![Milliman logo]
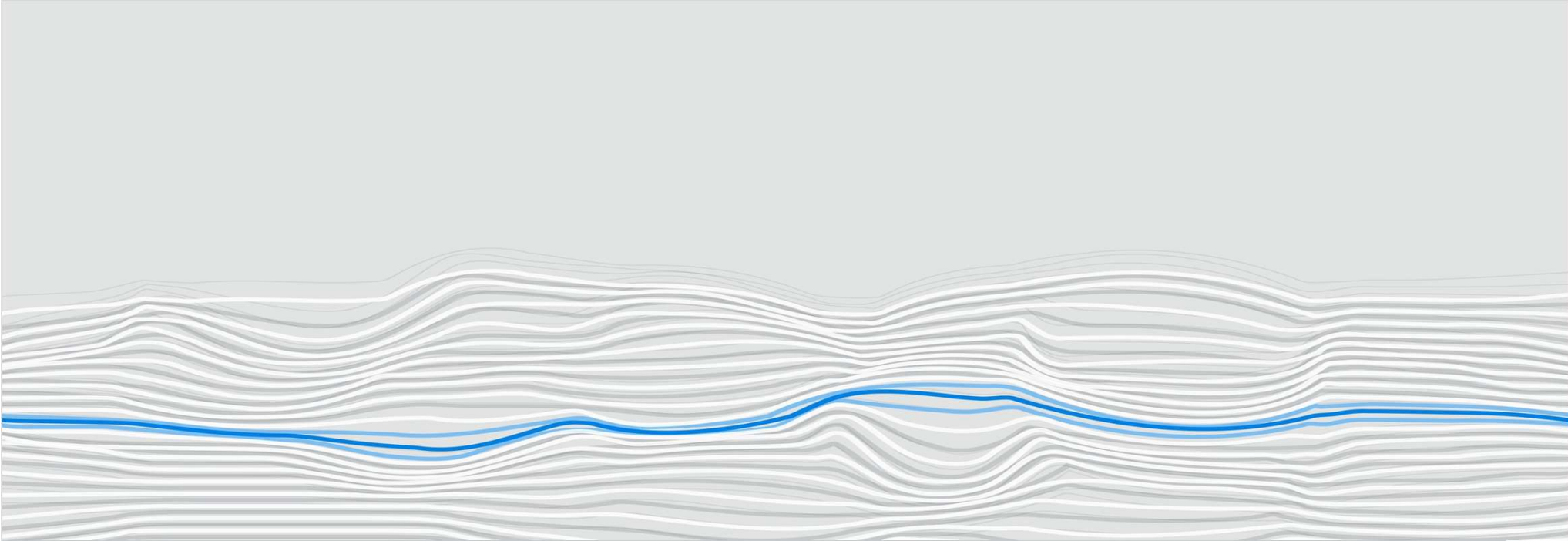
State of Hawai`i Med-QUEST Division

Preliminary APR DRG Model

APRIL 5, 2021

Contents

Milliman

Preliminary Model Methodology

Overview

- The preliminary inpatient prospective payment methodology using 3M's All Patient Refined Diagnosis Related Groups (APR DRGs) described in this presentation is draft for discussion purposes, and reflects preliminary payment policy options under consideration by the State of Hawai`i Med-QUEST Division (MQD)

- MQD proposes to implement the new APR DRG payment methodology for Medicaid fee-for-service inpatient payment effective January 1, 2022, replacing the current per diem payment methodology

- MQD also intends to direct the Medicaid managed care organizations (MCOs) to adopt the new APR DRG payment methodology under a §438.6(c) arrangement

- For more details on the preliminary APR DRG model, refer to the Milliman report developed for MQD titled "Preliminary Inpatient APR DRG Model" and dated November 17, 2020 (note the change in target implementation date since this report)

Goals and Objectives

- The new APR DRG payment methodology aligns with QUEST Demonstration goals:

Promote access, efficient utilization, stabilizing costs and transforming service delivery

| Provide standardized payment benchmark | Provide acuity measurement | Promote equitability across providers | Incentivize efficient care delivery | Transparency |

Milliman

DRG Overview

- DRGs are used by payers and providers to classify hospital inpatient stays into clinically meaningful diagnostic groups with similar average resource requirements

- DRGs provide a mechanism for healthcare payers to make a single case rate payment for similar services provided in a hospital inpatient stay

| DRG Product	Developer	Target Populations	Total DRGs	Newborn DRGs	Behavioral Health DRGs	Medicaid Program Use (# of States)	Other Payer Adoption
APR DRG Version 37	**3M (proprietary)**	All patients	**1,320** [1]	**112**	**72**	**27**	**Some commercial plans**
MS-DRG Version 37	3M/CMS (public)	Medicare (elderly)	759	7	13	13	Medicare, many commercial plans
TRICARE DRG Version 37	3M/MHS (public)	Service members and families	827	29	14	1	TRICARE

Proposed by MQD

- MQD proposes to use **APR DRGs** for Medicaid payment due to its enhanced granularity (particularly for key Medicaid service lines) and widespread adoption of across states

Note: 1. APR DRGs include 330 base DRGs and 4 severity of illness (SOI) levels within each DRG (ranging from 1-"Minor" to 4-"Extreme")

Milliman

Inpatient National Landscape
Which states' Medicaid programs have adopted DRGs for inpatient payment?

