"Pathways to Success"
MSSP final rule: Faster movement to downside risk increases focus on reducing population costs

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On December 31, 2018, the Centers for Medicare and Medicaid Services (CMS) released a sweeping new rule that will significantly change the Medicare Shared Savings Program (MSSP). This paper is the ninth in a series of Milliman white papers on implications of the new rule, and the first which addresses the terms of the final rule.

One of the hallmarks of the new MSSP rule is faster movement to downside risk. Under the current regulations, accountable care organizations (ACOs) can stay in an upside-only track for up to six years. The new rule requires some ACOs in the Basic Track to begin assuming some downside risk in year 3 (low revenue ACOs new to MSSP and inexperienced with risk can remain in an upside only arrangement until Year 4) and those in the Enhanced Track assume downside risk in year 1. To date, ACOs in Track 1 have had a longer trajectory for assuming downside risk and may not have experienced the same pressure to reduce costs as ACOs participating in MSSP tracks with downside risk.

Under the new rule, there will be a more urgent need for ACOs to reduce population costs. Two major tactics are typically implemented by health plans and ACOs to reduce population costs:

1. **Demand management:** Improve the health of the population and thereby lower demand for services. Initiatives include disease management, case management, wellness, preventive care, disease registries, gaps in care closure, adherence programs, etc.

2. **Supply management:** Reduce utilization of medically unnecessary services and reduce costs of medically necessary services. Initiatives include utilization management such as precertification and inpatient utilization review, emergency department diversion programs, specialty referral management, clinical decision support, site of service shifting from higher-cost sites of care to lower-cost sites of care, etc.

This report focuses on supply management and, in particular, data mining tactics that identify medically unnecessary services. There is well-established support for the significant opportunity to reduce medically unnecessary utilization. The Dartmouth Atlas of Health Care reports significant variation in Medicare fee-for-service (FFS) rates of surgical procedures, end-of-life costs, chronic illness care, prescription drug use, and more.[1] The Institute of Medicine report identified one-third of healthcare spending as unnecessary, including spending associated with failures of care delivery, failures of care coordination, overtreatment, administrative complexity, pricing failure, and fraud and abuse.[2] The Milliman Health Cost Guidelines™ (HCG) benchmarks identify approximately one-third lower healthcare costs for Medicare populations when comparing national average ("loosely managed") to 10th percentile best-performing ("well managed") health systems on a risk-adjusted basis.[3]

We share several data mining tactics we have seen successful ACOs adopt to effectively guide strategies to reduce medically unnecessary services and in turn reduce the ACO's total population costs.

Create an actuarial cost model to identify population health cost drivers

A fundamental data mining exercise for ACOs is to build an actuarial cost model, which can serve as a road map for identifying cost reduction opportunities. An actuarial cost model typically represents the cost components of a population's total healthcare expenditures on a per member per year (PMPY) or per member per month (PMPM) basis. The total PMPY or PMPM costs can be segmented by detailed service categories such as those produced by the Milliman HCG Grouper, which allocates each unique claim to one or more service categories based on International Classification of Diseases (ICD)-10 procedure codes, Healthcare Common Procedure Coding System (HCPCS) codes, Current Procedural Terminology (CPT) codes, revenue codes, place of service codes, specialty codes, etc.

1   Dartmouth Atlas Project. Retrieved December 20, 2018, from http://www.dartmouthatlas.org/.

2   Berwick, D.M. & Hackbarth, A.D. (2010). Eliminating waste in US health care. JAMA;307:1513-1516.

3   The Milliman HCGs provide a flexible but consistent basis for determining health claim costs and premium rates for a wide variety of health plans. The HCGs are developed as a result of Milliman's continuing research on healthcare costs. First developed in 1954, the HCGs have been updated and expanded annually. They are continually monitored, as they are used in measuring the experience or evaluating the rates of health plans, and as they are compared with other data sources. The HCGs are a proprietary and cooperative effort of Milliman health actuaries and represent a combination of their experience, research, and judgment. Extensive data, both published and unpublished, are used in their development.

