

GMCB Data Team Update

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Data Governance Council Summary and Update

Kate O'Neill, MPH

GMCB's Data Governance Authority



- 18 V.S.A. sections 9405, 9410, 9453, 9454
- Broad authority over, and responsibility for maintaining a healthcare database that includes hospital- and insurer-reported data for quantifying and analyzing health care utilization, expenditures, and resources.
- Stewardship of:
 - VHCURES – Vermont Healthcare Uniform Reporting and Evaluation System
 - Eligibility and claims data for medical and prescription drug services used by Vermont residents
 - VUHDDS – Vermont Uniform Hospital Discharge Data System
 - In-patient, out-patient, and emergency department services provided by Vermont Hospitals to Vermont residents and non-residents.

Data Governance Concerns



The GMCB is responsible for a broad set of data management concerns. While not intended as an all-encompassing inventory, these concerns can generally be attributed to four categories.

Risk Management

Implementing and enforcing the most appropriate data privacy and security standards and practices.

Data Quality

Establishing data stewardship to promote the highest possible quality of GMCB's data resources.

Program Sustainability

Evaluating opportunities to optimize sustainability and revenue for GMCB's data stewardship program.

Data Release

Supporting clear processes for the evaluation of data requests and the release of data to Vermont State Agencies and Instrumentalities, and to non-State entities.

Data Governance Council



The GMCB created a Data Governance Council with the authority to make and execute decisions and assign resources to identified and prioritized items.

- Currently composed of seven voting members who are data contributors, data users, technical experts, or policy leaders:
 - 2 GMCB Staff
 - 1 GMCB Board member
 - 2 State agency representatives
 - 2 non-state entity representatives
- Meets approximately every other month in an open, public meeting and meetings are announced on the Board's calendar of events.

DGC Resources



Two resources that support the GMCB's Data Governance Council:

- [GMCB Data Governance and Stewardship Charter](#)
(version 1.4.3 adopted March 2018)
- [GMCB Data Stewardship Principles and Policies](#)
(version 2.0 adopted April 2019)
- Plus much more on the GMCB website:
<https://gmcboard.vermont.gov/data-and-analytics/data-governance>

Current Issues for the DGC



- VHCURES Rule H-2008-01 update
 - Data Submission Rule
 - Data Release Rule
- Policy Guidance
 - Data linkage – definition, conditions, limitations
 - Structures for allowable data release based on intended use
- Health care data-related activities at state and federal levels
- Specific data release applications and data linkage requests

Health Care Data Analyses

Sarah Lindberg

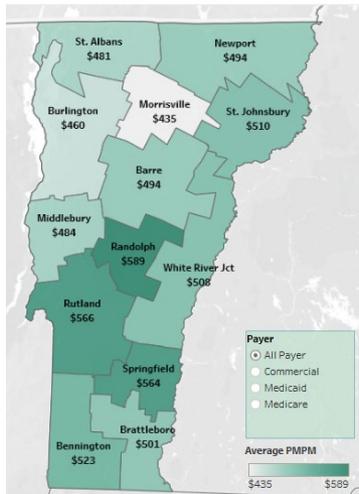
Two Main Lenses for Analysis

RESIDENT

Where people live

\$6.3 billion in 2018*

E.g. All-Payer Total Cost of Care:



PROVIDER

Where care was delivered

\$6.4 billion in 2018*

E.g. Vermont Hospital Budgets:

Fiscal Year 2018 Year-End Review

Medicare Designation	Contract with One Care VT*	Hospital	NPR/FPP Actual FY18	% of Total
PPS**	✓	Brattleboro Memorial Hospital	\$77,601,735	3.1%
PPS	✓	Central Vermont Medical Center	\$194,586,135	7.7%
CAH		Copley Hospital	\$66,226,448	2.6%
CAH		Gifford Medical Center	\$48,844,171	1.9%
CAH		Grace Cottage Hospital	\$18,193,737	0.7%
CAH	✓	Mount Ascutney Hospital & Health Center	\$50,808,643	2.0%
CAH	✓	North Country Hospital***	\$81,484,221	3.2%
CAH		Northeastern VT Regional Hospital	\$78,445,072	3.1%
PPS	✓	Northwestern Medical Center	\$103,317,768	4.1%
CAH	✓	Porter Medical Center	\$80,346,401	3.2%
PPS		Rutland Regional Medical Center	\$254,235,029	10.1%
PPS	✓	Southwestern VT Medical Center	\$161,115,765	6.4%
CAH	✓	Springfield Hospital	\$52,978,810	2.1%
PPS	✓	University of Vermont Medical Center	\$1,254,036,509	49.7%
SYSTEM			\$2,522,220,444	100%