- APR DRG
- MS-DRG
- TRICARE DRG
- Other, Not DRG
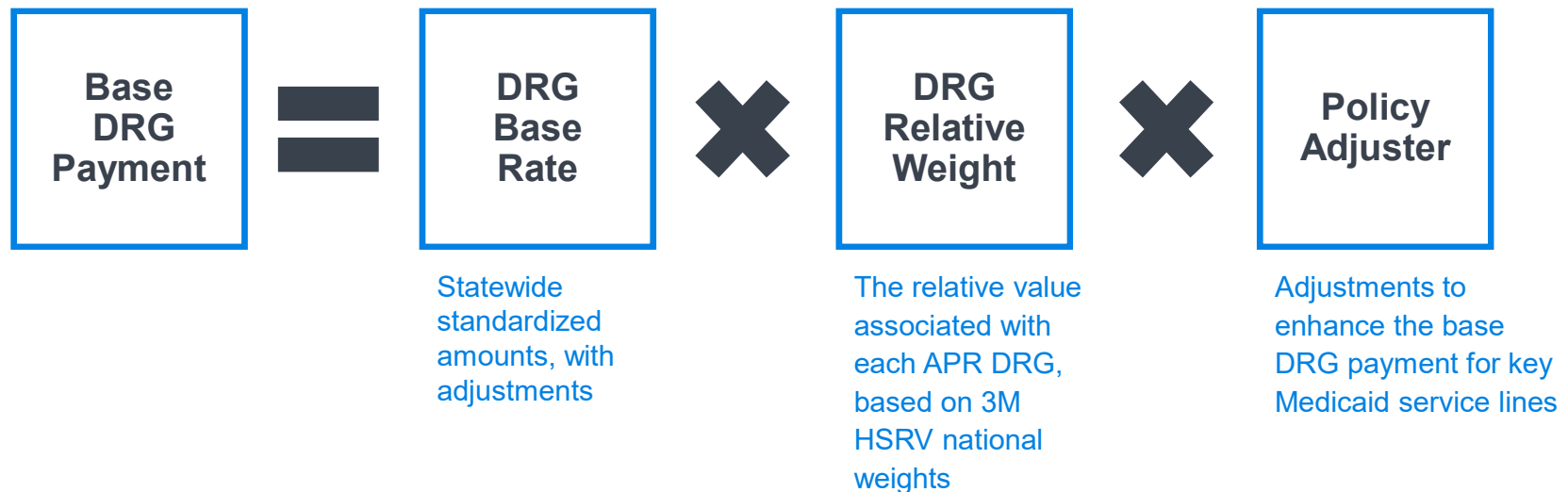- ⭐ Pursuing APR DRGs

Milliman
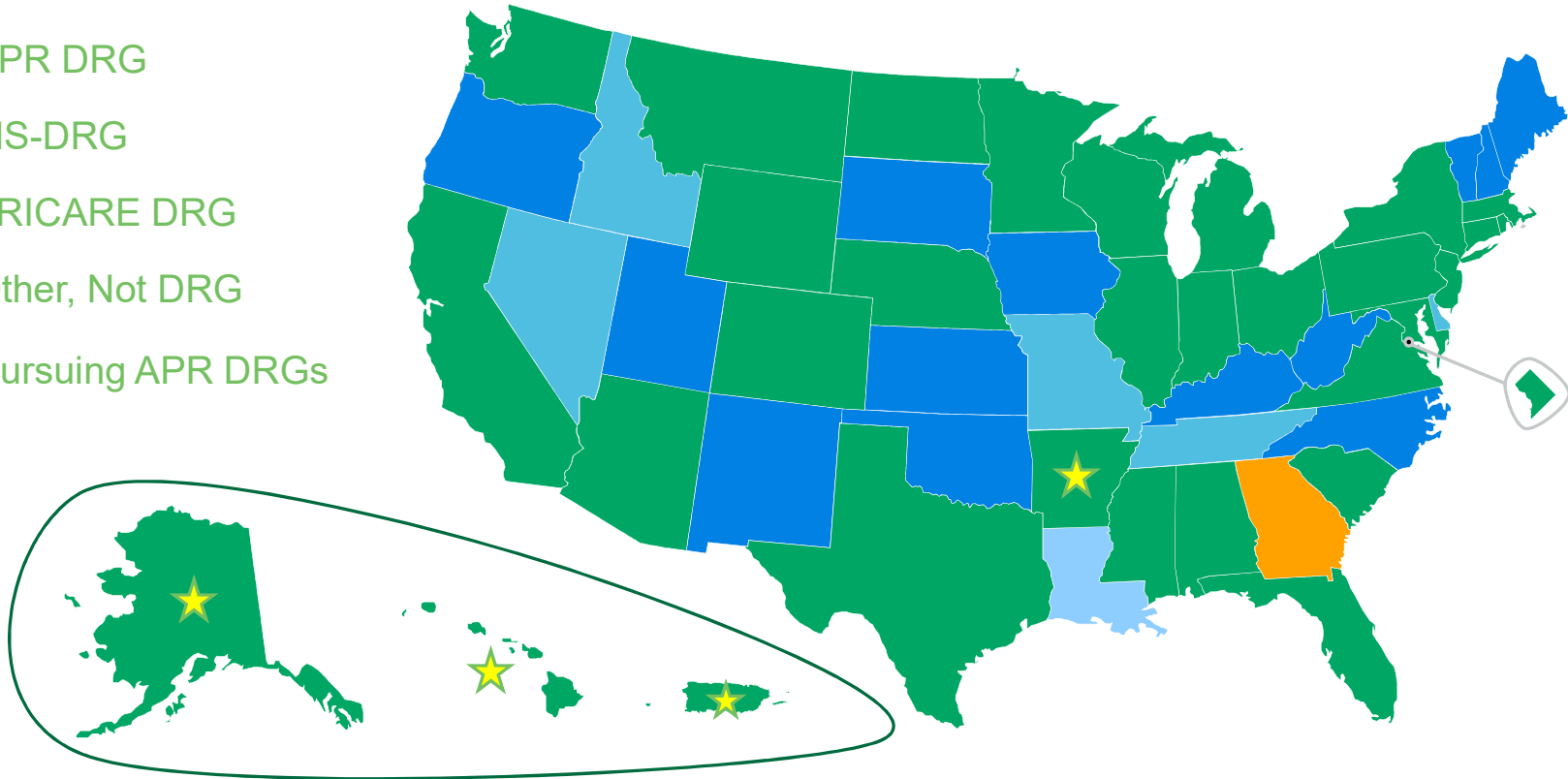
Modeling Basis

- The preliminary inpatient APR DRG model was developed using in-state acute hospital state fiscal year (SFY) 2018 Medicaid inpatient managed care encounter data and FFS paid claims data

  - New APR DRG methodology excludes Critical Access Hospitals, freestanding rehabilitation hospitals, freestanding psychiatric hospitals, out-of-state hospitals, and State of Hawaii Organ and Tissue Transplant (SHOTT) services

  - APR DRG modeling excludes Kaiser and Shriners hospital due to data issues, but these hospitals will be included the DRG payment methodology

  - APR DRG modeling includes waitlisted days and payments

- The preliminary model also includes the estimated costs of inpatient services for benchmarking purposes by applying hospital Medicare cost report data to the model discharge data at the detail line level

- The preliminary model parameters reflect national best practices, with Hawai`i-specific adjustments to meet the needs of the Hawai`i Medicaid program

Milliman

Model Base DRG Payment Methodology

Pricing Formula

- The preliminary APR DRG model includes a simulated base DRG payment for every model discharge, calculated as follows:

Base DRG Payment	=	DRG Base Rate	✕	DRG Relative Weight	✕	Policy Adjuster
		Statewide standardized amounts, with adjustments		The relative value associated with each APR DRG, based on 3M HSRV national weights		Adjustments to enhance the base DRG payment for key Medicaid service lines

Milliman

9

Model Base DRG Payment Methodology (Continued)

Preliminary DRG Base Rates

- Per MQD's direction, DRG base rates have been calculated using class-specific standardized amounts multiplied by hospital-specific indirect medical education (IME) factors
  - There are hospital classes for privately owned hospitals and Hawaii Health Systems Corporation (HHSC), in recognition of the separate Medicaid supplemental funding streams for each class
- Privately-owned hospitals preliminary standardized amount: **$11,578.24**
  - Modeled to be budget neutral for Medicaid managed care (where simulated APR DRG payments for model MCO encounter data resulted in $0 aggregate estimated payment change when compared to reported MCO paid amounts)
- HHSC hospitals preliminary standardized amount: **$6,368.03**
  - Modeled to be 55% of the private standardized amount (approximately budget neutral)
- IME factors based on the Medicare IPPS FFY 2021 operating IME factors
- *DRG funding pool used to model DRG base rates reflect historical MCO/hospital negotiated increases above FFS rates*

Milliman

Model Base DRG Payment Methodology (Continued)

Preliminary DRG Relative Weights

- Per MQD's direction, the model includes 3M's version 37.1 APR DRG Hospital-Specific Relative Value (HSRV) national weights

- 3M APR DRG HSRV national weights are calculated and published by 3M using national data

  - HSRV weighs are based on the average billed charges for each APR DRG, with adjustments applied to normalize billed charges for hospitals based on their charge relativity

  - Includes weights populated for all 1,320 APR DRG/SOI combinations

- MQD proposes using the 3M national weights in lieu of state-specific weights, due to the lack of sample size and administrative burden associated with using Hawai`i Medicaid data

Milliman

Model Base DRG Payment Methodology (Continued)

Policy Adjusters

- A key part of MQD's model considerations has been reimbursement levels for key Medicaid service lines with high Medicaid utilization, where hospitals have fewer opportunities to cost shift to other payers

- At MQD's direction, we have modeled the following Hawai`i-specific policy adjusters to enhance base DRG payments for key Medicaid service lines:
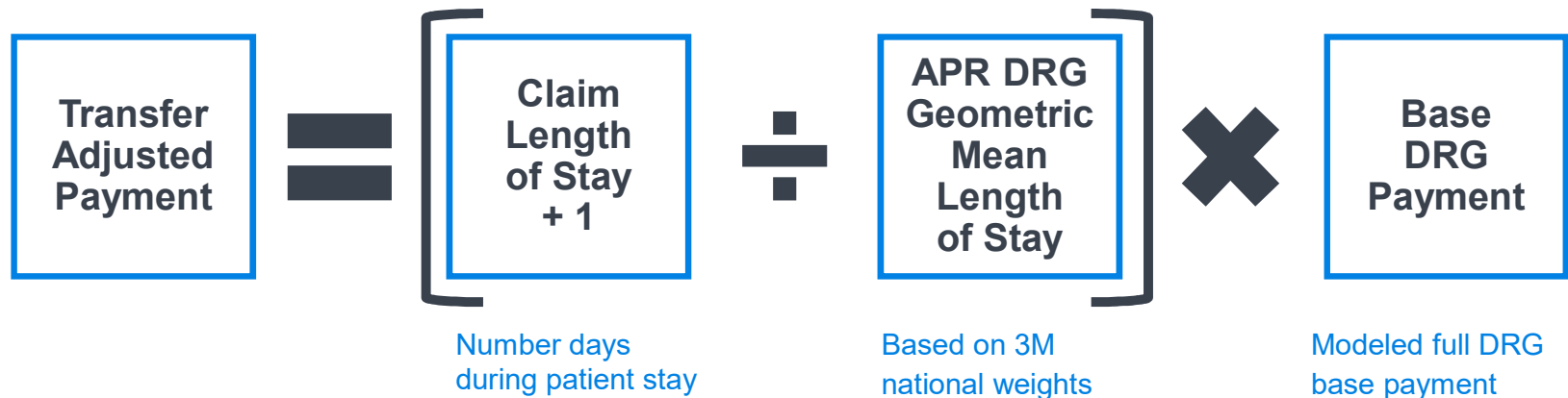
Service Line	Modeled Policy Adjuster
Other newborn (neonatal)	1.55
Well newborn	1.15
Maternity (normal delivery and cesarean section delivery)	1.15
Psychiatric and alcohol and drug abuse	1.15
Trauma (based on DRG description)	1.15
All other pediatric services (age 20 and under)	1.15
All other adult services	1.00 (no adjustment)

- Modeled policy adjusters generally result in estimated pay-to-cost ratios more consistent with the statewide average compared to the current system (**71%**)

  - For the other newborn (neonatal) policy adjuster, MQD sought to mitigate negative impacts for this key Medicaid service line, while still keeping reimbursement levels at enhanced levels

Milliman

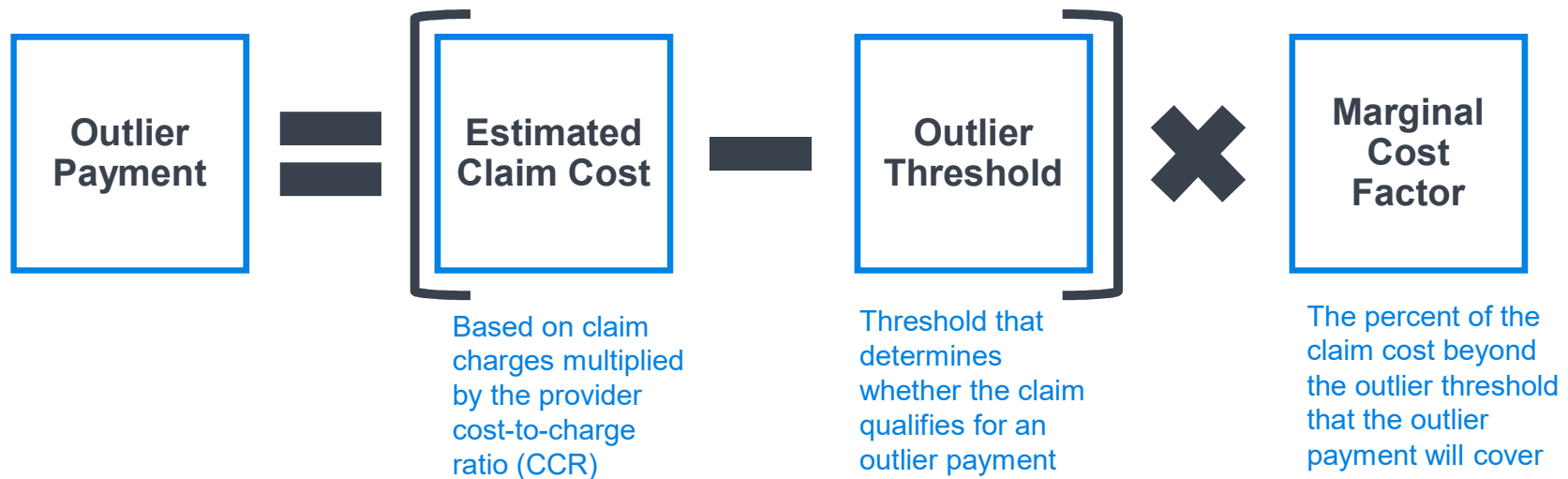# Model Transfer Payment Adjusted Payment Methodology

