

HealthDataViz

See how you're doing



April 25, 2019



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DATA VISUALIZATION HELPS US **KATHERINE** TO SEE AND LEARN. Done well, it's a revelation of the stories and S. ROWELL, opportunities we need to understand in order that we may improve our health and healthcare M.S., M.H.A. systems-and that's something I care deeply about. **Health**DataViz See how you're doing MY FAVORITE DISPLAY DEVICES (617) xxx-xxxx What's not to love about a bar? Bars allow us to #1 | BAR CHART compare values directly, see the distribution and shape of data, easily rank results, and of course, they are always preferable to pies charts! ANYTHING you can do with a pie, you can do better **MY PRIOR** with a bar. Full stop. **PROFESSIONAL EXPERIENCE** #2 | DEVIATION CHART I love the simplicity of a deviation graph to clearly convey the relative difference between values, **NSOIP** such as actual versus budget or goal. And they are especially helpful on summary overview T REHABILITAT dashboards. MASSACHUSETTS GENERAL HOSPITAL Created by my good friend and mentor, Steve Few, #3 | BULLET CHART BlueCross BlueShield Bullet Charts pack a powerful punch. They allow us to display performance on a measure along with multiple contextual values - all while taking up ANESTHESIA very little space. They are my kind of graph -ASSOCIATES, PA #4 | CHOROPLETH MAP The Choropleth maps in the Dartmouth Atlas were a total game changer for my career. The **use of** MY HOME TEAM varying degrees of color saturation on these types **EDUCATION** of maps make it easy to see high and low values, and consider geographic differences. \$ Dartmouth Books I've **HDV**izCast Health & MEDICINE 0 Data University of New Hampshir Ever since 2010 I have Need a quick lesson in published a free the best practices of monthly guide to data visualization? CONS understanding, Check out my new Colby-Sawyer presenting, and using offering "HDVizCast" a College short (under 2 health and healthcare minutes!) video to evidence. Check it out help you up your Click on icon to connect! and sign up today! game.



Making Research Relevant & Ready

The Patrick and Catherine Weldon Donaghue Medical Research Foundation provides grants for medical research of practical benefit.

Thanks to Our Webinar Sponsor

Housekeeping

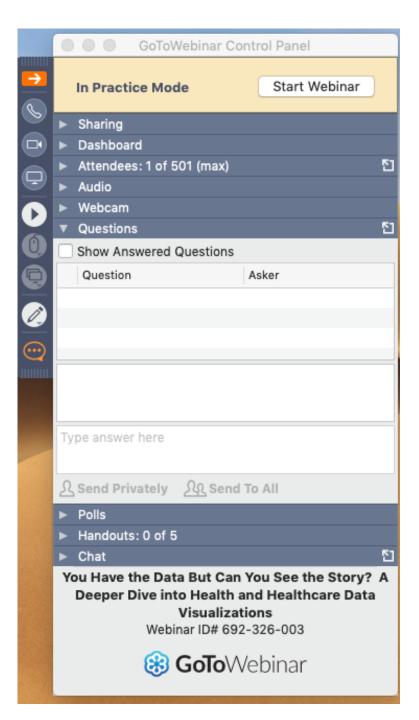
All participants will be muted during the webinar.

If you wish to ask a question, simply type it in the bottom box and hit SEND!

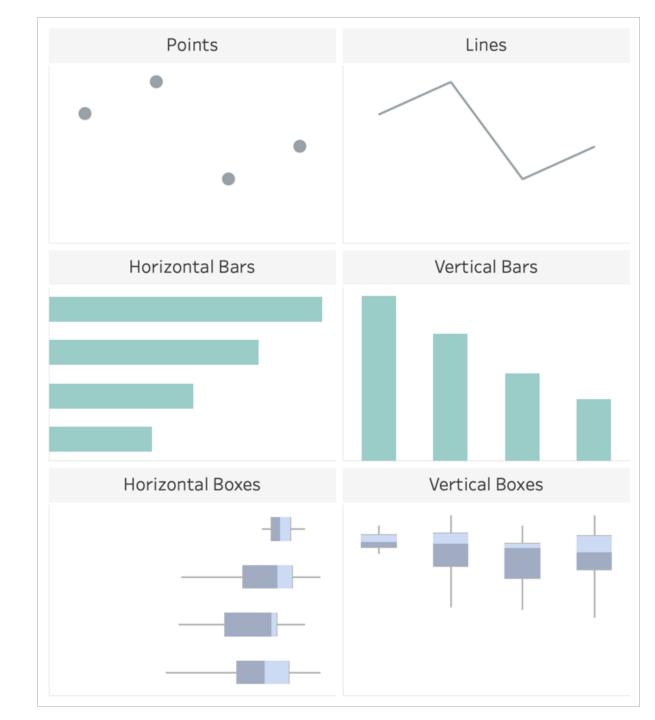
During the last 15 minutes of the Webinar we will read and answer.

At the end of this Webinar a brief survey will be launched. We value your feedback and welcome any comments you may have to help us improve future Webinars.

Thank you!!



Methods of Encoding Data



Points Help Us To: See and compare unique values in data



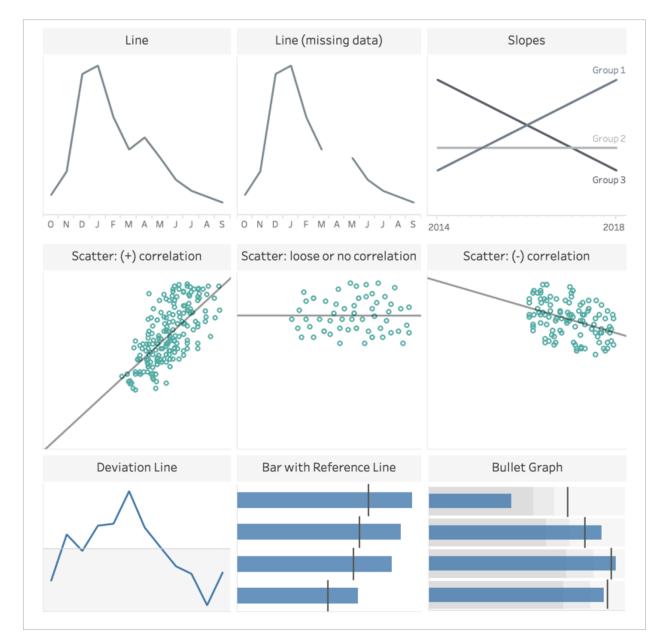
Lines Help Us To:

See changes and trends over time and gaps in data

Better see and consider possible relationships in our data, such as correlations

See relative change from a comparison over time.