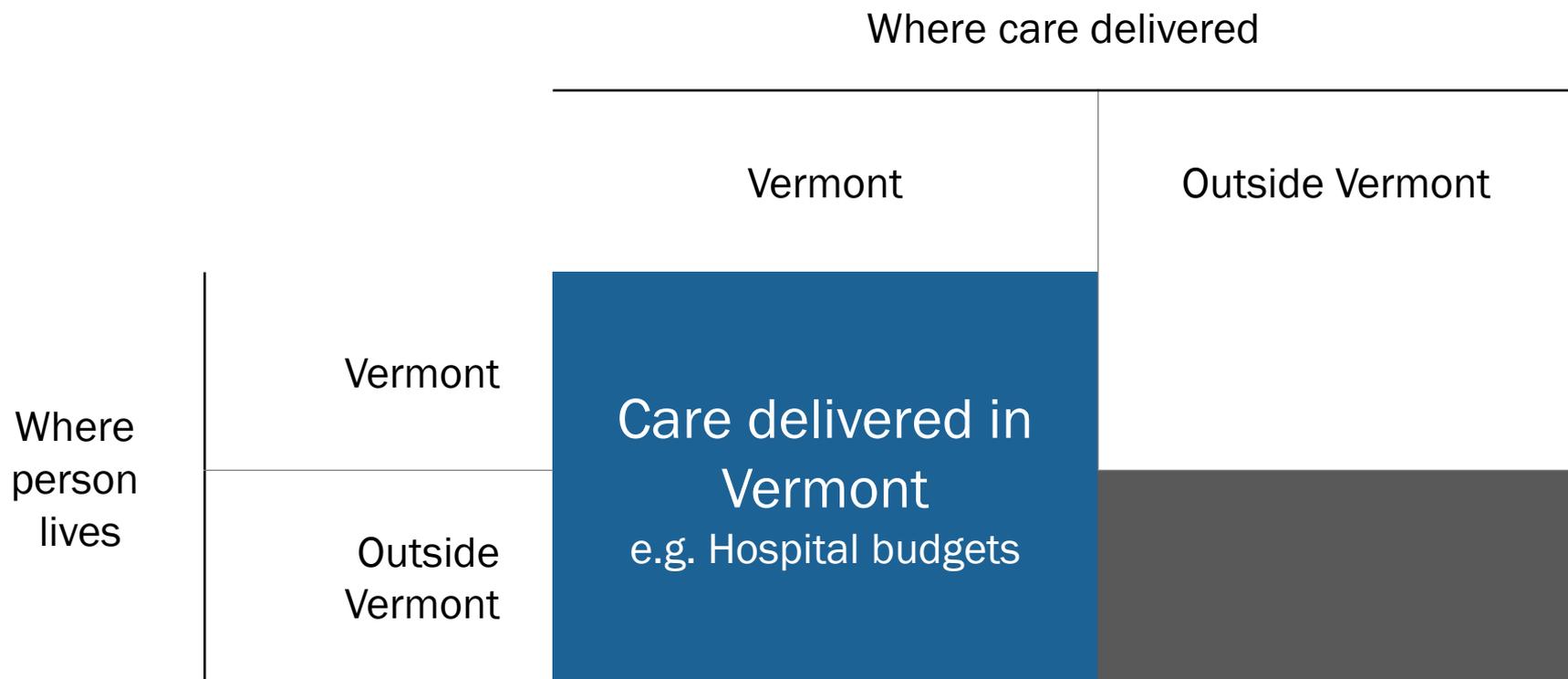
* Estimates from 2018 Expenditure Analysis,

https://gmcbboard.vermont.gov/sites/gmcb/files/Misc/2018_VT_Health_Care_Expenditure_Analysis_Final_%20July_%208_%202020.pdf

RESIDENT

		Where care delivered	
		Vermont	Outside Vermont
Where person lives	Vermont	Care delivered to Vermont residents e.g. All-Payer Model accountability	
	Outside Vermont		