Pricing Formula

- Per MQD's direction, the model includes Medicare-style transfer adjusted payments for transfer-out cases to another hospital setting

- Transfer adjusted payment was modeled only if the transfer-out discharge length of stay plus 1 was less than the APR DRG geometric mean length of stay, as follows:

| Transfer Adjusted Payment | = | [Claim Length of Stay + 1 | ÷ | APR DRG Geometric Mean Length of Stay] | × | Base DRG Payment |

Number days during patient stay

Based on 3M national weights

Modeled full DRG base payment

Model Outlier Payment Methodology

Pricing Formula

- Per MQD's direction, the preliminary APR DRG model includes simulated outlier payments for extraordinarily high-cost cases

- Outlier payments were modeled for cases with estimated costs exceeding the outlier threshold in addition to (not in lieu of) the base DRG payment, as follows:

$$\text{Outlier Payment} = \left[\text{Estimated Claim Cost} - \text{Outlier Threshold} \right] \times \text{Marginal Cost Factor}$$

Estimated Claim Cost: Based on claim charges multiplied by the provider cost-to-charge ratio (CCR)

Outlier Threshold: Threshold that determines whether the claim qualifies for an outlier payment

Marginal Cost Factor: The percent of the claim cost beyond the outlier threshold that the outlier payment will cover

Milliman

Model Outlier Payment Methodology (Continued)

Outlier Parameters

- Per MQD's direction, outlier payment parameters were modeled to result in simulated outlier payments of approximately 10% of total simulated APR DRG payments, consistent with the range of outlier payment targets used by several Medicaid agencies

- Preliminary modeled outlier thresholds were based on a **$58,000** "fixed loss amount" added to the base DRG payment

- Preliminary modeled outlier payments based on "marginal cost factors" applied to discharge costs exceeding the outlier threshold

  - Preliminary modeled marginal cost factor was **75%** for SOI levels 1-2 and **85%** for SOI levels 3-4

  - Discharge costs used for outlier modeling were based on Medicare IPPS outlier CCRs applied to billed charges

- Outlier CCRs will be based on the Medicare IPPS FFY 2021 combined operating and capital outlier CCRs

Milliman

Next Steps

- Conduct hospital and MCO stakeholder meetings, including sharing the model methodology, rate factors, and estimated fiscal impacts

- Finalize policy decisions based on stakeholder feedback, including:
  - Inclusion of services currently paid separately from acute per diem
  - Transitional adjustments to supplemental payments
  - DRG update schedule

- Conduct FFS implementation (MMIS, public notice, billing guidelines, CMS approval, etc.)

- Share final APR DRG model parameters with stakeholders (rates, weights, grouper specifications, DRG calculator, etc.)
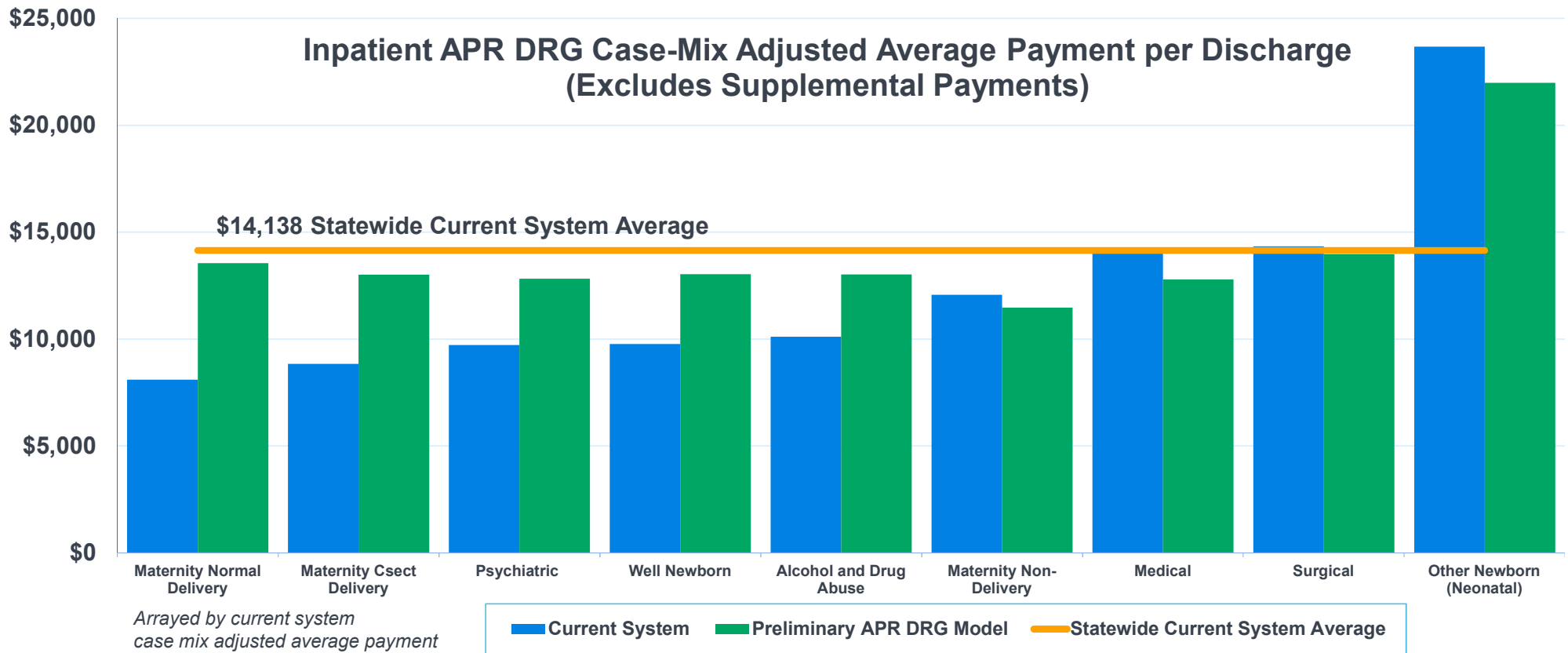
Milliman