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For MSSP participants, the monthly Claim and Claim Line Feed (CCLF) data files provided by CMS should be routinely grouped and summarized into an actuarial cost model in order to evaluate cost drivers, identify potential targets for utilization reduction initiatives, track outcomes expected from key initiatives, and track overall costs compared to the ACO's PMPY expenditure benchmark set by CMS. Downloading, processing, and evaluating the CCLF data requires administrative claims data processing and reporting expertise. This is not a trivial task, particularly with the multiple files that need to be joined such as the membership (or assignment) file, as well as the need to consider and program updates to the file structures that CMS intermittently introduces. Figure 1 provides an illustrative example of an actuarial cost model for a Medicare ACO showing paid PMPY costs by medical service category and the contribution to total paid PMPY.

FIGURE 1: ACTUARIAL COST MODEL

SERVICE CATEGORY	PAID PMPY	% OF PAID PMPY
Inpatient Services	**$5,237**	**49.9%**
Medical and surgical admissions	$4,275	40.7%
Psychiatric/substance abuse admissions	$27	0.3%
Skilled nursing facility	$935	8.9%
Outpatient Services	**$3,088**	**29.4%**
ER/observation	$321	3.1%
Facility-based surgery	$952	9.1%
Radiation therapy	$93	0.9%
Radiology - general diagnostic	$108	1.0%
CT/MRI/PET imaging	$121	1.1%
Pathology/lab	$225	2.1%
Infused/injectable drugs	$825	7.9%
Cardiovascular testing	$97	0.9%
PT/OT/ST/chiropractic	$184	1.8%
Psychiatric/substance abuse	$15	0.1%
Other outpatient facility	$148	1.4%
Other Services (professional, home health, etc.)	**$2,176**	**20.7%**
Preventive services	$189	1.8%
Professional office surgery	$154	1.5%
Office/clinic visits - PCP and specialist	$540	5.1%
Urgent care	$4	0.0%
Home health/hospice	$851	8.1%
Ambulance	$137	1.3%
DME, supplies and prosthetics	$158	1.5%
Other services	$142	1.4%
Grand Total	**$10,500**	**100.0%**

Source: Sample of Medicare aged non-dual ACO population claims data grouped using the Milliman HCG Grouper.

Note: Paid is net of member cost sharing. Includes Part B drugs but no Part D drugs.

After building an actuarial cost model, a few key questions can help guide selection of key services to target:

- Which services provide the greatest financial opportunity?
- How much effort will it take to impact a particular service (financial, human resources, political capital)?
- How feasible is it to reduce the service?

Benchmark utilization of key services to identify utilization reduction opportunities

After identifying potential services to target from the actuarial cost model, organizations need to evaluate whether the utilization and spend in a service category represents efficient or inefficient care with very little or very large opportunity for improvement. Comparing utilization of a selected service to benchmarks provides an ACO with the ability to evaluate whether there is a feasible opportunity to reduce utilization for that service. In order to credibly compare ACO performance to benchmarks, the benchmarks should be risk-adjusted at the service category level to reflect the risk profile of the ACO's assigned beneficiaries. Milliman uses CMS-Hierarchical Condition Category (HCC) model risk scores to adjust the Milliman HCG Medicare FFS utilization benchmarks. Milliman's benchmarks provide national average (loosely managed) and 10th percentile best-performing (well managed) utilization benchmarks for several categories of medical services produced by the Milliman HCG Grouper.[4]

Many ACOs will target inpatient admissions for utilization reduction because it is the largest cost contributor to total population spend. Benchmarking inpatient utilization by specific conditions or procedures becomes essential in order to design and implement initiatives to reduce inpatient utilization. Figure 2 provides an illustrative example of a Medicare ACO's inpatient utilization by diagnosis-related group (DRG) family, compared to Milliman's risk-adjusted loosely and well managed benchmarks, for selected DRG families. This figure illustrates the estimated cost savings opportunity if loosely or well managed utilization levels are attained.

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4   The Milliman Medicare benchmarks are empirical models representing the experience of Medicare FFS populations across the nation. The loosely managed benchmarks represent plans that have some utilization review, preauthorization, and case management aimed at managing utilization. The well managed benchmarks represent nationwide experience in highly effective managed care environments (such as a staff model health maintenance organization [HMO] or a globally capitated provider group without FFS incentives) that efficiently apply utilization management principles across the entire continuum of medical care. Loosely managed represents average performance whereas well managed represents performance at approximately the 90th percentile in the range of healthcare management.