Add reference values to our visualizations



Bars:

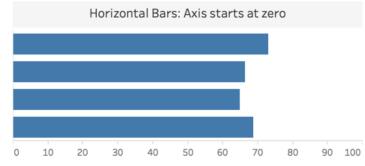
Help us to compare values and order data, for example -ranking

Are versatile and may be arranged either horizontally or vertically based on the overall layout of your visualization and labeling requirements

Must start at zero to correctly show how big one value is compared to another

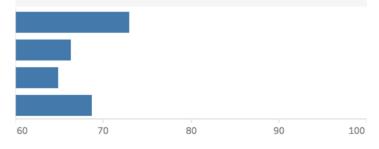


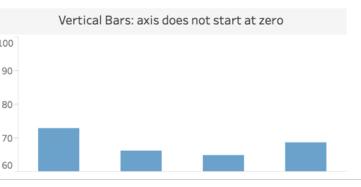
Axis Start Really Matters





Horizontal Bars: Axis does not start at zero



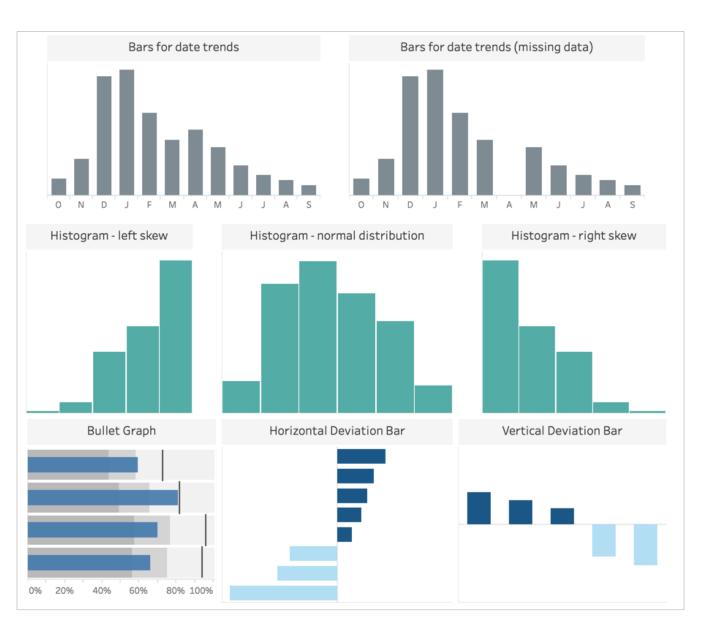


Bars Also Help Us See:

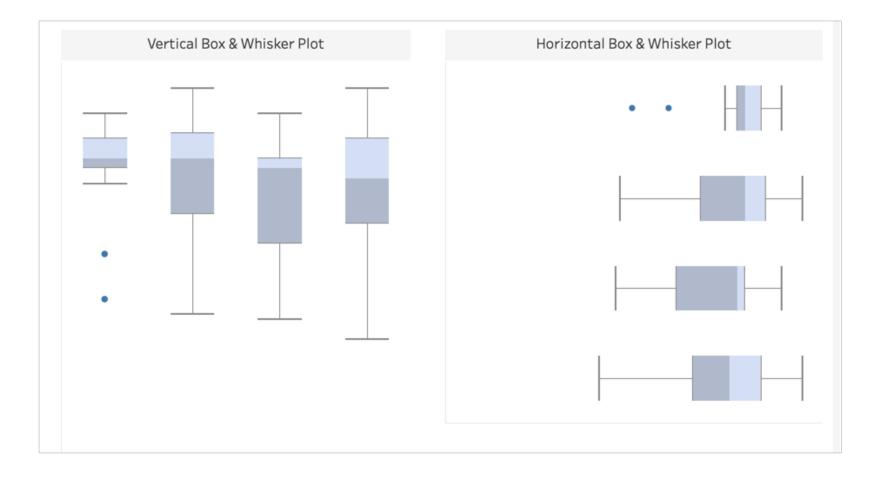
Trends over time

Distributions

Complex Comparisons and relative difference from a comparison



Boxes Help Us See: the distribution of data by quartiles



Boxes and Color Help Us Display:

Complex Hierarchical Data

	Top Cause By Country	Trends			Leading C	auses by Ag	ge All Causes b	y Country				
Country	2002	Start year			010	En	d year	-20	% differer	difference in number of deaths		
lumber of deaths by countr	ry and cause, 2002-2010											
Ischaemic heart diseases 3,871,366 deaths		Dementia and Alzh diseases 1,210,775 deaths	ieimer's	diseas	ic lower re es 701 death		Diabetes mellitus 606,590 deaths	Ischae heart d 497,33 deaths	diseases 19	Ischaemic heart diseases 337,228 deaths		
							Cirrhosis and other diseases			Certain		
		Diabetes mellitus 640,852 deaths	Heart failure and complications and ill-define	s		Influenza and	Chronic lower respiratory					
			heart disease 575,813 deaths	2								
Malignant neoplasm of trachea, I 1,438,911 deaths	bronchus and lung		deaths				Heart failure and		lschaemic neart diseases 340,376	Ischaemic heart diseases 234,611		
		Diseases of the urinary system 433,315 deaths	Cirrhosis a other disea liver						deaths			
Cerebrovascular diseases 1,273,894 deaths			Intentiona self-harm	I	Certain							
		Land transport accidents 309,080 deaths	Malignant neoplasm d									
Cerebrovascular diseases 828,721 deaths	Assault (homicide) 394,931 deaths	Hypertensive diseases 298,826 deat	condit	tions ating	Heart failure and							
lschaemic heart diseases 805,567 deaths	Diabetes mellitus 391,526 deaths	Influenza and Pneumonia 282,672 deat	Cirrho	osis								
	Chronic lower respiratory diseases	Land transpo accidents 279,212 deat	rt									

