Medicare LDS Analytics

User Guide 1.0.0.1

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WELCOME TO MEDICARE ANALYTICS DATA ENGINE

Medicare Analytics Data Engine (MADE) is a web-based application that consists of a suite of Population analytics and Episode analytics reports built based on LDS Standard Analytic Files for Maryland. hMetrix and CRISP have received 4 years of data from 2012 through 2015 for 100% of the Maryland Medicare Fee for Service (FFS) beneficiaries. Using the beneficiary's unique identifier, beneficiary's claim payments, types of service, procedures, diagnoses, and eligibility are tracked throughout the four years. This allows for the analysis of episodes of care at the beneficiary level as well as analysis across the entire population.

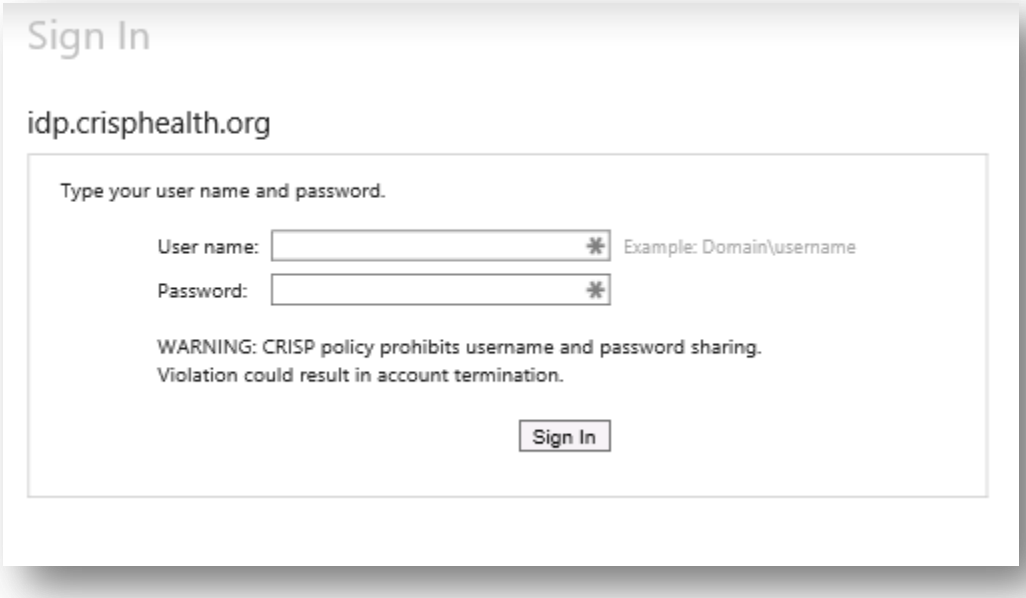
SOFTWARE REQUIREMENTS

MADE is a web-based application accessible through a modern browser: Google Chrome 40 or higher, Internet Explorer 9 or higher, Firefox 35 or higher.

LAUNCHING MADE

A user that wishes to access hMetrix must first login to the CRISP Hospital Reporting Portal. Once in the portal, the user shall click on a link to hMetrix. The following screen shots represent the user's workflow.

Step 1: User logs in to the CRISP Hospital Reporting Portal using the user id and password provided for the portal - https://reports.crisphealth.org/t/Hospitals/views/HospitalPortal/CRSHospitalReportingPortal?:embed=y



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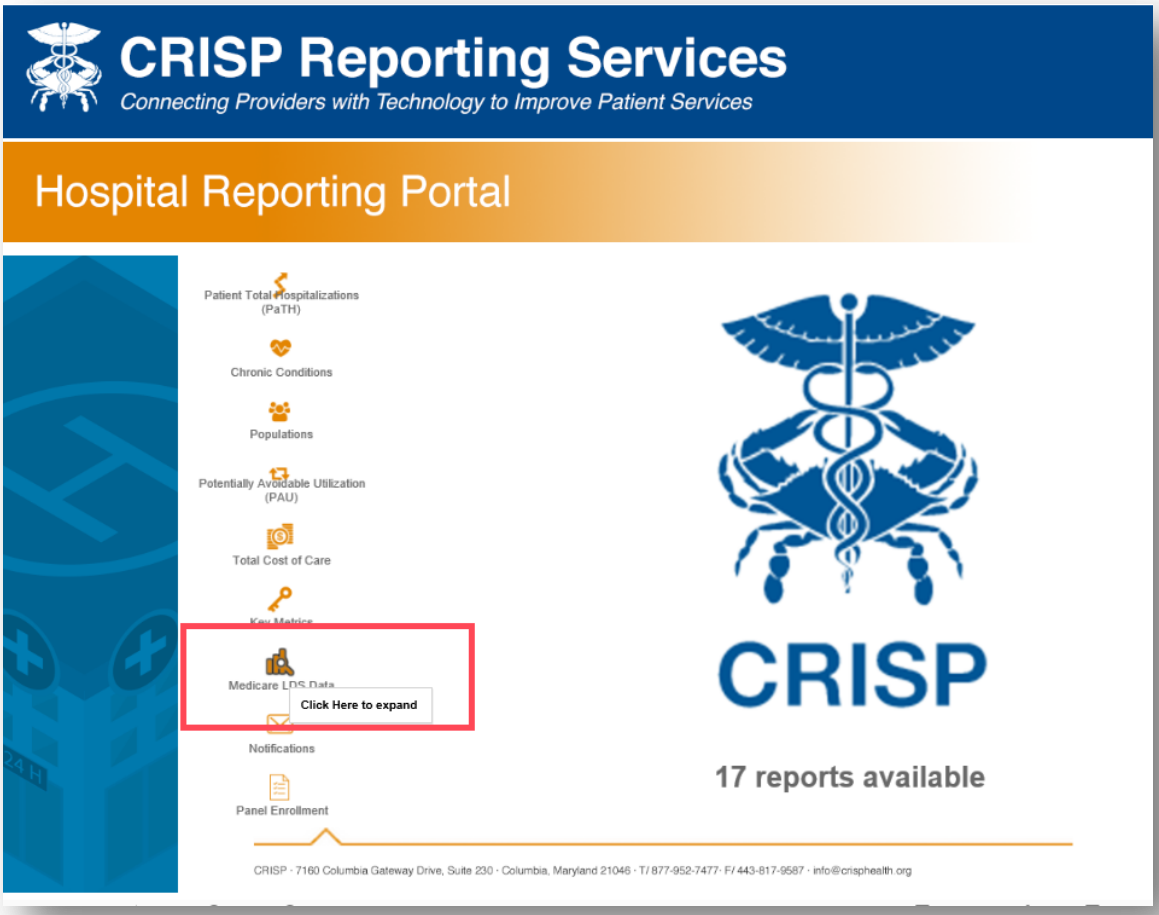
Step 2: User navigates to the LDS Report within the Portal



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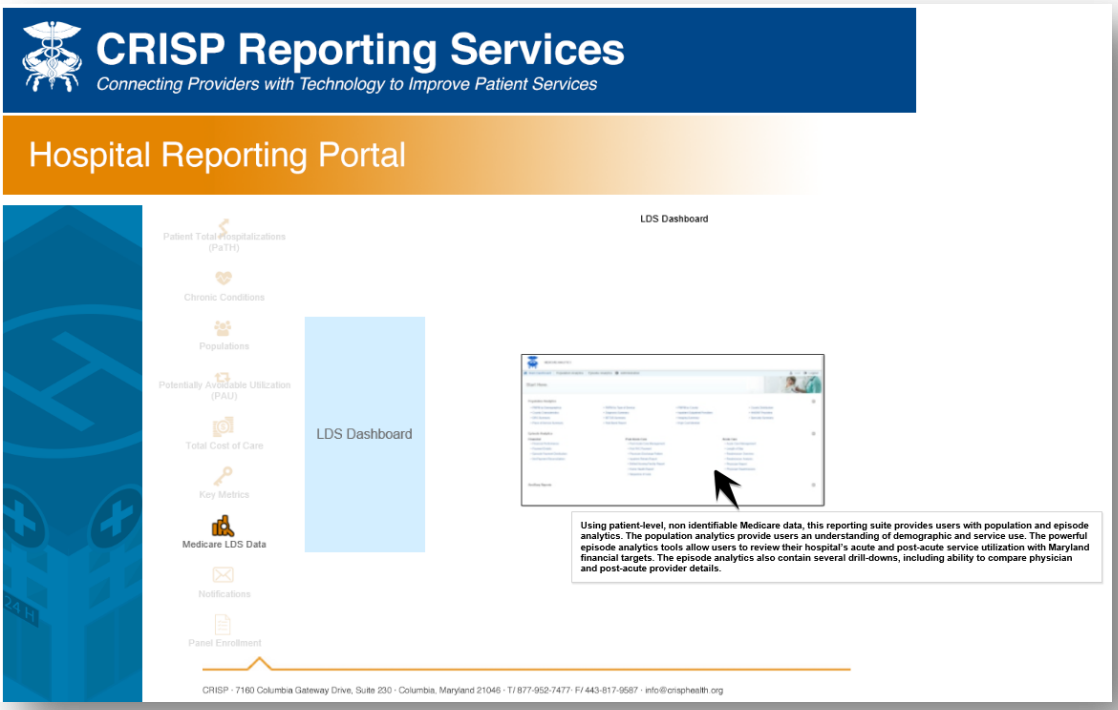
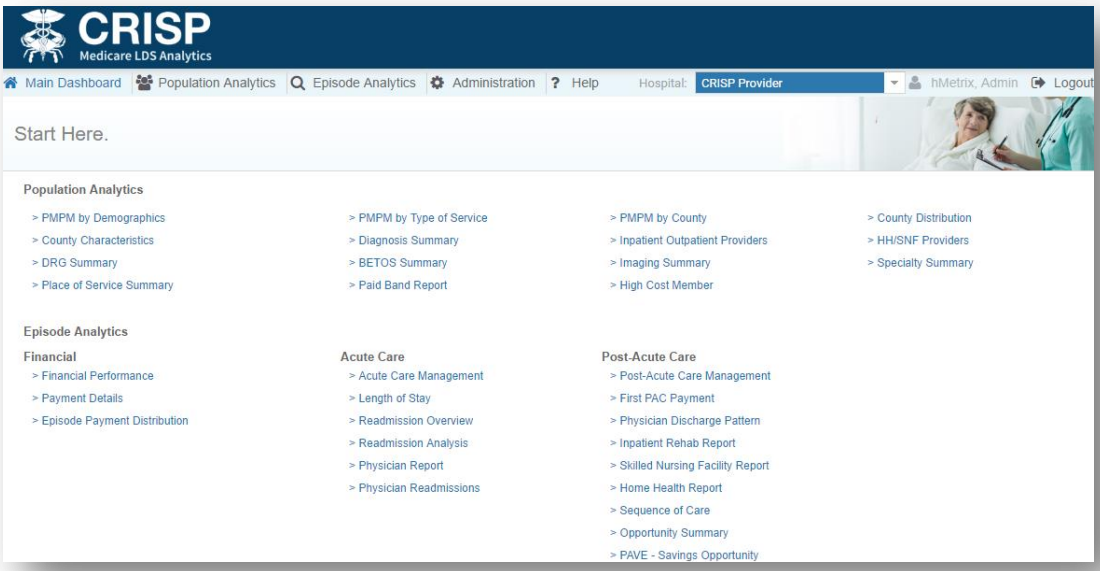
Step 3: User navigates through sub category menu. Use clicks on report thumbnail.



Step 4: User is directed to the MADE site in a new window.



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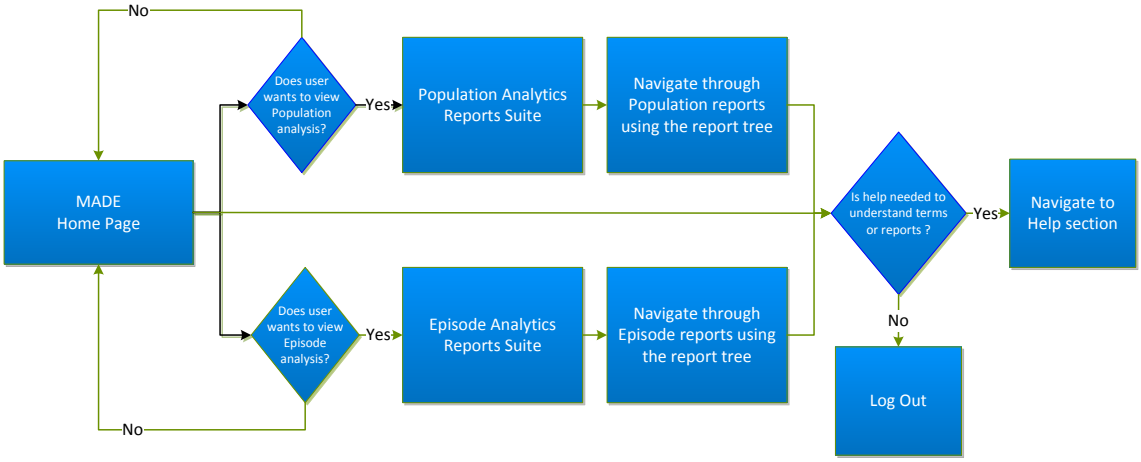
WORKFLOW

The workflow of MADE is shown below.

APPLICATION WORKFLOW



There are two suites of reports in MADE – Population Analytics reports and Episode Analytics reports. The breakdown of the reports and their navigation paths are shown in the next two schematic diagrams.

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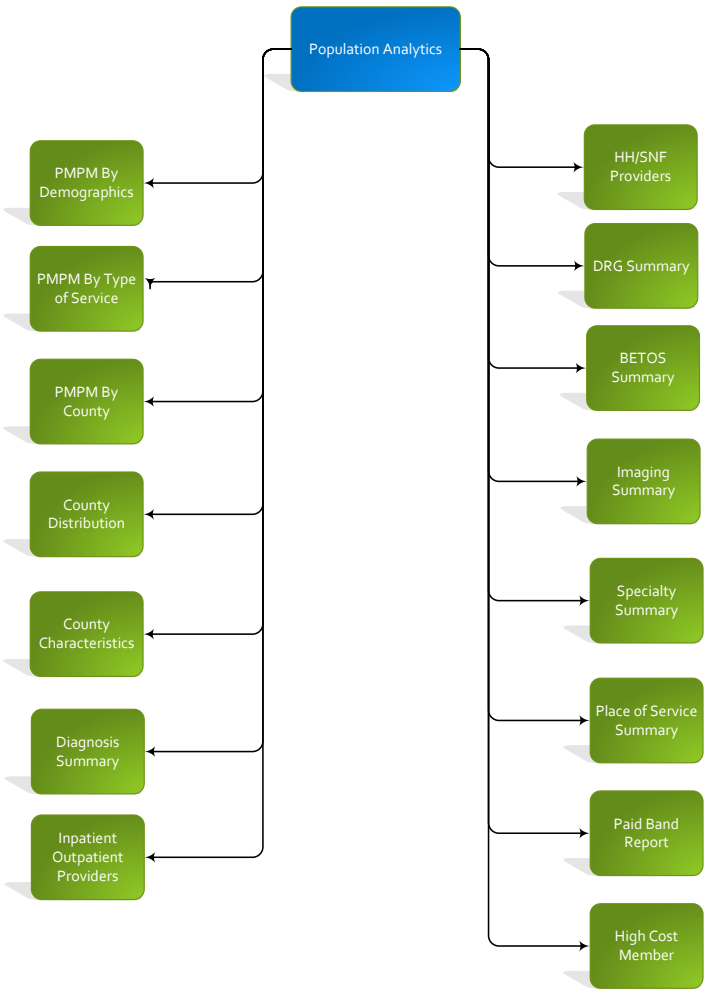
Population Analytics Reports



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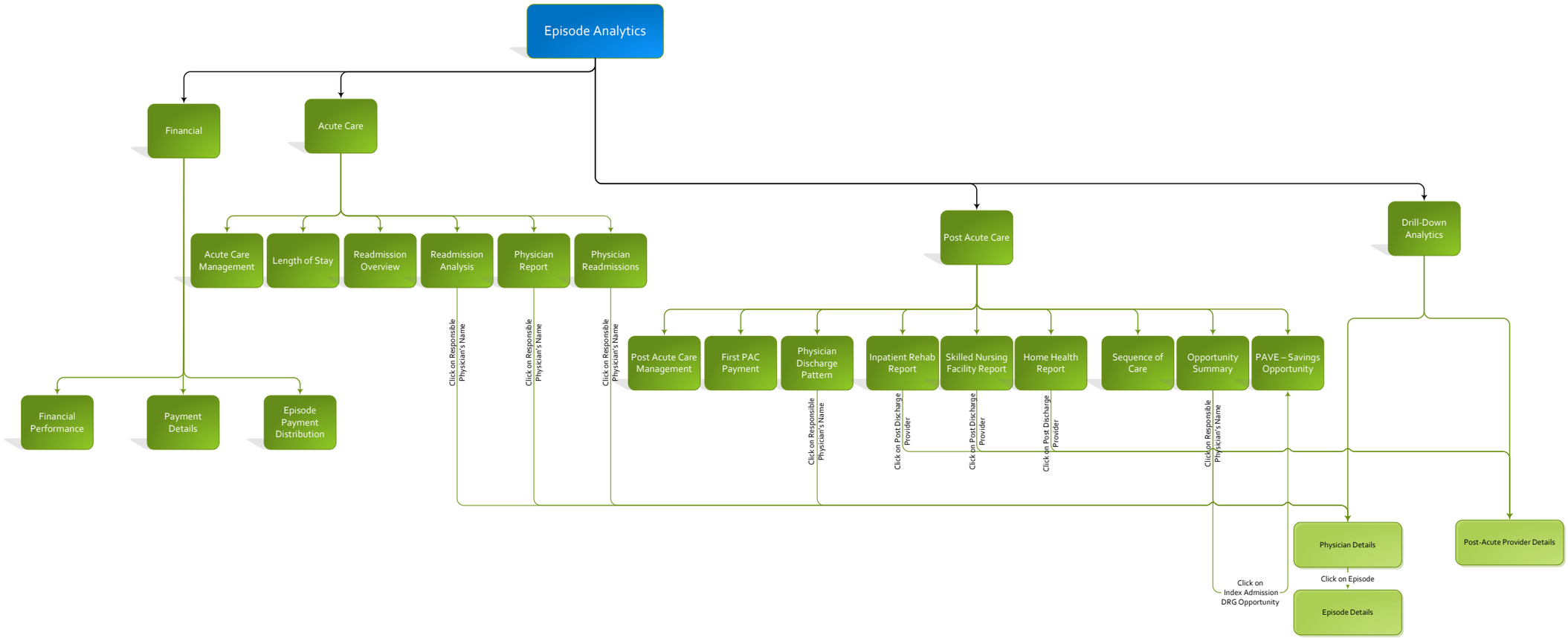
Episode Analytics Reports



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MADE HOME PAGE

The MADE home page is the initial page when you enter the CRISP LDS application and provides an overview of all the available reports in the application.

This home page shows five modules of the application as separate tabs, which are:

- Main Dashboard – shows the Home page
- Population Analytics – shows the reports associated with Population Analytics. These reports are described in further detail in the section Population Analytics.
- Episode Analytics – shows the reports associated with Episode Analytics. These reports are described in further detail in the section Episode Analytics.
- Administration – shows the reports associated with usage of the application. This section is only available to users who are part of CRISP Reporting Services and have an administrator role. For administration reports, refer to the Admin Guide.
- Help– shows the Glossary, LDS Data Basics and the User Guide

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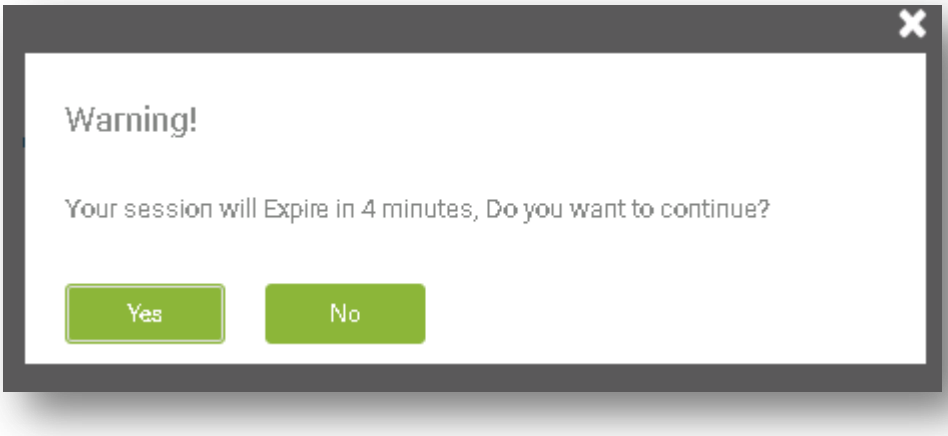
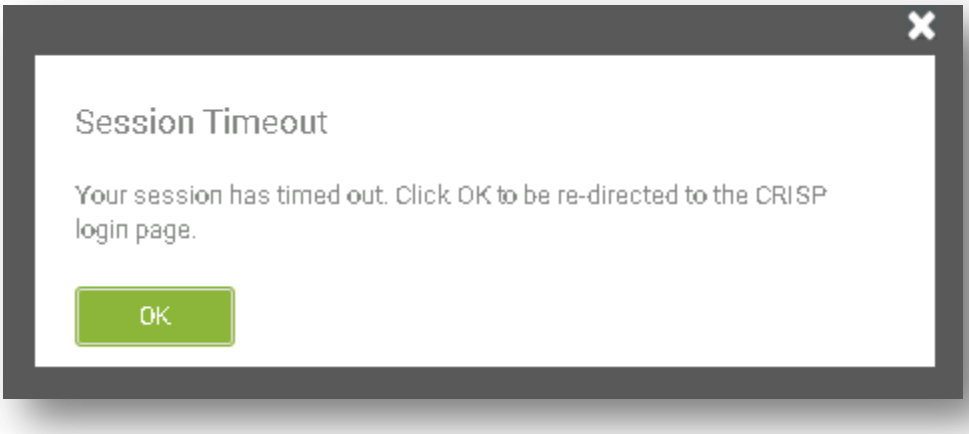
SESSION TIMEOUT

To minimize unauthorized use of MADE when has logged in and steps away, a user's session is set to time after 30 minutes of inactivity. There will be a warning message 5 minutes prior to the session timeout as given below.