Preliminary Model Impacts

Preliminary APR DRG Model Estimated Impact

- **Actual payments under APR DRGs will differ from the simulated payments in this preliminary modeling**

  - Reasons for differences include, but are not limited to, final MQD policy decisions, final APR DRG payment parameters adopted by MCOs, negotiated rates between hospitals and MCOs, and future changes in enrollment, inpatient utilization, inpatient service mix, hospital documentation and coding, hospital chargemasters, COVID-19 impacts, and other factors

  - Preliminary APR DRG modeling does not include estimated changes to Medicaid supplemental payments that may be impacted by payment changes under APR DRGs

- Estimated payment impact shown as follows is expressed as a comparison of the case mix adjusted average payment per discharge and pay-to-cost ratios

  - Case mix adjusted average payment is based on the average payment per discharge divided by APR DRG case mix, which allows a comparison of relative reimbursement levels after adjusting for differences in volume and case mix
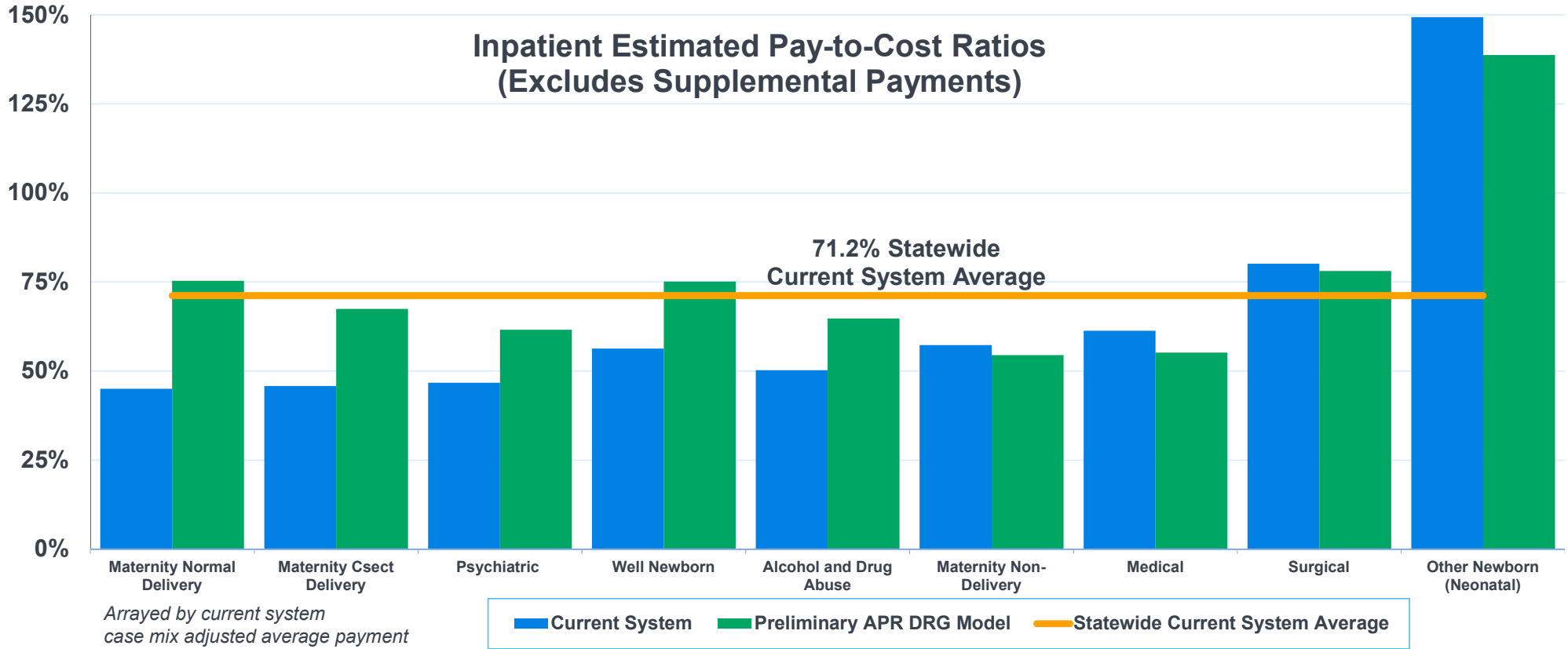
Milliman

Estimated Payment Impact
Service line

Inpatient APR DRG Case-Mix Adjusted Average Payment per Discharge (Excludes Supplemental Payments)

$14,138 Statewide Current System Average

Categories: Maternity Normal Delivery, Maternity Csect Delivery, Psychiatric, Well Newborn, Alcohol and Drug Abuse, Maternity Non-Delivery, Medical, Surgical, Other Newborn (Neonatal)

