SFHSS 2021
DxCG Risk Scores
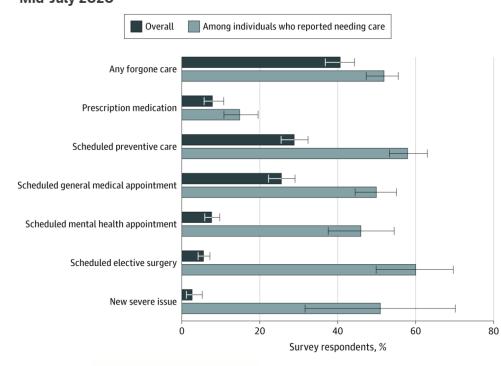
April 8th, 2021

DxCG Introduction & Background

- DxCG methodology developed in 1990s in partnership with U.S CMS as a tool for modeling risk-adjusted health care payments.

- DxCG Risk Scores are predictors of resource consumption and cost.

  o Cost may not be a good proxy for health status for all populations (access/bias).

- Models predict 12-month current (concurrent) and future (prospective) risk using person-level age, gender, chronic and acute condition diagnoses.

- Models are based on a commercial population (Medicare will appear high).

- SFHSS Model predicts risk for both medical and drug.

Summary & Key Findings

- Risk Scores in the current rolling period (October 2019 – September 2020) decreased by 5% to 17%, mostly attributable to 2020 claims reduction

- Risk Scores and decreases in healthcare service utilization are non-uniform amongst subsets of the SFHSS population

    - Larger decreases for Actives & Greater stability in Medicare Plans

        - Preventative Care Visit Rate: -64% (Actives), -31% (Medicare Retiree)

        - Mail Rx & Telemedicine Visits increase as much as 34% and 200% respectively

    - Larger reductions of claims & visits in BSC & data feed changes

    - Disparities in risk score & health measures amongst SFHSS race groups

        - BIPOC Preventative Care Rate at 80% of the SFHSS average

COVID & Claims Reduction in 2020

Figure 1. Share of Respondents Forgoing Medical Care From March Through Mid-July 2020

Legend: ■ Overall ■ Among individuals who reported needing care

Categories (top to bottom):
- Any forgone care
- Prescription medication
- Scheduled preventive care
- Scheduled general medical appointment
- Scheduled mental health appointment
- Scheduled elective surgery
- New severe issue

X-axis: Survey respondents, % (0 to 80)

JAMA Netw Open. 2021;4(1):e2034882. doi:10.1001/jamanetworkopen.2020.34882

Total # Claims

Population	Prev 2yr % Change
SFHSS Actives	-17 %
SFHSS Early Retirees	-16 %
SFHSS Medicare Retirees	-6 %

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COVID & Claims Reduction in 2020

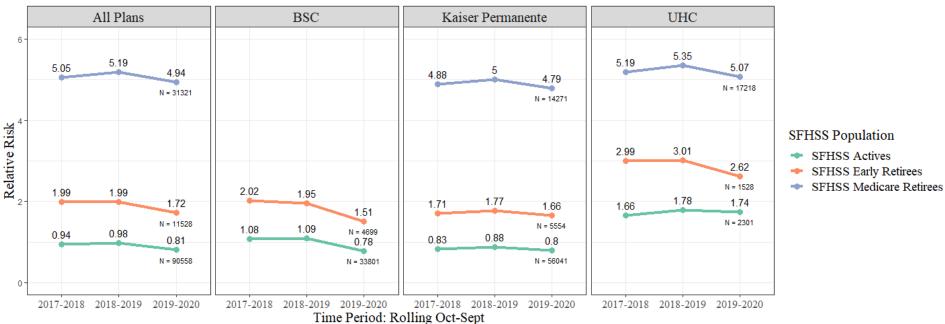| Previous 2 Years: Rolling Period % Change			
	SFHSS Actives	**Early Retirees**	**Medicare Retirees**
Scripts Per 1000 Rx Retail	-9 %	-6 %	-5 %
Scripts Per 1000 Rx Mail	34 %	24 %	25 %
Visits Per 1000 OP Fac Med	-34 %	-23 %	-10 %
Visits Per 1000 Prevent Adult	-64 %	-57 %	-31 %
Visits Per 1000 ER	-15 %	-12 %	-15 %
Admits Per 1000	-7 %	-3 %	-12 %
Pats Per 1000 Telemedicine	117 %	141 %	221 %

Substantial increase 24%-34% in Rx Mail Orders and a decrease in Rx Retail Orders.