If the user clicks Yes to the warning message then the user's session will need to go through another 30 minutes of inactivity before a timeout can occur. If the user clicks No or does not respond to the warning message, the user's session will timeout and will receive the below Session Timeout message.



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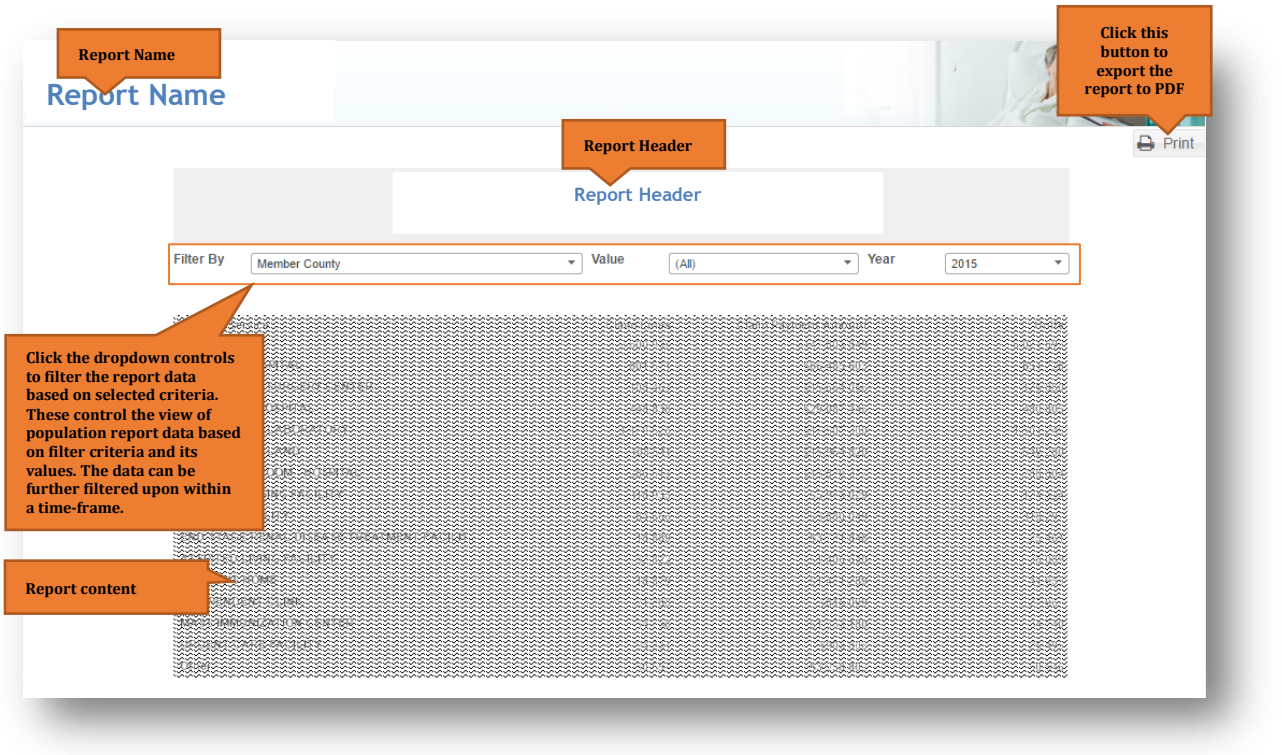
POPULATION ANALYTICS

The general structure of a Population Analytics report is given below. The various Population Analytics reports are described in further detail in this section in the following pages. For detailed information on how the assignment of population is conducted in MADE refer to the section in LDS Data Basics titled "Population Assignment".



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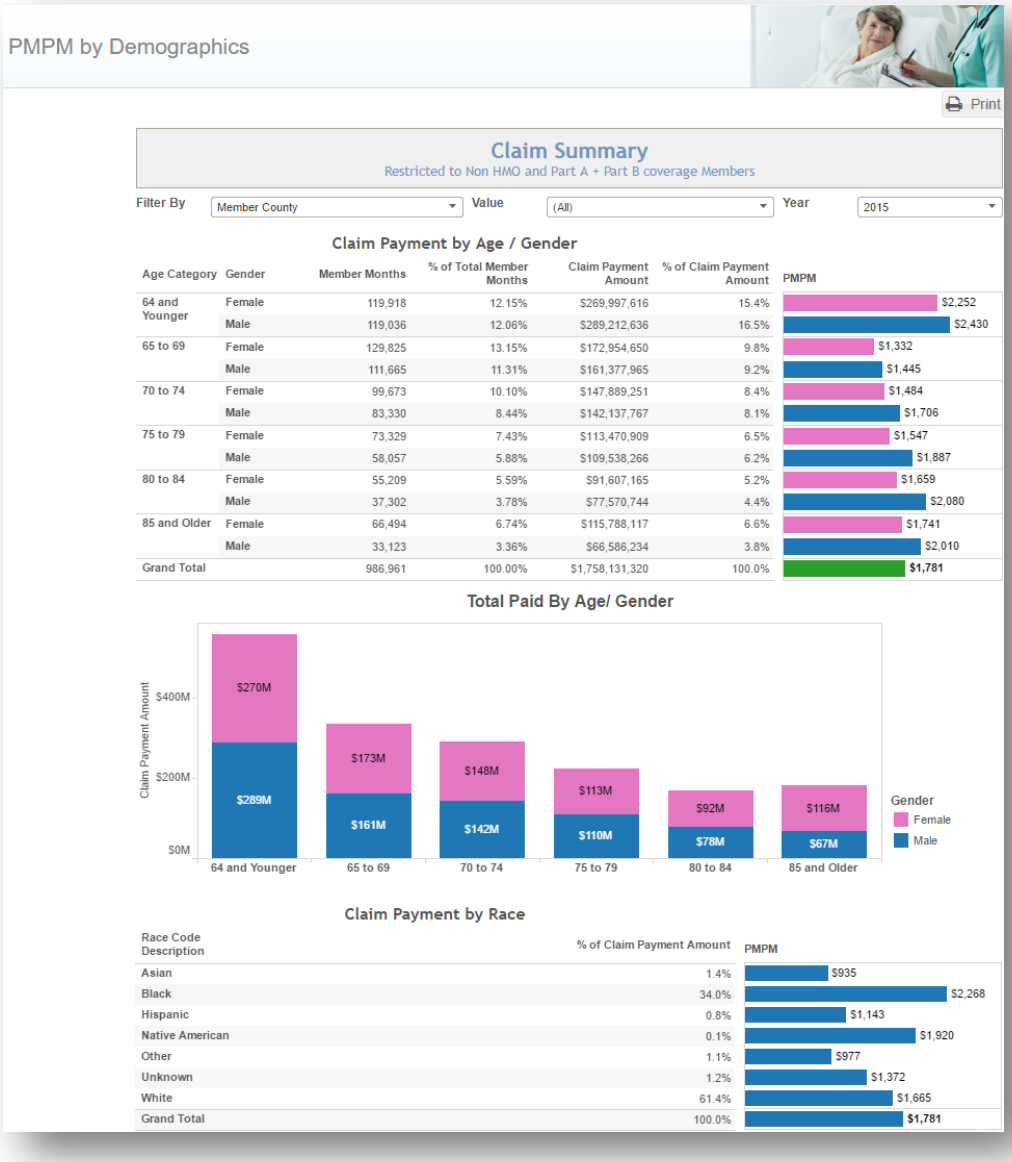
1. PMPM BY DEMOGRAPHICS

PMPM by Demographics illustrates the member count and payment information based on demographics such as race, gender, and age. This report shows:

CHART NAME	DESCRIPTION
Claim Payment by Age / Gender	Lists the member month count, total payment amount and average PMPM by age group and gender.
Total Paid by Age / Gender	Stacked bar charts showing the total claim payment amount by age group. Each bar is also split by gender.
Claim Payment by Race	Bar chart listing the average PMPM by race.



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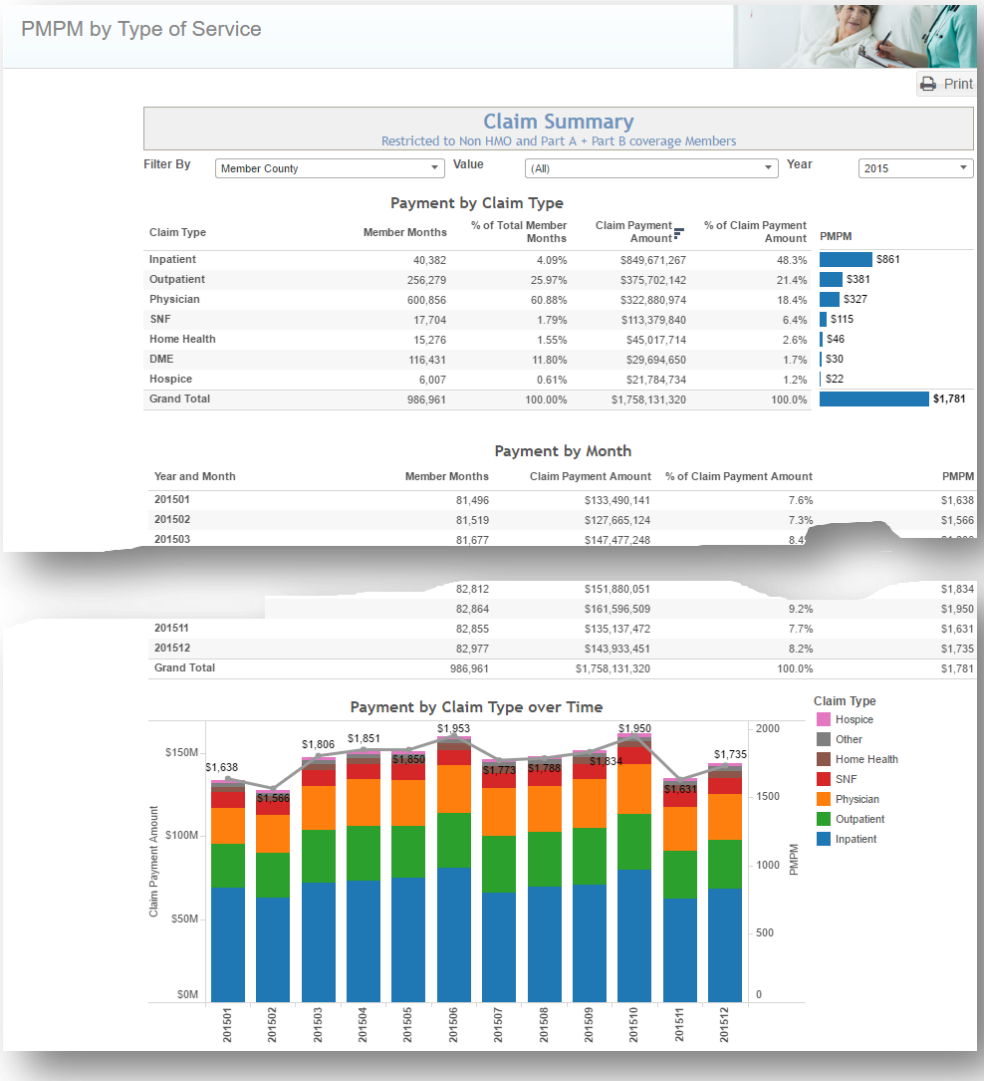
2. PMPM BY TYPE OF SERVICE

PMPM by Type of Service contains details about the population split by the type of service received. This report shows:

CHART NAME	DESCRIPTION
Payment by Claim Type	Lists the member month count, payment amounts, and average PMPM related to different types of services.
Payment by Month	Member count, payment amount, and average PMPM for each calendar month.
Payment by Claim Type over Time	Stacked bar chart showing the payment amounts for various types of service for each calendar month. The line chart shows the average PMPM for that month.



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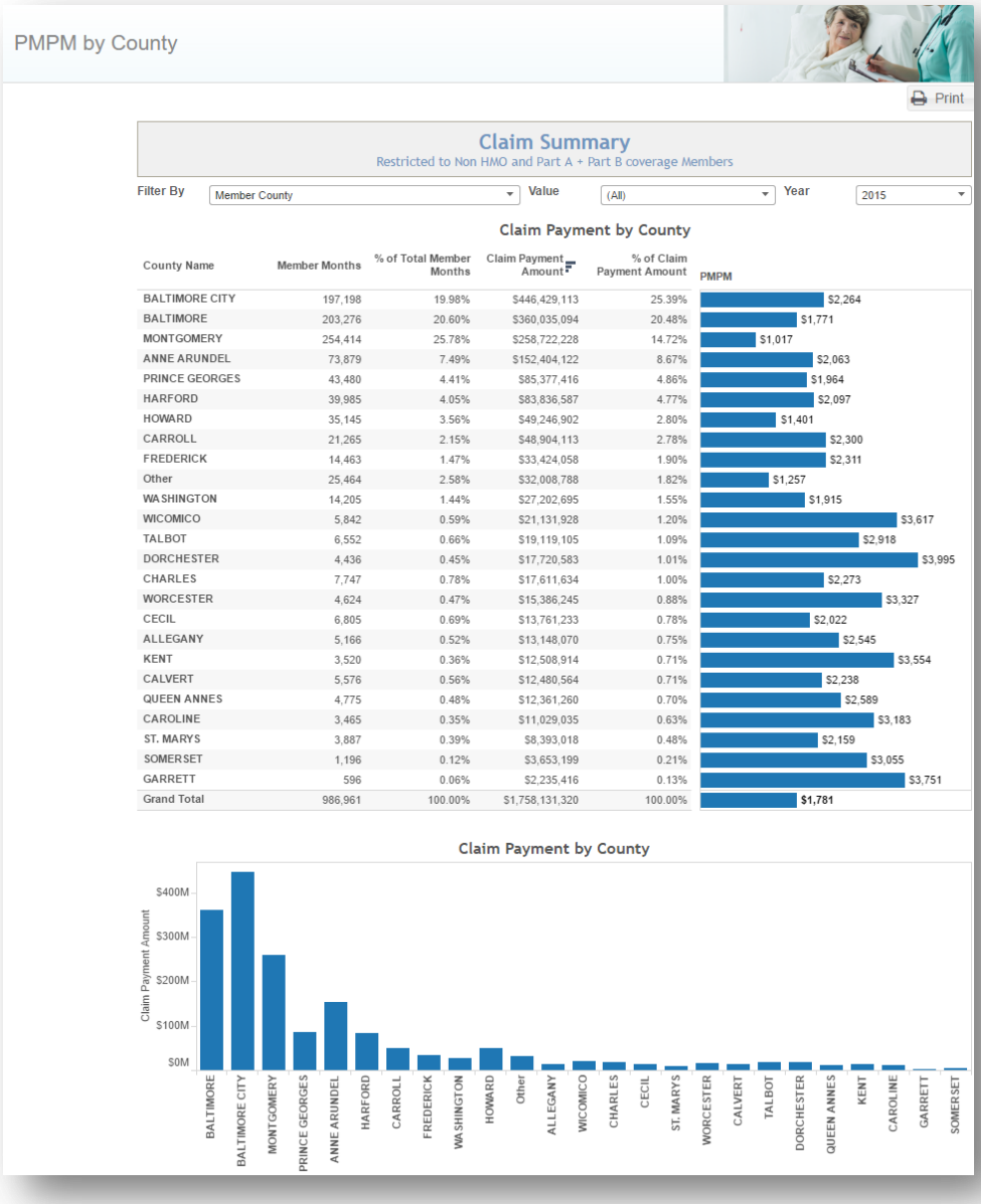
3. PMPM BY COUNTY

PMPM by County illustrates the distribution of member months, payment amount, and PMPM by county of residence. This report shows:

CHART NAME	DESCRIPTION
Claim Payment by County	Member month count, payment amount, and PMPM by county of residence.
Claim Payment by County	Bar chart listing the total claim payment amount by county of residency.



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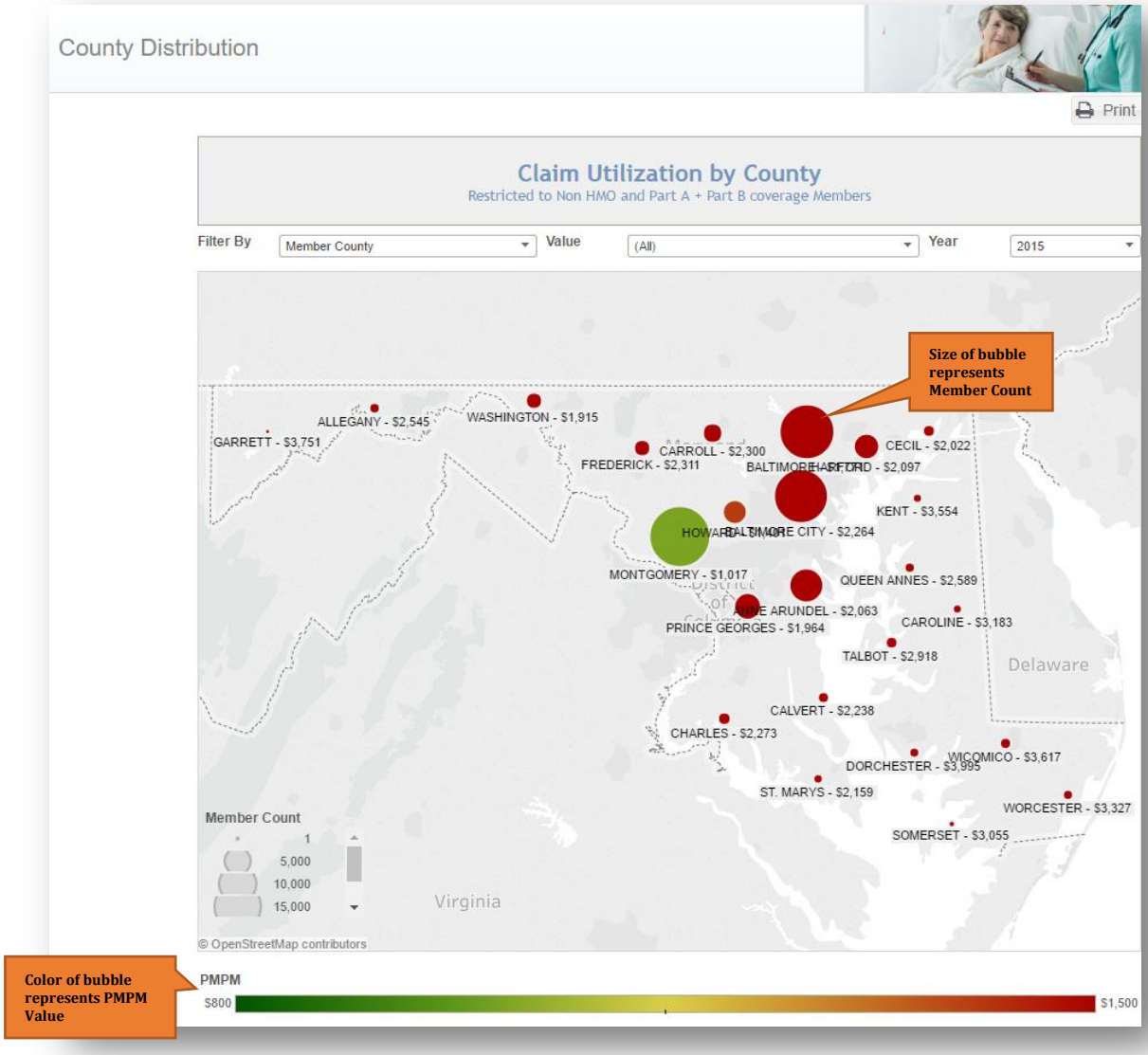
4. COUNTY DISTRIBUTION

County Distribution displays various details for each county. The color of the circle over each county represents the value (more green, lower PMPM; more red, higher PMPM) while the size of the circle represents the member count.



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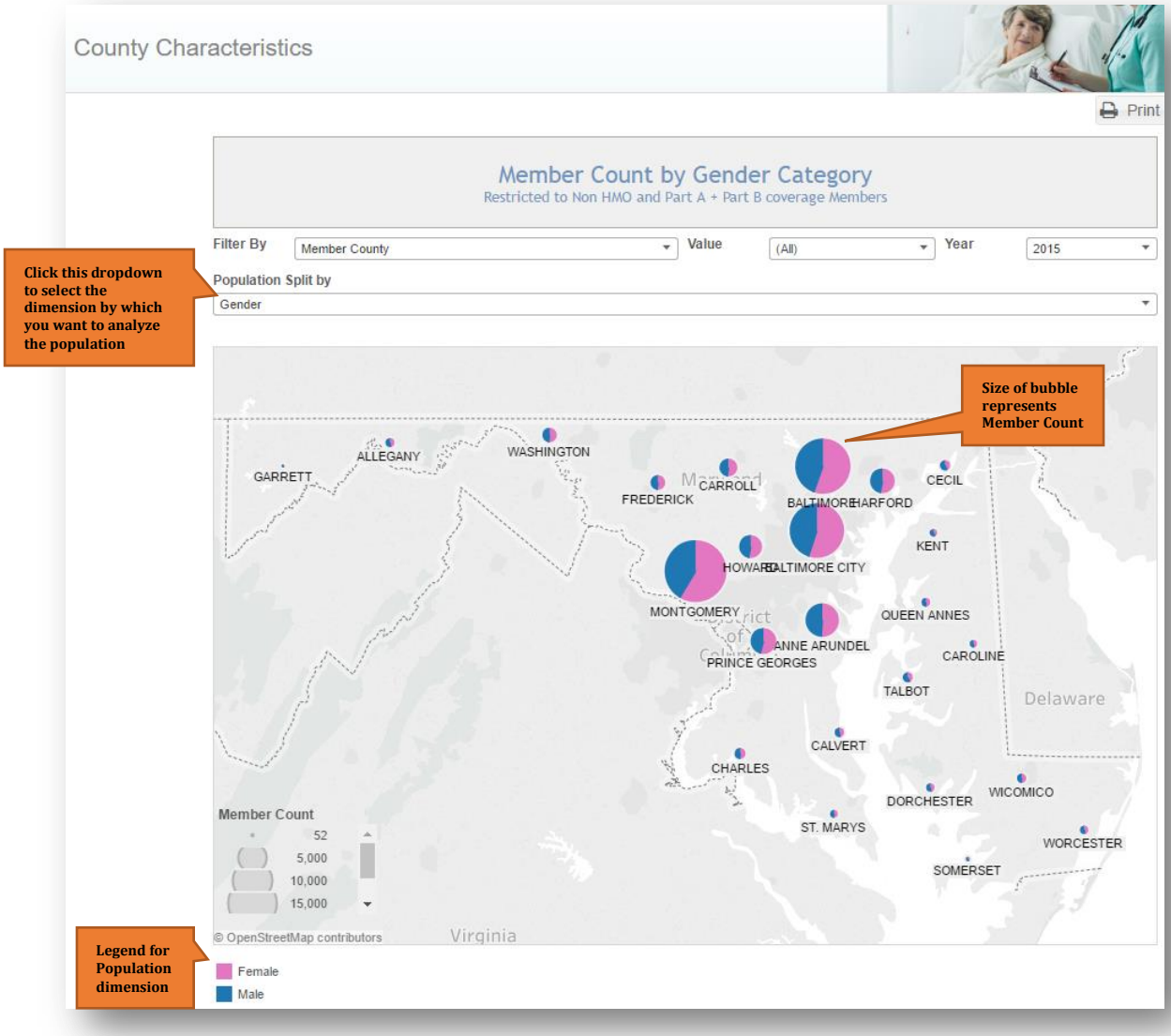
5. COUNTY CHARACTERISTICS

County Characteristics provides various details about the population in each county. The choice of measure can be selected under the Population Split By dropdown. The size of the circles represents the member count.