Arrayed by current system case mix adjusted average payment

Legend: ■ Current System ■ Preliminary APR DRG Model — Statewide Current System Average
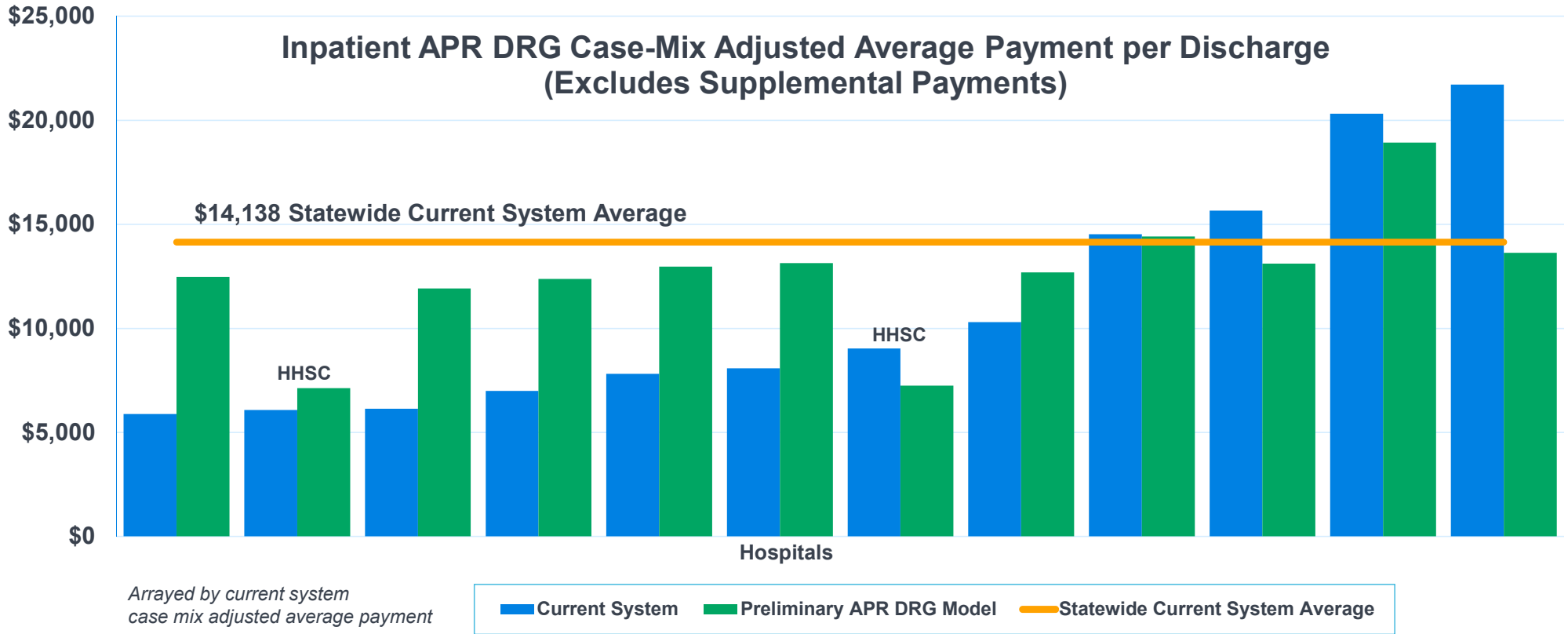
Note: Case mix based on 3M APR DRG version 37.1 HSRV national weights. Based on SFY 2018 Hawai`i Medicaid managed care encounters and FFS paid claims, excluding ABD dual member claims, Kaiser hospital and MCO claims, hospitals without Medicare cost report data in HCRIS, freestanding psychiatric and rehabilitation hospitals, out-of-state hospitals, hospitals with missing or invalid provider IDs, and claims where a valid APR DRG could not be assigned.
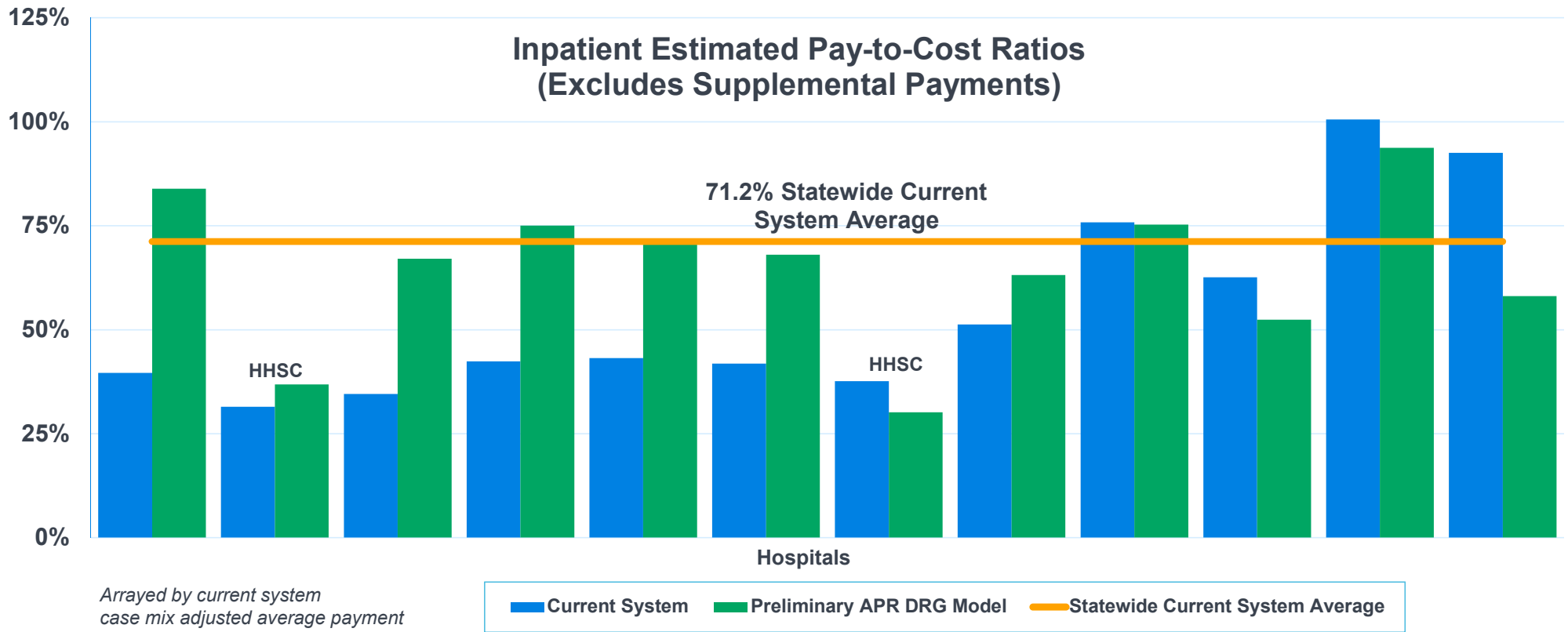
Milliman

19

Estimated Pay-to-Cost Ratios
Service line

Inpatient Estimated Pay-to-Cost Ratios
(Excludes Supplemental Payments)

71.2% Statewide
Current System Average

Arrayed by current system case mix adjusted average payment

Legend: Current System | Preliminary APR DRG Model | Statewide Current System Average