PROVIDER

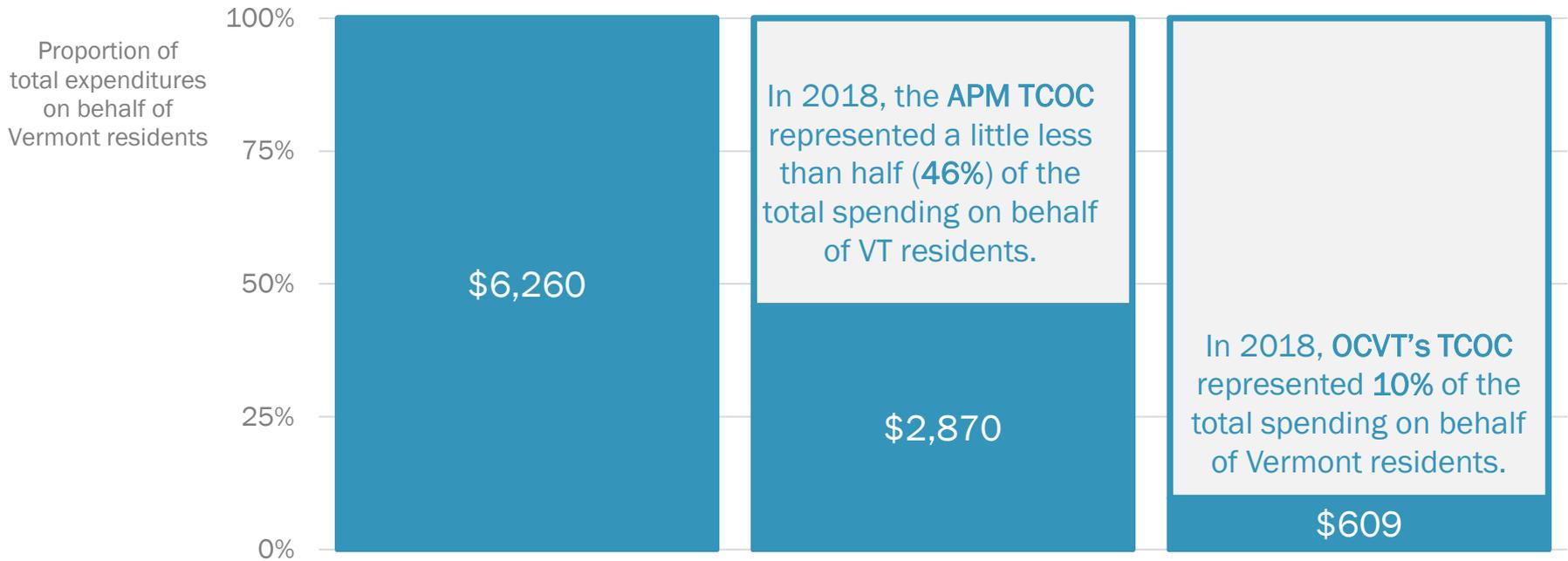


Comparing Expenditure Measures (in millions)

Total VT Resident Spend
(2018 EA)

APM TCOC
(2018)

OCVT TCOC
(2018 Actual)



TCOC = Total Cost of Care

Four Interactive Reports



PATIENT ORIGIN

Provides information about facility utilization over time for *all patients* discharged from regulated hospitals

Data source: Vermont Uniform Hospital Discharge Data Set

PATIENT MIGRATION

The total medical claims spending in VHCURES is mapped from the Hospital Service Area (HSA) of residence to the HSA of the rendering provider

Data source: VHCURES

ALL-PAYER MODEL TOTAL COST OF CARE (APM TCOC)