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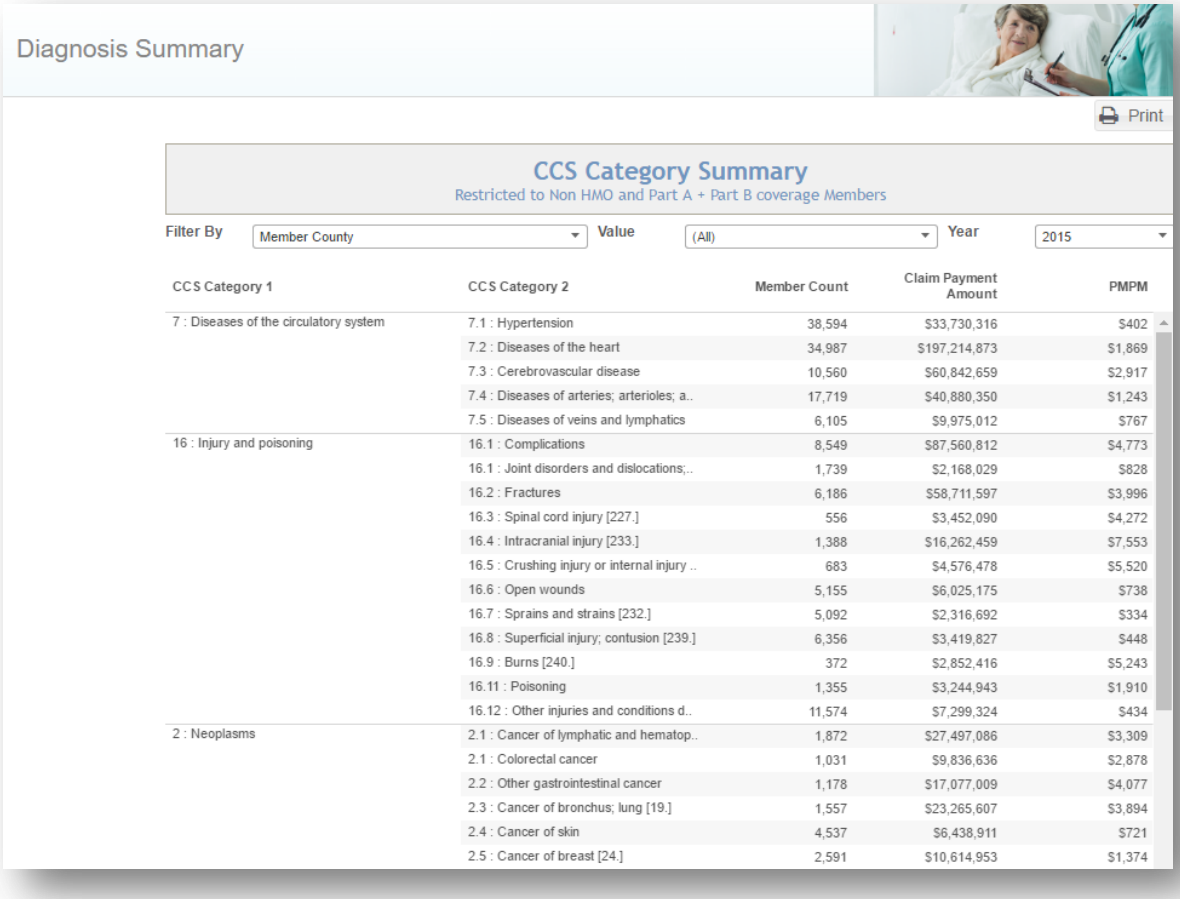
6. DIAGNOSIS SUMMARY

Diagnosis Summary compares the distribution of member count and payment amount across different diagnosis categories.



CCS Category 1	CCS Category 2	Member Count	Claim Payment Amount	PMPM
7 : Diseases of the circulatory system	7.1 : Hypertension	38,594	$33,730,316	$402
	7.2 : Diseases of the heart	34,987	$197,214,873	$1,869
	7.3 : Cerebrovascular disease	10,560	$60,842,659	$2,917
	7.4 : Diseases of arteries; arterioles; a..	17,719	$40,880,350	$1,243
	7.5 : Diseases of veins and lymphatics	6,105	$9,975,012	$767
16 : Injury and poisoning	16.1 : Complications	8,549	$87,560,812	$4,773
	16.1 : Joint disorders and dislocations;..	1,739	$2,168,029	$828
	16.2 : Fractures	6,186	$58,711,597	$3,996
	16.3 : Spinal cord injury [227.]	556	$3,452,090	$4,272
	16.4 : Intracranial injury [233.]	1,388	$16,262,459	$7,553
	16.5 : Crushing injury or internal injury ..	683	$4,576,478	$5,520
	16.6 : Open wounds	5,155	$6,025,175	$738
	16.7 : Sprains and strains [232.]	5,092	$2,316,692	$334
	16.8 : Superficial injury; contusion [239.]	6,356	$3,419,827	$448
	16.9 : Burns [240.]	372	$2,852,416	$5,243
	16.11 : Poisoning	1,355	$3,244,943	$1,910
	16.12 : Other injuries and conditions d..	11,574	$7,299,324	$434
2 : Neoplasms	2.1 : Cancer of lymphatic and hematop..	1,872	$27,497,086	$3,309
	2.1 : Colorectal cancer	1,031	$9,836,636	$2,878
	2.2 : Other gastrointestinal cancer	1,178	$17,077,009	$4,077
	2.3 : Cancer of bronchus; lung [19.]	1,557	$23,265,607	$3,894
	2.4 : Cancer of skin	4,537	$6,438,911	$721
	2.5 : Cancer of breast [24.]	2,591	$10,614,953	$1,374

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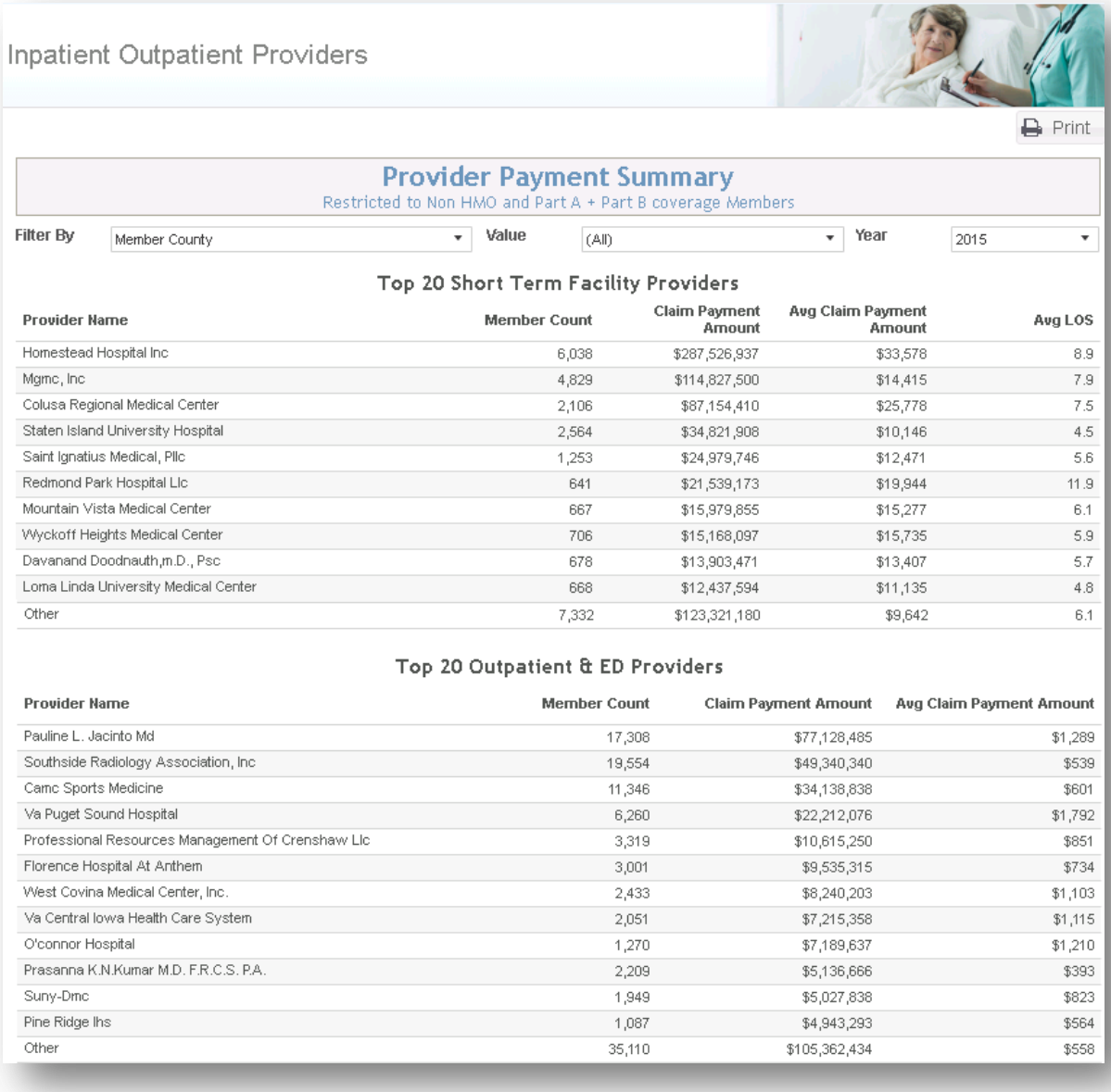
7. INPATIENT OUTPATIENT PROVIDERS

Inpatient Outpatient Providers lists the top 20 short term facilities and top 20 outpatient/ED providers the members received services from. The list is sorted by member count and shows the payment amounts and average inpatient length of stay (LOS).



Inpatient Outpatient Providers

Print

Provider Payment Summary

Restricted to Non HMO and Part A + Part B coverage Members

Filter By: Member County | Value: (All) | Year: 2015

Top 20 Short Term Facility Providers

Provider Name	Member Count	Claim Payment Amount	Avg Claim Payment Amount	Avg LOS
Homestead Hospital Inc	6,038	$287,526,937	$33,578	8.9
Mgmc, Inc	4,829	$114,827,500	$14,415	7.9
Colusa Regional Medical Center	2,106	$87,154,410	$25,778	7.5
Staten Island University Hospital	2,564	$34,821,908	$10,146	4.5
Saint Ignatius Medical, Pllc	1,253	$24,979,746	$12,471	5.6
Redmond Park Hospital Llc	641	$21,539,173	$19,944	11.9
Mountain Vista Medical Center	667	$15,979,855	$15,277	6.1
Wyckoff Heights Medical Center	706	$15,168,097	$15,735	5.9
Davanand Doodnauth,m.D., Psc	678	$13,903,471	$13,407	5.7
Loma Linda University Medical Center	668	$12,437,594	$11,135	4.8
Other	7,332	$123,321,180	$9,642	6.1

Top 20 Outpatient & ED Providers

Provider Name	Member Count	Claim Payment Amount	Avg Claim Payment Amount
Pauline L. Jacinto Md	17,308	$77,128,485	$1,289
Southside Radiology Association, Inc	19,554	$49,340,340	$539
Camc Sports Medicine	11,346	$34,138,838	$601
Va Puget Sound Hospital	6,260	$22,212,076	$1,792
Professional Resources Management Of Crenshaw Llc	3,319	$10,615,250	$851
Florence Hospital At Anthem	3,001	$9,535,315	$734
West Covina Medical Center, Inc.	2,433	$8,240,203	$1,103
Va Central Iowa Health Care System	2,051	$7,215,358	$1,115
O'connor Hospital	1,270	$7,189,637	$1,210
Prasanna K.N.Kumar M.D. F.R.C.S. P.A.	2,209	$5,136,666	$393
Suny-Dmc	1,949	$5,027,838	$823
Pine Ridge Ihs	1,087	$4,943,293	$564
Other	35,110	$105,362,434	$558

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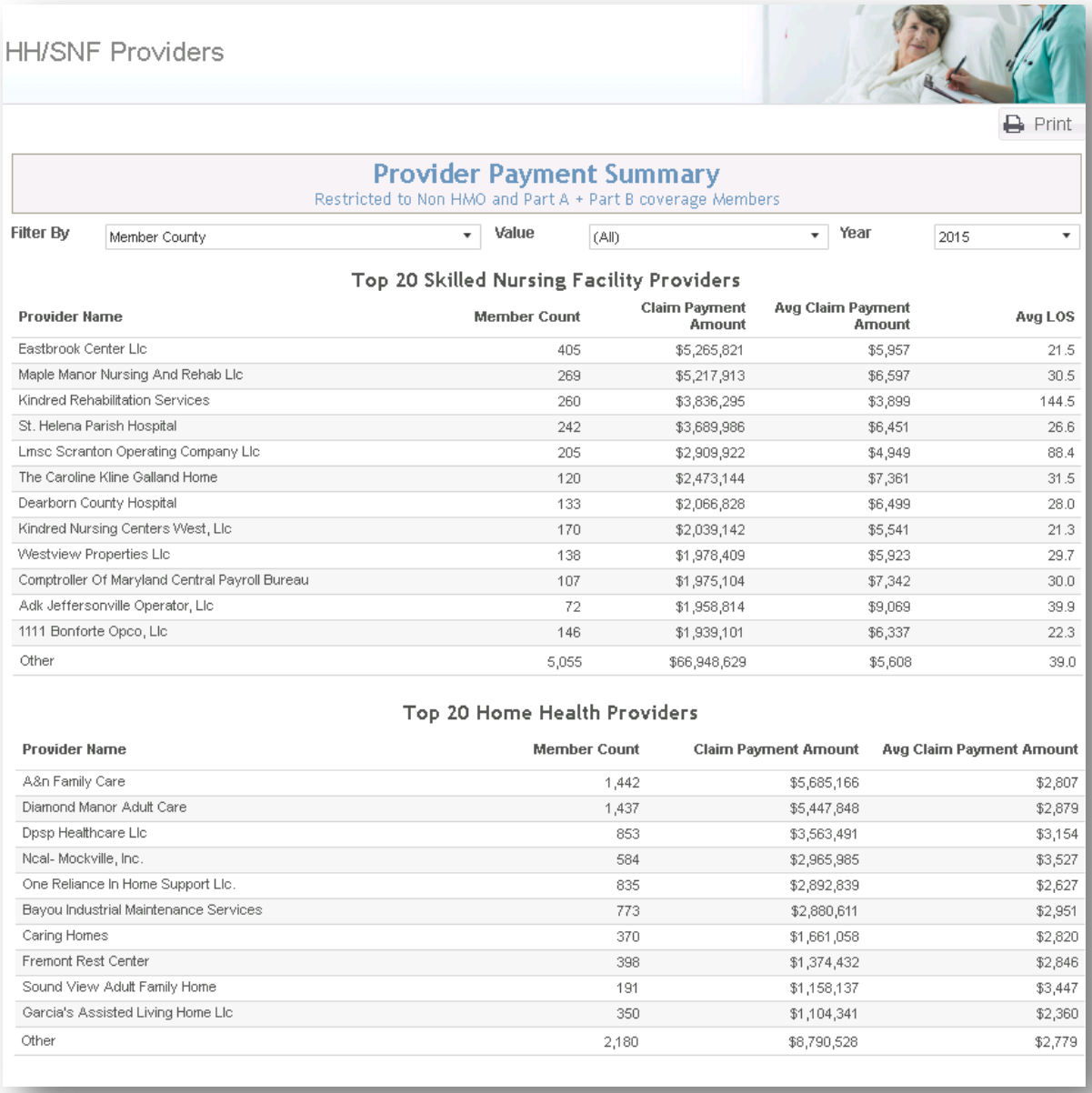
8. HH/SNF PROVIDERS

HH/SNF Providers lists the top 20 skilled nursing facilities and top 20 home health agencies the members received services from. The list is sorted by member count and shows the payment amounts and average skilled nursing facility length of stay (LOS).



HH/SNF Providers

Print

Provider Payment Summary

Restricted to Non HMO and Part A + Part B coverage Members

Filter By: Member County | Value: (All) | Year: 2015

Top 20 Skilled Nursing Facility Providers

Provider Name	Member Count	Claim Payment Amount	Avg Claim Payment Amount	Avg LOS
Eastbrook Center Llc	405	$5,265,821	$5,957	21.5
Maple Manor Nursing And Rehab Llc	269	$5,217,913	$6,597	30.5
Kindred Rehabilitation Services	260	$3,836,295	$3,899	144.5
St. Helena Parish Hospital	242	$3,689,986	$6,451	26.6
Lmsc Scranton Operating Company Llc	205	$2,909,922	$4,949	88.4
The Caroline Kline Galland Home	120	$2,473,144	$7,361	31.5
Dearborn County Hospital	133	$2,066,828	$6,499	28.0
Kindred Nursing Centers West, Llc	170	$2,039,142	$5,541	21.3
Westview Properties Llc	138	$1,978,409	$5,923	29.7
Comptroller Of Maryland Central Payroll Bureau	107	$1,975,104	$7,342	30.0
Adk Jeffersonville Operator, Llc	72	$1,958,814	$9,069	39.9
1111 Bonforte Opco, Llc	146	$1,939,101	$6,337	22.3
Other	5,055	$66,948,629	$5,608	39.0

Top 20 Home Health Providers

Provider Name	Member Count	Claim Payment Amount	Avg Claim Payment Amount
A&n Family Care	1,442	$5,685,166	$2,807
Diamond Manor Adult Care	1,437	$5,447,848	$2,879
Dpsp Healthcare Llc	853	$3,563,491	$3,154
Ncal- Mockville, Inc.	584	$2,965,985	$3,527
One Reliance In Home Support Llc.	835	$2,892,839	$2,627
Bayou Industrial Maintenance Services	773	$2,880,611	$2,951
Caring Homes	370	$1,661,058	$2,820
Fremont Rest Center	398	$1,374,432	$2,846
Sound View Adult Family Home	191	$1,158,137	$3,447
Garcia's Assisted Living Home Llc	350	$1,104,341	$2,360
Other	2,180	$8,790,528	$2,779

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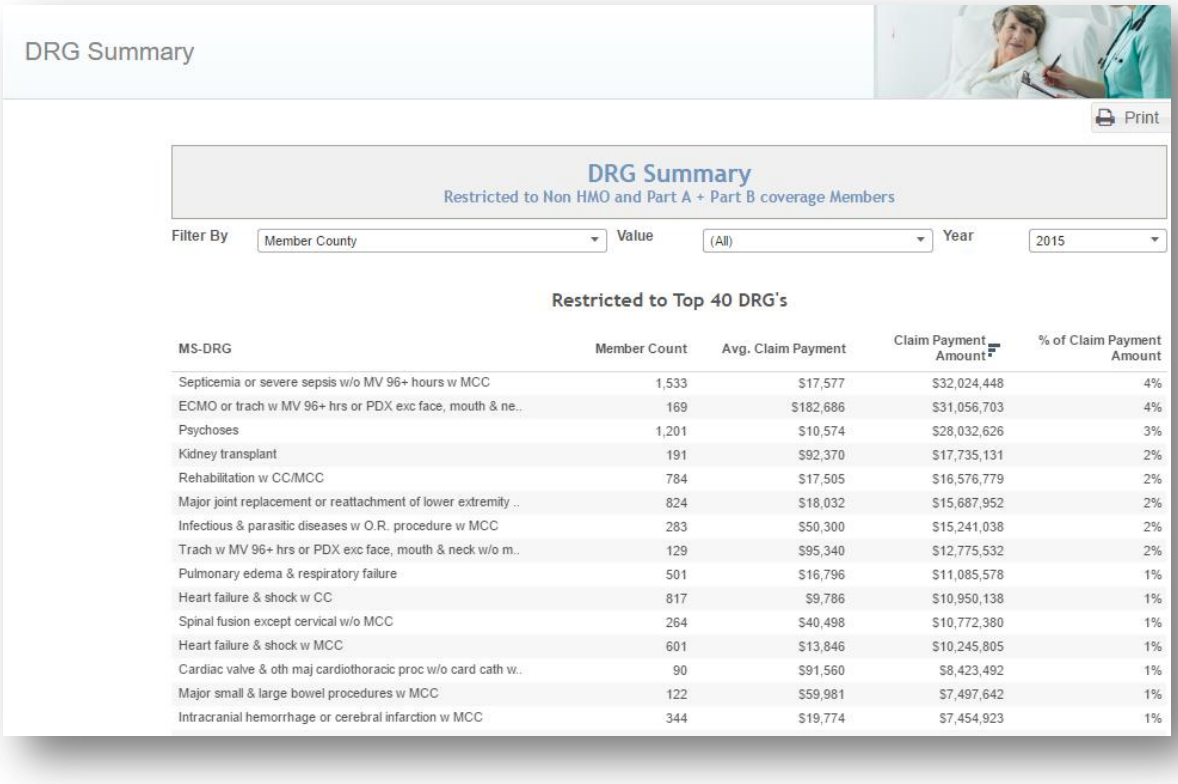
9. DRG SUMMARY

DRG Summary lists the top 40 MS-DRGs by total payment amount. The table also provides the member count and average claim payment amount for each MS-DRG.



