Background and Data

What is SIM?

- Colorado State Innovation Model
  - Grant request for $78 million, received $65 million from Center for Medicare and Medicaid Innovation (CMMI) to implement and test this program
- Improve the health of Coloradans by:
  - Providing access to integrated primary care and behavioral health services in coordinated community systems
  - Applying value-based payment structures
  - Expanding information technology efforts, including telehealth
  - Finalizing a statewide plan to improve population health
- Funding assisted Colorado in integrating physical and behavioral health care in nearly 400 primary care practices and 4 community mental health centers compromised of approximately 1,600 primary care providers.
- State worked to establish a partnership between their public heath, behavioral health, and primary care sectors.

Milliman's Role

- Strategic Direction
- Co-chaired the Evaluation workbook of SIM
- Extensive analytical support
  - Credibility analysis
  - Cost and utilization reporting
  - Return on investment reporting
  - Depression predictive modeling

Data Used and Attribution

- All Payer Claims Database (APCD) data
- Includes detailed membership and claims data for inpatient facility, outpatient facility, professional services, ancillary services, and prescription drugs (all healthcare costs).
- Line of business (LOB): Medicare, Medicaid, and commercial
- Medicaid BHO encounter data, fiscal years 2014 through 2018
- Attribution based on NPIs reported by practices on SIM practice roster. Each member is assigned to a single primary care provider where they had the most visits in recent years.

Reports Overview

CMMI Cost & Utilization Reports

Actuarial Cost & Utilization Reports

Milliman

Why are these reports important?

- Shows what is going on outside of the practice
- Costs and use of services change over time

Included details for each report

Each report contains information split by the following level of detail:

- SIM individual practices compared to SIM aggregate cohorts (pediatric, internal medicine, mixed primary care)
- CMHC practices compared to CMHC in aggregate
- Baseline Year in total and by quarter
- Program Years-to-date and by quarter
- By Line of Business (Medicare, Medicaid, commercial) and in total
- Risk Adjustment Scores included