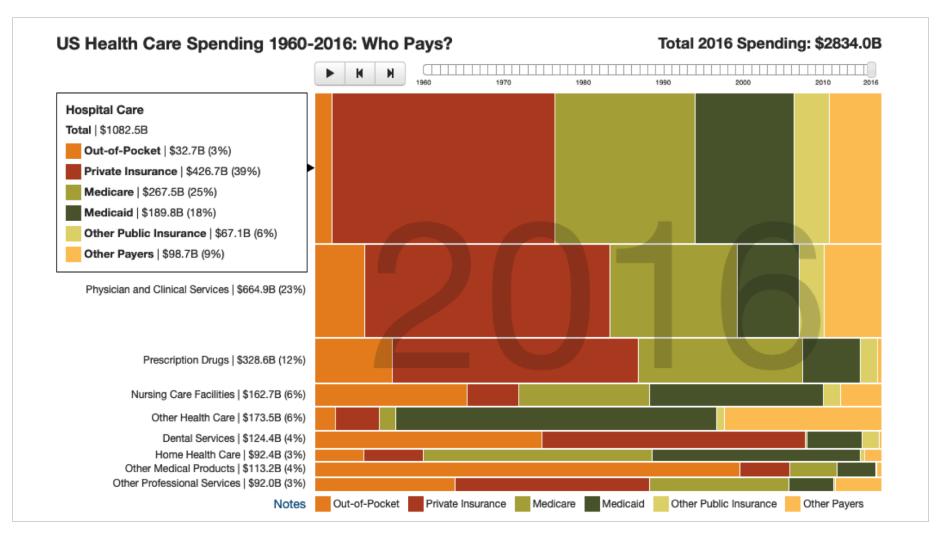
Boxes and Color Help Us See:

Patterns in multivariate data that can't be easily shown using bars

Select Year to Compare to 2017 2011	Medicaid	Medicare	Other Health Insurance Programs	Other Third Party Payers	Out of Pocket	Private Health Insurance	Grand Total
Hospital Care	\$193.9	\$282.9	\$69.6	\$106.9	\$33.9	\$455.3	\$1,142.5
Physician and Clinical Services	\$75.3	\$159.0	\$32.3	\$66.7	\$60.1	\$300.9	\$694.3
Prescription Drugs	\$33.0	\$100.9	\$11.0	\$1.8	\$46.7	\$140.1	\$333.5
Other Health Care	\$105.9	\$5.0	\$2.5	\$49.6	\$6.5	\$13.6	\$183.1
Nursing Care Facilities	\$50.2	\$37.7	\$5.4	\$12.1	\$44.3	\$16.6	\$166.3
Dental Services	\$12.5	\$0.9	\$4.0	\$0.5	\$53.0	\$58.2	\$129.1
Other Medical	\$7.9	\$10.1	\$0.2	\$0.9	\$88.1	\$11.4	\$118.6
Home Health	\$35.0	\$38.8	\$0.7	\$2.7	\$9.0	\$10.8	\$97.0
Other Professional Services	\$7.5	\$24.7	\$0.4	\$7.2	\$23.9	\$33.0	\$96.7
Grand Total	\$521.2	\$660.0	\$126.1	\$248.4	\$365.5	\$1,039.9	\$2,961.1

What We May Like (it looks cool so it must be good) v. What We Can *Understand & Explain*

What we may like (and it is cool looking)..



What we can understand and explain...

Difference of the past 6 years for a constraint	\$3 trillio pending on as increased	n in Th th d 30% in		n billions spenditure c od was paid 9%. In 2017	hange by p by Medica 7, Medicaid	ayor during id, with an	In 2017 Care se which r	nd Payor , expenditures for 0 rvices was \$183 bi represents a 39% in D11 to 2017.	ther Health llion,
Select Year to Compare to 2017 2011	Medicaid	Medicare	Other Health Insurance Programs	Other Third Party Payers	Out of Pocket	Private Health Insurance	Grand Total	Percent of all 2017 Expenditures by Service Type	% Change from 2011 to 2017
Hospital Care	\$193.9	\$282.9	\$69.6	\$106.9	\$33.9	\$455.3	\$1,142.5	38.6%	34.1%
Physician and Clinical Services	\$75.3	\$159.0	\$32.3	\$66.7	\$60.1	\$300.9	\$694.3	23.4%	29.6%
Prescription Drugs	\$33.0	\$100.9	\$11.0	\$1.8	\$46.7	\$140.1	\$333.5	11.3%	28.8%
Other Health Care	\$105.9	\$5.0	\$2.5	\$49.6	\$6.5	\$13.6	\$183.1	6.2%	• 39.0%
Nursing Care Facilities	\$50.2	\$37.7	\$5.4	\$12.1	\$44.3	\$16.6	\$166.3	5.6%	14.4%
Dental Services	\$12.5	\$0.9	\$4.0	\$0.5	\$53.0	\$58.2	\$129.1	4.4%	19.5%
Other Medical	\$7.9	\$10.1	\$0.2	\$0.9	\$88.1	\$11.4	\$118.6	4.0%	24.5%
Home Health	\$35.0	\$38.8	\$0.7	\$2.7	\$9.0	\$10.8	\$97.0	3.3%	30.0%
Other Professional Services	\$7.5	\$24.7	\$0.4	\$7.2	\$23.9	\$33.0	\$96.7	3.3%	32.7%
Grand Total	\$521.2	\$660.0	\$126.1	\$248.4	\$365.5	\$1,039.9	\$2,961.1		
Percent of all 2017 Expenditures by Payor Type 	17.6%	22.3%	4.3%	8.4%	12.3%	35.1%		% of Total 2017 0.0%	2 Expense 15.4%
% Change from 2011 to 2017	• 39.4%	28.9%	33.3%	26.4%	17.9%	32.1%			DataViz

Understanding *WHY* a complex chart type was conceived and, *what problem it aims to solve,* is essential to using it correctly.