DRG Summary

Print

DRG Summary

Restricted to Non HMO and Part A + Part B coverage Members

Filter By: Member County | Value: (All) | Year: 2015

Restricted to Top 40 DRG's

MS-DRG	Member Count	Avg. Claim Payment	Claim Payment Amount	% of Claim Payment Amount
Septicemia or severe sepsis w/o MV 96+ hours w MCC	1,533	$17,577	$32,024,448	4%
ECMO or trach w MV 96+ hrs or PDX exc face, mouth & ne..	169	$182,686	$31,056,703	4%
Psychoses	1,201	$10,574	$28,032,626	3%
Kidney transplant	191	$92,370	$17,735,131	2%
Rehabilitation w CC/MCC	784	$17,505	$16,576,779	2%
Major joint replacement or reattachment of lower extremity ..	824	$18,032	$15,687,952	2%
Infectious & parasitic diseases w O.R. procedure w MCC	283	$50,300	$15,241,038	2%
Trach w MV 96+ hrs or PDX exc face, mouth & neck w/o m..	129	$95,340	$12,775,532	2%
Pulmonary edema & respiratory failure	501	$16,796	$11,085,578	1%
Heart failure & shock w CC	817	$9,786	$10,950,138	1%
Spinal fusion except cervical w/o MCC	264	$40,498	$10,772,380	1%
Heart failure & shock w MCC	601	$13,846	$10,245,805	1%
Cardiac valve & oth maj cardiothoracic proc w/o card cath w..	90	$91,560	$8,423,492	1%
Major small & large bowel procedures w MCC	122	$59,981	$7,497,642	1%
Intracranial hemorrhage or cerebral infarction w MCC	344	$19,774	$7,454,923	1%

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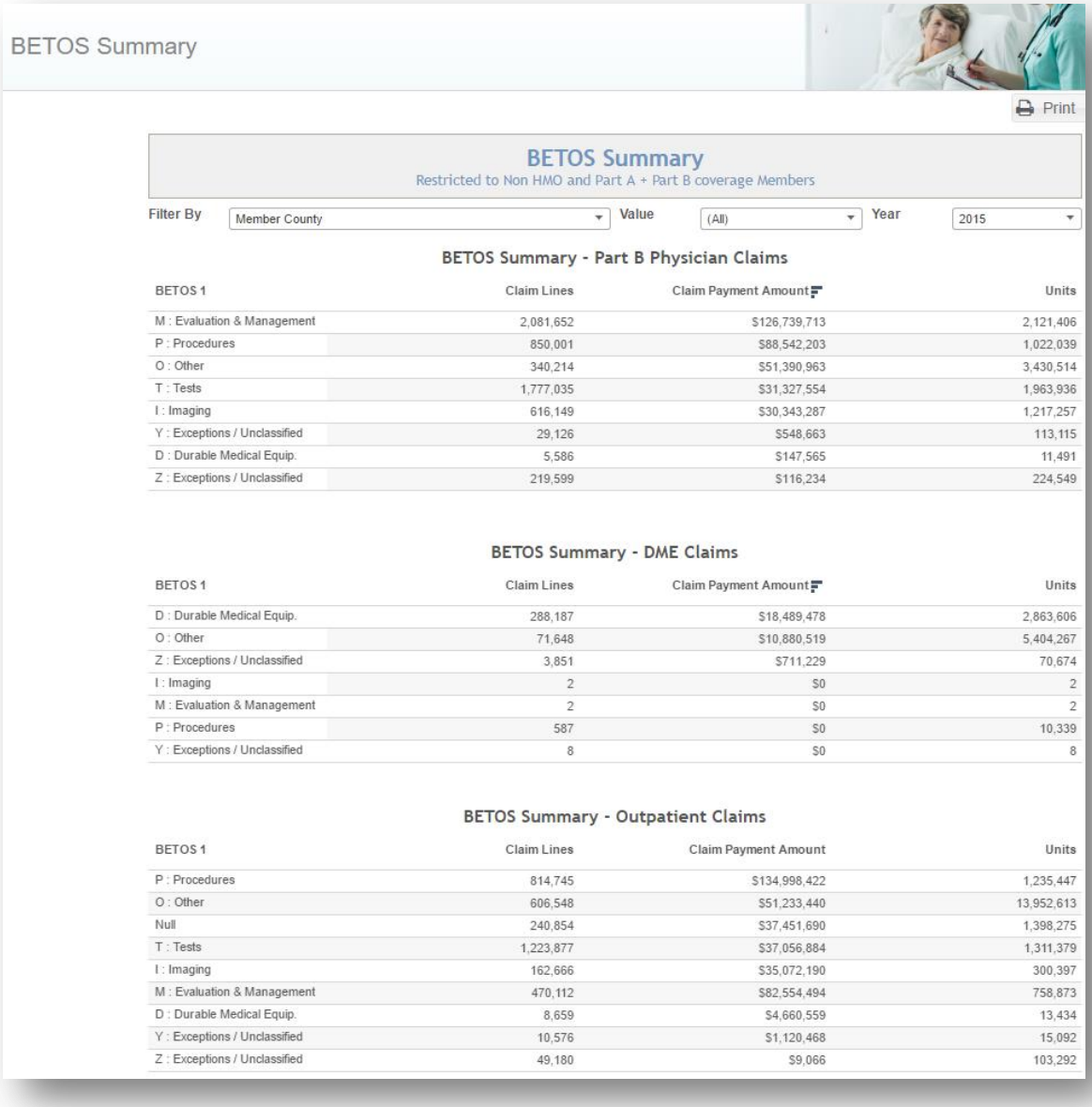
10. BETOS SUMMARY

BETOS Summary shows the distribution of physician services, durable medical equipment, and outpatient services. These services are categorized using the BETOS classification. The tables list the claim line count, unit count, and total payment amount. For further information on BETOS classification refer to the Glossary.



BETOS Summary

Print

BETOS Summary

Restricted to Non HMO and Part A + Part B coverage Members

Filter By: Member County | Value: (All) | Year: 2015

BETOS Summary - Part B Physician Claims

BETOS 1	Claim Lines	Claim Payment Amount	Units
M : Evaluation & Management	2,081,652	$126,739,713	2,121,406
P : Procedures	850,001	$88,542,203	1,022,039
O : Other	340,214	$51,390,963	3,430,514
T : Tests	1,777,035	$31,327,554	1,963,936
I : Imaging	616,149	$30,343,287	1,217,257
Y : Exceptions / Unclassified	29,126	$548,663	113,115
D : Durable Medical Equip.	5,586	$147,565	11,491
Z : Exceptions / Unclassified	219,599	$116,234	224,549

BETOS Summary - DME Claims

BETOS 1	Claim Lines	Claim Payment Amount	Units
D : Durable Medical Equip.	288,187	$18,489,478	2,863,606
O : Other	71,648	$10,880,519	5,404,267
Z : Exceptions / Unclassified	3,851	$711,229	70,674
I : Imaging	2	$0	2
M : Evaluation & Management	2	$0	2
P : Procedures	587	$0	10,339
Y : Exceptions / Unclassified	8	$0	8

BETOS Summary - Outpatient Claims

BETOS 1	Claim Lines	Claim Payment Amount	Units
P : Procedures	814,745	$134,998,422	1,235,447
O : Other	606,548	$51,233,440	13,952,613
Null	240,854	$37,451,690	1,398,275
T : Tests	1,223,877	$37,056,884	1,311,379
I : Imaging	162,666	$35,072,190	300,397
M : Evaluation & Management	470,112	$82,554,494	758,873
D : Durable Medical Equip.	8,659	$4,660,559	13,434
Y : Exceptions / Unclassified	10,576	$1,120,468	15,092
Z : Exceptions / Unclassified	49,180	$9,066	103,292

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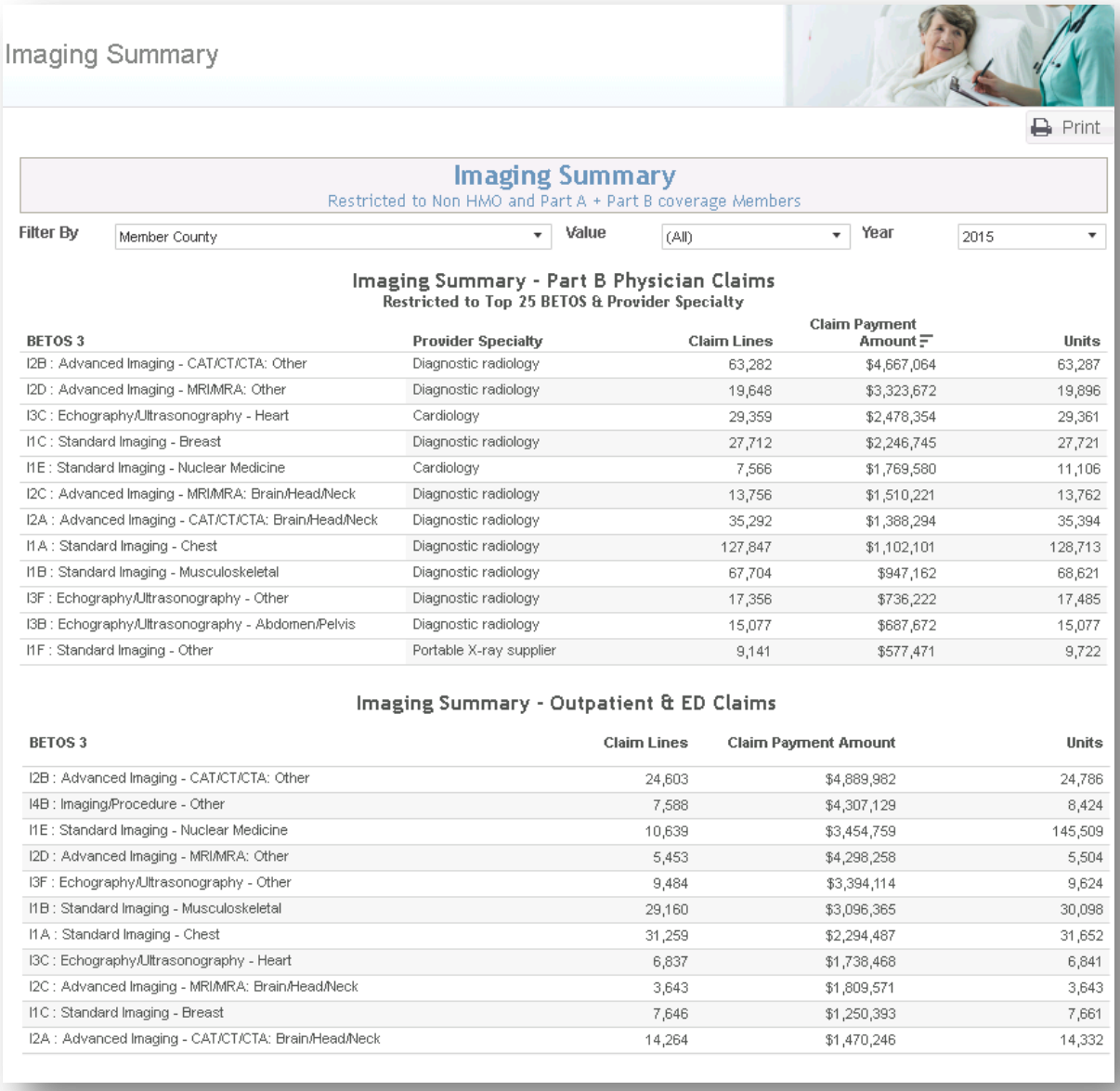
11. IMAGING SUMMARY

Imaging Summary lists the top 25 imaging service BETOS categories performed by physicians, as well as the imaging services ordered within the outpatient/ED setting. Claim line count, unit count, and total payment amount is also provided in the tables.



Imaging Summary

Print

Imaging Summary

Restricted to Non HMO and Part A + Part B coverage Members

Filter By: Member County | Value: (All) | Year: 2015

Imaging Summary - Part B Physician Claims

Restricted to Top 25 BETOS & Provider Specialty

BETOS 3	Provider Specialty	Claim Lines	Claim Payment Amount	Units
I2B : Advanced Imaging - CAT/CT/CTA: Other	Diagnostic radiology	63,282	$4,667,064	63,287
I2D : Advanced Imaging - MRI/MRA: Other	Diagnostic radiology	19,648	$3,323,672	19,896
I3C : Echography/Ultrasonography - Heart	Cardiology	29,359	$2,478,354	29,361
I1C : Standard Imaging - Breast	Diagnostic radiology	27,712	$2,246,745	27,721
I1E : Standard Imaging - Nuclear Medicine	Cardiology	7,566	$1,769,580	11,106
I2C : Advanced Imaging - MRI/MRA: Brain/Head/Neck	Diagnostic radiology	13,756	$1,510,221	13,762
I2A : Advanced Imaging - CAT/CT/CTA: Brain/Head/Neck	Diagnostic radiology	35,292	$1,388,294	35,394
I1A : Standard Imaging - Chest	Diagnostic radiology	127,847	$1,102,101	128,713
I1B : Standard Imaging - Musculoskeletal	Diagnostic radiology	67,704	$947,162	68,621
I3F : Echography/Ultrasonography - Other	Diagnostic radiology	17,356	$736,222	17,485
I3B : Echography/Ultrasonography - Abdomen/Pelvis	Diagnostic radiology	15,077	$687,672	15,077
I1F : Standard Imaging - Other	Portable X-ray supplier	9,141	$577,471	9,722

Imaging Summary - Outpatient & ED Claims

BETOS 3	Claim Lines	Claim Payment Amount	Units
I2B : Advanced Imaging - CAT/CT/CTA: Other	24,603	$4,889,982	24,786
I4B : Imaging/Procedure - Other	7,588	$4,307,129	8,424
I1E : Standard Imaging - Nuclear Medicine	10,639	$3,454,759	145,509
I2D : Advanced Imaging - MRI/MRA: Other	5,453	$4,298,258	5,504
I3F : Echography/Ultrasonography - Other	9,484	$3,394,114	9,624
I1B : Standard Imaging - Musculoskeletal	29,160	$3,096,365	30,098
I1A : Standard Imaging - Chest	31,259	$2,294,487	31,652
I3C : Echography/Ultrasonography - Heart	6,837	$1,738,468	6,841
I2C : Advanced Imaging - MRI/MRA: Brain/Head/Neck	3,643	$1,809,571	3,643
I1C : Standard Imaging - Breast	7,646	$1,250,393	7,661
I2A : Advanced Imaging - CAT/CT/CTA: Brain/Head/Neck	14,264	$1,470,246	14,332

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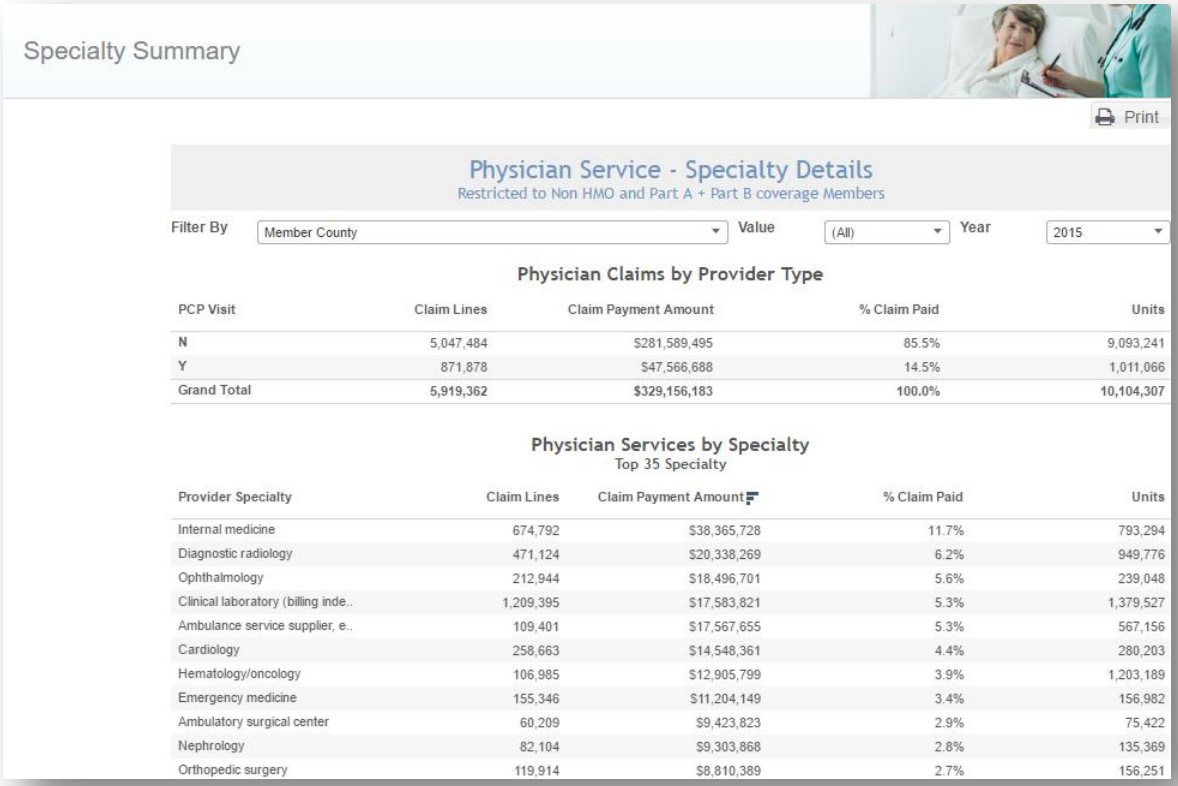
12. SPECIALTY SUMMARY

Specialty Summary lists the top 35 physician specialties based on total payment amount. Also provided is the claim line count and unit count. The Primary Care Provider (PCP) Visit field indicates claims where members either visited a primary care provider specialty (identified by family practice or internal medicine) or visited a specialist directly.



Specialty Summary

Print

Physician Service - Specialty Details

Restricted to Non HMO and Part A + Part B coverage Members

Filter By: Member County | Value: (All) | Year: 2015

Physician Claims by Provider Type

PCP Visit	Claim Lines	Claim Payment Amount	% Claim Paid	Units
N	5,047,484	$281,589,495	85.5%	9,093,241
Y	871,878	$47,566,688	14.5%	1,011,066
Grand Total	5,919,362	$329,156,183	100.0%	10,104,307

Physician Services by Specialty

Top 35 Specialty

Provider Specialty	Claim Lines	Claim Payment Amount	% Claim Paid	Units
Internal medicine	674,792	$38,365,728	11.7%	793,294
Diagnostic radiology	471,124	$20,338,269	6.2%	949,776
Ophthalmology	212,944	$18,496,701	5.6%	239,048
Clinical laboratory (billing inde..	1,209,395	$17,583,821	5.3%	1,379,527
Ambulance service supplier, e..	109,401	$17,567,655	5.3%	567,156
Cardiology	258,663	$14,548,361	4.4%	280,203
Hematology/oncology	106,985	$12,905,799	3.9%	1,203,189
Emergency medicine	155,346	$11,204,149	3.4%	156,982
Ambulatory surgical center	60,209	$9,423,823	2.9%	75,422
Nephrology	82,104	$9,303,868	2.8%	135,369
Orthopedic surgery	119,914	$8,810,389	2.7%	156,251

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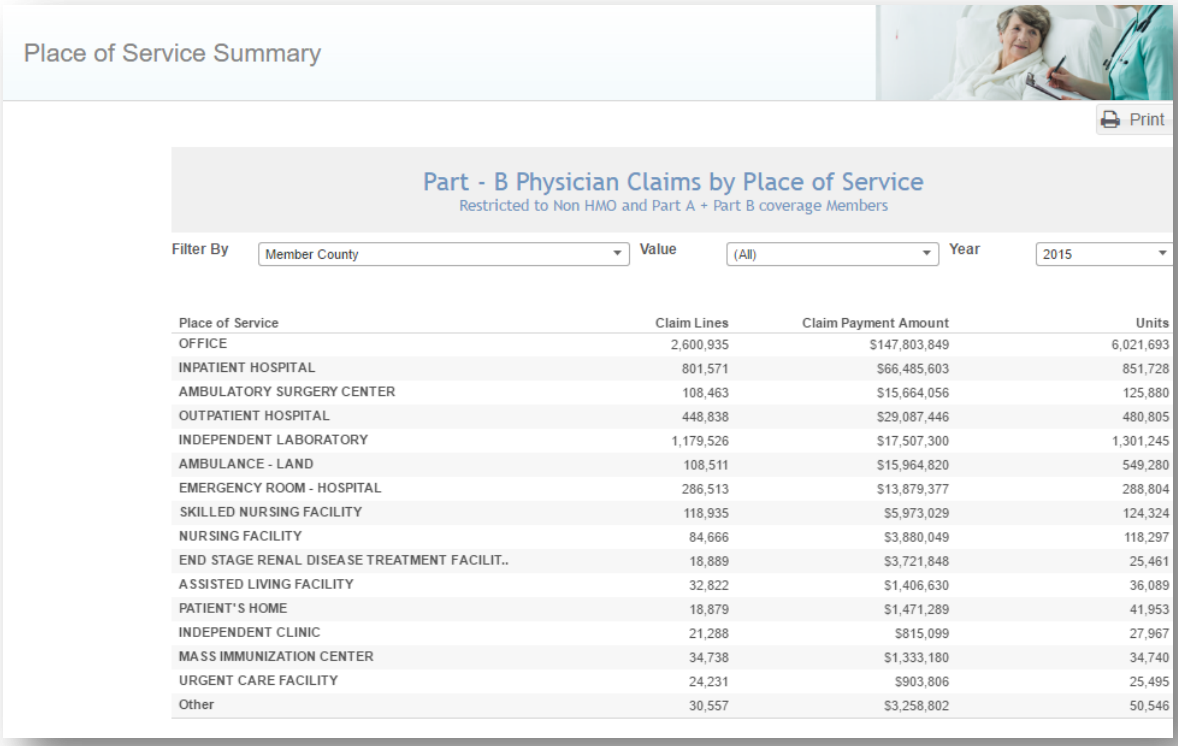
13. PLACE OF SERVICE SUMMARY

Place of Service Summary details which place of service the physician claims reported. Claim line count, payment amount, and unit count by place of service is provided.



