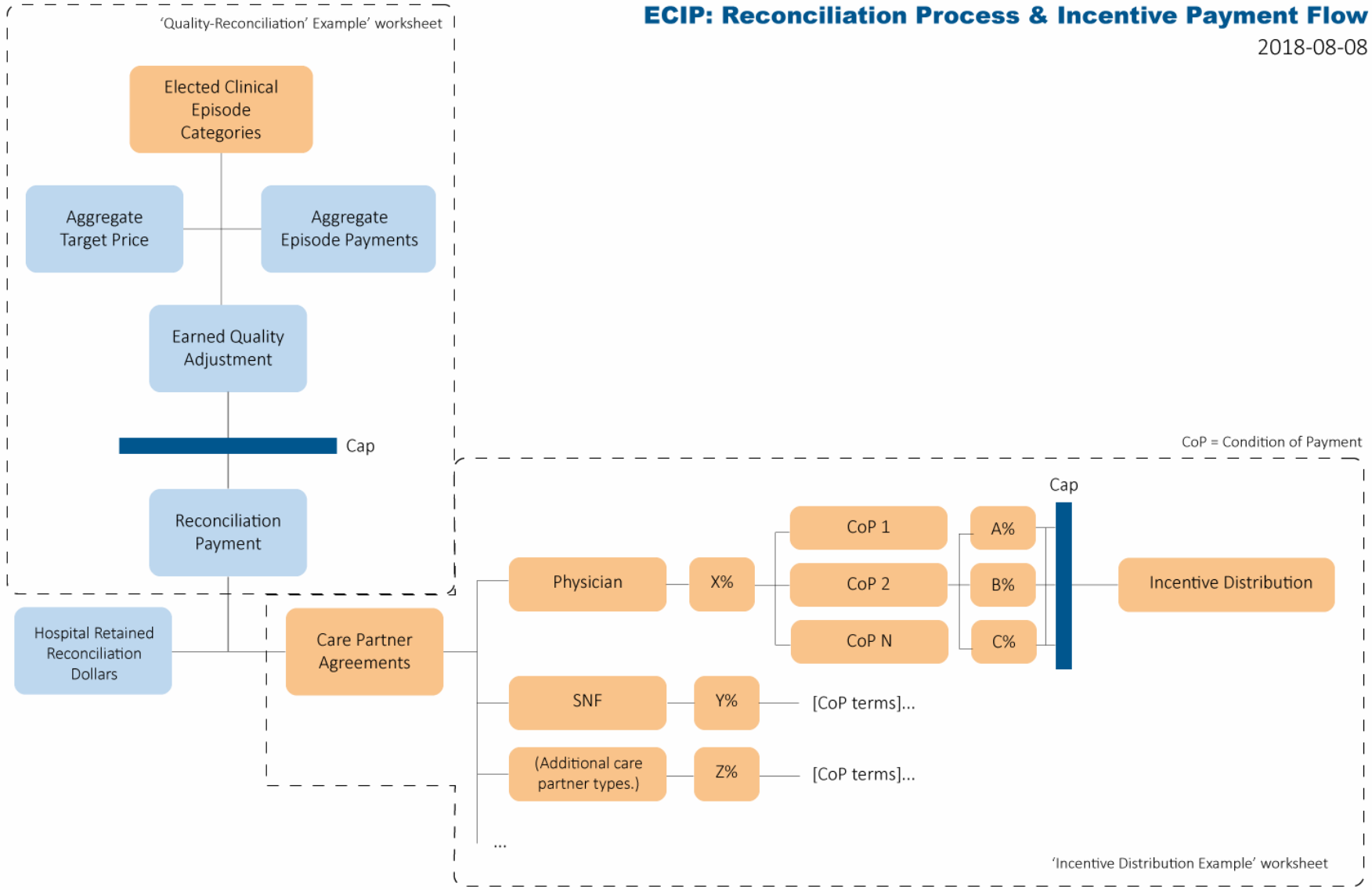
Target Price Calculation - Overview

8. Re-normalize target prices using ratio of actual to standardized charges
9. Apply ECIP 3% discount factor to arrive at prospective target price ($TP_{initial}$)
10. During reconciliation, retrospectively adjust hospital-specific weights to reflect actual, experienced case mix and generate final target price