TREEMAPS (don't do this!)

Were conceived by Ben Shneiderman at the U of MD, to help display complex hierarchies of data. Not simple categorical data, such as Leading Causes of Death, displayed below, that could be displayed, and more easily understood and compared, in a bar graph.

		Leading Causes of De Reported Deaths Countries and Territories of the				
Country Brazil	Age groups All	Sex All	Year 2014 to		Top Caus 1 to 10	ses
1 Ischaemic heart Deaths: 107749	t diseases), Rate: 52.3 , 10.5 %	3 Influenza and Pneumonia Deaths: 71144, Rate: 34.5 , 6	.9 %	6 Hypertensive diseases Deaths: 45757, Rate: 22.2 , 4.4 %		ts
2 Cerebrovascula Deaths: 99213,	r diseases Rate: 48.1 , 9.6 %	4 Assault (homicide) Deaths: 58599, Rate: 28.4 , 5	.7 %	8 Chronic lower respirat diseases Deaths: 42199, Rate: 4.1 %		10 Diseases of the urinary system Deaths: 30867, Deate: 45.0
		5 Diabetes mellitus Deaths: 57843, Rate: 28.1 , 5	.6 %	9 Heart failure and comp and ill-defined heart di Deaths: 31547, Rate: 3.1 %	isease	Rate: 15.0 , 3.0 %

TREEMAPS (do this)

Used correctly this graph type allow us to display complex hierarchal data like that in this example. Data by country (largest boxes outlined in white, causes of death (smaller boxes) and changes in the rate per cause from one time period to another (colors and saturation).

	Top Cause By	Trend	ls	Leadi	ng Causes	All Cause	s by	
Country All)	* 2002	Start ye	ar	• 2010	End	year	 % difference -200% 	in number of deaths
umber of deaths by cou	ntry and cause, 20	02-2010						
schaemic heart diseases 1,871,366 deaths		Dementia and A diseases 1,210,775 death		Chronic lower diseases 1,123,701 dea		Diabetes mellitus 606,590 deaths	ischaemic heart diseases 497,339 deaths	Ischaemic heart diseases 337,228 deaths
						Cirrhosis and other diseases		Certain
		Diabetes mellitus 640,852 deaths	Heart failure and complication and ill-define	5	Influenza and	Chronic lower respiratory	_	
			heart disease 575,813 deaths					
Aalignant neoplasm of trachea, br 1,438,911 deaths	onchus and lung					Heart failure and	lischaemic heart diseases 340,376	Ischaemic heart diseases 234,611
		Diseases of the urinary system 433,315 deaths	Cirrhosis a other disa liver				deaths	
erebrovascular diseases 1,273,894 deaths		Land transport	Intentiona self-harm	Certa	in			
		accidents 309,080 deaths	Malignant					
erebrovascular diseases 128,721 deaths	Assault (homicide) 394,931 deaths	Hyperte diseases	conditions	originatin	g in the per			rom Certain I 6,229 people in 200
schaemic heart diseases 305,567 deaths	Diabetes mellitus 391,526 deaths	influenza a Pneumonia 282,672 de	aths and	25/5				
	Chronic lower respiratory diseases	Land trans accidents 279,212 de						

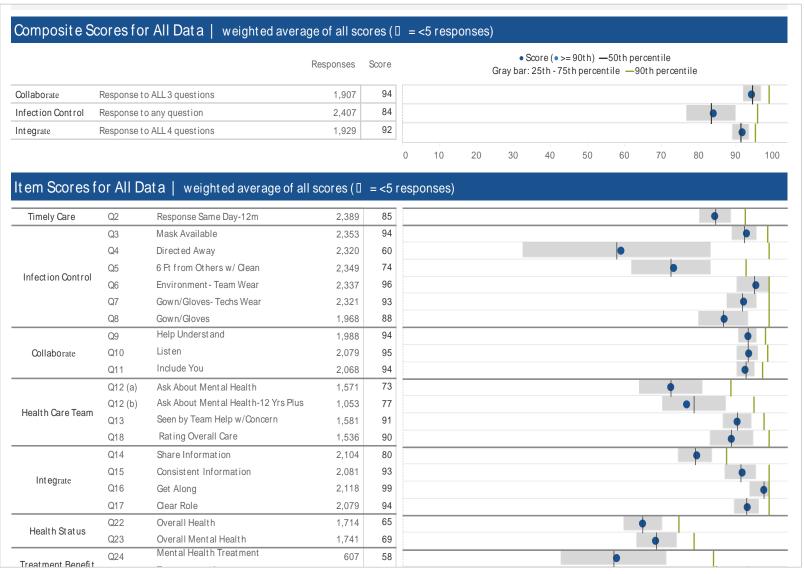
Simple and Elegant Ways to Display Survey Results and Contextual Data

Survey Results and Confidence Intervals

GLOBAL RATINGS Adult Medicaid Positive Rates v. NCQA National Averages Rating Positive Rates v. NCQA Averages with Confidence Interval Range Type 84% Rating of All Health GLOBAL 80% 90% Care RATINGS 83% Rating of Health 70% 85% Plan 75% Rating of Personal 73% 86% Doctor 76% Rating of Specialist 70% 80% Seen Most Often 84% **COMPOSITE** Customer Service 82% 92% MEASURES 91% Getting Care Quickly 96% 85% 82% Getting Needed 72% 💻 87% Care 91% How Well Doctors 85% 92% Communicate 85% Shared Decision 75% 88% Making 70% 75% 80% 85% 90% 95%

Survey Results and Comparisons

Composite results, # surveys respondents, response results (score of "Yes" answers), 25th – 75th Percentile result, groups score, 50th and 90th percentile results



Survey Results, Comparisons and Changes Over Time

In this view we used bullet graphs to display results compared to national results by percentiles, to target for the group and a heat map to show how the survey results have changed over time.