Largest decrease (-64%) in Preventative Care Visit Rate for Actives. Smallest decrease for Medicare Retirees (-31%)

12%-15% decrease in ER Visit rates for all SFHSS groups.

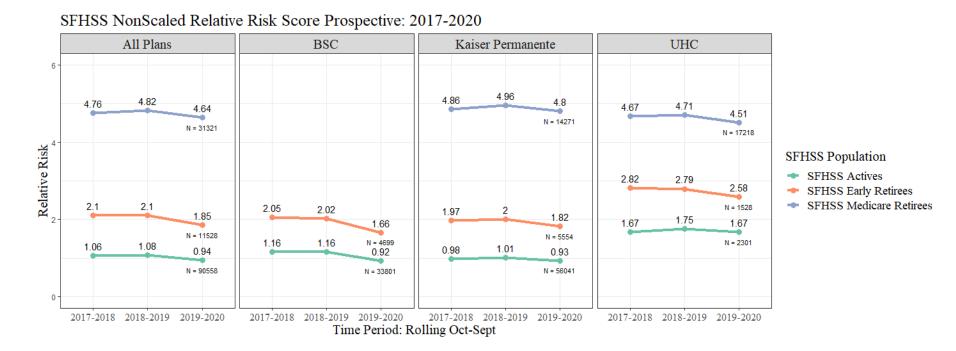100-200% increase in Telemedicine patients.

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SFHSS Overview: Concurrent Risk Scores

SFHSS NonScaled Relative Risk Score Concurrent: 2017-2020

- Concurrent Models use an individuals: Acute/Chronic Conditions, Age & Gender.

- Non-rescaled risk scores compare our membership to a standard national dataset, where 1.00 is the historic average person.

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SFHSS Overview: Prospective Risk Scores

SFHSS NonScaled Relative Risk Score Prospective: 2017-2020

- Prospective Models use an individuals: Chronic Conditions, Age & Gender.

SFHSS Overview: Risk Score Condition Contribution

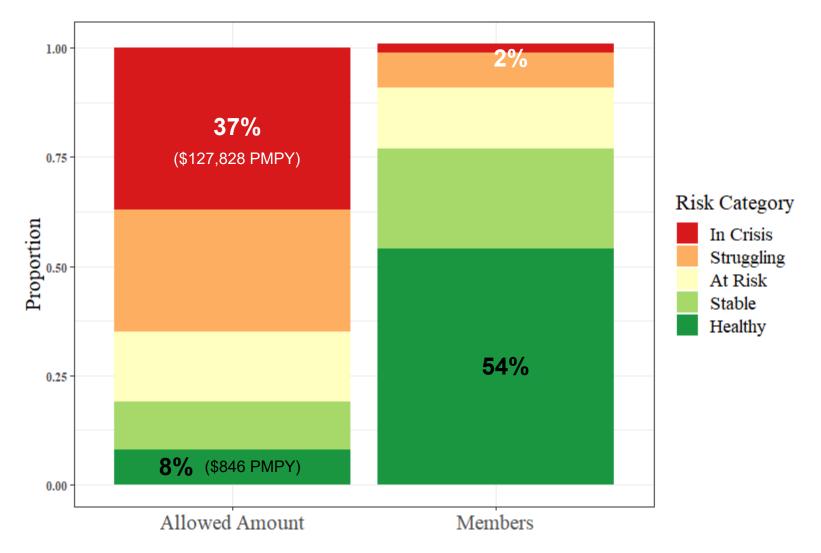| % Contribution Category	SFHSS Actives		SFHSS Early Retirees		SFHSS Medicare Retirees	
	2018-2019	2019-2020	2018-2019	2019-2020	2018-2019	2019-2020
Other Conditions	21	21	16	15	10	10
Musculoskeletal Disord	16	14	16	15	13	12
Neoplasms	7	8	10	11	10	10
Psychiatric Disorder	6	7	5	5	2	2
Diabetes	7	6	9	8	9	9
Cardiovascular Disorder	6	6	9	9	17	17
Respiratory Disorder	6	6	5	5	6	6
Urinary System Disorder	5	6	8	8	12	12
Neurological Disorder	5	5	5	5	6	6
Gastrointestinal Disord	5	5	4	4	3	3
Infections	3	3	3	3	2	2
Metabolic Disorder	3	3	3	3	4	4
Pregnancy	2	2	0	0	0	0
Blood Disorder	2	2	2	2	3	3
Hepatobiliary Disorder	2	2	2	2	2	2
Trauma and Adverse Eff	2	2	2	1	1	1
Substance Abuse	1	1	1	1	0	0
Development Disability	1	1	0	0	0	0
Neonates	0	0	0	0	0	0