All values shown in the Baseline Analysis Workbooks distributed are in 2018 dollars

Reconciliation

Payment Flow Summary - Review



ECIP Reconciliation Process

- No downside risk
- 20% program stop-gain
  - Calculated as percent of aggregate target price at episode initiator level
- Two performance periods per year, with corresponding reconciliation true-ups
- Two-stage (initial and final) reconciliation to allow for appeals process and retrospective quality adjustments
- Specific timeline for performance periods, reconciliation dates, and appeals process to be finalized and distributed

Reconciliation Calculation - Overview

1. At the clinical episode category level, re-calculate hospital-specific weights ($AWeight_{final}$) using actual, experienced case mix
2. At the clinical episode category level, calculate the final hospital-specific target prices using hospital weights calculated in (1) and update to reflect the most recent PPS updates
3. At the hospital level, calculate the total aggregate target price for the period across all selected clinical episode categories
4. At the hospital level, calculate the total, aggregate episode payments for the period across all selected clinical episode categories
    a) Payment adjustments & exclusions applied, including high-cost episode caps and extreme / uncontrollable circumstance flag

Reconciliation Calculation - Overview

5. Calculate the difference between the total aggregate episode payments and total aggregate target price as the initial incentive payment amount
    a) If the resulting value is negative, no incentive payment is earned
    b) If the resulting value is positive, check to see if the stop-gain limit is reached
        i. If the stop-gain limit is hit, cap the reconciliation payment at 20% of the total aggregate target price
        ii. Check against HSCRC incentive pool caps (developed separately)
6. Calculate the earned quality payment as 5% of the maximum earned incentive payment
    a) CQS earned incentive payments applied during subsequent true-ups after CQS calculation
7. Calculate true-up amounts *(subsequent reconciliations only)*
8. Reconcile ACO overlap *(subsequent reconciliations only)*
9. Calculate post-episode repayment amounts *(subsequent reconciliations only)*

Reconciliation Calculation - Example

Final target price calculation *(omits payment update step for simplicity)*

From our earlier slides:

$$AWeight_{ce,h} = \frac{\sum_{drg,soi} N_h}{\sum_{drg,soi}(N_h * AFAC)}$$

$$P\_PMT = \$14{,}000$$

Clinical Episode Category	APR DRG	Level of Severity	Baseline Period Volume (Hosp)	Measurement Period Volume (Hosp)	AFAC (MD)
Episode X	DRG Y	1	10 (5%)	5 (2.5%)	.35
Episode X	DRG Y	2	90 (45%)	80 (40%)	.9
Episode X	DRG Y	3	75 (37.5%)	105 (52.5%)	1
Episode X	DRG Y	4	25 (12.5%)	10 (5%)	2.2

$$AWeight_{initial} = \frac{10 + 90 + 75 + 25}{10 * .35 + 90 * .9 + 75 * 1 + 25 * 2.2} = .932 \Rightarrow TP_{initial} = .932 * 14{,}000 = \$13{,}053$$

$$AWeight_{final} = \frac{5 + 80 + 105 + 10}{5 * .35 + 80 * .9 + 105 * 1 + 10 * 2.2} = .996 \Rightarrow TP_{final} = .996 * 14{,}000 = \$13{,}947$$

Reconciliation Calculation - Example

Clinical Episode Category	Performance Period Volume	Final Target Price (TP_{final})	Aggregate Target Price	Mean Payment	Aggregate Payments
Episode A	200	$15,000	$3,000,000	$13,900	$2,780,000
Episode B	250	$10,000	$2,500,000	$10,150	$2,537,500
Episode C	150	$19,000	$2,375,000	$18,650	$2,331,250
Total			**$7,875,000**		**$7,648,750**