HCAH	PS Comp	oosite T	op Box	%		HCAHPS CYTD vs. Target and National %		Q	uarter	Top I to Qu	Box % Jarter	Chan	ge	
	CY 2014	YTD 2015	MGH Target	Difference to Target		Composite National National National National MGN Score 25th % 50th % 75th % 90th % 10th 7	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 201
Dis charge nformation	91.7%	92.0%			70		92.5%	91.2%	92.9%	92.4%	91.7%	91.1%	91.4%	92.0
tec om me nd to sp ital	89.9%	91.8%			85		91.1%	90.5%	90.3%	90.5%	89.5%	89.7%	89.7%	91.
Overall Hospital Rating	80.0%	85.5%			83		80.3%	82.0%	82.2%	80.7%	80.1%	79.7%	79.4%	85.5
Nurse Communication	82.1%	84.9%			86		81.2%	83.4%	82.8%	82.3%	83.3%	81.4%	81.4%	84.5
Doctor Communication	81.7%	81.2%			86		82.8%	82.4%	83.5%	81.8%	82.5%	81.3%	81.0%	81.3
Medication Communication	66.0%	78.4%			47		65.9%	65.8%	66.8%	66.8%	67.7%	65.5%	63.3%	78.
MGH Rounding Question	77.1%	76.6%			77								77.1%	76.0
Pain Man agement	71.8%	74.5%	72.5%	2.0%	65		72.9%	72.3%	73.4%	73.3%	72.8%	70.4%	70.3%	74.5
toom Cleanliness	72.1%	69.8%			86		74.7%	75.5%	74.5%	72.5%	74.5%	72.1%	69.1%	69.8
Care Transitions	59.9%	67.7%			85		63.0%	61.2%	61.7%	59.5%	60.5%	60.4%	58.8%	67.3
itaff Response	64.0%	66.1%	65.2%	0.9%	73		65.8%	64.5%	65.9%	63.1%	65.0%	63.9%	63.8%	66.
Juiet at Night	49.6%	51.2%	51.2%	0.0%	86		51.1%	51.2%	49.7%	49.2%	49.8%	49.1%	50.5%	51.3
						0% 20.0% 40.0% 80.0% 80.0% Composite Top Box %	Chang -2.9%	e from p	revious	quarte	r			15.

Meet the viewer where they are

Action &	Impact Level		Question	Top I	3ox % FYTD			Roll		Top E Com		d Qua	rter	
				vs Ta	arget	Difference to Target	16 Q3	16 Q4	17 Q1	17 Q2	17 Q3	17 Q4	18 Q1	18 Q2
OVERALL	provider possi	ble a	from 0 to 10, where 0 is the worst and 10 is the best provider possible, Id you use to rate this provider?		87.8%	0.1%	86.0%	6	•	•		•	\$	38.3%
				vs. Overall 75th	Percentile									
FOCUS ON IMPROVING	HIGH IMPACT	!	Did this provider give you easy to understand information about these health questions or concerns?		94.4%	-2.0%	92.8%	b	•	•	•	•	ģ	94.7%
		!	Did this provider seem to know the important information about your medical history?		87.0%	-3.6%	87.4%	6		•	•	•	Ę	37.3%
		ļ	Did this provider spend enough time with you?		92.3%	-3.5%	90.5%	6	•	•	•		ç	92.8%
	MEDIUM IMPACT	!	Did this provider explain things in a way that was easy to understand?		94.1%	-2.0%	92.3%	6	•				9	94.4%
		ļ	Did this provider listen carefully to you?		94.7%	-2.0%	93.1%	ó	•	•	•	•	ġ	95.1%
	LOW IMPACT	ļ	Did this provider show respect for what you had to say?		95.3%	-2.1%	94.5%	6					9	95.7%
			<u>Would you recommend this provider's</u> office to your family and friends?		92.8%	-2.5%	91.3%	6	•	•			ç	92.8%

FOCUS ON IMPROVING indicates areas that affect our Goal for Overall Rating of Provider where improvement is needed to meet our benchmark. of Provider where our benchmarks were met.