Place of Service Summary

Print

Part - B Physician Claims by Place of Service

Restricted to Non HMO and Part A + Part B coverage Members

Filter By: Member County | Value: (All) | Year: 2015

Place of Service	Claim Lines	Claim Payment Amount	Units
OFFICE	2,600,935	$147,803,849	6,021,693
INPATIENT HOSPITAL	801,571	$66,485,603	851,728
AMBULATORY SURGERY CENTER	108,463	$15,664,056	125,880
OUTPATIENT HOSPITAL	448,838	$29,087,446	480,805
INDEPENDENT LABORATORY	1,179,526	$17,507,300	1,301,245
AMBULANCE - LAND	108,511	$15,964,820	549,280
EMERGENCY ROOM - HOSPITAL	286,513	$13,879,377	288,804
SKILLED NURSING FACILITY	118,935	$5,973,029	124,324
NURSING FACILITY	84,666	$3,880,049	118,297
END STAGE RENAL DISEASE TREATMENT FACILIT..	18,889	$3,721,848	25,461
ASSISTED LIVING FACILITY	32,822	$1,406,630	36,089
PATIENT'S HOME	18,879	$1,471,289	41,953
INDEPENDENT CLINIC	21,288	$815,099	27,967
MASS IMMUNIZATION CENTER	34,738	$1,333,180	34,740
URGENT CARE FACILITY	24,231	$903,806	25,495
Other	30,557	$3,258,802	50,546

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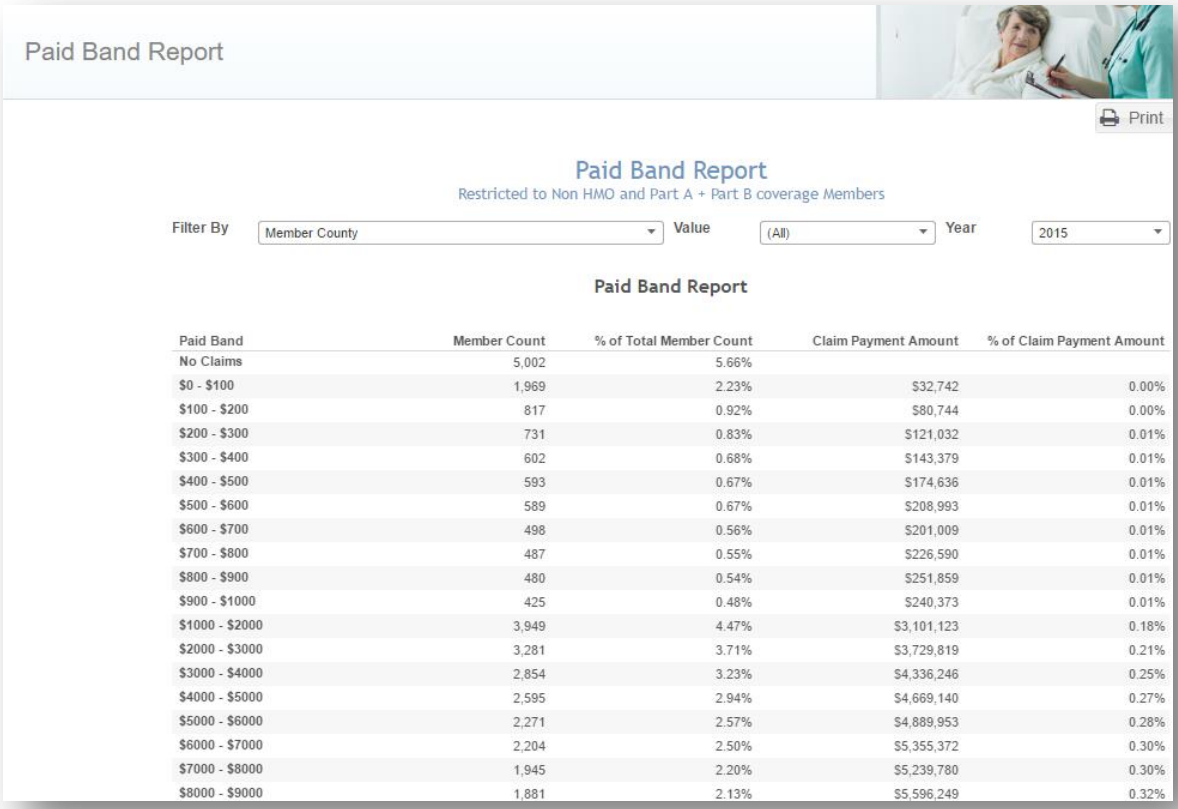
14. PAID BAND REPORT

Paid Band Report shows the distribution of members based on the member's total payment amount for the year.



Paid Band Report

Print

Paid Band Report

Restricted to Non HMO and Part A + Part B coverage Members

Filter By: Member County | Value: (All) | Year: 2015

Paid Band Report

Paid Band	Member Count	% of Total Member Count	Claim Payment Amount	% of Claim Payment Amount
No Claims	5,002	5.66%		
$0 - $100	1,969	2.23%	$32,742	0.00%
$100 - $200	817	0.92%	$80,744	0.00%
$200 - $300	731	0.83%	$121,032	0.01%
$300 - $400	602	0.68%	$143,379	0.01%
$400 - $500	593	0.67%	$174,636	0.01%
$500 - $600	589	0.67%	$208,993	0.01%
$600 - $700	498	0.56%	$201,009	0.01%
$700 - $800	487	0.55%	$226,590	0.01%
$800 - $900	480	0.54%	$251,859	0.01%
$900 - $1000	425	0.48%	$240,373	0.01%
$1000 - $2000	3,949	4.47%	$3,101,123	0.18%
$2000 - $3000	3,281	3.71%	$3,729,819	0.21%
$3000 - $4000	2,854	3.23%	$4,336,246	0.25%
$4000 - $5000	2,595	2.94%	$4,669,140	0.27%
$5000 - $6000	2,271	2.57%	$4,889,953	0.28%
$6000 - $7000	2,204	2.50%	$5,355,372	0.30%
$7000 - $8000	1,945	2.20%	$5,239,780	0.30%
$8000 - $9000	1,881	2.13%	$5,596,249	0.32%

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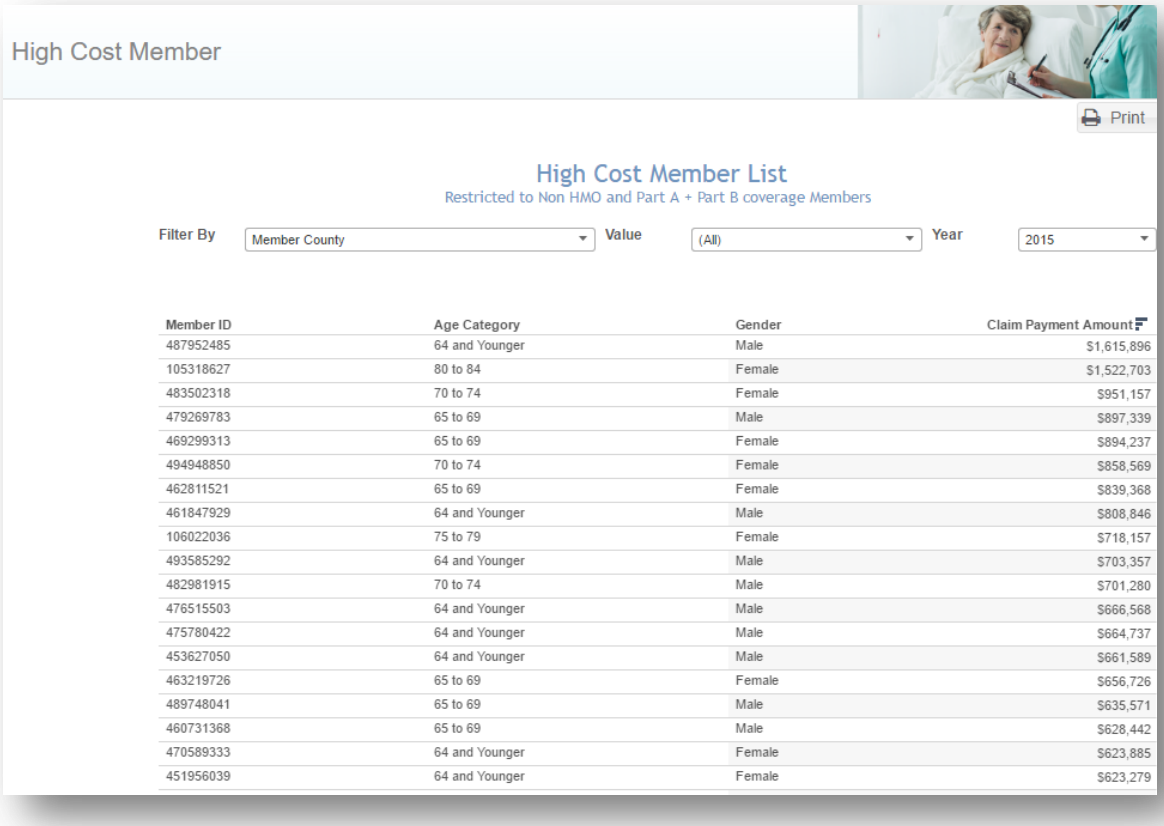
15. HIGH COST MEMBER

High Cost Member lists the most expensive members in the chosen population.



Member ID	Age Category	Gender	Claim Payment Amount
487952485	64 and Younger	Male	$1,615,896
105318627	80 to 84	Female	$1,522,703
483502318	70 to 74	Female	$951,157
479269783	65 to 69	Male	$897,339
469299313	65 to 69	Female	$894,237
494948850	70 to 74	Female	$858,569
462811521	65 to 69	Female	$839,368
461847929	64 and Younger	Male	$808,846
106022036	75 to 79	Female	$718,157
493585292	64 and Younger	Male	$703,357
482981915	70 to 74	Male	$701,280
476515503	64 and Younger	Male	$666,568
475780422	64 and Younger	Male	$664,737
453627050	64 and Younger	Male	$661,589
463219726	65 to 69	Female	$656,726
489748041	65 to 69	Male	$635,571
460731368	65 to 69	Male	$628,442
470589333	64 and Younger	Female	$623,885
451956039	64 and Younger	Female	$623,279

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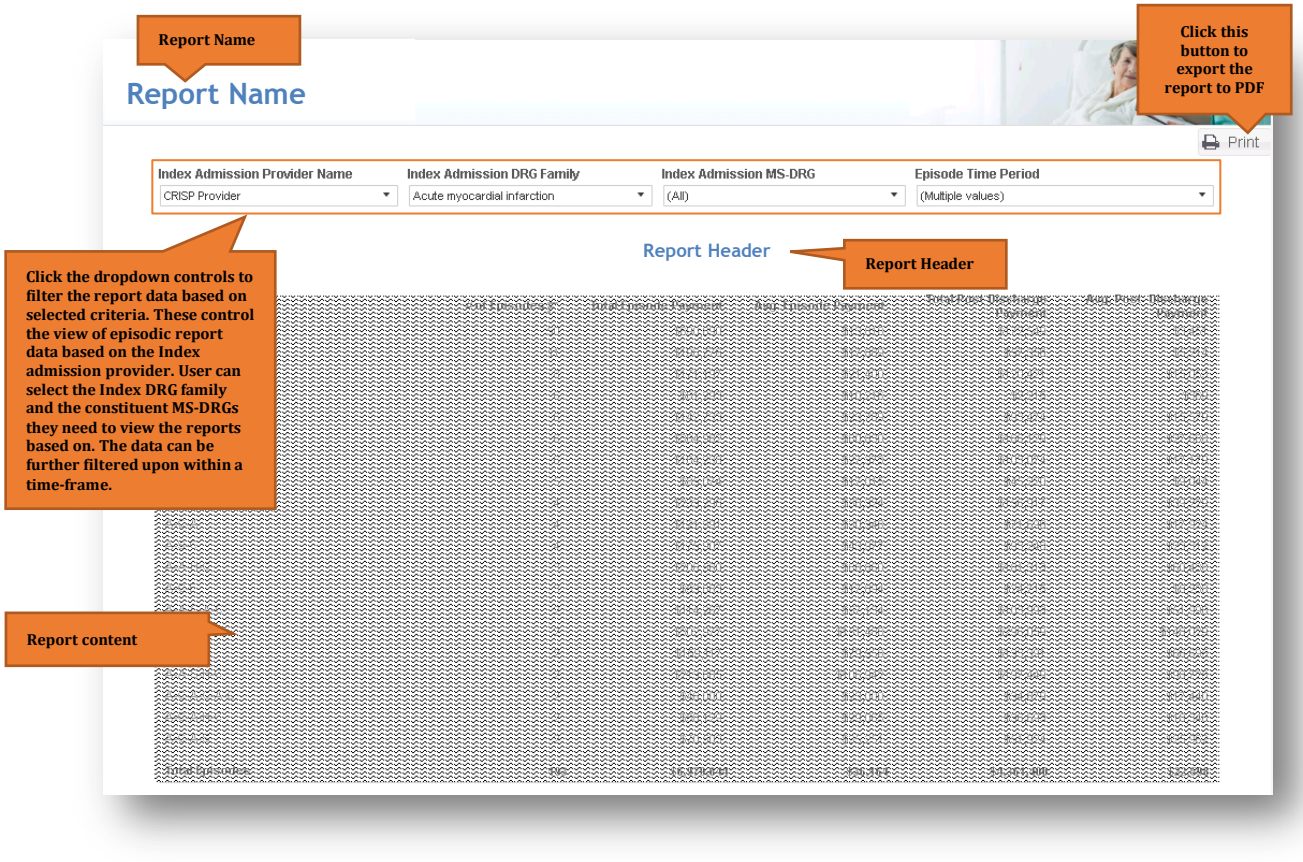
EPISODE ANALYTICS

The general structure of an Episode Analytics report is given below. The various Episode Analytics reports are described in further detail in this section in the following pages. For detailed information on how Episodes are defined in MADE refer to the section in LDS Data Basics titled “Episode”.



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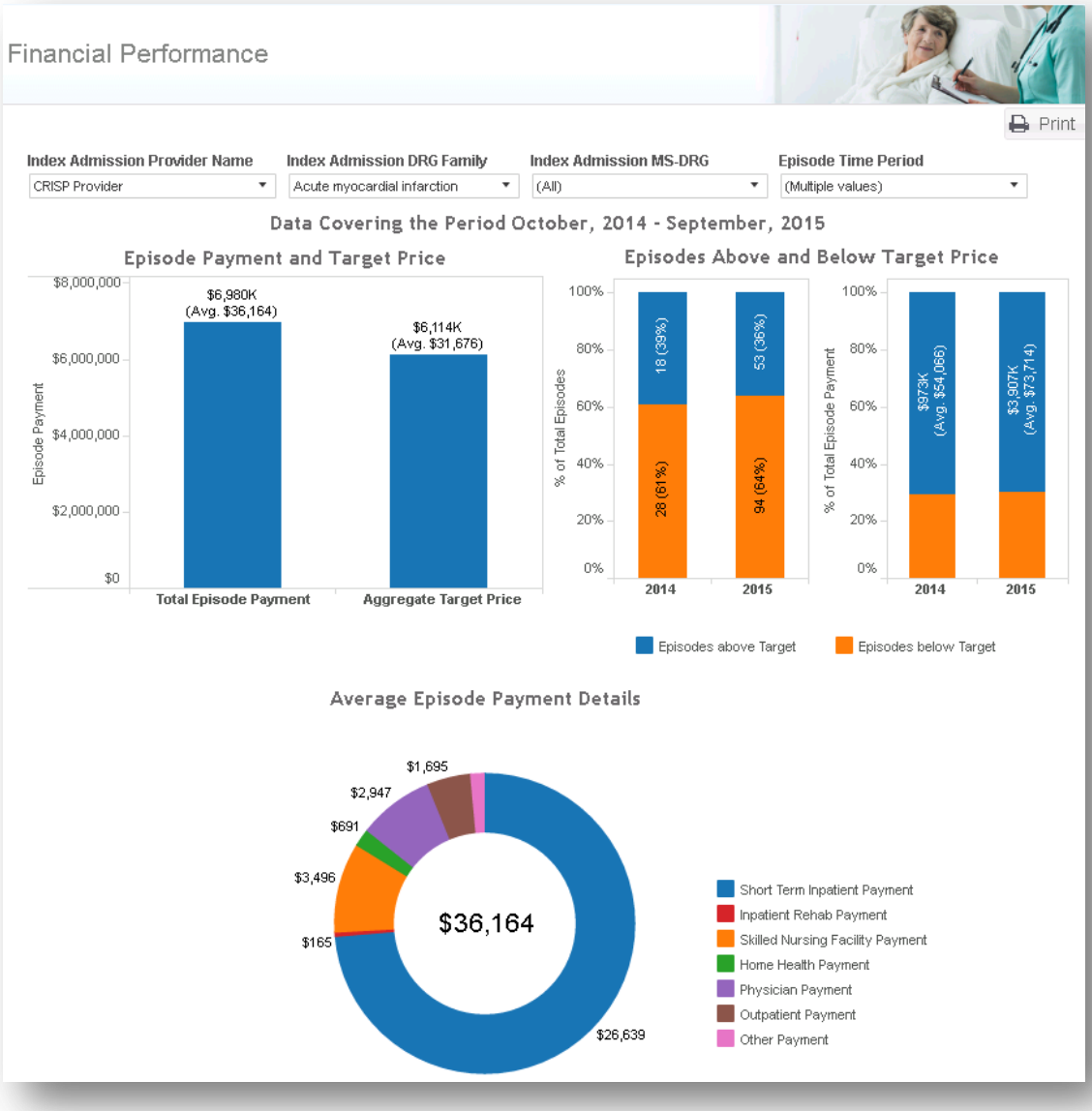
1. FINANCIAL PERFORMANCE

Financial Performance illustrates the episode payment compared to the target price for the chosen MS-DRG. This report shows:

CHART NAME	DESCRIPTION
Episode Payment and Target Price	Total aggregate episode payment compared to the target. Includes episode averages.
Episodes Above and Below Target Price	The percent of cases below and above the target price and the distribution of total dollars related to these cases.
Average Episode Payment Details	The distribution of average payments for the entire episode.



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2. PAYMENT DETAILS

Payment Details provides greater detail about your episode payment distribution. This report shows:

CHART NAME	DESCRIPTION
Episode Payment Summary	Gives the total number of episodes, average episode payment, and total episode payment for episodes above and below the target price.
Episode Payment Details	Compares your payment distribution across health care setting to the regional averages.
Episode Payment Distribution – Region Comparison	Compares your payment distribution across health care setting to the regional averages as a bar chart.

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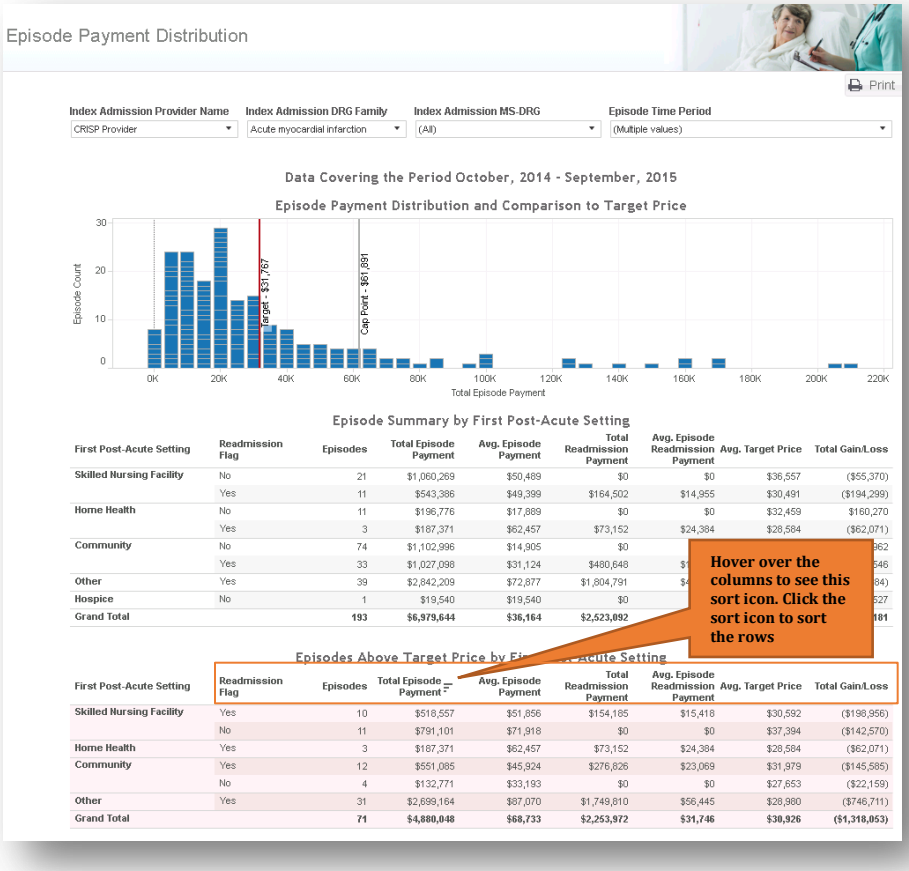
3. EPISODE PAYMENT DISTRIBUTION

Episode Payment Distribution illustrates the distribution of all episodes below and above the target price. This report shows:

CHART NAME	DESCRIPTION
Episode Payment Distribution and Comparison to Target Price	Shows the distribution of episodes by episode payment. Lines are provided for the Target Price (in red) and Cap Point (in grey). The cap point is the episode-level stop-loss where all payments made above that point are not part of the episode payment. This is to prevent outlier effects on the average episode payment for hospitals.
Episode Summary by First Post-Acute Setting	Provides a summary of episode payments, readmissions and the total gain / loss compared to the target price based on the patient's first post-acute care setting.
Episodes Above Target Price by First Post-Acute Setting	Provides a summary of episode payments, readmissions and the total gain / loss compared to the target price based on the patient's first post-acute care setting only for episodes above the target price.



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4. ACUTE CARE MANAGEMENT

Acute Care Management provides various snapshots of performance measures pertaining to the acute care setting. This report shows:

CHART NAME	DESCRIPTION
DRG Summary	The number of episodes, the average episode payments, number of readmissions, and average readmission payment for each MS-DRG of the chosen family.
Index Admission LOS	Quarterly and annual average length of stay of the index admission.
Payment Comparison – Episodes w/ and w/o Readmission	Compares the payments by index admission, post-acute care and readmission components for episodes with and without readmissions.
Readmission Count Comparison	The number of readmissions back to your hospital versus a different hospital.
Readmission Rate Trend	Trends readmissions in total and where the readmission occurred.