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FIGURE 2: INPATIENT UTILIZATION AND ESTIMATED COST SAVINGS OPPORTUNITY BY DRG FAMILY

SELECT DRG FAMILY (MS-DRGS)	ADMITS PER 1,000	LOOSELY MANAGED ADMITS PER 1,000	WELL MANAGED ADMITS PER 1,000	ESTIMATED REDUCTION IN PAID PMPY AT LOOSELY MANAGED LEVEL	ESTIMATED REDUCTION IN PAID PMPY AT WELL MANAGED LEVEL
Sepsis (870-872)	32.9	16.1	11.3	$193	$248
Heart Failure (291-293)	26.5	15.8	9.3	$87	$140
Lower Extremity Arthroplasty (466-470)	20.3	18.6	13.8	$23	$87
Pneumonia (193-195)	14.0	13.3	8.6	$4	$34
Cerebrovascular Disease - Medical (061-072)	13.8	13.0	8.5	$6	$44
Obstructive Pulmonary Disease (190-192, 202-203)	13.3	11.3	5.7	$12	$44
Gastrointestinal Disease - Medical (368-373, 391-395)	12.3	11.5	7.4	$5	$30
GI Hemorrhage (377-379)	9.5	7.7	5.5	$13	$29
Cardiac Arrhythmias (308-310)	9.2	9.8	5.4	$0	$21
UTI (689-690)	9.1	8.8	5.4	$2	$20
Top 10 DRG Families by Volume	**160.8**	**125.8**	**80.9**	**$345**	**$698**
Grand Total (all DRGs)	**360.8**	**315.4**	**205.4**	**$934**	**$1,750**

Source: Sample of Medicare aged non-dual ACO population claims data grouped using the Milliman HCG Grouper.

Note: Illustrative example based on 10,000 member years with a total paid PMPY of $10,500.

FIGURE 3: 30-DAY POST-ACUTE CARE (PAC) UTILIZATION AND ESTIMATED COST SAVINGS OPPORTUNITY FOR SELECT DRG FAMILIES

	% OF DRG ADMISSIONS WITH SOME PAC UTILIZATION BY SERVICE TYPE		
30-DAY PAC SERVICE TYPE	ACO EXPERIENCE	5TH PERCENTILE BEST-PERFORMING BENCHMARK	OPPORTUNITY FOR REDUCTION IN PAID PMPY
Anchor Admission - Lower Extremity Arthroplasty (MS-DRGs 469-470)			
Inpatient Readmissions	7.8%	4.2%	$11
Acute Inpatient Rehab	1.7%	1.0%	$2
Skilled Nursing Facility	38.0%	20.6%	$23
Home Health Care	74.3%	47.5%	$18
Grand Total			**$54**
Anchor Admission - Heart Failure (MS-DRGs 291-293)			
Inpatient Readmissions	22.6%	18.7%	$17
Acute Inpatient Rehab	0.9%	0.6%	$1
Skilled Nursing Facility	14.1%	13.9%	$0
Home Health Care	42.2%	28.9%	$7
Grand Total			**$24**

Source: Sample of Medicare aged non-dual ACO population claims data grouped using the Milliman HCG Grouper.

Note: Illustrative example based on 200 PAC episodes, 10,000 member years, and a total paid PMPY of $10,500.

Because post-acute care (PAC) delivered in the 30 days after discharge from acute inpatient admissions represents another significant cost contributor to total Medicare population spend (13% on average[5]), many ACOs are interested in further data mining to evaluate the trigger DRG families that drive PAC utilization and may provide reduction opportunities. Comparing PAC utilization to benchmarks can assist in identifying DRG families to target for care pathways and transition of care strategies. Figure 3 illustrates an ACO's 30-day

5   Fitch, K., Pyenson, B., Berrios, M.E., & Engel, T. (August 6, 2014). Evaluating Opportunity in the CMMI BPCI Program: Comparison of PAC Utilization to Benchmarks. Milliman Healthcare Reform Briefing Paper. Retrieved December 20, 2018, from http://www.milliman.com/insight/2014/Evaluating-opportunity-in-the-CMMI-BPCI-program-Comparison-of-PAC-utilization-to-benchmarks/.

PAC utilization experience for two DRG families compared to the Milliman Medicare FFS PAC benchmarks—national average and 5th percentile best performing.[6] The impact of moving PAC utilization to 5th percentile best performance can have a significant cost impact for some DRG conditions and procedures.