KEEP DOING indicates areas that affect our Goal for Overall Rating

Dashboards Defined

A dashboard is a visual display

of

the most important information needed to achieve one or more objectives

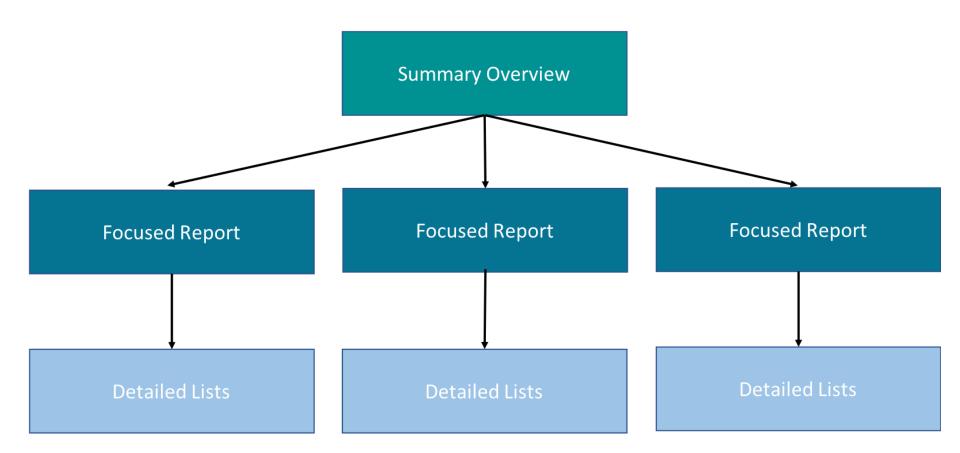
that has been

consolidated on a single computer screen

so it can be

monitored at a glance

Guided Analytics Framework



30-Day All Cause Readmissions

Hospital Rea Reporting Peri				i							(AI)	Discharge Date (All)		althDataViz
Rea	dmissio	n Rate by Dep	artmei	nt					imitte scharg		Readmits by Ty	pe Index Admits ALOS	CMI	HCAHPS
*Click to department to view service details	Count	Rate	Q4 2015	Q1 2016	Q2 2016	Q3 2016	0-7 Days	8-14 Days	15-21 Days	22-30 Days	Related vs. Unrelated	Observed vs. Expected ALOS	Admission Case Mix Index (CMI)	HCAHPS Discharge Help at Home (National Avg)
Department Total		14%	15%	14%	13%	14%	44%	24%	16%	16%	45% 52%	6.4	1.41	80%
Medicine	3070	19%	20%	18%	19%	19%	35%	28%	19%	20%	38% 82%	6.5	1.69	76%
Critical Care	902	13%	17%	15%	11%	10%	40%	25%	20%	16%	67% 331	s 10.0	2.06	80%
Surgery	750	12%	13%	13%	11%	13%	42%	25%	18%	15%	49% 51%	7.8	2.01	81%
OB/GYNE	56	1%	2%	1%	1%	1%	57%	20%	16%	7%	43% 57%	4.0	1.10	72%
Family Medicine	419	15%	13%	17%	15%	16%	35%	33%	16%	16%	58% 42%	•	1.36	79%

SUMMARY OVERVIEW

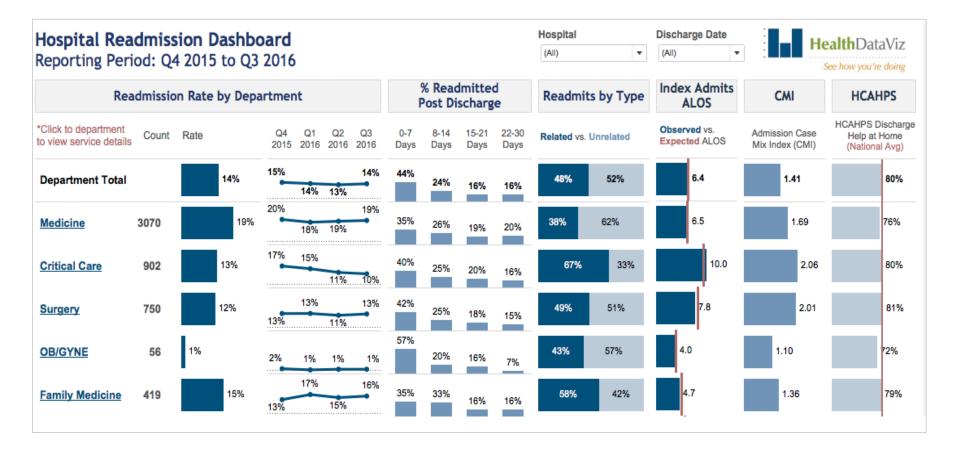
				on Compariso	n	(All)		×		Health	
eport	ing Peri	od: Q4 2015 to (23 2016			Discharg	- Data		Service	See how	rou're doing
						(All)	e Date		All		
						(AU)			(MI)		•
			(Overall Readmissio	on within	a 30 Days					
	# Unique S-DRGs w/	Readmission Rate	Total Cas	es Readmission Count	Same C	ondition	Same Condition Count	Diffe	rent Conditi	Differen	t Condition Court
PLOS	284	14.0%	42,8	5,884		49.0%	2,883		51.0	%	3,001
				Observed MS-DRGs Within 30-Days			Dis		tion of R st-Discha		
Medrg	MSDRG D	escription	Total Readmits	DRG Readmits as a % of Total Readmits	Related	f vs. Unrelate	d 0-7 D	iys (-14 Days 1	5-21 Days	22-30 Days
Top DR	Gs Total			21.2%	48%	529	6	34%	26%	18%	23%
871	Septicemia	or severe sepsis w/o M	. 202	4.2%	60	% 40	1%	18%	24%	13%	15%
292	Heart failur	e & shock w complicatio	. 165	3.4%	41%	59%		27%	32%	23%	19%
885	Psychoses		131	2.7%	6	9% 1	11%	25%	31%	22%	22%
603	Cellulitis w	lo MCC	113	2.3%	38%	62%		35%	21%	14%	30%
392	Esophagiti	s, gastroent & misc dige	s 80	1.7%	40%	60%		39%	20%	16%	25%
291	Heart failur	e & shock w major comp	ol 80	1.7%	35%	65%		31%	31%	21%	169
812	Red blood	cell disorders	74	1.5%		74%	26%	30%	18%	21%	319
683	Renal failu	re w CC	63	1.3%	21%	79%		33%	21%	16%	30%
191	Chronic ob	structive pulmonary dise	61	1.3%	58	% 42	%	64%	25%	20%	119
194	Simple pro	umonia & pleurisy	57	1.2%	479	539	6 - C	25%	33%	16%	26%
	Pa	atient Profile		Readmitte	d	Not	Readmitted		0	ifferenc	e
Gender	Fem	alo		43%			51%		-8%		
	Mak			57%			49%				8%
Age	19-6	4		44%			62%		-6%		5
Payor	65+	mercial/Private		44%		20%	38%		-11%		7%
Payor		icaid Traditional		13%		14%				1%	
		icaid/Managed Care		10%		12%				2%	