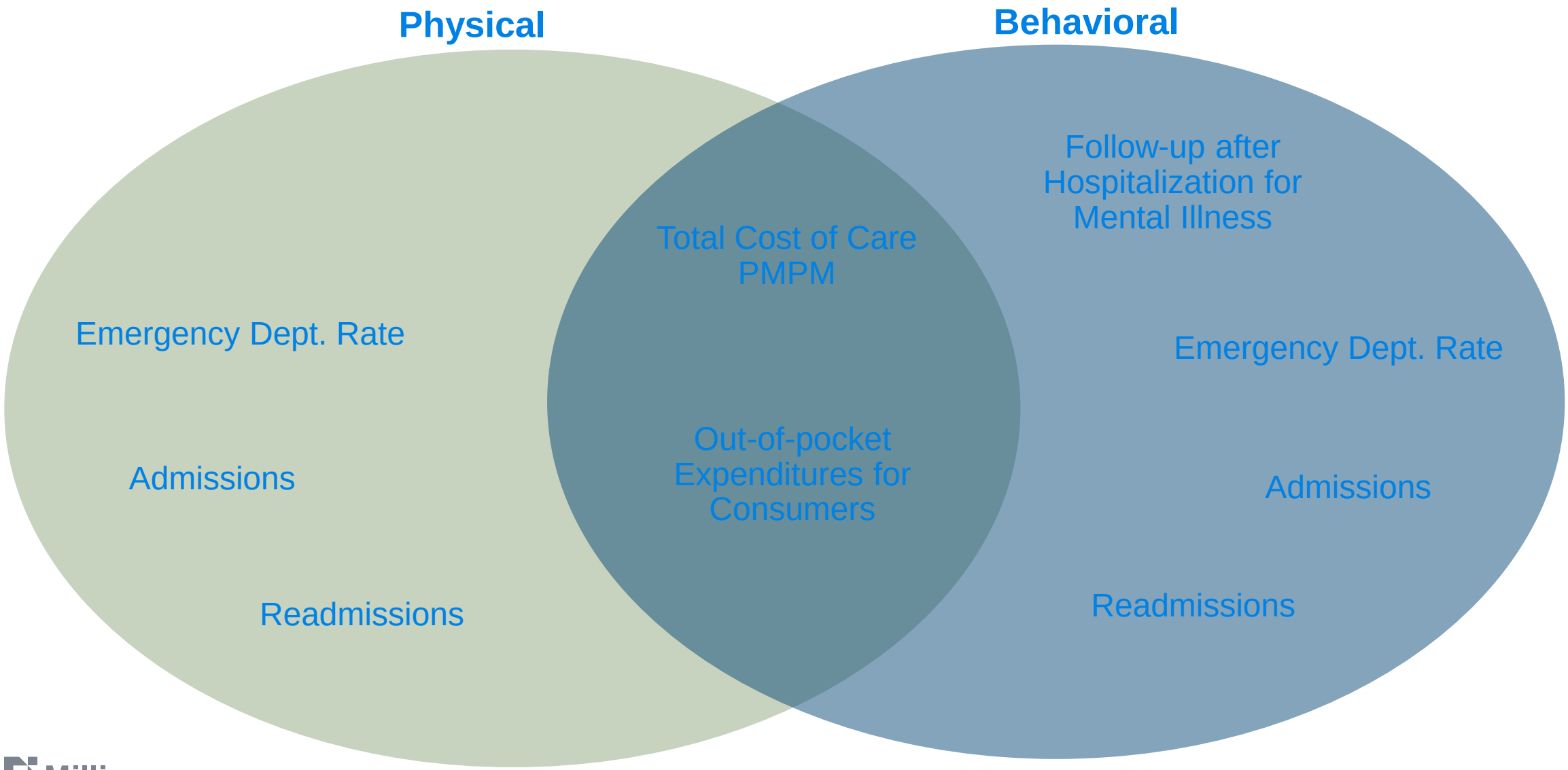
CMMI Cost & Utilization Reports

Details of Report

2015 Average Risk Scores: See "Risk Adjustment" page for more information			
	Commercial	1.912	1.061
	Medicaid	1.643	1.118
	Medicare	1.134	0.955

Total 2015 Model Performance Data		Sample SIM Practice Site			SIM Mixed Primary Care PCP Practices Combined		
		Total			Total		
Metric Definition/Description	**Line of Business**	**Numerator**	**Denominator**	**Value**	**Numerator**	**Denominator**	**Value**
The annual member out-of-pocket spending per attributed member.	**Total**	$386,498	494	$782	$122,335,795	112,375	$1,089
	Commercial	$131,418	71	$1,851	$50,262,541	46,499	$1,081
	Medicaid	$38,778	329	$118	$7,795,273	34,973	$223
	Medicare	$216,302	94	$2,301	$64,277,981	30,903	$2,080
The allowed cost per member per month (PMPM) for the attributed population.	**Total**	$8,217,262	6,971	$1,179	$1,163,080,664	2,159,858	$538
	Commercial	$977,721	942	$1,038	$287,161,783	577,733	$497
	Medicaid	$3,822,175	4,890	$782	$443,642,521	1,202,039	$369
	Medicare	$3,417,366	1,139	$3,000	$432,276,360	380,086	$1,137