Musculoskeletal disorders are a high driver of risk scores in all SFHSS groups.

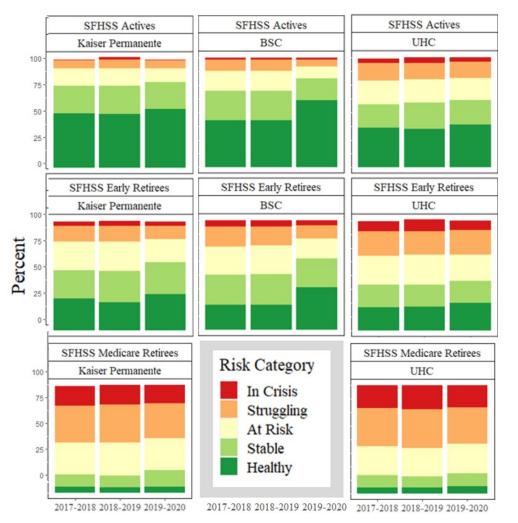SFHSS Actives have a large contribution of risk due to other conditions

Risk contribution due to psychiatric disorders are higher in Actives and Early Retirees than in Medicare Retirees.

Cardiovascular and Urinary System disorders are the highest contributors of risk for Medicare Retirees.

Commercial Plans: Risk Category & Allowed Amount Ratio

SFHSS Overview: Risk Categories

Risk category trend (lowest to highest):

- KP < BSC < UHC
- Active < Early Retiree < Med Retiree

Blue Shield Plans have the greatest increase towards Healthy/Stable Members in 2020.

2018-2019 Risk Category Proportions			
	KP	BSC	UHC
Members	75,625	39,446	20,544
Healthy	39	41	10
Stable	23	27	13
At Risk	19	19	26
Struggling	13	11	32
In Crisis	5	3	19

SFHSS Data Dive: Health Plans

Blue Shield

Measure	2017-2018	2018-2019	2019-2020	%Change (2yr)
Claims	870035	875202	635833	-27%
Visits Per 1000 Prevent Adult	464	475	107	-78%
Visits Per 1000 ER	192	190	171	-10%
Admits Per 1000	46	45	44	-3%

Kaiser Permanente

Measure	2017-2018	2018-2019	2019-2020	%Change (2yr)
Claims	1387548	1456074	1333628	-8%
Visits Per 1000 Prevent Adult	245	262	134	-49%
Visits Per 1000 ER	232	243	200	-17%
Admits Per 1000	58	59	53	-10%

United HealthCare

Measure	2017-2018	2018-2019	2019-2020	%Change (2yr)
Claims	977298	1045207	988981	-6%
Visits Per 1000 Prevent Adult	426	466	357	-30%
Visits Per 1000 ER	432	450	383	-17%
Admits Per 1000	173	174	149	-17%

Largest drop in claims (-27%) in Blue Shield Plan in comparison to Kaiser and UHC (-8% and 6% respectively)