Compares per member per month (PMPM) TCOC by the HSA of residence

Data source: VHCURES

VT HOSPITAL SYSTEM FINANCIAL REPORT

Provides longitudinal summary of hospital budget submissions

Data source: Hospital budget submissions

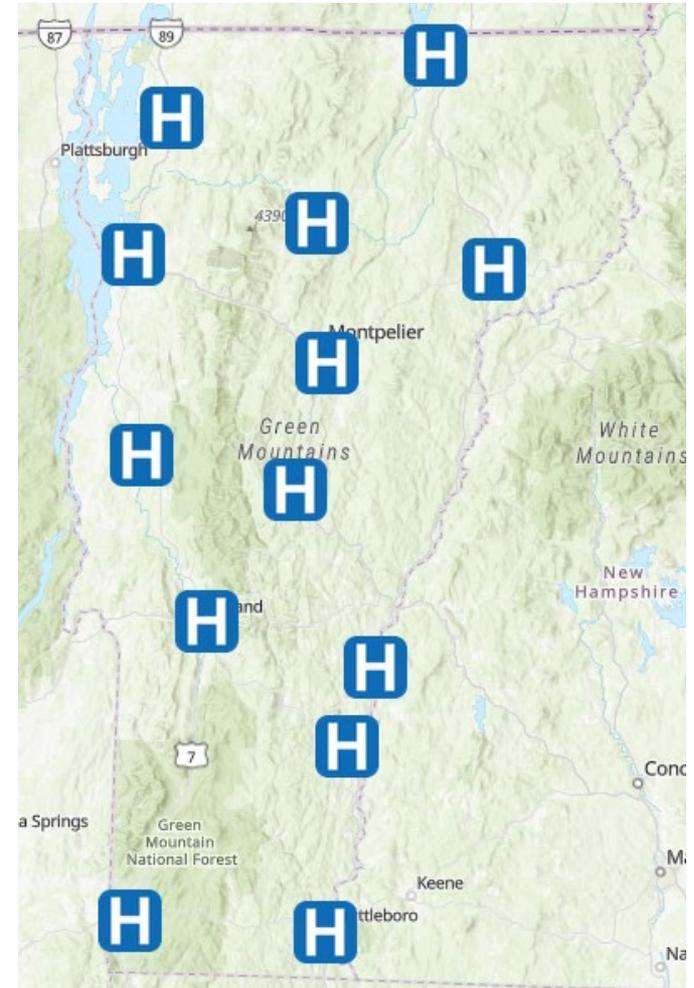
Patient Origin Dashboard v.1

Geoff Battista, PhD

Patient Origin

Objective: To track changes to hospitals' patients and their characteristics.

- "Hospitals" are all hospitals subject to budget review (Grace Cottage forthcoming)
- "Patients" are everyone who receives inpatient or outpatient care at a hospital or its practice
- Inpatient and outpatient visits to emergency departments are excluded.



Data

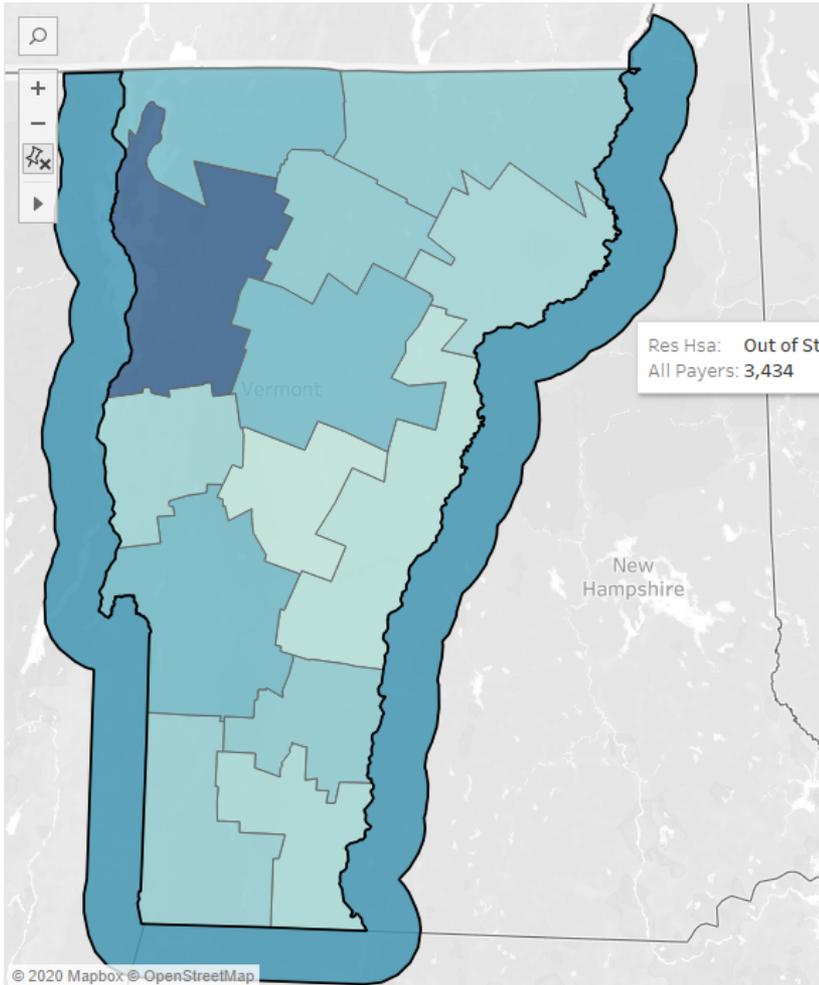
Data were derived from [VUHDDS](#), the State’s hospital discharge database. VUHDDS registers discharges by **episode**, or per person per diagnosis summary of care.