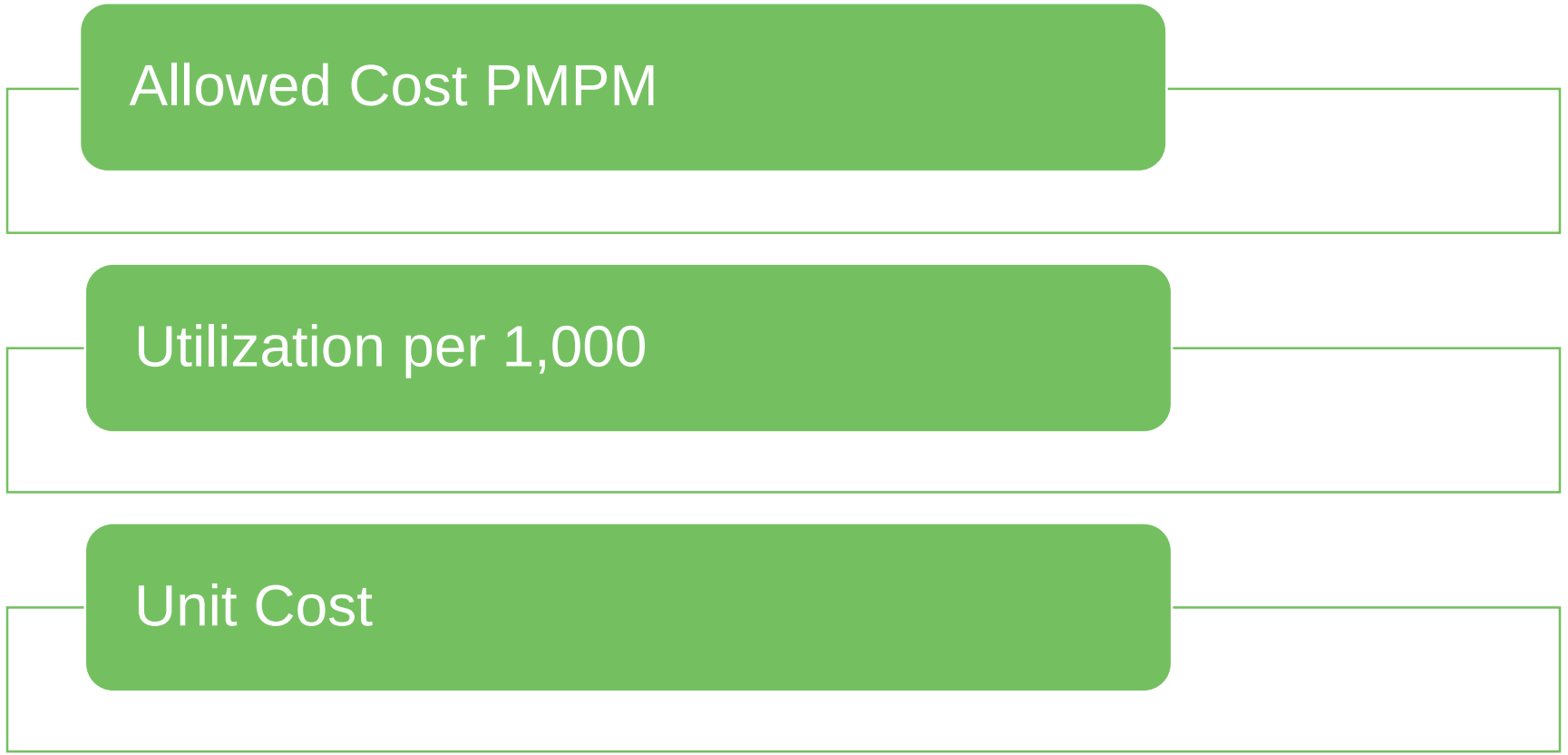
Overview of CMMI Reports: Nine Metrics



Actuarial Cost & Utilization Reports

Milliman

Overview of Actuarial Reports: Three Metrics



Overview of Actuarial Reports: Service Categories

Service Categories
All Other Services
Ambulance
Diagnostic Imaging / X-Ray
Dialysis Procedures
Durable Medical Equipment / Prosthetics
Emergency Services
Home Health Care
Hospice
Inpatient Hospital – Behavioral
Inpatient Hospital – Physical

Service Categories (Cont.)
Laboratory Services
Long Term Care
Outpatient Hospital – Behavioral
Outpatient Hospital – Physical
Prescription Drugs – Behavioral
Prescription Drugs – Physical
Professional Primary Care – Physical
Professional Specialty Care – Behavioral
Professional Specialty Care – Physical
Skilled Nursing Facility

How to Use Actuarial Reports

- Track performance over time
- Review which types of services show increasing/decreasing costs
- Compare individual practice results to SIM mixed primary care / pediatric / internal medicine practice results
- Risk scores shown by line of business
- Inform cost projections, cost savings, ROI

Example of tracking through time (Baseline)