Smallest % decline in ER visit rate(-10%) and Admissions Rate (-3%) in Blue Shield compared to Kaiser and UHC rates (-10% to -17%)
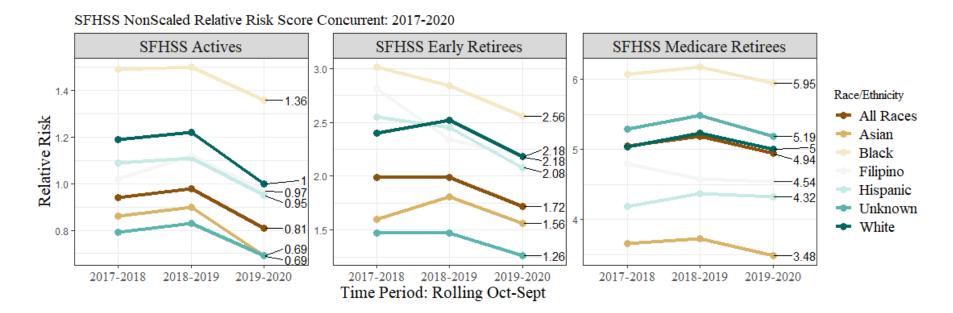
SFHSS Data Dive: Health Plans

		Admits Per 1000 Acute				Visits Per 1000 ER				Visits Per 1000 Prevent Adult			
		Unadjusted Rate	Adjusted HSS Average	Ratio	Previous Year Ratio	Undajusted Rate	Adjusted HSS Average	Ratio	Previous Year Ratio	Unadjusted Rate	Adjusted HSS Average	Ratio	Previous Year Ratio
Actives	All Plans	34.77	34.77	1.00	1.00	160.55	160.55	1.00	1.00	120	120	1.00	1.00
	BSC	40.57	33.88	1.20	0.99	166.17	149.09	1.11	0.89	102	108	0.95	1.35
	KP	30.71	33.37	0.92	1.02	156.49	162.80	0.96	1.09	124	127	0.98	0.76
	UHC	49.67	89.39	0.56	0.77	172.18	293.19	0.59	0.74	308	144	2.14	1.13
Early Retirees	All Plans	62.30	62.30	1.00	1.00	216.50	216.50	1.00	1.00	168	168	1.00	1.00
	BSC	65.18	55.45	1.18	0.96	203.51	197.27	1.03	0.96	137	158	0.86	1.32
	KP	56.81	58.07	0.98	0.99	218.22	207.31	1.05	1.06	145	172	0.84	0.73
	UHC	70.06	100.42	0.70	1.07	244.80	313.31	0.78	0.91	353	184	1.92	0.95
Medicare Retirees	All Plans	147.91	147.91	1.00	1.00	389.47	389.47	1.00	1.00	272	272	1.00	1.00
	KP	129.49	141.31	0.92	0.93	360.49	375.20	0.96	0.98	162	273	0.59	0.74
	UHC	163.05	153.35	1.06	1.06	413.13	401.23	1.03	1.02	362	270	1.34	1.22

BSC Acute Admissions and ER Visit comparison ratios to the All Plan average increased in the current year (Admissions: 1.20 vs. 0.99; ER: 1.11 vs. 0.89)

Medicare Retirees in the UHC Plan have a much greater preventative visit unadjusted rate and ratio to the HSS average than KP

Medicare plans have the most stable ratios when comparing the current and previous period ratios

SFHSS Data Dive: Race Demographics

SFHSS NonScaled Relative Risk Score Concurrent: 2017-2020

Black employees have the highest concurrent risk scores in all SFHSS subset populations, followed by White employees.

Asian and Healthcare Dependents (Unknown) Actives and Early Retirees are the only groups with lower risk than the All Races average

American Indian/Alaskan Native, Native Hawaiian/Pacific Islander, and Multiracial groups have been hidden due to small SS. High risk scores & disparities are likely to persist in these groups.

SFHSS Data Dive: Race Demographics

Measure	Asian	Black	Filipino	Hispanic	Unknown	White
Members	1.7%	-0.2%	1.1%	0.9%	-0.2%	-1.2%
Claims	-15.4%	-8.6%	-8.3%	-8.1%	-14.9%	-11.1%
Scripts Per 1000 Rx	-2.8%	-0.5%	-0.5%	-0.6%	-1.9%	-1.5%
Visits Per 1000 OP Fac Med	-20.7%	-12.6%	-12.2%	-9.7%	-19.1%	-12.2%
Visits Per 1000 Prevent Adult	-60.4%	-48.8%	-52.2%	-55%	-52.7%	-48.5%
Visits Per 1000 ER	-14.5%	-11.9%	-12.7%	-9.4%	-18.3%	-10.1%
Admits Per 1000	-10.9%	-10.2%	6.7%	0.9%	-13.5%	-7.6%
Pats Per 1000 Telemedicine	161.8%	110%	166.5%	134.1%	137.8%	169%