The Patient Origin Dashboard filters episode data by certain characteristics, allowing the user to explore how utilization has changed.

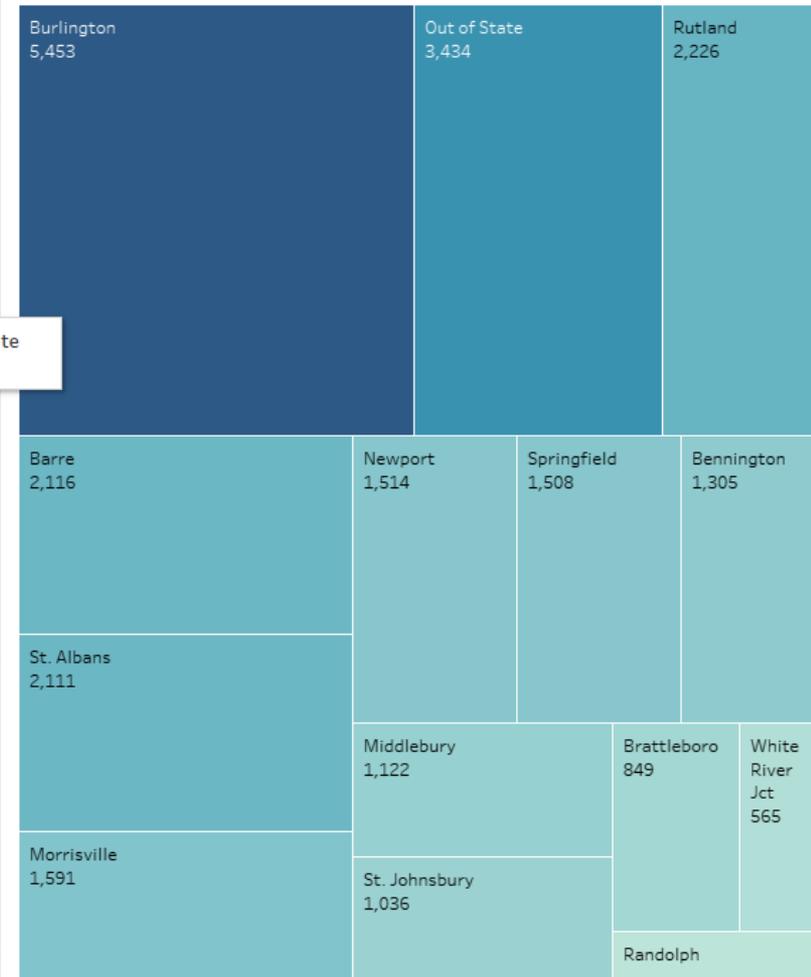
We excluded all combinations of these variables that yield fewer than 20 episodes. Self Pay and Free Care were excluded from the Dashboard for this reason.

Variable	Values
Hospital	<i>All Vermont hospitals subject to budget review</i>
Patient Location	<i>All Vermont Hospital Service Areas + “Out of State”</i>
Locale	Inpatient, Outpatient, Outpatient-Expanded
Payer	Medicare, Medicaid, “Commercial”
Year	2012-2018 (I, O) 2014-2018 (O-E)