Service Categories	Sample SIM Practice Site Baseline (2016) Q1	Q2	Q3	Q4	Total
All Other Services	$11.25	$15.18	$2.93	$3.21	$8.17
Ambulance	$1.28	$2.36	$6.71	$11.58	$5.45
Diagnostic Imaging/X-ray	$12.83	$12.79	$10.52	$13.37	$12.37
Dialysis Procedures	$0.00	$0.00	$0.00	$0.00	$0.00
Durable Medical Equipment/Prosthetics	$3.04	$3.75	$2.39	$4.15	$3.32
Emergency Services	$30.55	$25.65	$26.36	$38.70	$30.25
Home Health Care	$1.50	$0.13	$0.33	$1.86	$0.94
Hospice	$0.00	$0.00	$0.00	$0.00	$0.00
Inpatient Hospital – Behavioral	$0.81	$0.85	$1.26	$0.00	$0.74
Inpatient Hospital – Physical	$49.73	$57.17	$44.13	$79.38	$57.44
Laboratory Services	$14.11	$9.81	$11.67	$10.24	$11.46
Long Term Care	$0.00	$0.00	$0.00	$0.00	$0.00
Outpatient Hospital – Behavioral	$0.89	$0.28	$0.08	$1.98	$0.80
Outpatient Hospital – Physical	$151.02	$220.30	$228.68	$234.08	$208.48
Prescription Drugs – Behavioral	$12.67	$14.97	$13.83	$17.53	$14.73
Prescription Drugs – Physical	$69.03	$67.00	$67.29	$77.86	$70.24
Professional Primary Care – Physical	$40.12	$38.39	$39.41	$44.17	$40.49
Professional Specialty Care – Behavioral	$4.41	$5.44	$4.39	$4.47	$4.68
Professional Specialty Care – Physical	$16.89	$19.01	$15.00	$20.23	$17.76
Skilled Nursing Facility	$0.00	$1.88	$0.00	$0.00	$0.47
Total	**$420.13**	**$494.97**	**$474.99**	**$562.81**	**$487.80**
Total Member Months	4,895	4,948	4,959	4,790	19,592
Total Allowed Costs	$2,056,553	$2,449,111	$2,355,453	$2,695,840	$9,556,958

Example of tracking through time (Performance Year 1)

Service Categories	Sample SIM Practice Site Model Test Year 1 (2017) Q1	Q2	Q3	Q4	Total
All Other Services	$9.33	$3.87	$6.04	$7.73	$6.74
Ambulance	$0.77	$2.83	$3.59	$1.95	$2.28
Diagnostic Imaging/X-ray	$12.04	$14.58	$12.98	$15.09	$13.64
Dialysis Procedures	$0.00	$0.00	$0.00	$0.00	$0.00
Durable Medical Equipment/Prosthetics	$5.33	$3.66	$3.38	$5.04	$4.35
Emergency Services	$29.97	$22.89	$37.20	$22.84	$28.29
Home Health Care	$1.13	$0.31	$0.19	$1.12	$0.68
Hospice	$0.00	$2.15	$3.83	$4.15	$2.48
Inpatient Hospital – Behavioral	$0.00	$0.00	$2.20	$3.31	$1.33
Inpatient Hospital – Physical	$52.39	$38.23	$38.30	$59.37	$46.91
Laboratory Services	$6.20	$8.15	$8.08	$8.62	$7.74
Long Term Care	$0.00	$0.00	$0.00	$0.00	$0.00
Outpatient Hospital – Behavioral	$0.00	$0.00	$0.00	$0.00	$0.00
Outpatient Hospital – Physical	$278.51	$272.46	$218.49	$234.32	$251.62
Prescription Drugs – Behavioral	$11.85	$11.29	$13.25	$13.69	$12.49
Prescription Drugs – Physical	$72.51	$86.57	$76.14	$88.48	$80.76
Professional Primary Care – Physical	$34.39	$35.57	$39.62	$42.81	$37.97
Professional Specialty Care – Behavioral	$6.02	$4.33	$3.90	$3.48	$4.46
Professional Specialty Care – Physical	$22.03	$17.64	$17.66	$18.66	$19.03
Skilled Nursing Facility	$0.00	$0.00	$0.00	$0.00	$0.00
Total	**$542.47**	**$524.53**	**$484.83**	**$530.66**	**$520.75**
Total Member Months	4,514	4,426	4,320	4,078	17,338
Total Allowed Costs	$2,448,723	$2,321,564	$2,094,477	$2,164,031	$9,028,795