Categories: Maternity Normal Delivery, Maternity Csect Delivery, Psychiatric, Well Newborn, Alcohol and Drug Abuse, Maternity Non-Delivery, Medical, Surgical, Other Newborn (Neonatal)

Milliman

Estimated Payment Impact
In-state short term acute hospitals

Inpatient APR DRG Case-Mix Adjusted Average Payment per Discharge (Excludes Supplemental Payments)

$14,138 Statewide Current System Average

HHSC

HHSC

Hospitals

Arrayed by current system case mix adjusted average payment

■ **Current System** ■ **Preliminary APR DRG Model** — **Statewide Current System Average**

Note: Case mix based on 3M APR DRG version 37.1 HSRV national weights. Based on SFY 2018 Hawai`i Medicaid managed care encounters and FFS paid claims, excluding ABD dual member claims, Kaiser hospital and MCO claims, hospitals without Medicare cost report data in HCRIS, freestanding psychiatric and rehabilitation hospitals, out-of-state hospitals, hospitals with missing or invalid provider IDs, and claims where a valid APR DRG could not be assigned.
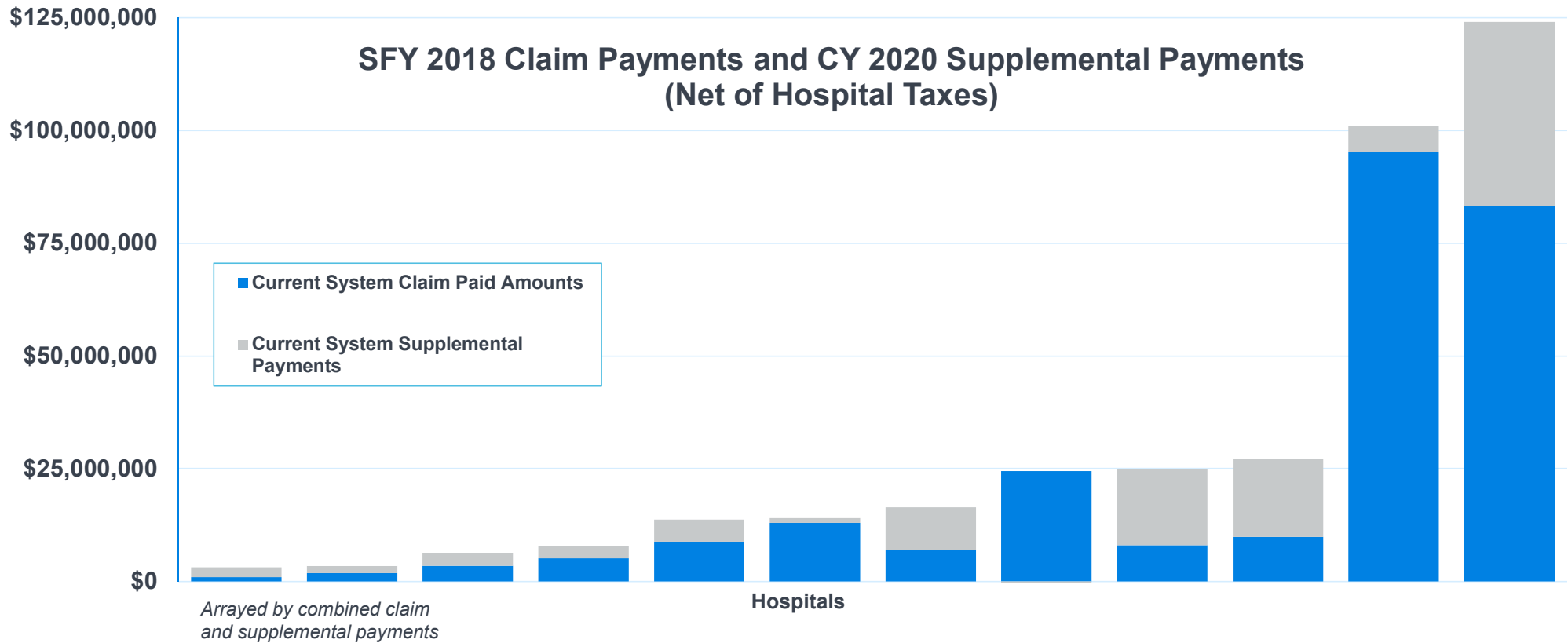
Milliman

Estimated Pay-to-Cost Ratios
In-state short term acute hospitals

**Inpatient Estimated Pay-to-Cost Ratios
(Excludes Supplemental Payments)**

71.2% Statewide Current System Average

HHSC

HHSC

Hospitals

*Arrayed by current system
case mix adjusted average payment*

Current System **Preliminary APR DRG Model** **Statewide Current System Average**

Milliman

Total Medicaid Inpatient Hospital Funding
Inpatient claim and supplemental payments under the current system

**SFY 2018 Claim Payments and CY 2020 Supplemental Payments
(Net of Hospital Taxes)**

■ **Current System Claim Paid Amounts**

■ **Current System Supplemental Payments**

Hospitals

*Arrayed by combined claim
and supplemental payments*

Milliman

Transitional Adjustments

- To help mitigate impacts under APR DRGs, MQD is proposing transitional adjustments to supplemental payments effective SFY 2022:

| Private Access Payments	HHSC Directed Payments	Quality Pool Payments
- Currently based on each Private hospital's Medicaid managed care "shortfall" (gap between estimated payments under **Medicare** and Medicaid payments) - *MQD proposes to update the Medicaid shortfall calculation to apply the APR DRG model estimated impacts*	- Currently based on each HHSC hospital's Medicaid managed care shortfall (gap between (gap between estimated **costs** and Medicaid payments) - *MQD proposes to update the Medicaid shortfall calculation to apply the APR DRG model estimated impacts*	- Currently a $42.1 million payment pool - *MQD is proposing material increases*

- Supplemental payment changes subject to final MQD policy decisions, stakeholder discussions, and approval by the state legislature and CMS