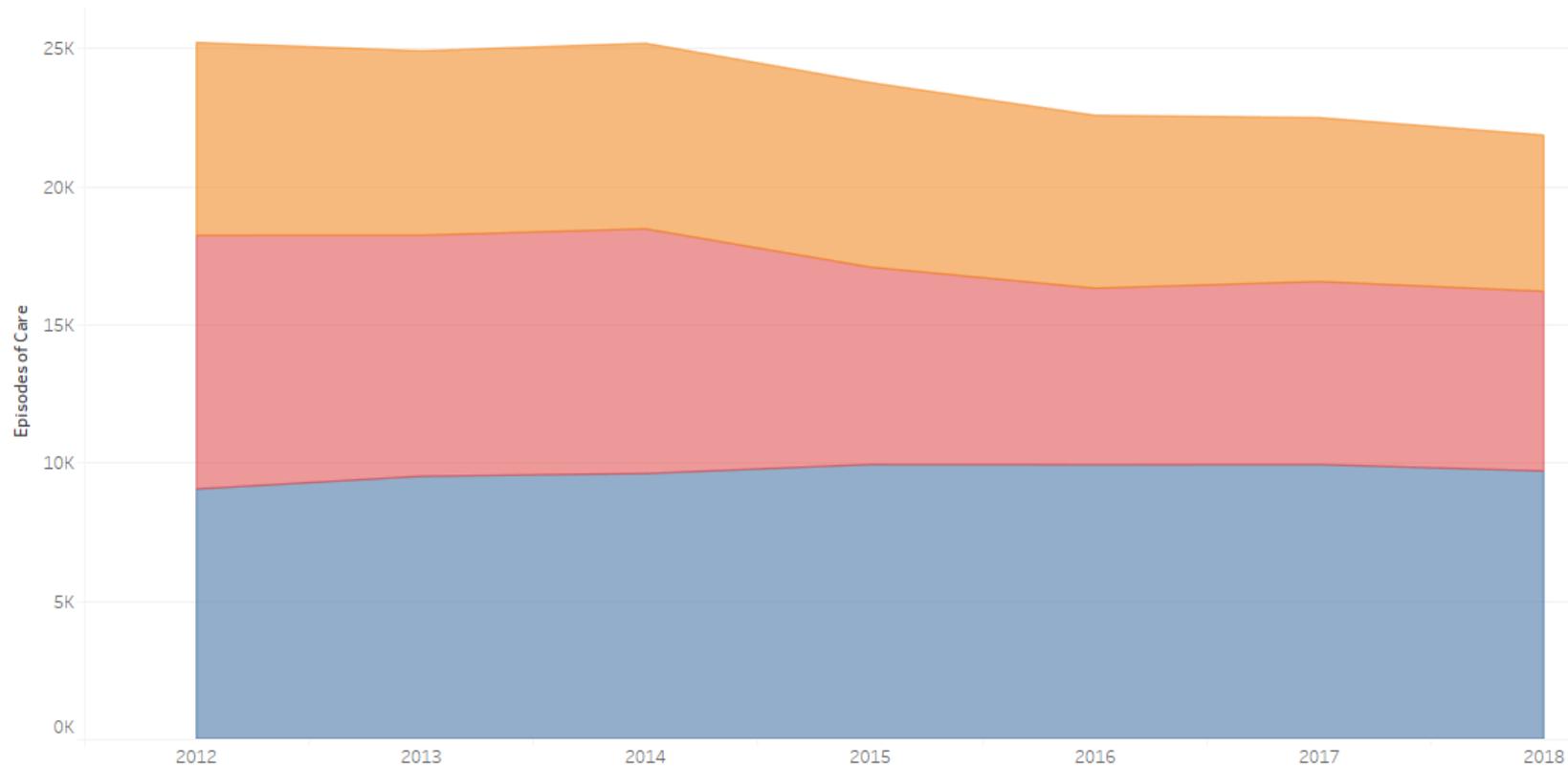
Episodes by Patient Location



Comparing Episodes by Patient Location



Patient Episodes Over Time



Episodes Per Year

	2012	2013	2014	2015	2016	2017	2018
Commercial	9,035	9,495	9,594	9,923	9,915	9,920	9,687
Medicare	9,174	8,718	8,852	7,139	6,384	6,619	6,501
Medicaid	6,976	6,671	6,713	6,674	6,254	5,928	5,648
Total	25,185	24,884	25,159	23,736	22,553	22,467	21,836

Change in Episodes Per Year

	2013	2014	2015	2016	2017	2018
Commercial (change)	5%	1%	3%	0%	0%	-2%
Medicare (change)	-5%	2%	-19%	-11%	4%	-2%
Medicaid (change)	-4%	1%	-1%	-6%	-5%	-5%
Annual Change in Total	-1%	1%	-6%	-5%	0%	-3%

Discussion

The Dashboard shows the volume of episodes at Vermont hospitals. It does not *explain* trends. However, its data can factor into staff research for regulatory decisions and other Board concerns, e.g., sustainability.