Example of tracking through time (Performance Year 2)

Service Categories	Sample SIM Practice Site Model Test Year 2 (2018) Q1	Q2	Q3	Q4	Total
All Other Services	$9.01	$9.80	$8.69	$24.71	$13.00
Ambulance	$0.89	$0.46	$0.63	$1.46	$0.86
Diagnostic Imaging/X-ray	$11.93	$7.67	$9.98	$13.94	$10.85
Dialysis Procedures	$0.00	$0.00	$0.00	$0.00	$0.00
Durable Medical Equipment/Prosthetics	$4.00	$3.65	$3.57	$5.17	$4.09
Emergency Services	$31.09	$26.21	$19.49	$22.25	$24.77
Home Health Care	$3.81	$0.29	$0.80	$1.43	$1.57
Hospice	$4.73	$3.92	$0.00	$0.00	$2.18
Inpatient Hospital – Behavioral	$0.00	$2.08	$0.00	$0.00	$0.53
Inpatient Hospital – Physical	$56.10	$42.39	$23.48	$43.56	$41.35
Laboratory Services	$7.91	$9.51	$6.44	$9.19	$8.26
Long Term Care	$0.00	$0.00	$0.00	$0.00	$0.00
Outpatient Hospital – Behavioral	$0.00	$4.23	$31.41	$0.00	$8.94
Outpatient Hospital – Physical	$201.42	$180.62	$166.99	$311.33	$214.52
Prescription Drugs – Behavioral	$20.07	$16.08	$15.01	$12.27	$15.86
Prescription Drugs – Physical	$151.56	$84.50	$162.18	$97.24	$123.71
Professional Primary Care – Physical	$39.68	$37.72	$40.24	$41.56	$39.78
Professional Specialty Care – Behavioral	$6.81	$7.02	$8.52	$6.13	$7.12
Professional Specialty Care – Physical	$19.22	$16.97	$14.25	$16.89	$16.83
Skilled Nursing Facility	$0.00	$0.00	$0.00	$0.00	$0.00
Total	**$568.22**	**$453.12**	**$511.70**	**$607.12**	**$534.21**
Total Member Months	3,551	3,661	3,582	3,521	14,315
Total Allowed Costs	$2,017,744	$1,658,870	$1,832,909	$2,137,677	$7,647,200

Return on Investment (ROI)

SIM ROI Reports

Data Sources

- NPI Rosters
- Attribution
- APCD

LOB

- Commercial
- Medicaid
- Medicare (FFS and MA combined)

Practice Type

- Mixed Primary Care
- Internal Medicine
- Pediatrics

Data Adjustments

- Review of each Payer Code / Insurance Code Combination
- Some interpolations / extrapolations / exclusions made
- Balanced Medicaid APCD to HCPF reports (both CIVHC and HCPF changed data vendors during 2016) – see next slide
- No such balancing for Medicare FFS; limited CIVHC balancing for Commercial payers
- Medicare Part D duplication adjustment – identified any members appearing in both RESDAC/Payer 300 submissions and commercial submissions, and removed those associated RESDAC/Payer 300
- BHO capitated claim adjustment

Methodology

- Only used complete data (slow reporting; runout issues)
- MCD Adjustments
- Duplicated eligibility and pharmacy claims in the Medicare Part D data
- Large Claim exclusion ($250K per CY)
- Minimum eligibility (6 months per CY)
- Conservative (low end of ranges) trend assumptions
- Risk adjustment
- Sensitivity of trends assumed

Annual Trend Assumptions

Conservative Low End Assumptions for Assumed Annual Trend Rates			
Service Category	**Commercial**	**Medicaid**	**Medicare**
Inpatient Facility	2.0%	1.5%	-1.0%
Outpatient Facility/Emergency Room	3.0%	0.0%	3.5%
Professional/Other	2.0%	2.0%	-0.5%
Prescription Drugs	6.3%	6.5%	3.5%