Profile providers to guide utilization reduction strategy

Although some strategies to reduce utilization will require changes to the ACO health system's operations such as emergency department diversion programs, transition of care programs, case management programs, and the like, many strategies will be directed at changing provider performance. ACOs must be able to target inefficient physician performance, which requires credible provider profiling. As with the benchmarking exercise described previously, physician profiling requires credible risk adjustment. After identifying particular services with opportunity

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6   The Milliman PAC benchmarks are generated using the Medicare 100% health claims data for 2017. The PAC utilization national average and 5th percentile best-performing benchmarks by DRG represent the 30-day PAC experience in key categories of care for FFS Medicare beneficiaries (including those who are dually eligible for Medicaid) by hospital referral regions (HRR). National average benchmarks reflect average utilization of PAC services across all anchor cases by DRG. The 5th percentile best-performing benchmarks for a given anchor DRG were determined by summarizing the PAC utilization experience for hospitals in each HRR determined to be "top performers" for each DRG.

for utilization reduction, profiling the performance of physicians responsible for ordering and performing the services can guide strategy for particular initiatives. Figure 4 provides an example of a risk-adjusted provider profiling report for CT/MRI/PET outpatient (OP) utilization.

Shift leakage to in-network providers to increase revenue

Although we have focused on data mining exercises that identify opportunities to reduce utilization and population expenditures, an ACO should also consider data mining to identify leakage of services to providers outside of the ACO. The CCLF data provides all services incurred by the ACO population, whether inside or outside of the ACO's network. Shifting services from providers outside of the ACO network to providers inside of the ACO network can represent a significant opportunity for ACOs to increase revenue, which can offset some or all of the lost revenue associated with reducing utilization. All claims can be flagged with an in-network (IN) or out-of-network (OON) indicator using the ACO's provider and facility IDs. The actuarial cost model in Figure 1 above can be further segmented to show IN and OON cost for each service line to assist in identifying service lines that have significant OON utilization and cost. Figure 5 provides an illustration of a leakage report that can be generated using data available to MSSP participants.

FIGURE 4: RISK-ADJUSTED PROVIDER PROFILING REPORT

ATTRIBUTED PHYSICIAN	CMS-HCC RISK SCORE FOR ATTRIBUTED MEMBERS	CT/MRI/PET OP PROCEDURES PER 1,000 ATTRIBUTED MEMBERS	CT/MRI/PET OP PROCEDURES PER 1,000 ATTRIBUTED MEMBERS (AFTER RISK ADJUSTMENT USING HCC SCORES)
Physician 1	1.07	692.8	609.6
Physician 2	1.16	802.2	711.3
Physician 3	1.02	618.3	581.2
Physician 4	0.92	621.6	629.6
Physician 5	1.03	715.7	675.3
Total Population	**1.04**	**644.4**	**599.2**

Source: Sample of Medicare aged non-dual ACO population claims data.

FIGURE 5: OON UTILIZATION AND COST BY ATTRIBUTED PHYSICIAN GROUP INPATIENT ELECTIVE SURGERIES

ATTRIBUTED PHYSICIAN GROUP	TOTAL PAID PMPY	OON PAID PMPY	% OF OON PAID PMPY	TOTAL ADMITS PER 1,000	OON ADMITS PER 1,000	% OF OON ADMITS
Physician Group 1	$227	$113	50.0%	30.2	13.9	46.0%
Physician Group 2	$157	$93	59.2%	19.9	11.8	59.2%
Physician Group 3	$140	$72	51.4%	16.2	7.0	42.9%
Physician Group 4	$131	$73	56.1%	16.0	9.6	59.7%
Physician Group 5	$80	$38	47.3%	10.2	4.7	46.4%
Total Population	**$735**	**$390**	**53.0%**	**92.6**	**47.0**	**50.7%**

Source: Sample of Medicare aged non-dual ACO population claims data.

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Summary

Under the new MSSP rule, "Pathways to Success", there is faster movement toward downside risk and therefore more pressure for ACOs to deliver more efficient care and reduce costs in order to mitigate this downside risk. This report highlights several data mining tactics that ACOs can consider in their efforts to reduce utilization and cost. Effective data mining of the CCLF data files can provide a road map for identifying services and providers to target for utilization reduction. ACOs will need to navigate and consider the impact of these utilization reduction efforts on revenue reduction for their healthcare systems, along with the potential for shared savings. In addition, the financial impact of shifting leakage of services to the healthcare system should be considered.

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