Please note the following factors, and others, when interpreting the trends:

- There were many changes to Federal and State programs, regulations, etc. from 2012 to 2018. For example, State efforts to redetermine Medicaid eligibility since Fall 2015 correspond with a decline in Medicaid episodes in 2016.
- Technological innovation could enable the same care to be delivered in a different locale. For example, inpatient procedures in 2012 could be done as outpatient in 2018.
- Abrupt changes in episode volume—especially at small hospitals—are often explained by hospitals that spin off their operations to separate firms (e.g., FQHCs), hospitals that change the services they provide, doctors who retire and are not immediately replaced, and independent/new doctors who join hospitals.
- Changes to inter-HSA travel may in part signify population change, all else held constant, or simply that a given HSA is a poor indicator of a hospital's *de facto* service area.

Patient Migration Dashboard v.1

Lindsay Kill, M.S.

Introduction

- Patient Migration is the second part to the Patient Origin & Migration project, approved by the GMCB in Dec. 2019.
 - "The total medical claims spending in VHCURES is mapped from the Hospital Service Area (HSA) of residence to the HSA of the rendering provider"
- The purpose of these reports is to describe at a high level the movement of Vermont patients and the flow of expenditures in and out of hospital service areas.
- For hospital budgets, the Analytics team provided 2018 patient migration data for non-financial reporting documentation. The following is an interactive version and expansion on that initial report.

Sample Data Structure

Patient ID	Age Range	Gender	Month & Year	Payer	H.S.A. of residence	H.S.A. of Care	Total Claims	Claim Type	Total Expenditures	Total Out of Pocket Spend
0000001	18-44	F	Jan. 2014	Medicaid	Barre	Barre	5	Medical	\$2,000	\$15
0000001	18-44	F	Feb. 2014	Medicaid	Barre	Burlington	10	Medical	\$4,000	\$20
0000001	18-44	F	Oct. 2014	Medicaid	Randolph	Barre	1	Medical	\$500	\$0
0000002	45-64	M	Feb. 2014	Commercial	White River Jct.	White River Jct	3	Medical	\$1,000	\$300
0000003	65-84	M	April 2017	Medicare	Middlebury	Burlington	20	Medical	\$20,000	\$500
0000003	65-84	M	April 2017	Medicare	Middlebury	Burlington	12	Pharmacy	\$2,000	\$60

Note: The data structure above is curated from aggregating claims data. The observations shown here are hypothetical and not based on any existing claims data.