Maximum Earned Incentive Payment	CQS Earned Quality Percent	CQS Earned Quality Cap	Base Initial Incentive Payment
$226,250	5%	$11,313	$214,938

Reconciliation Calculation - Example

1. Calculate stop-gain

Stop-gain	**20%**
Aggregate Target Price	**$7,875,000**
Stop-gain Cap Amount	**$1,529,750**

2. Calculate quality adjustment

Composite Quality Score	**84.6%**
CQS Earned Quality Cap	**$11,313**
CQS Payment Earned	**$9,570**

3. Calculate final amount

Base Initial Incentive Payment	**$214,938**
CQS Payment Earned	**$9,570**
Total Incentive Payment	**$224,508**

4. Less…

True-Up Amount	**$0**
ACO Overlap Recoupment	**$0**
Post-Episode Repayment Recoupment	**$0**

True-Up Calculations

1. Not performed at initial reconciliation
2. Update initial reconciliation amounts and prior true-ups
3. Account for any updates in claims or newly processed claims not included in initial reconciliation
4. Incorporates quality measurement data to apply earned quality incentive payment

ACO Overlap Calculation

1. Prevents duplicate incentive payments from overlapping savings achieved for same beneficiary's care
2. Only applies to MSSP Track 1, 1+, and 2 ACO's
    1. Beneficiaries aligned with MSSP Track 3 and Next Generation ACO models cannot trigger ECIP episodes
3. Reduces ECIP incentive payment proportional to savings attributed to ACO, if ACO and ECIP participant both achieve savings
4. Full calculation steps available in the CRS Portal

ECIP Card > Technical References & Specifications > BPCI Advanced Reconciliation Specification > p. 25

Post-Episode Repayment Calculations

1. Ensures beneficiaries are not delayed or withheld medically-necessary care until after episode ends
2. Accounts for excessive expenditures immediately following the end of the 90-day episode period
    1. 91 to 120 days post-anchor stay (the 'post-episode monitoring period')
3. Attribution, payment aggregation, update factor methods used are all identical to those used elsewhere in ECIP
4. Post-episode spend for each episode compared to benchmark value; any amount exceeding the benchmark is included in post-episode repayment adjustment and subtracted from any positive incentive payment amount
5. Benchmark value is set as [state] average post-episode spend plus three standard deviations, for a given clinical episode category in the baseline period

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Composite Quality Score (CQS)

Incentive Payment Quality Adjustment

- Maximum 5% positive earned quality adjustment
- Adopts quality measures and calculation approach from BPCI Advanced
  - All measures weighted evenly within clinical episode categories
  - Single composite quality score calculated for each participant, weighted by volume in elected clinical episode categories
  - Scored based on performance scaled relative to highest and lowest performing peers
    - ECIP scaling (peers) based on scores of all Maryland hospitals
- Added to retrospective reconciliation payments allowing for collection, analysis, and benchmarking of administrative (claims-based) quality measures during performance period

Quality Measure Specifications

- All-Cause Hospital Readmission Measure (NQF #1789)
- Advanced Care Plan* (NQF #0326)
- Perioperative Care: Selection of Prophylactic Antibiotic: First or Second Generation Cephalosporin (NQF #0268)
- Hospital-Level Risk-Standardized Complication Rate (RSCR) Following Elective Primary Total Hip Arthroplasty (THA) and/or Total Knee Arthroplasty (TKA) (NQF #1550)
- Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Coronary Artery Bypass Graft Surgery (NQF #2558)
- Excess Days in Acute Care after Hospitalization for Acute Myocardial Infarction (NQF #2881)
- CMS Patient Safety Indicators (NQF #0531)

** Note that this is the modified CMS version of the measure per the BPCI Advanced specification; it differs slightly from the NQF-endorsed version*

Quality Adjustments – Sample Weights

Clinical Episode Category	Advance Care Plan	All-Cause Readmissions	RSCR TJA	AMI Excess Days	30-day CABG Mortality	CMS PSI	Abx Selection
AMI	25%	25%		25%		25%	
Cellulitis	33%	33%				33%	
CABG	20%	20%			20%	20%	20%