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5. LENGTH OF STAY

Length of Stay compares the distribution of length of stay for each MS – DRGs. This report shows:

CHART NAME	DESCRIPTION
Distribution of Length of Stay(LOS) by MS-DRG	Gives the length of stay distribution for each chosen MS-DRG.
Index Length of Stay (LOS) Trend	Shows the length of stay trend for each chosen MS-DRG for the chosen time-period.

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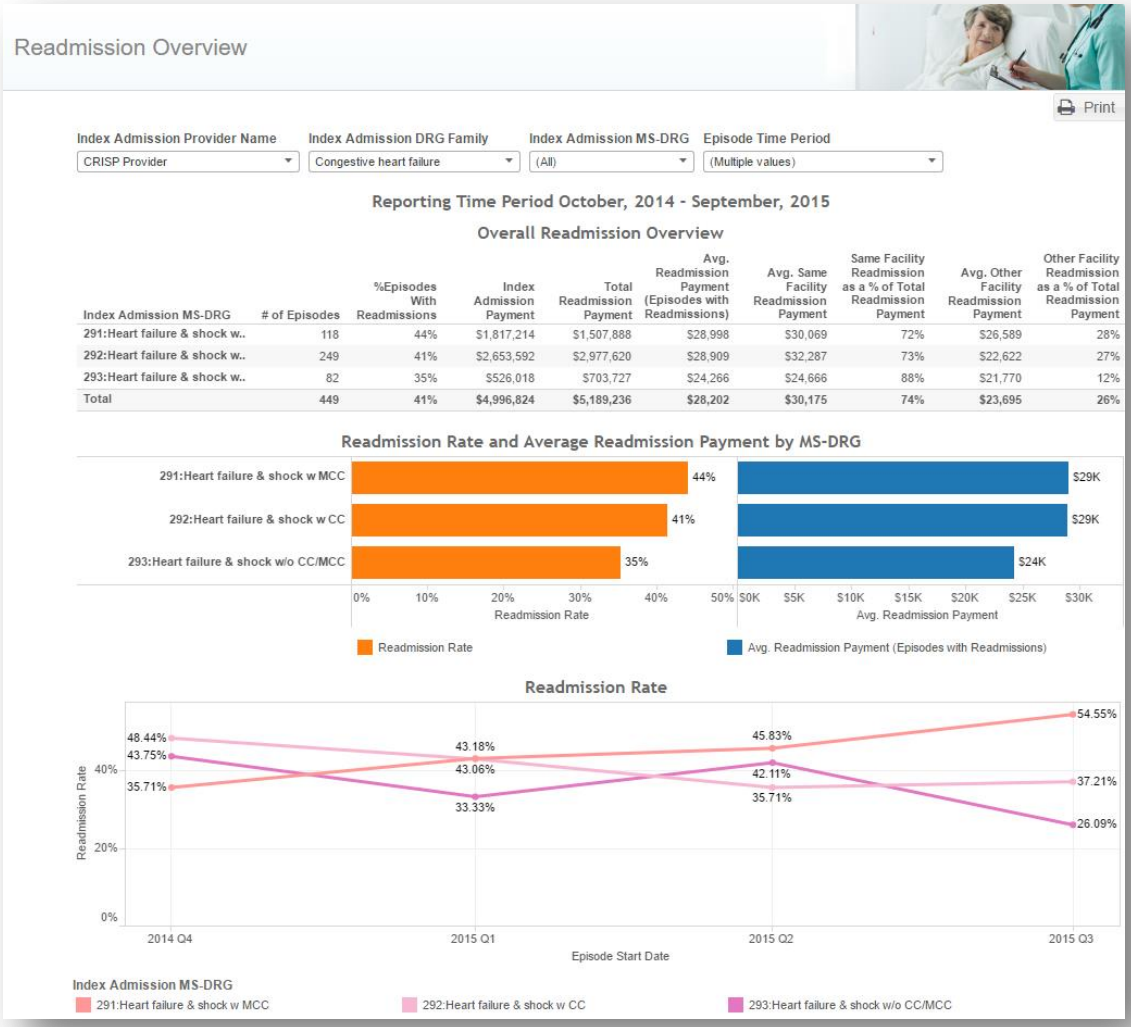
6. READMISSION OVERVIEW

Readmission Overview provides the readmission rate and payment by MS-DRG. This report shows:

CHART NAME	DESCRIPTION
Overall Readmission Overview	An overview of total readmission payments by MS-DRG and breaks down the amounts of this payment and percentages related to the index hospital verses a different hospital.
Readmission Rate and Average Readmission Payment by MS-DRG	Readmission rates and average readmission payment for each chosen MS-DRG.
Readmission Rate	Displays the readmission trend for each MS-DRG.



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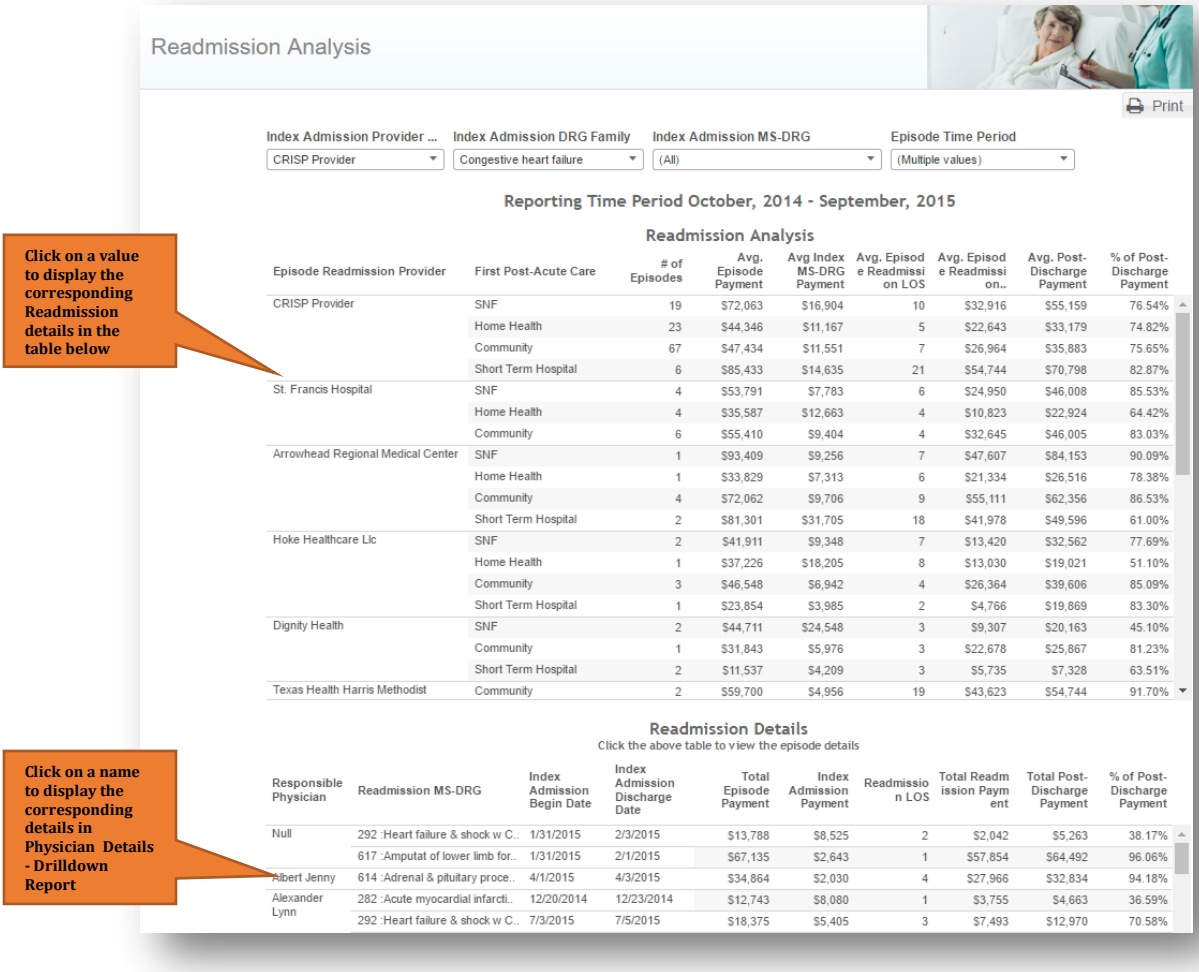
7. READMISSION ANALYSIS

Readmission Analysis provides the details of readmissions by readmission provider and responsible physician. This report shows:

TABLE NAME	DESCRIPTION
Readmission Analysis	Shows data on readmissions by the episode readmission provider and the first post-acute care provider. Selecting a row in this table filters the Readmission Details table.
Readmission Details	Individual readmission information by responsible physician and readmission MS-DRG.



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8. PHYSICIAN REPORT

Physician Report compares each of the top volume physicians. This report shows:

CHART NAME	DESCRIPTION
Average LOS by Physician	Compares the average length of stay of the index admission across physicians.
Average Payment per Episode by Physician	Compares the average episode payment across physicians.
Readmission Rate by Physician	Compares the episode readmission rate by physicians.
Physician Performance Report	Includes similar data from the above three charts for each physician along with the total number of episodes, the average physician payment, and the average readmission payment for each physician.

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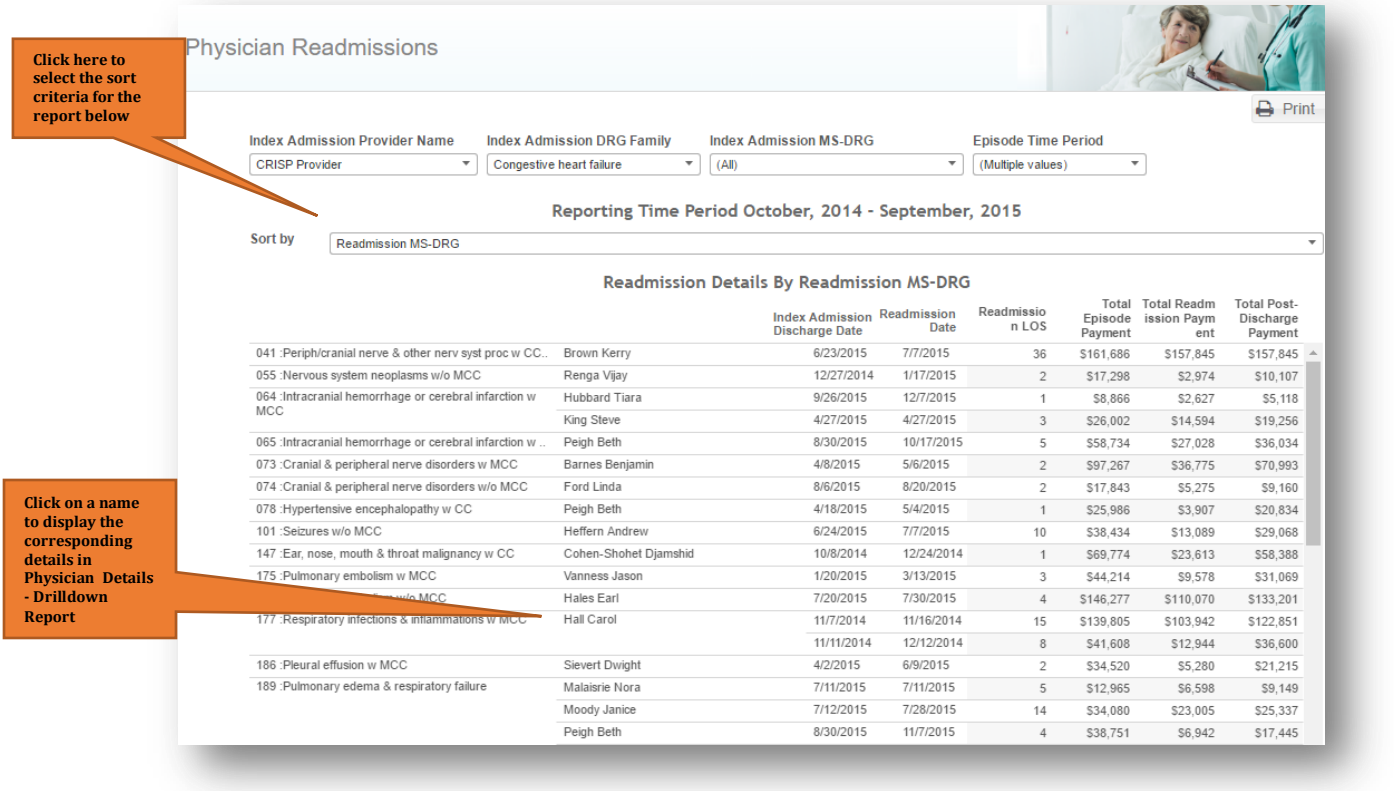
9. PHYSICIAN READMISSIONS

Physician Readmissions lists each readmission by either readmission MS-DRG or by physician. It provides the timeline between the index hospital admission discharge and the readmission. It also provides the total episode cost, readmission cost and total post-discharge cost for each readmission.



		Index Admission Discharge Date	Readmission Date	Readmission LOS	Total Episode Payment	Total Readmission Payment	Total Post-Discharge Payment
041 :Periph/cranial nerve & other nerv syst proc w CC..	Brown Kerry	6/23/2015	7/7/2015	36	$161,686	$157,845	$157,845
055 :Nervous system neoplasms w/o MCC	Renga Vijay	12/27/2014	1/17/2015	2	$17,298	$2,974	$10,107
064 :Intracranial hemorrhage or cerebral infarction w MCC	Hubbard Tiara	9/26/2015	12/7/2015	1	$8,866	$2,627	$5,118
	King Steve	4/27/2015	4/27/2015	3	$26,002	$14,594	$19,256
065 :Intracranial hemorrhage or cerebral infarction w ..	Peigh Beth	8/30/2015	10/17/2015	5	$58,734	$27,028	$36,034
073 :Cranial & peripheral nerve disorders w MCC	Barnes Benjamin	4/8/2015	5/6/2015	2	$97,267	$36,775	$70,993
074 :Cranial & peripheral nerve disorders w/o MCC	Ford Linda	8/6/2015	8/20/2015	2	$17,843	$5,275	$9,160
078 :Hypertensive encephalopathy w CC	Peigh Beth	4/18/2015	5/4/2015	1	$25,986	$3,907	$20,834
101 :Seizures w/o MCC	Heffern Andrew	6/24/2015	7/7/2015	10	$38,434	$13,089	$29,068
147 :Ear, nose, mouth & throat malignancy w CC	Cohen-Shohet Djamshid	10/8/2014	12/24/2014	1	$69,774	$23,613	$58,388
175 :Pulmonary embolism w MCC	Vanness Jason	1/20/2015	3/13/2015	3	$44,214	$9,578	$31,069
[illegible] w/o MCC	Hales Earl	7/20/2015	7/30/2015	4	$146,277	$110,070	$133,201
177 :Respiratory infections & inflammations w MCC	Hall Carol	11/7/2014	11/16/2014	15	$139,805	$103,942	$122,851
		11/11/2014	12/12/2014	8	$41,608	$12,944	$36,600
186 :Pleural effusion w MCC	Sievert Dwight	4/2/2015	6/9/2015	2	$34,520	$5,280	$21,215
189 :Pulmonary edema & respiratory failure	Malaisrie Nora	7/11/2015	7/11/2015	5	$12,965	$6,598	$9,149
	Moody Janice	7/12/2015	7/28/2015	14	$34,080	$23,005	$25,337
	Peigh Beth	8/30/2015	11/7/2015	4	$38,751	$6,942	$17,445

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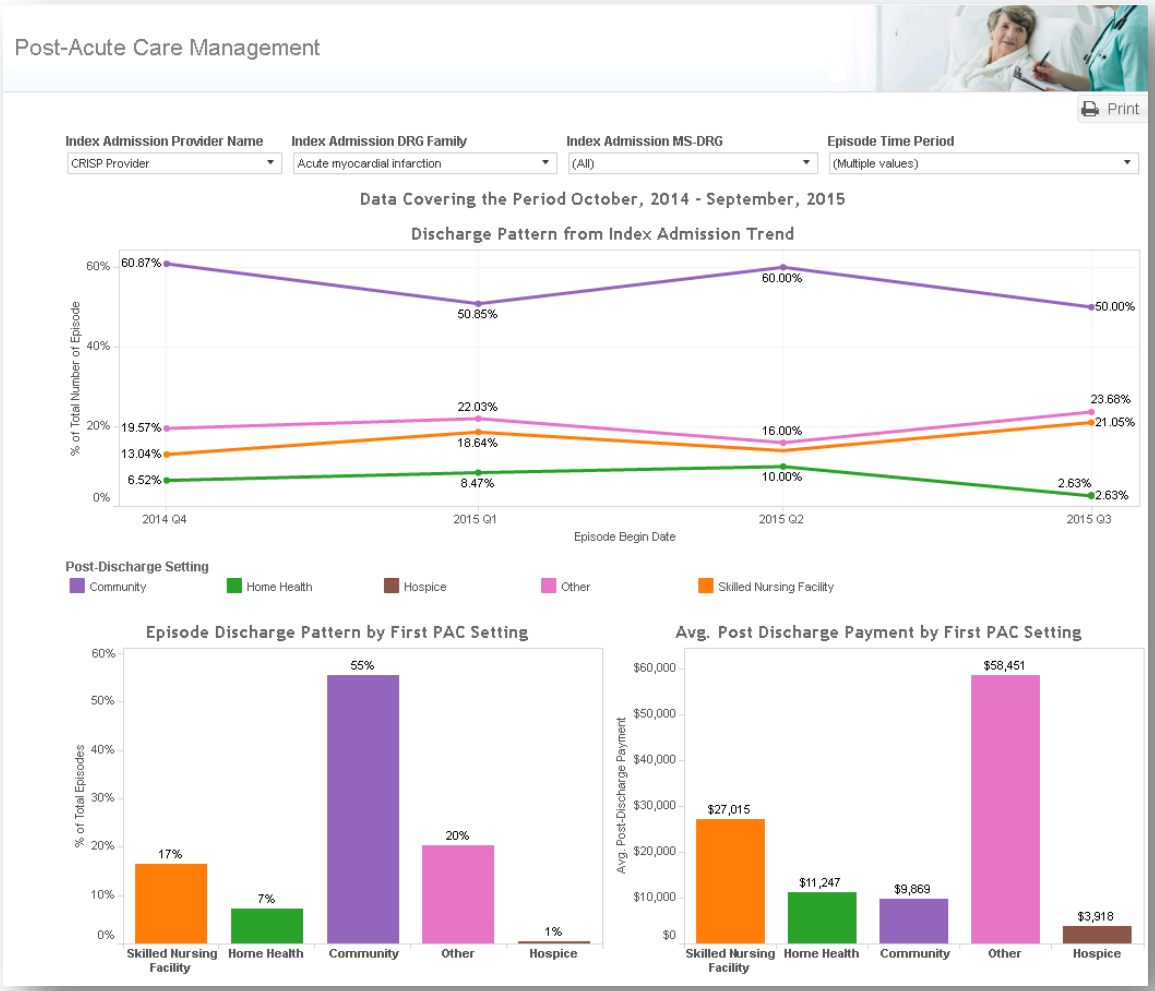
10. POST-ACUTE CARE MANAGEMENT

Post-Acute Care Management shows high-level information based on the discharge pattern from the index admission. This report shows:

CHART NAME	DESCRIPTION
Discharge Pattern from Index Admission Trend	Shows the index admission discharge pattern trends on a quarterly basis for the chosen time period.
Episode Discharge Pattern by First PAC Setting	Illustrates the percentage of episodes discharged by first post-acute care setting.
Avg. Post Discharge Payment by First PAC Setting	Provides the average post-discharge payment by first post-acute care setting.



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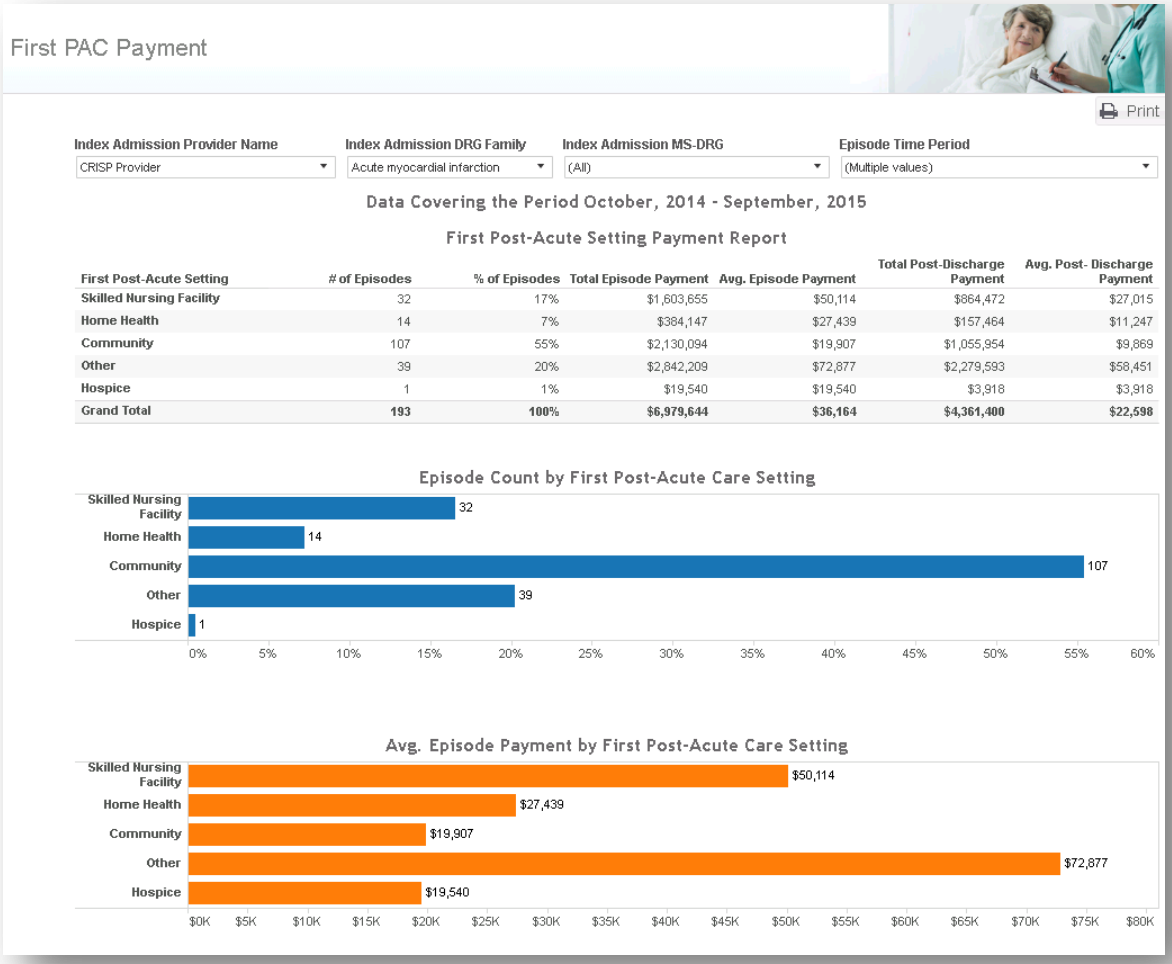
11. FIRST PAC PAYMENT

First PAC Payment contains episode count and payment information based on the discharge setting. This report shows:

CHART NAME	DESCRIPTION
First Post-Acute Setting Payment Report	Details the episode count, total episode payment, and total post-discharge payment by first post-acute care setting.
Episode Count by First Post-Acute Care Setting	Displays the number of episodes related to the first post-acute care setting.
Avg. Episode Payment by First Post-Acute Care Setting	Provides the average episode cost for each of the first post-acute care settings.