Limitations / Caveats

- Potential Additional APCD Adjustments Needed
- BHO capitated claims (0 or 1) needed adjustment
- Attribution Imperfections
- MARA Risk Scores are imperfect (all risk scores are)
- Many factors affect healthcare costs
- Large claim and minimum eligibility criteria are assumptions
- No practice credibility adjustments made

Proposed Cost Savings & ROI
Draft Results - Confidential

Estimated 3rd year and 4th year Return on Investment From Model Intervention						
Assumed Grant Amount	$86,928,656			Savings	ROI-Gross	Restated ROI
Actual Grant Amount	$65,000,000		Year 3	$ 126,587,853	1.46	1.95
			Year 4	$ 211,609,607	2.43	3.26

Proposed Cost Savings & ROI: Assumptions
Draft Results - Confidential

- Healthcare utilization and cost **reductions**: Inpatient Physical, Inpatient Behavioral, Emergency Services, Ambulance, SNF
- Healthcare utilization and cost **increases**: primary and specialty medical professional, behavioral professional, diagnostic testing, imaging (non-complex), labs, prescription drugs – medical and behavioral
- Projected Savings: $17.3M (yr. 1), $42.2M (yr. 2), $67.1M (yr. 3)
- Savings translates to about $1.90 PMPM if we make integrated care available to 80% of all Coloradans (more PMPM is needed if we fall short of that target)

Total – Cohort 1 (PCPs + CMHCs)
Draft Results - Confidential

Total Projected Healthcare Cost Savings Estimates – PCP & CMHCs combined – Cohort 1						
Line of Business	Calendar Period	Projected PMPM	Actual PMPM	Savings PMPM	Member Months	Total Savings
Commercial	2016	$401.73	$391.01	$10.72	557,943	$5,981,926
Medicaid	2016	$318.96	$315.31	$3.66	2,105,941	$7,697,508
Medicare	2016	$1,129.72	$1,059.71	$70.01	484,513	$33,922,208
Total	2016	$458.40	$443.28	$15.12	3,148,397	$47,601,642
Commercial	2017	$424.55	$396.72	$27.83	547,099	$15,226,405
Medicaid	2017	$348.92	$350.10	($1.18)	2,048,610	($2,415,183)
Medicare	2017	$1,296.68	$1,092.52	$204.17	497,170	$101,505,237
Total	2017	$514.65	$477.69	$36.96	3,092,879	$114,316,459

Total – Cohort 2
Draft Results - Confidential

Total Projected Healthcare Cost Savings Estimates – PCP Practices – Cohort 2						
Line of Business	Calendar Period	Projected PMPM	Actual PMPM	Savings PMPM	Member Months	Total Savings
Commercial	2017	$401.27	$382.73	$18.54	567,350	$10,521,349
Medicaid	2017	$334.89	$361.22	($26.33)	1,054,812	($27,767,965)
Medicare	2017	$1,026.33	$926.74	$99.59	340,225	$33,884,697
Total	2017	$473.96	$465.48	$8.48	1,962,387	$16,638,081

Total – Pediatric Practices – Cohort 1
Draft Results - Confidential

Total Projected Healthcare Cost Savings Estimates – Pediatric Practices – Cohort 1						
Line of Business	Calendar Period	Projected PMPM	Actual PMPM	Savings PMPM	Member Months	Total Savings
Commercial	2016	$188.64	$184.62	$4.02	117,017	$470,354
Medicaid	2016	$157.53	$168.66	($11.13)	775,220	($8,628,179)
Medicare	2016	$487.88	$421.01	$66.86	6,817	$455,790
Total	2016	$164.09	$172.65	($8.57)	899,054	($7,702,036)
Commercial	2017	$194.11	$176.06	$18.05	118,044	$2,130,621
Medicaid	2017	$173.17	$196.69	($23.52)	756,763	($17,799,697)
Medicare	2017	$688.10	$437.54	$250.56	7,275	$1,822,837
Total	2017	$180.22	$195.92	($15.70)	882,082	($13,846,239)