Milliman

Example Inpatient Access Payment Adjustments
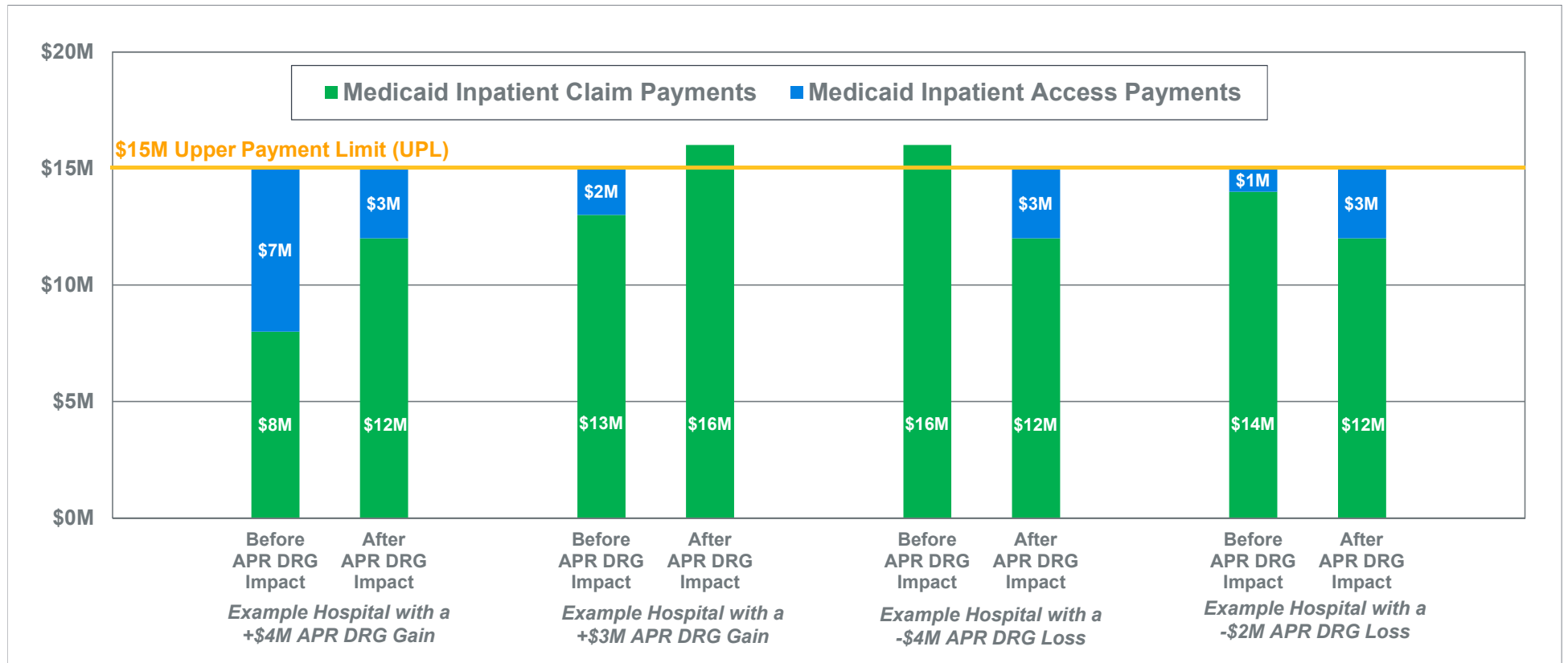
- Each of these example hospitals (not based on actual amounts) have a $15 million inpatient UPL. Note the Medicaid shortfall calculation includes dual-eligibles.

Billing Considerations

- APR DRGs require more complete and accurate reporting on inpatient claims:
  - Member information (birthdate, sex, etc.)
  - Hospital NPI
  - Service date range
  - ICD-10 diagnosis codes (with Present on Admission codes) and procedure codes (with dates)
  - Birth weight (value code 54)
  - Patient discharge status
  - Billed charges

- In addition, MQD will require providers to report the following for informational purposes:
  - The Occurrence Span Code for waitlisted days (for example, 74 for ICF level of care and 75 for SNF level of care)
  - ICD-10 diagnosis codes for problems related to housing and economic circumstances (for example, Z59)

- Hospitals are **not** required to license the 3M APR DRG software or report APR DRGs when submitting claims in order to be paid (however, hospitals may find it beneficial to obtain the software to know the expected APR DRG)

- Interim billing should reflect updates to patient diagnosis and procedure codes

Limitations and Qualifications

This presentation is intended to facilitate live discussion with Med-QUEST (MQD) and Hawai`i hospitals and should not be relied upon as a stand-alone document. This presentation should be considered along with the Milliman report developed for MQD titled "Preliminary Inpatient APR DRG Model" and dated November 17, 2020.

This report contains information produced, in part, by using the 3M™ All Patient Refined Diagnosis Related Groups (APR DRG) patient classification system, which is proprietary computer software created, owned and licensed by 3M Company. All copyrights in and to the 3M Software are owned by 3M Company or its affiliates. All rights reserved.

The preliminary APR DRG model described this presentation reflects preliminary payment policy options under consideration by MQD. Final policy decisions for a new FFS APR DRG methodology have not been made by MQD; as such, the preliminary model is subject to change based on stakeholder feedback, MQD final policy decisions, and the CMS approval process. In addition, final APR DRG payment parameters adopted by MCOs may differ from the FFS methodology implemented by MQD.

Actual payments under APR DRGs will differ from the simulated payments in this preliminary modeling. Reasons for differences include, but are not limited to, final MQD policy decisions, final APR DRG payment parameters adopted by MCOs, negotiated rates between hospitals and MCOs, and future changes in enrollment, inpatient utilization, inpatient service mix, hospital documentation and coding, hospital chargemasters, COVID-19 impacts, and other factors. Also, the preliminary APR DRG modeling does not include estimated changes to Medicaid supplemental payments that may be impacted by payment changes under APR DRGs.

We understand this presentation will be distributed by MQD to the Hawai`i hospitals. To the extent that the information contained in this presentation is provided to any approved third parties, the correspondence should be distributed in its entirety. Any user of this information must possess a certain level of expertise in health care modeling that will allow appropriate use of the information presented.

Milliman makes no representations or warranties regarding the contents of this presentation to third parties. Likewise, third parties are instructed that they are to place no reliance upon this presentation prepared by Milliman that would result in the creation of any duty or liability under any theory of law by Milliman or its employees to third parties.

If you are not the intended recipient, any disclosure, copying, distribution or any action taken or omitted to be taken in reliance on it, is prohibited and may be unlawful. Unless indicated to the contrary: it does not constitute professional advice or opinions upon which reliance may be made by the addressee or any other party.

Milliman

Milliman

Thank you

Ben Mori
Senior Healthcare Consultant
+1 206 613 8204
ben.mori@Milliman.com

Justin Birrell, FSA, MAAA
Principal & Consulting Actuary
+1 206 504 5548
justin.birrell@milliman.com