FOCUSED SUPPORTING REPORT

Hospital F							Service		Physicia	•	0		Heal	<mark>th</mark> DataViz
Reporting Pe	eriod:Q4 20	015 to Q3	2016				140		1946		6		See. 1	war war in ching
						Pati	ent Readm Servic	ission Det	alls					
Discharge	Patient MRN	Admission	Discharge	108	Expected LOS	O vs. 8 LOS Diff	Readmission Admit Date	Roadmission Discharge Date	Days to Readwit	Primary Paper	Madra	MSDRG Description	MSDRG Readmin alon	MSDRG Desciption Readmission
Physician All	513703275	4/27/16	4/25/10	1	43	-3.3	\$376	5/14/10	5	Medicare Traditional/inde	245	Parc cardiovaat proc w non-drap-	237	Major cardiovescular pr.
Physician ABC	508297957	4/25/16	4/28/18	2	3.6	-1.8	521/10	61216	3	Medicare Traditionalizeda	920	Complications of Insainwrit w CC	253	Other vascular procedures w CC
	545681756	3/15/16	4/29/16	45	12,2	32.8	5816	5/19/10		Medicare Traditionalityde	981	Estensive O.R. procedure unrela.	235	Coronary bypess w/o certiled ceth
	550589608	4/26/16	4/30/16	4	4.5	-0.5	5/2/19	5/5/10	2	Medicare/ Managed Care	290	Azute myocardial inferction, diachia.	314	Other circulatory system diagnoses
	550960828	4/22/18	5/5/16	13	3.7	9.3	5/9/1d	5/11/16	4	Commercial Private Tradition	248	Parc cardiovaac proc w drug-enzi.	194	Bimple preumons & pleaning w CC
	653136154	4/28/16	521/18	3	4.4	-1.4	6/3/16	5/6/16	2	Medicare Traditional/Inde	251	Perc cardiovasc proc w/a coronar.	545	Connective Seaue disorders w MCC
	579514207	4/22/16	400/16	8	8.6	-0.6	56ml	59118	8	Medcare Traditional/Inde	298	Circulatory disorders except	377	0.1 hemorthage # MOC
Physician AC	574374038	4/9/16	4/10/16	3.	3.8	-2.8	4/12/16	4/13/16	2	Medicare Traditional/Inde.	247	Perc cardovasc proc w drug-aluti.	292	Heart failure & shock w CC
Physician ACD	540660392	3/25/18	3/28/18	2	3.0	0.0	32916	3/20/16	1	Medicare Traditional/inde	948	Bigris & symptoms w/o M.	432	Cirtuin & alcoholic hepatite
Physician AD	504944820	3/22/16	3/25/16	3	2.0	1.0	4/57/5	49/16	12	Medicare Traditional/Inde.	313	Chest pain	281	Acute myodardial infanction, clachar
	506573138	4/12/16	4/14/18	2	4.3	-2.3	5/11/16	5/12/10	27	Medicare Traditionalitede	292	Hoart failure & shock w CC	560	Other musouloskeletal s
	530093297	3/11/10	3/22/16	11	7.1	3.9	3/26/16	4/3/16	4	Medicare/ Managed Care	201	Acuts myocardial interction, discha-	291	Heart failure & abook w MOC
	548925360	4/8/18	4/9/18	3	\$.1	-2.1	42616	4/30/78	37	Medicare Traditional/Inde.	281	Acute myocardial inferction, dischal	280	Acute myocardial infanction, dischar
	563473764	4/0/16	4/12/18	4	5.2	-1.2	4/23/16	426'16	11	Medicare/ Managed Care	245	Parc cardovast proc w drug-atuli.	246	Part santioyast pric w drug-alutin
	585382343	4/11/18	4/13/18	2	3.7	-1.7	4/27118	42818	54	Modicare/ Manaped Care	503	Heart failure & shock w/o COM.	293	Heart failure & shock w/o CC/MC
Physician ADE	516855703	3/24/16	3/26/18	2	3.7	-1.7	4/5/10	48/15	11	Medicare/ Managed Care	.011	Red blood cell disorders w MCC	811	Red blood cell disorders w MCC
	619503625	3/17/10	3/19/16	2	2.9	-0.9	3/25/16	3/91/16		Medicald Tradilionatinde.	192	Chronie obstructive pulm.	192	Chronic obstructiv pulmenary diseas
	523121422	3/24/10	4/2/10	9	48	4.2	4816	4/15/10	8	Medicald Traditional/Inde.	535	Practicess of hip & polvis w MCC	401	Hip & femur procedures excep
	527309638	4/15/16	4/21/18	8	2.8	3.2	58119	9/15/10	17	Modicare Traditional/Inde	991	Esophagids, gastroent & mist.	871	Septoenia or sevens sepais with
	530538786	3/4/16	3/17/16	13	5.5	7.5	4/10/16	4/15/10	24	Commorcial Private Health -	372	Major gistrointestinal d.	372	Major pestrointes/anal di.
	633827248	3/23/16	4/5/58	11	7.7	3.3	4/15/16	421/16	12	Modicare Traditional/Inde	872	Septicentia or nevero sopola w?.	391	Esophagitio, gastroant & misc
	534853565	413/10	4/17/18	4	7.9	-3.9	40016	4/24/16	3	Medicare TraditionalInde.	175	Pulmonary omboliam w MCC	375	Digestive Helighancy w CC
	638827162	3/25/16	3/31/16	6	3.3	2.7	40/16	4/7/16	2	Medicaid Tradifionalifede.	192	Chronie obetructive pulm.	191	Chronic obstructiv petmonary diseas
		-	10000						~	Medicare	-	Katney & uninary		ECMO or thach w

DETAILS ON DEMAND

Summary Overview Hospital Readmissions Dashboard



Public Displays (Loosening up -- just a bit!)

Donaghue Foundation 2018 Annual Report



Greater Value Portfolio Research Spotlight

INCORPORATING QUALITY OF CARE INFORMATION INTO A TIERED COST-SHARING HEALTH INSURANCE BENEFIT

Bryan Dowd, PhD, University of Minnesota

Contribution to Improved Value

Test models of care and coverage that address current financial disincentives for systemic change.

About This Project

This study will develop and test ways to present data on both quality of care and cost to employees choosing among primary care dirice. The two-year award is to \$357,659. Dr. Dowd and his research team are partnering with the Minnesola State Employees Group Insurance Program (SciP).

The Problem

Currently its attract for consumers to compare both the quality and the expected cost of care when choosing among primary care clinics. Economistic the this tack of comparehensive cost and quality data, presented in a useful way to consumers, as one of the primary causes of inefficiency in the U.S. health system — i.e., our inability to maximize quality at any level of health core spending.

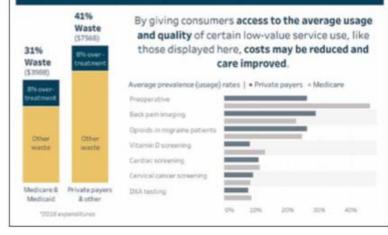
Project Approach

Quality measures such as ambulatory care sensitive admissions, avoidable emergency department visits potentially preventable rehapitatizations, and low-value care will be developed using claims data and quality information from state and federal agencies. Interviews disc will be conducted with health care provides, health plan administrators, and union leadership to understand the best ways to present and use these quality measures.