- All measures applicable to a given clinical episode category are weighted equally
- A given measure will have the same score for all clinical episode categories
- A full table of measure weights is available on the CRS Portal:

  ECIP Card > Program Materials > ECIP Quality Measure Weights (Excel document)

Composite Quality Score Calculation - Overview

1. For each quality measure, calculate the score for each hospital in Maryland during the measurement period
2. Determine the cohort minimum and maximum scores for each measure from the population of all Maryland hospitals
3. Using the highest and lowest scores for each measure, scale each individual hospital's score from 0 to 10 (10 being the highest score)

$$Scaled\ Quality\ Score_{q,h,y} = \frac{Raw\ Quality\ Score_{q,h,y} - Cohort\ Minimum_{q,y}}{Cohort\ Maximum_{q,y} - Cohort\ Minimum_{q,y}} * 10$$

where
h = hospital at which clinical episode is initiated
q = the quality measure
y = the measurement time period

Composite Quality Score Calculation - Overview

4. Within each clinical episode category, calculate a merged clinical quality score by taking an equally weighted average of the scaled measure scores for all applicable measures and scale back to 100
5. Calculate the final, single composite quality score at the hospital level by weighting the merged quality score for each clinical episode category using the volume of episodes in that category

$$CQS_{h,y} = \frac{\sum_{ce \in CE} Quality\ Score_{h,ce,y} * \#\ of\ Clinical\ Episodes_{h,ce,y}}{\#\ of\ Clinical\ Episodes_{h,y}}$$

where
h = hospital at which clinical episode is initiated
ce = clinical episode category, CE = all clinical episode categories
y = the measurement time period

Composite Quality Score Calculation - Example

Hospital Scores

Clinical Episode Category	Advance Care Plan	All-Cause Readmissions	RSCR TJA	AMI Excess Days	30-day CABG Mortality	CMS PSI	Abx Selection
AMI	90	74		81		91	
Cellulitis	90	74				91	
CABG	90	74			72	91	89

Cohort Minimum / Maximum Scores

Clinical Episode Category	Advance Care Plan	All-Cause Readmissions	RSCR TJA	AMI Excess Days	30-day CABG Mortality	CMS PSI	Abx Selection
AMI	22 / 98	17 / 90		32 / 91		34 / 97	
Cellulitis	22 / 98	17 / 90				34 / 97	
CABG	22 / 98	17 / 90			40 / 99	34 / 97	29 / 94

Composite Quality Score Calculation - Example

Measure score scaling and results

Advance care plan scaled score $= \frac{90 - 22}{98 - 22} = 8.95$

All-cause readmissions scaled score $= \frac{74 - 17}{90 - 17} = 7.81$

… (repeat for each measure)

Clinical Episode Category	Advance Care Plan	All-Cause Readmissions	RSCR TJA	AMI Excess Days	30-day CABG Mortality	CMS PSI	Abx Selection
AMI	8.95	7.81		8.31		9.05	
Cellulitis	8.95	7.81				9.05	
CABG	8.95	7.81			5.42	9.05	9.23

Composite Quality Score Calculation - Example

Final composite quality score calculation and results

Episode category blended score calculation

$$\text{AMI} = \frac{8.95 + 7.81 + 8.31 + 9.05}{4} * 100 = 85.27$$

… (repeat for each episode category)

Weighted CQS calculation

$$= \frac{(85.27*200 + 86.01*250 + 80.92*125)}{(200 + 250 + 125)} = 84.6$$

Clinical Episode Category	Blended Score	Volume
AMI	85.27	200
Cellulitis	86.01	250
CABG	80.92	125

Final Composite Quality Score
84.6

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Q & A

Next up:

Completing the IP Template & Supplemental Workbook (September 5)

ECIP Office Hours I (September 20)

ECIP – HCIP Connection (September 26)