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12. PHYSICIAN DISCHARGE PATTERN

Physician Discharge Pattern compares physicians based on which post-acute care settings they discharged to. This report shows:

CHART NAME	DESCRIPTION
Average Post-Discharge Payments	Shows the average post-discharge payment for each of the top volume physicians and compares each physician to the average post-discharge payment for the group.
Discharge Pattern by Physician	Illustrates the discharge pattern for each of the top volume physicians by the percentage of discharges to the first post-acute care setting.
Post Physician Performance Report	Provides similar detail of the two charts above for each physician also including their volume of episodes.

Hover over the columns to see the sort icon. Click the sort icon to sort the rows

Click on a name to display the corresponding details in Physician Details - Drilldown Report

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13. INPATIENT REHABILITATION REPORT

Inpatient Rehabilitation Report compares the top volume Inpatient Rehabilitation Facilities (IRF). This report shows:

CHART NAME	DESCRIPTION
Avg. LOS by Inpatient Rehab Facility	Shows the average length of stay within the IRF for each of the top volume inpatient rehab facilities.
Avg. Payment per Episode by Inpatient Rehab Facility	The average episode payment for each of the top volume inpatient rehab facilities.
Readmission Rate by Inpatient Rehab Facility	The average readmission rate for each of the top volume inpatient rehab facilities.
Inpatient Rehab Facility Report	For each of the providers shown in the above charts, this table gives the number of episodes, average length of stay, and average payment information.

Click on a facility's name to display the details corresponding to the provider facility in Post-Acute Provider Details - Drilldown Report

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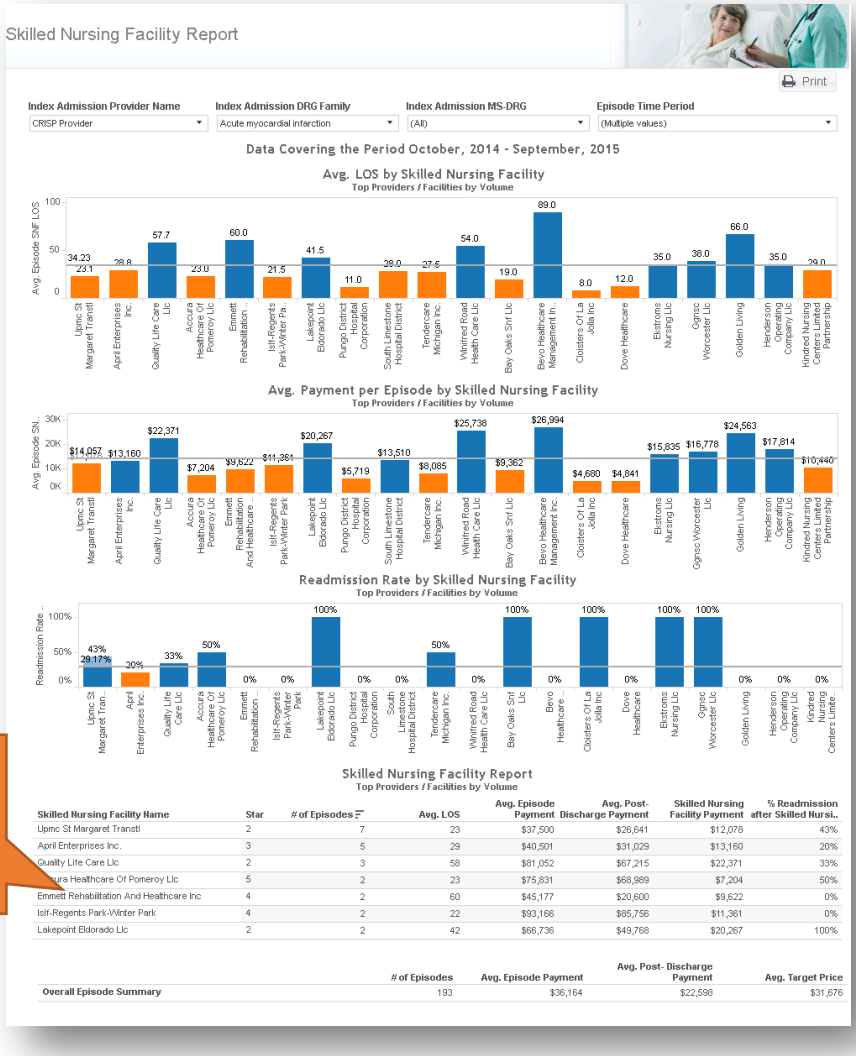
14. SKILLED NURSING FACILITY REPORT

Skilled Nursing Facility Report compares the top volume Skilled Nursing Facilities (SNF). This report shows:

CHART NAME	DESCRIPTION
Avg. LOS by Skilled Nursing Facility	Shows the average length of stay within the SNF for each of the top volume skilled nursing facilities.
Avg. Payment per Episode by Skilled Nursing Facility	The average episode payment for each of the top volume skilled nursing facilities.
Readmission Rate by Skilled Nursing Facility	The average readmission rate for each of the top volume skilled nursing facilities.
Skilled Nursing Facility Report	For each of the providers shown in the above charts, this table gives the number of episodes, average length of stay, and average payment information



Click on a facility's name to display the details corresponding to the provider facility in Post-Acute Provider Details - Drilldown Report

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15. HOME HEALTH REPORT

Home Health Report compares the top volume Home Health Agencies (HHA). This report shows:

CHART NAME	DESCRIPTION
Avg. Number of Visits by Home Health Agency	Shows the average number of visits for each of the top volume home health agencies.
Avg. Total Payment per Episode by Home Health Agency	The average episode payment for each of the top volume home health agencies.
Readmission Rate by Home Health Agency	The average readmission rate for each of the top volume home health agencies.
Home Health Report	For each of the providers shown in the above charts, this table gives the number of episodes, average Home Health visits, and average payment information

Click on a facility's name to display the details corresponding to the provider facility in Post-Acute Provider Details - Drilldown Report

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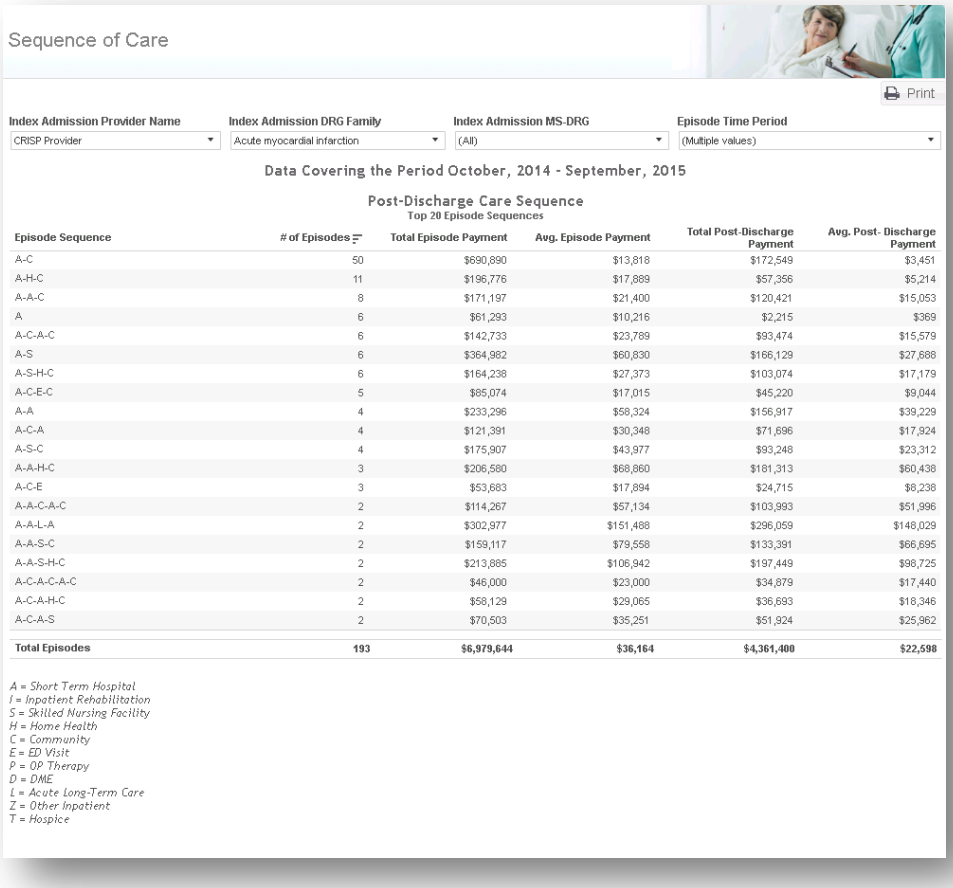
16. SEQUENCE OF CARE

Sequence of Care illustrates the top 20 post-acute care sequences by volume. This report provides information regarding volume, total and average episode payments, and total and average post-discharge payments for each sequence. The provider types mentioned in this report are given here:

Provider Type	Provider Type Description
A	Short Term Hospital
I	Inpatient Rehabilitation
S	Skilled Nursing Facility
H	Home Health
C	Community
E	ED Visit
P	OP Therapy
D	DME
L	Acute Long Term Care
Z	Other Inpatient
T	Hospice



Sequence of Care

Print

Index Admission Provider Name: CRISP Provider | Index Admission DRG Family: Acute myocardial infarction | Index Admission MS-DRG: (All) | Episode Time Period: (Multiple values)

Data Covering the Period October, 2014 - September, 2015

Post-Discharge Care Sequence
Top 20 Episode Sequences

Episode Sequence	# of Episodes	Total Episode Payment	Avg. Episode Payment	Total Post-Discharge Payment	Avg. Post- Discharge Payment
A-C	50	$690,890	$13,818	$172,549	$3,451
A-H-C	11	$196,776	$17,889	$57,356	$5,214
A-A-C	8	$171,197	$21,400	$120,421	$15,053
A	6	$61,293	$10,216	$2,215	$369
A-C-A-C	6	$142,733	$23,789	$93,474	$15,579
A-S	6	$364,982	$60,830	$166,129	$27,688
A-S-H-C	6	$164,238	$27,373	$103,074	$17,179
A-C-E-C	5	$85,074	$17,015	$45,220	$9,044
A-A	4	$233,296	$58,324	$156,917	$39,229
A-C-A	4	$121,391	$30,348	$71,696	$17,924
A-S-C	4	$175,907	$43,977	$93,248	$23,312
A-A-H-C	3	$206,580	$68,860	$181,313	$60,438
A-C-E	3	$53,683	$17,894	$24,715	$8,238
A-A-C-A-C	2	$114,267	$57,134	$103,993	$51,996
A-A-L-A	2	$302,977	$151,488	$296,059	$148,029
A-A-S-C	2	$159,117	$79,558	$133,391	$66,695
A-A-S-H-C	2	$213,885	$106,942	$197,449	$98,725
A-C-A-C-A-C	2	$46,000	$23,000	$34,879	$17,440
A-C-A-H-C	2	$58,129	$29,065	$36,693	$18,346
A-C-A-S	2	$70,503	$35,251	$51,924	$25,962
Total Episodes	**193**	**$6,979,644**	**$36,164**	**$4,361,400**	**$22,598**

A = Short Term Hospital
I = Inpatient Rehabilitation
S = Skilled Nursing Facility
H = Home Health
C = Community
E = ED Visit
P = OP Therapy
D = DME
L = Acute Long-Term Care
Z = Other Inpatient
T = Hospice

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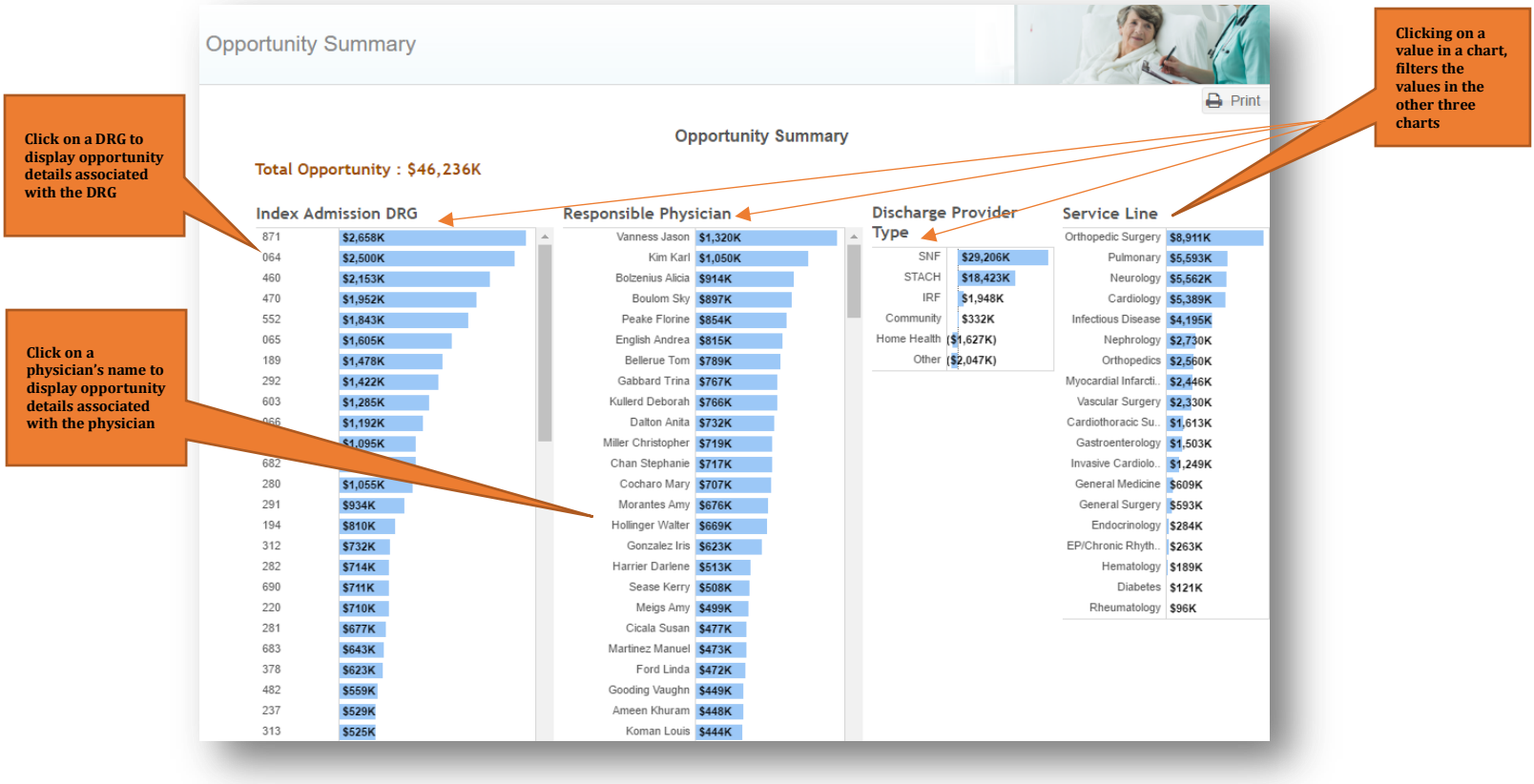
17. OPPORTUNITY SUMMARY

Opportunity Summary highlights the areas of savings opportunities. Selecting any row will filter the other columns. This report includes:

COLUMN NAME	DESCRIPTION
Index Admission DRG	The amount of savings opportunity for each MS-DRG.
Responsible Physician	Savings opportunities related to each responsible physician.
Discharge Provider Type	The first place of service following discharge from the index hospital.
Service Line	The amount of savings opportunity for each service line.



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18. POST-ACUTE VARIANCE EXPLORER (PAVE) SAVINGS OPPORTUNITY

PAVE uses proprietary technology of hMetrix to cluster groups of physicians into clusters based on similarity of practice patterns.

CHART NAME	DESCRIPTION
Post-Acute Savings Opportunity Summary	Shows the savings opportunity for each MS-DRG if the average post-discharge payments related to each physician were replaced with the average in the highest performing cluster.
Physician Cluster Summary	Provides a summary of the number of episodes, physicians and the average post-discharge cost in each cluster.
Discharge Pattern by Physician	Discharge patterns for each physician by percent of discharges to the first post-acute care setting.
Post-Discharge Payment by Physician	Illustrates the average post-discharge payment for each physician in a cluster and compares it to the average for the other clusters.
Highest Performing Cluster – Discharge Pattern	Represents the high performing cluster's average discharge pattern by percent of distribution.
Highest Performing Cluster – Payment Split	Represents the high performing cluster's average post-discharge payment and its spit between the different post-acute care settings.

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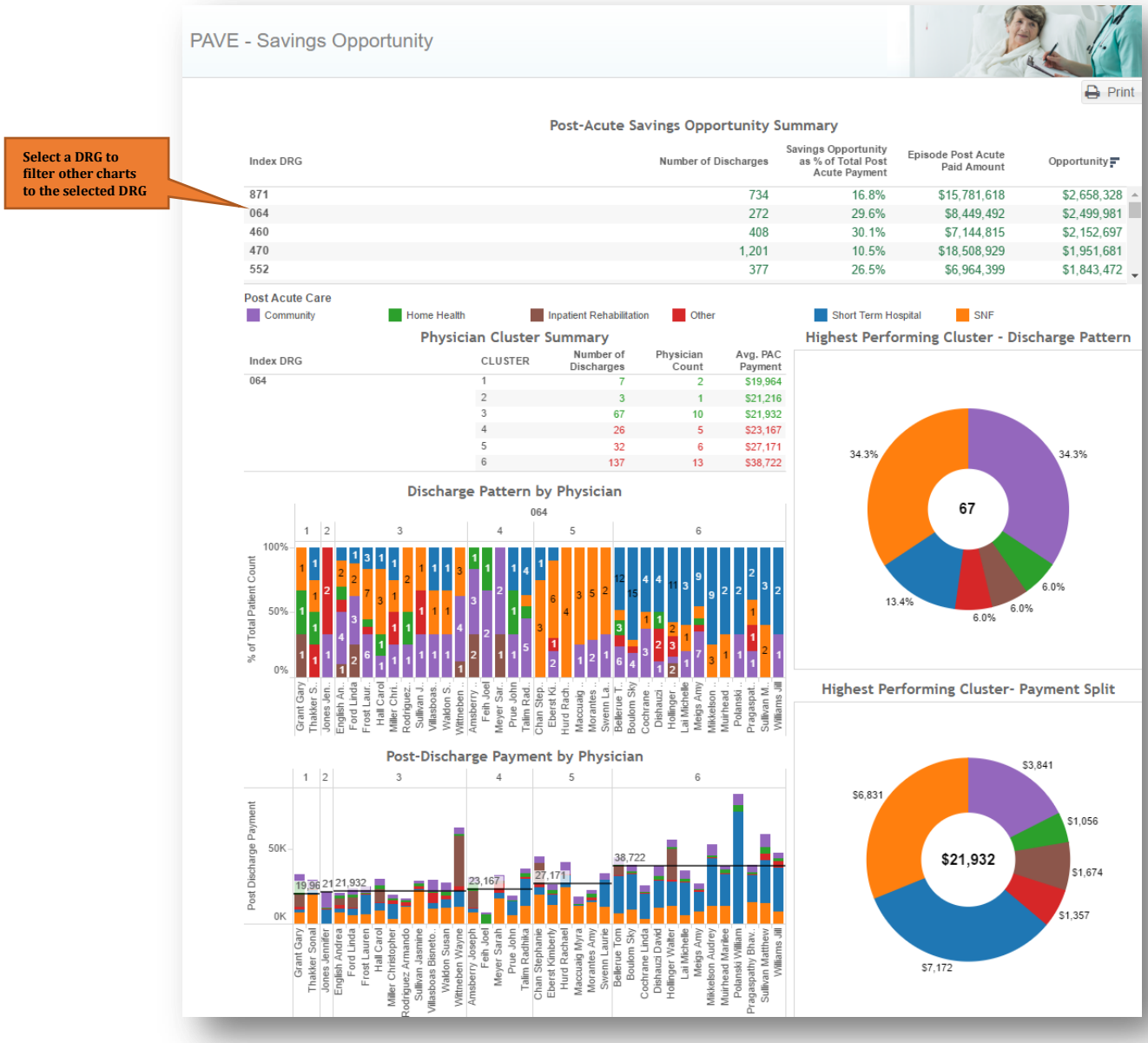