October 2019 - Sept 2020		Visits Per 1000 Prevent Adult				Visits Per 1000 ER				Admits Per 1000 Acute			
Race	Members	Unadjusted Rate	Adj HSS Average Rate	Ratio	Prev Ratio	Unadjusted Rate	Adj HSS Average Rate	Ratio	Prev Ratio	Unadjusted Rate	Adj HSS Average Rate	Ratio	Prev Ratio
All Races	130,991	168	168	1.00	1.00	220.83	220.83	1.00	1.00	65.02	65.02	1.00	1.00
Asian	15,060	183	162	1.13	1.30	108.87	163.22	0.67	0.62	39.92	39.32	1.02	0.96
Black	8,838	145	184	0.79	0.75	360.38	289.24	1.25	1.24	85.96	93.32	0.92	0.95
Filipino	6,917	153	181	0.84	0.85	208.16	238.91	0.87	0.87	66.36	70.74	0.94	0.85
Hispanic	8,304	132	178	0.74	0.80	229.83	216.73	1.06	1.02	57.52	57.90	0.99	0.92
Unknown	64,762	168	155	1.08	1.05	216.81	190.66	1.14	1.17	59.98	55.02	1.09	1.12
White	26,428	181	188	0.96	0.92	249.23	299.49	0.83	0.81	86.50	95.01	0.91	0.90

Workstreams & Next Steps

Summary & Key Findings	Actions & Workstreams
Decrease in risk scores and healthcare services utilization during pandemic & Non-uniform change patterns for actives & retirees	Monitor health plan reports and health metrics as members return to previous/new baseline levels of care
Data quality and standard metric comparability between health plans	• Work with IBM and HP partners to investigate individual issues as they arise • Data Management Strategy • Uniform Health Plan Reporting & Performance Goals
Disparities in health within SFHSS populations (e.g. Race, Gender, Department)	• Racial Equity Action Plan • Population and Social Health Strategies • Exploratory pilot programs • Department health profiles • SFHSS Wellbeing & Communications

Thank you!

Appendix

Data Dive: Musculoskeletal

SFHSS Actives	Oct 19 to Sep 20 {All Data} CMedRx	
Major Diagnostic Category (Admits)	Admissions	Allowed Amount Admit
Pregnancy, Childbirth	950	$25,941,869.58
Circulatory	202	$16,382,591.07
Infections	200	$15,249,356.97
Nervous	169	$14,695,917.81
Musculoskeletal	211	$13,502,787.89
Digestive	203	$9,001,874.24
Newborns	89	$7,887,307.14
Liver, Pancreas	94	$6,958,812.74
Myeloproliferative Diseases	53	$6,041,931.23
Respiratory	111	$5,046,636.79
Skin, Breast	50	$4,292,331.70
Mental	199	$4,040,422.08
Kidney	63	$3,775,808.12
Metabolic	96	$3,703,195.04
Blood	26	$1,782,844.21
Injuries, Poisonings	33	$1,297,402.83
Multiple Trauma	7	$1,249,168.87
Ear, Nose, Mouth & Throat	37	$1,106,486.80
Health Status	26	$962,271.46
Alcohol/Drug Use	54	$893,578.73
~Not Applicable	9	$719,293.54
Female Reproductive	25	$684,583.99
Male Reproductive	18	$678,092.71
Burns	5	$612,236.62
Eye	5	$129,186.91
HIV Infections	1	$31,939.00

Largest types of musculoskeletal admits:
- Osteoarthritis (Knee, Hip)
- Other spondylopathies
- Fractures (of various types)
- Disc disorders

Episode Summary Group	Episodes
Arthropathies/Joint Disord NEC	6,685
Spinal/Back Disord, Low Back	2,856
Spinal/Back Disord, Ex Low	1,928
Injury - Musculoskeletal, NEC	1,855
Fracture/Disloc - Upper Extrem	1,589
Bursitis	1,417
Osteoarthritis	1,412
Fracture/Disloc - Ankle/Foot	1,037
Injury - Knee	644
Gout	334