Total – CMHCs
Draft Results - Confidential

Total Projected Healthcare Cost Savings Estimates – CMHCs – Cohort 1						
Line of Business	Calendar Period	Projected PMPM	Actual PMPM	Savings PMPM	Member Months	Total Savings
Commercial	2016	$457.92	$447.41	$10.52	9,624	$101,220
Medicaid	2016	$683.25	$661.44	$21.80	169,516	$3,696,023
Medicare	2016	$1,882.88	$1,770.93	$111.95	25,915	$2,901,065
Total	2016	$824.28	$791.62	$32.67	205,055	$6,698,308
Commercial	2017	$549.47	$490.70	$58.77	8,992	$528,427
Medicaid	2017	$705.92	$655.71	$50.21	164,464	$8,258,115
Medicare	2017	$2,135.68	$1,795.04	$340.64	28,127	$9,581,321
Total	2017	$898.44	$807.32	$91.12	201,583	$18,367,863

Elements Contributing to ROI

- Total Cost of Care – Cohort 1 (CMMI & actuarial metric)

Line of Business	2015	2016	2017	2018
Commercial	$466	$439	$459	$469
Medicaid	$308	$305	$339	$378
Medicare	$1,154	$1,181	$1,162	N/A

- IP Hospital Physical Admits – Cohort 1 (actuarial metric)

Line of Business	2015	2016	2017	2018
Commercial	$75	$55	$60	$53
Medicaid	$34	$31	$31	$35
Medicare	$127	$135	$134	N/A

Elements Contributing to ROI

- ER Use – Cohort 1 (actuarial metric)

Line of Business	2015	2016	2017	2018
Commercial	$23	$24	$27	$25
Medicaid	$20	$21	$19	$19
Medicare	$16	$16	$16	N/A

- Rx – Physical Use – Cohort 1 (actuarial metric)

Line of Business	2015	2016	2017	2018
Medicaid	$41	$46	$58	$62

Readmission Rates

- 30 Day Physical Readmit Rate – Cohort 1 (CMMI metric)

Line of Business	2015	2016	2017	2018
Commercial	9.72%	7.85%	4.36%	5.39%
Medicaid	7.20%	4.12%	3.18%	2.12%
Medicare	11.55%	6.41%	4.88%	N/A

- 30 Day MH/SUD Readmit Rate – Cohort 1 (CMMI metric)

Line of Business	2015	2016	2017	2018
Commercial	15.15%	11.57%	10.47%	26.53%
Medicaid	7.92%	3.44%	3.69%	4.27%
Medicare	8.65%	3.28%	4.45%	N/A

Risk Scores by Practice Type & LOB
Draft Results - Confidential

Average Normalized Risk Scores by Practice Type, Line of Business, and Year for Cohort 1									
	2015 Risk Score			2016 Risk Score			2017 Risk Score		
Practice Type	Commercial	Medicaid	Medicare	Commercial	Medicaid	Medicare	Commercial	Medicaid	Medicare
Mixed Primary Care	1.057	1.133	0.952	1.069	1.163	1.062	1.100	1.248	1.194
Pediatric	0.551	0.613	0.686	0.491	0.520	0.517	0.493	0.562	0.711
Internal Medicine	1.813	1.013	1.150	1.594	1.086	1.340	1.751	1.296	1.525
CMHC	1.446	1.919	1.364	1.426	2.204	1.542	1.648	2.220	1.710

ROI through 2017
Draft Results - Confidential

- The estimated healthcare cost savings for all SIM Cohort 1 PCP practices and CMHCs combined in 2016 is approximately $47.6 million, which represents 3.3% of projected healthcare cost levels during 2016.
- The estimated healthcare cost savings for all SIM Cohort 1 and Cohort 2 PCP practices and CMHCs combined in 2017 is approximately $131.0 million, which represents 5.2% of projected healthcare cost levels during 2017.
- Combined, the projected savings through 2017 is $178.6 million, or approximately 4.5% of projected healthcare

ROI through 2017
Draft Results - Confidential

- $23.9 million of CMMI funding has been released for the SIM work in the pre-implementation year (2015) and the first two model test years (2016 and 2017) as of 1/1/18, while $42.9 million has been released through 1/1/19
- This investment combined with the projected healthcare cost savings of $178.6 million through 2017 results in a projected ROI of 7.47 using funds released through 1/1/18, and 4.16 using funds released through 1/1/19
- No Comparison Groups used in ROI analysis