Select a DRG to filter other charts to the selected DRG

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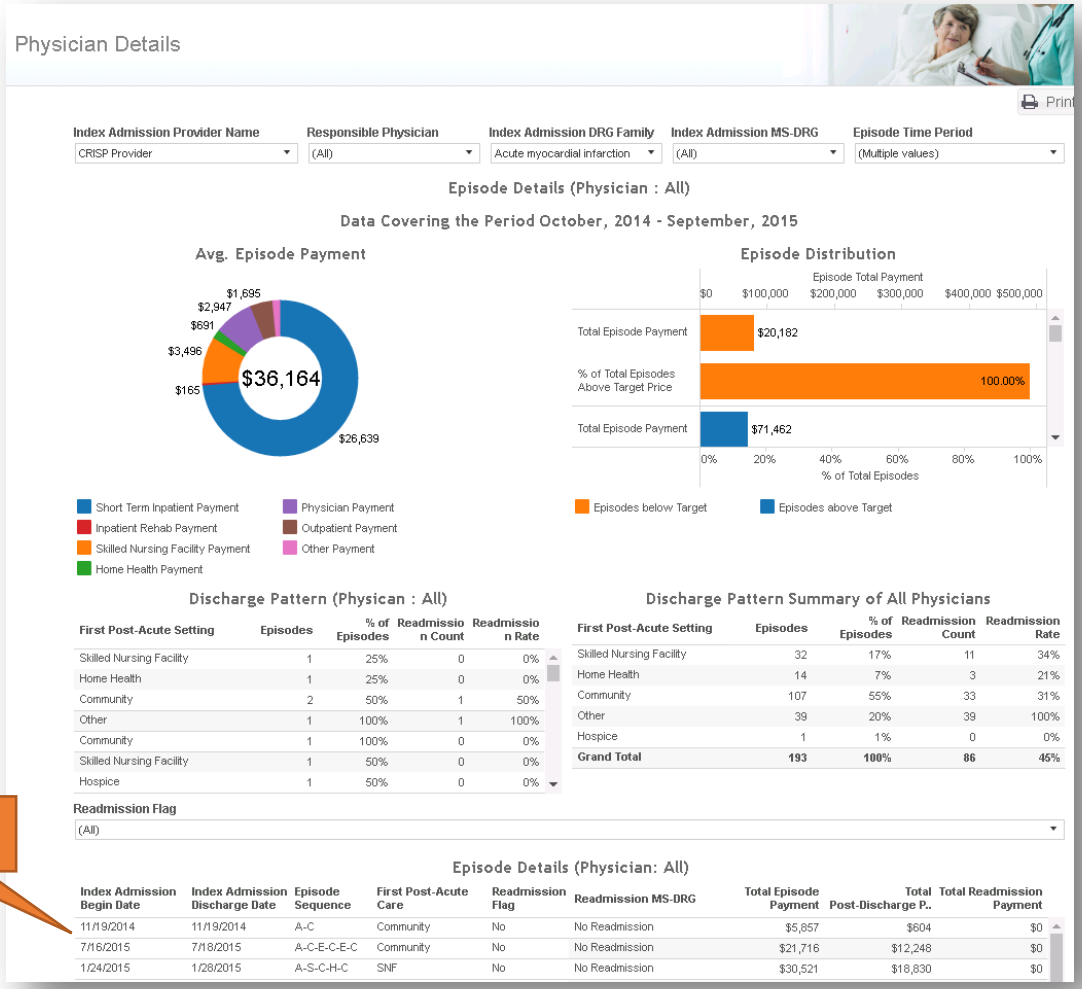
19. PHYSICIAN DETAILS

Physician Details shows the key metrics of a particular physician. This report shows:

CHART NAME	DESCRIPTION
Avg. Episode Payment	Shows the physician's average episode payments by setting.
Episode Distribution	Provides the distribution of episodes above and below the target price for the selected physician.
Discharge Pattern	Lists the discharge pattern and readmission rate by first post-acute care setting for the selected physician. Selecting a row from this table filters the Episode Details table.
Discharge Pattern Summary of All Physicians	Lists the discharge pattern and readmission rate by first post-acute care setting for the hospital.
Episode Details	Lists all episodes for the physician. Can be filtered to show only episodes with readmissions.



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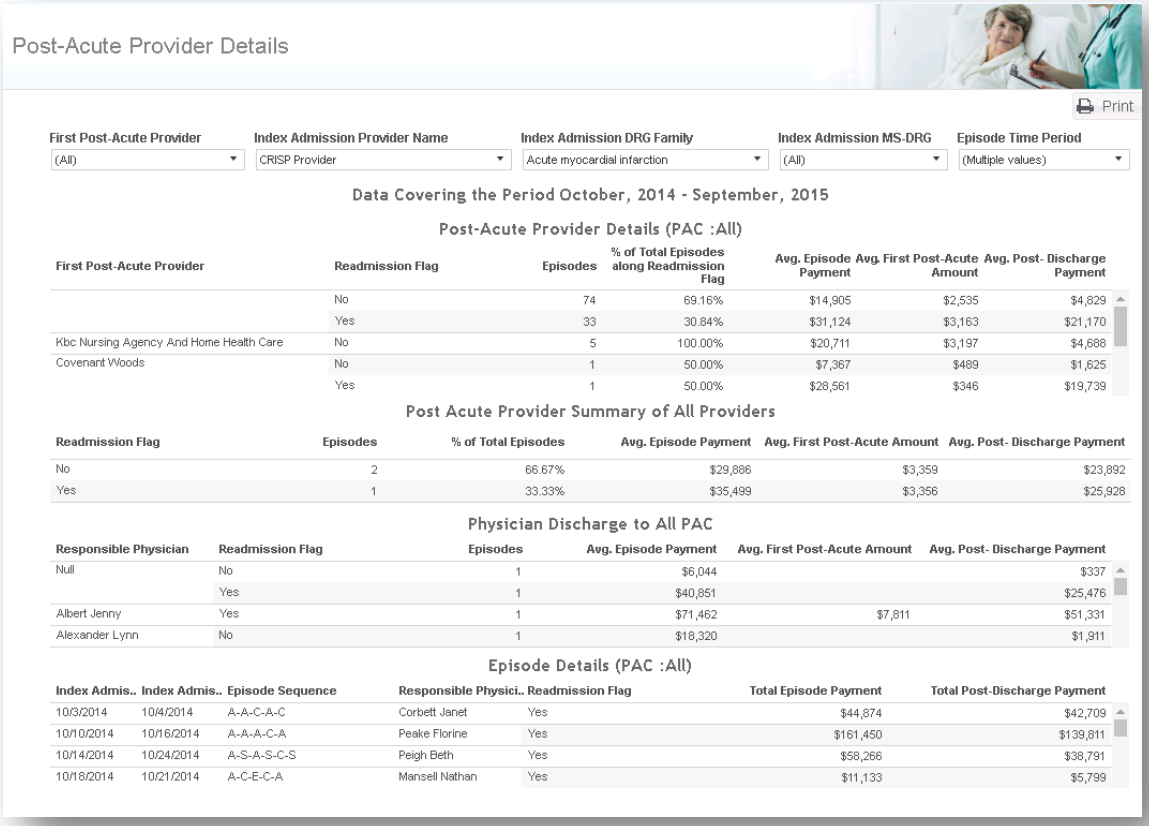
20. POST-ACUTE PROVIDER DETAILS

Post-Acute Provider Details shows the key metrics of a particular post-acute care provider. This report shows:

CHART NAME	DESCRIPTION
Post-Acute Provider Details	Details the number of episodes, readmissions, and payments related to the selected post-acute provider.
Post-Acute Provider Summary of All Providers	Details the number of episodes, readmissions, and payments related to all post-acute providers.
Physician Discharge to All PAC	Lists the physicians who discharged to the selected post-acute provider, along with the volume of episodes and episode payments.
Episode Details	Lists all episodes for the Post-Acute Provider



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GLOSSARY

Glossary provides quick reference to the terms used in the CRISP LDS application:

Term	Definition
BETOS	Berenson-Eggers Type of Service (BETOS) codes is a classification of CPT and HCPCS codes into broad categories that allow for easy review and analysis of data.
CCS Category	The Clinical Classifications Software (CCS) is a diagnosis and procedure categorization system developed by AHRQ' HCUP project to aggregate diagnosis and procedure codes into a smaller number of clinically meaningful categories.
Cluster	Physicians are grouped into discrete groups based on similarity of practice patterns, i.e. similar physicians will appear in the same cluster, while dissimilar physicians will appear in different clusters. The comparison of utilization across these clusters allows for the calculation of opportunity.
Community	Post-acute setting defined by non-facility based physician services.
Episode	All episode-related payments which occurred between the index admission and 90 days after discharge. The episode is initiated by an admission to your hospital.
ESRD	Patients with End-Stage Renal Disease (ESRD) are eligible for Medicare coverage regardless of age.
First Setting / First PAC / First Post-Acute Care	The first facility or setting that the patient was discharged to after the index admission. The post-discharge period could have multiple stays at various post-acute settings (or even readmissions); however, this is the first one the patient was discharged to.
HHA / HH	Home Health Agency
Index Admission	The initiating admission at your hospital. This is the event that begins the episode. Also known as the anchor stay.
IRF	Inpatient Rehabilitation Facility
LOS	Length of stay, measured in days.
LTCH	Long-Term Care Hospital
Member Months	The number of beneficiaries enrolled in Medicare Part A and Part B each month.
Non-HMO	Medicare beneficiaries enrolled in Part A and Part B. These are the non-Part C, or non-Medicare Advantage members.
OP Therapy	Therapy services performed in the outpatient setting.
Other Facility Readmission	A readmission to a short-term acute care hospital that is different from the index admission hospital.
PAC	Post-Acute Care including Home Health, Skilled Nursing, Inpatient Rehabilitation, Long-Term Care Hospital, and Hospice facilities; as well as non-facility based care during the post-discharge period.
Part A + Part B Members	Traditional/Original Medicare beneficiaries. These beneficiaries are also known as fee-for-service (FFS) beneficiaries. This tool only reports on these Part A and Part B members.

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PMPM	Per Member Per Month (PMPM) is used often in measures when looking at a population. This allows for averaging not over just the number of members, but also the amount of time they were enrolled. The most common usage is for payments, where the PMPM measure is the average payments for a member over one month.
Post-Discharge	The period of the episode immediately following the initial discharge from your hospital. This period lasts 90-days and includes all services related to the episode.
Proration	Episodes are prorated, meaning any stay that spans the end date of the episode is prorated based on how many days of the stay are within the 90-day post-discharge period.
Run Out	Due to the way Home Health episodes are paid (60-day episodes), not all claims will necessarily be adjudicated by the end of the post-discharge period. For this reason, the application includes all episodes, regardless of whether data for all claims have been provided. The application then allows the user to select whether to include these incomplete episodes, or to exclude them from the analysis.
Same Facility Readmission	A readmission to a short-term acute care hospital that is the same as the index admission hospital.
SNF	Skilled Nursing Facility
STACH	Short-Term Acute Care Hospital
Target Price	This is the pre-determined benchmark amount that will be compared to your hospital's episode payment. The target price is calculated by averaging the top 25th percentile of providers.
Winsorization	Winsorization is the statistical process of replacing extreme data values or potential outliers with less extreme values to limit the impact of these values on analysis. For example, winsorization of paid amounts removes the impact of extremely expensive episodes and the potential skew it may introduce on a performance metric. The less extreme values or trim points or upper and lower bounds are set to the mean -/+ 3 standard deviations of the normalized paid amount by DRG. Each episodes costs are truncated at the upper and lower bounds.

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LDS DATA BASICS

POPULATION ASSIGNMENT

Each beneficiary in the Population Analytics module implemented for CRISP is assigned to one or more hospitals. The following is a brief description of the method used to assign beneficiaries.

STEPS

1. The hospitals to which beneficiaries are assigned are limited to the 47 CRISP hospitals.
2. All beneficiaries with a touch (inpatient or outpatient hospital claim) in 2015 will be assigned to each and every hospital with a touch. Approximately 40% of the total beneficiaries are assigned in this step. A beneficiary may be assigned to more than one facility at this point.
3. The remaining beneficiaries without any assigned so far will be assigned in a similar manner using 2014 and 2013 data.
4. The proportion of a beneficiary's county of residence that is assigned to a hospital will be developed using the data from the above two steps in the assignment process.
5. The remaining beneficiaries, who do not have any hospital claims, will be assigned at random to hospitals based on proportions developed from the above step.

PHYSICIAN ASSIGNMENT

Each episode in the Episode Analytics module implemented for CRISP is assigned to a physician. The assigned physician is the physician most responsible for the index hospitalization that initiates the episode. The assignment is based on two physician identified on each inpatient hospital claims, the attending physician and the operating physician.

If the index hospitalization is a surgical discharge, the episode is assigned to the operating physician or surgeon. If the operating physician is not recorded on the claim, the attending physician is assigned.

All remaining episodes are assigned to the attending physician.

LDS

The LDS Standard Analytic Files are a set of Medicare claims files incorporating claims from Inpatient Facility, Outpatient Facility, Skilled Nursing Facility, Home Health Agency, Hospice, Professional, and Durable Medical Equipment services. These files contain beneficiary claim level data including payment amounts, diagnoses, procedures, dates of service, and provider identifiers. Several patient identifiable data, such as social security number, home address, and other direct identifiers, are either encrypted or omitted due to the Health Insurance Portability and Accountability Act (HIPAA Privacy Rule). Cost information is also not included in the SAFs; however, everything required to calculate the payment of the claim is included, such as length of stay, Disproportionate Share Hospital (DSH) payments, Indirect Medical Education (IME) payments, and MS-DRG.

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The LDS also includes a Medicare Denominator file which contains beneficiary eligibility information such as the reason for eligibility, entitlement status, and months of eligibility for all Medicare beneficiaries enrolled during the year of the data set, including those beneficiaries without any claims. These data sets contain a unique identifier for each beneficiary, allowing the linkage of beneficiary claims across the various claims files.

hMetrix and CRISP have received 4 years of data from 2012 through 2015 for 100% of the Maryland Medicare beneficiaries. Use of this data is governed by a Data Use Agreement (DUA) from the Centers for Medicare and Medicaid Services (CMS). Using the beneficiary's unique identifier, hMetrix is able to track the beneficiary's claim payments, types of service, procedures, diagnoses, and eligibility throughout the four years. This allows for the analysis of episodes of care at the beneficiary level as well as analysis across the entire population.

The SAFs only contain Medicare fee-for-service (FFS) claims, Part A and Part B, and does not contain any Medicare Advantage (Part C) services, Prescription Drug Coverage (Part D), or non-Medicare (Private) insurance claims. Drugs paid for under Part A or Part B (such as drugs administered in the hospital) are included in the LDS.

EPISODE

Episodes are defined based on Medicare-severity-DRG (MS-DRG) "families." BPCI includes 48 episode types, which include up to 15 MS-DRGs each (see Table 1). hMetrix follow the CMS BPCI episode definition to build the episodes. Episodes are initiated by the inpatient admission of an eligible Medicare FFS beneficiary to an acute care hospital for one of the MS-DRGs in the CMS BPCI DRG list. The episode includes a Medicare beneficiary's inpatient stay in the acute care hospital, post-acute care, and all related services during the episode of care, which ends 90 days after hospital discharge. Episodes include all related Parts A and B services provided during the duration of an episode including hospital care, physician care, readmissions, post-acute care and durable medical equipment. Episodes exclude certain readmissions and Part B services that CMS has determined are unrelated to the index admission including transplantation, trauma services, acute surgical procedures and cancer care.

Index admission – The period of time between the admission date and the discharge date of an episode-initiating Inpatient Prospective Payment System (IPPS) hospital stay for a Participant

Post-Discharge Period – The period of time covering 90 days from the discharge date of an anchor stay, as defined by the Participant for a given episode type (beginning the same day as the anchor stay's discharge date).

DRG Family	MS-DRGs
Acute myocardial infarction	280, 281, 282
AICD generator or lead	245, 265
Amputation	239, 240, 241, 255, 256, 257, 474, 475, 476, 616, 617, 618
Atherosclerosis	302, 303

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DRG Family	MS-DRGs
Back and neck except spinal fusion	518, 519, 520
Coronary artery bypass graft	231, 232, 233, 234, 235, 236
Cardiac arrhythmia	308, 309, 310
Cardiac defibrillator	222, 223, 224, 225, 226, 227
Cardiac valve	216, 217, 218, 219, 220, 221, 266, 267
Cellulitis	602, 603
Cervical spinal fusion	471, 472, 473
Chest pain	313
Combined anterior posterior spinal fusion	453, 454, 455
Complex noncervical spinal fusion	456, 457, 458
Congestive heart failure	291, 292, 293
Chronic obstructive pulmonary disease, bronchitis, asthma	190, 191, 192, 202, 203
Diabetes	637, 638, 639
Double joint replacement of the lower extremity	461, 462
Esophagitis, gastroenteritis, and other digestive disorders	391, 392
Fractures of the femur and hip or pelvis	533, 534, 535, 536
Gastrointestinal hemorrhage	377, 378, 379
Gastrointestinal obstruction	388, 389, 390
Hip and femur procedures except major joint	480, 481, 482
Lower extremity and humerus procedure except hip, foot, femur	492, 493, 494
Major bowel procedures	329, 330, 331
Major cardiovascular procedure	237, 238
Major joint replacement of the lower extremity	469, 470
Major joint replacement of the upper extremity	483
Medical noninfectious orthopedic	537, 538, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563
Medical peripheral vascular disorders	299, 300, 301
Nutritional and metabolic disorders	640, 641
Other knee procedures	485, 486, 487, 488, 489
Other respiratory	189, 204, 205, 206, 207, 208, 186, 187, 188
Other vascular surgery	252, 253, 254
Pacemaker	242, 243, 244
Pacemaker device replacement or revision	258, 259, 260, 261, 262
Percutaneous coronary intervention	246, 247, 248, 249, 250, 251
Red blood cell disorders	811, 812
Removal of orthopedic devices	495, 496, 497, 498, 499
Renal failure	682, 683, 684

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DRG Family	MS-DRGs
Revision of the hip or knee	466, 467, 468
Sepsis	870, 871, 872
Simple pneumonia and respiratory infections	177, 178, 179, 193, 194, 195
Spinal fusion (noncervical)	459, 460
Stroke	61, 62, 63, 64, 65, 66
Syncope and collapse	312
Transient ischemia	69
Urinary tract infection	689, 690

READMISSION

A readmission is defined as an admission to a short-term acute care facility that occurs shortly after a discharge from the same or a different short-term acute care facility. Most often, it is measured as within a period of 30 days after the initial discharge, but it could be shorter or longer. Such readmissions are often, but not always, related to a problem inadequately resolved in the prior hospitalization.

In the often cited 30-day all-cause readmission rate, transfers from one short-term acute care facility directly to another short-term acute care facility are excluded from the rate. Such transfers may occur for services of a different type that the discharging or transferring short-term acute care facility is not proficient at performing.

CMS CMMI BPCI episodes alter this definition and CRISP's implementation of CMS BPCI episodes alters them further. All short-term acute care facility admissions within the 90-day episode time period are counted as readmissions of the index admissions. CRISP's implementation does not apply any of the CMS BPCI exclusions for unrelated readmissions. In CRISP's implementation of BPCI episodes, the index admission hospital is responsible for all readmissions within the 90-day episode period.

It is also important to note that since readmissions are being reported in the context of a 90-day episode, readmissions relative to a non-index hospitalization are not included in this readmission measure. These differences between the typical 30-day all-cause readmission rate measure and 90-day episode-centric readmission measure lead to higher rates of readmissions in the 90-day episode-centric readmission measure.

COST ADJUSTMENT FACTORS

Following steps describe the method used to calculate the cost adjustment factors:

1. Compute the average paid per discharge for each hospital (and in total) off what we see in the LDS data for each hospital.
2. Calculate the case mix index (CMI) for each hospital (and in total). The case mix index is the average MS-DRG weight per discharge. The standard 2015 CMS MS-DRG weights have been used for this calculation.
3. Divide the average paid per discharge by the case mix index.

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4. This CMI adjusted average paid per discharge for each hospital is divided by the CMI adjusted average paid per discharge for all hospitals. This calculation gives the relative cost for each hospital.

The relative costs are used to normalize the data before computing the target price and to convert the target price back for each hospital. To ensure that these are reasonable estimates, these relative costs were compared to the Resumption of Care (ROC) numbers. These costs are based on the Maryland data and, hence, implicitly include variation in cost due to factors other than unit cost at hospitals. It will not reduce variances in index hospitalization costs which is what is required for this adjustment. It highlights the post-acute care variances.

TARGET PRICE

Each Episode in the Episode Analytics module implemented for CRISP is based on an MS-DRG. The episodes are defined using the method developed under the CMS CMMI BPCI Model 2 program. The following is a brief description of the method used to calculate the benchmark for each MS-DRG.

Each MS-DRG episode will have a single benchmark for each year. The benchmark will be adjusted using hospital specific cost adjustment factors to come up with hospital specific benchmark.

STEPS

1. Restrict the episodes to the ones initiated (index admission) by the 47 CRISP providers.
2. The allowed amount from the claims data will be normalized as follows:
    a. Inpatient and outpatient claims are adjusted using the hospital specific cost adjustment factor.
    b. For all other claim types, the wage factors for the Index admission provider will be used to normalize the allowed amount from the claims data.
3. The normalized amounts will be summarized by episode to compute the episode amount.
4. Outliers will be winsorized at the 5th and 95th percentile values of the normalized episode amount for each MS-DRG.
5. MS-DRGs will be grouped into MS-DRG Families using the logic used by the CMS CMMI BPCI Model 2 program.
6. The provider level average normalized episode amount for each MS-DRG Family is then calculated using the winsorized data.
7. Low volume providers with fewer than five episodes in each MS-DRG Family will be removed from each MS-DRG Family.
8. After removing the low volume providers, the 25^{th} percentile of the provider level average, normalized episode amount is then calculated. This is used to identify the top 25% of providers in each MS-DRG Family.
9. The MS-DRG Family benchmark is the mean of the top 25% of providers in each MS-DRG Family.
10. The CMS CMMI BPCI Model 2 relative index for each MS-DRG within each MS-DRG family pricing is used to convert MS-DRG Family benchmarks to individual MS-DRG benchmarks. The MS-DRG

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benchmark is the Family benchmark times the MS-DRG index from the CMS CMMI BPCI Model 2 program.

11. The hospital benchmark will be computed from the state-wide benchmark by adjusting the normalized benchmark using the cost adjustment factor and wage adjustment factor in the proportion of inpatient and outpatient amounts vs all other amounts for each MS-DRG Family.
12. The annual trend on case mix adjusted overall average normalized dollars will be used to compute the benchmark for each year.

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