Translating Research into Practice

Minnesofa IEGIP has a national reputation for successfully using fixered cost-sharing system for primary case clinics. Adding quality data will be of interest to other employee groups. The results of this project will be shared with employee, health plans policymakers, and academicians through in-person presentations, research briefs, policymemoranda, and articles in the pere reviewed academic literature.

In the US, 8% of healthcare expenditures was spent on unnecessary clinical treatment.



Greater Value Portfolio Research Spotlight

IMPACT OF A MULTIFACETED EARLY MOBILITY INTERVENTION ON OUTCOMES AND ICU-MORBIDITIES IN CRITICALLY ILL CHILDREN

Sapna R. Kudchakar, MD, PhD, Johns Hopkins University



Contribution to Improved Value

Value refers to both how much we play and, just as importantly, the outcomes we get for that cost.

About this project

The goal of this project is to determine the impact of an early mability program on children inICUs and assess facilitates and barriers to its wider implementation. The two-year awards for \$443,446. The partnering organizations are four tertiary-care pediatric ICUs of durine size, setting, and geographic location.

The Problem

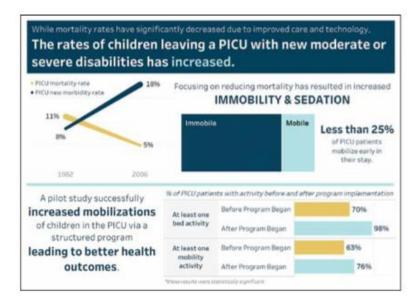
Although montality in pediatric ICUs has decreased, long-ferm ICU stays are associated with longer immobility, he avier sediation, and insufficient delivium prevention that increase ICU-acquired morbidities and hospital lengths of stays.

Project Approach

A plot study of a multi-histoverition program to promote early mobility, efficient sleep, and delifum prevention had positive results for safety, and feasibility. This study will assess patient-level dinical outcomes and facility-level success in implementing the program more broady and with

Translating Research into Practice

In addition to traditional scholarly disernination, translation approach estinctude developing key messages for statistications and other researchers from the partnering organizations, summaries in lay language about the benefits of an early mobility program for families, and a set of summaries, tools and resources for circicians.



Greater Value Portfolio Research Spotlight

ASSESSING TOXICITY AND ADHERENCE OF ORAL CANCER THERAPY WITH ELECTRONIC PATIENT REPORTED OUTCOMES (EPROS)



Nadine Jackson McCleary, MD, MPH, Dano-Farber Cancer Institute

Contribution to Improve Value

This project studies the impact of systematic electronic patient reported data to improve outcomes for patients receiving oral anticancer therapy as part of routine clinical practice in a large on cology academic and community practice.

About this project

This study will leverage concertinformatics to improve oral chemotherapy teatment outcomes, increase treatment adherence, and manage toxicity. The goal is to develop the tools needed for the oral cancer therapy monitoring system; conduct a plicit implementation at the point of care and between visits; and assess clinician and patient engagement, and overall impact of the program for better outcomes. The two-year award is for \$440000 The pathering organization is Dian-Faraber Cancer Institute.

The Problem

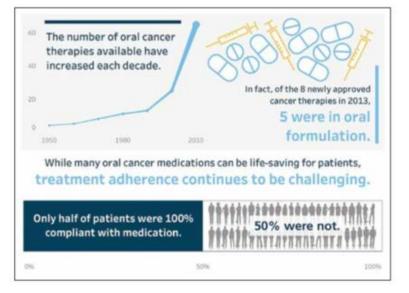
The number of end cancer-deviced therapies (OCDT) is expected to increase over time, potentially increasing risk of nonadherence and unique toxicities. Patients and their categores need additional access to communicate concerns as well as enhanced kills to learn how to safely administre, store and monitor potential advase effects.

Project Approach

After an in-clinic electronic system (ePRO) to collect patient report of symptoms related to treatment or disease was recently found to be feasible, ePRO twill be captured via tablets during clinic visits or by mobile devices between clinic visits to understand the impact of ePRO for OCDT administered for breast or gastraintestinal cancers on outcomes, adherence, toxicity, and patient and provider engagement.

Translating Research into Practice

The project results will guide future implementation strategies for OCDT adherence and toxicity monitoring and inform scalable strategies for oncology.



Greater Value Portfolio Research Spotlight

VALUE-BASED FORMULARY ESSENTIALS: TESTING AND EXPANDING ON VALUE IN PRESCRIPTION DRUG BENEFIT DESIGNS



Kai Yeung, PharmD, PhD, Kaiser Permanente Washington Health Research Institute

Contribution to Improved Value

Test models of care and coverage that address current financial disincentives for higher value healthcare

About this project

This study will expand a small pilot study of aligning out-of-pockets costs for drugs with their estimated value. The two-year award is for \$399,917. Remera Bue Cross is the partnering organization.

The Problem

Pharmaceutical costs are a significant and increasing factor in the high cost of healthcare in the U.S.Employee and health plans have enacted costs haring drug formularies to reduce the employees' cost burden, but some of these may have unintended cores quences by reducing patient adherence to drugs that improve health outcomes:

Project Approach

A pilot study conducted by Remera Bue Crois added cost effectiveness of drugs to the method used to rank medication on how much patients should pay for them. After softwire velow and efficacy review, a cost effectiveness review was added to estimate the value of each drug. In general, members would pay less for drugs that had a higher estimated value for improving health. The findings showed cost savings to both plan members and the Pemera company. This project extends a new evaluation of the value based drug formulary and cost-hinding plan to \$0,000 members.

Translating Research into Practice

The results of this study will be used by Phemeroto help, determine the degree to which they will expland their pictudue based formulary. Beyond that, a communication plan will be developed to diseminate the study findings to health policy journals and to other entities that are designing value-based health-care plans.



Questions?

Thanks!

Survey

(we greatly welcome and appreciate your feedback)



See how you're doing