Data Cleaning Steps



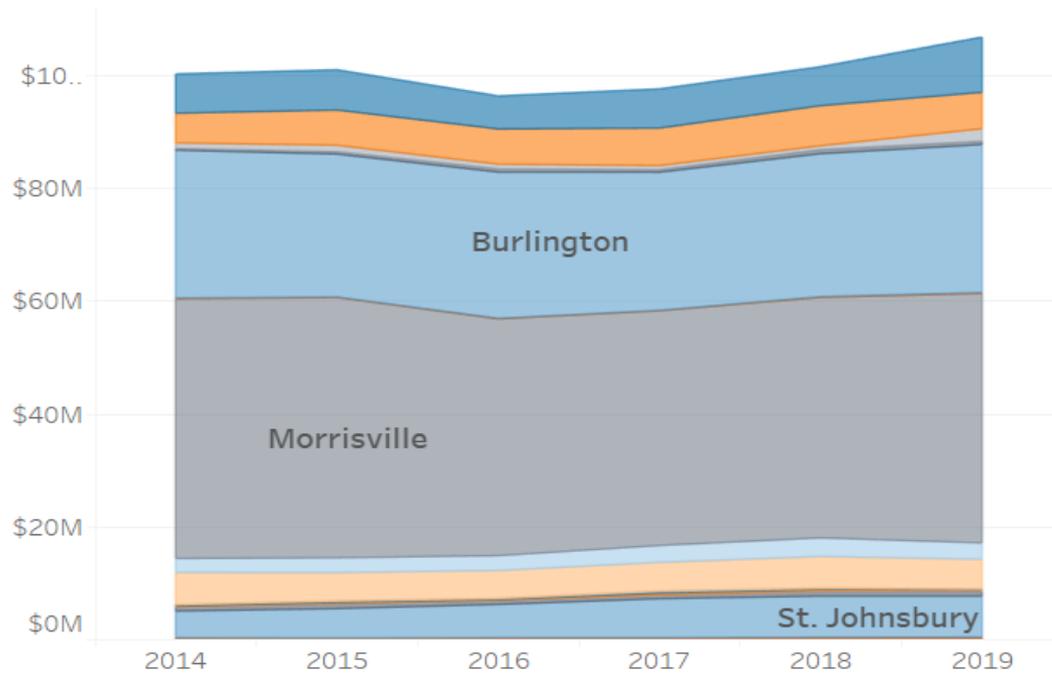
- Patients must be 18 or older with a Vermont zip code in the year.
- The Vermont zip code is used to associate the patients with a Hospital Service Area based on VDH's Hospital Service Area Version 4.
- Claims were cleaned to include only those paid and paid by the primary payer. Claims are inclusive of all services and provider types.
- Pharmacy claims are only for retail pharmacy purchases, not for any treatments administered during a medical visit.
- Data is limited by payers submitting to VHCURES. Not included: uninsured, federal employee insurance, workman's compensation plans, TriCare, and approx. 50% of the self-funded market.
- Per request, we include the "hospital service areas" around Albany Medical Center and Dartmouth Hitchcock. All other out-of-state visits are summarized as "Other Non-VT".

- 2014
- 2015
- 2016
- 2017
- 2018
- 2019

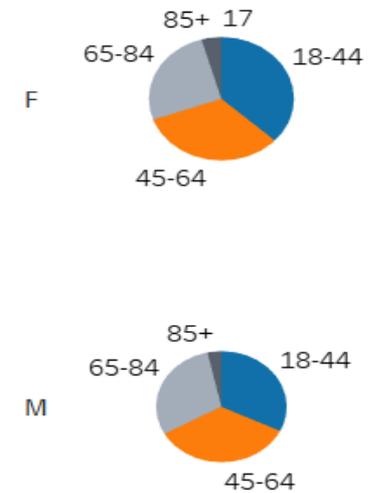
HSA of Residence

- Barre
- Bennington
- Brattleboro
- Burlington
- Middlebury
- Morrisville
- Newport
- Randolph
- Rutland
- Springfield
- St. Albans
- St. Johnsbury
- White River Jct

Medical Spend for Residents of Morrisville



Age & Gender Profile for Morrisville Residents in 2019



What proportion of total spend for Morrisville Residents stays within Vermont, and what proportion goes to providers outside of Vermont?

		2014	2015	2016	2017	2018	2019
Commercial	Outside of VT	13.08%	12.17%	11.01%	11.63%	14.15%	16.53%
	Within VT	86.92%	87.83%	88.99%	88.37%	85.85%	83.47%
Medicaid	Outside of VT	7.74%	8.92%	6.80%	6.51%	6.16%	8.02%
	Within VT	92.26%	91.08%	93.20%	93.49%	93.84%	91.98%
Medicare	Outside of VT	14.57%	13.54%	13.48%	15.73%	14.12%	15.22%
	Within VT	85.43%	86.46%	86.52%	84.27%	85.88%	84.78%

HSA of Residence	Other Non-VT Areas	Barre	Bennington	Brattleboro	Burlington	Middlebury	Morrisville	Newport	NH Upper Valley Region
Barre	\$53.22M	\$142.61M	\$39.26M	\$2.96M	\$65.91M	\$1.73M	\$7.31M	\$1.13M	\$27.11M
Bennington	\$54.61M	\$0.09M	\$123.29M	\$9.47M	\$4.42M	\$0.13M	\$0.22M	\$0.02M	\$18.11M
Brattleboro	\$51.42M	\$0.37M	\$2.84M	\$87.35M	\$2.60M	\$0.21M	\$0.22M	\$0.03M	\$31.11M
Burlington	\$120.23M	\$17.42M	\$2.32M	\$6.80M	\$633.64M	\$11.83M	\$17.71M	\$1.96M	\$11.11M
Middlebury	\$20.39M	\$1.29M	\$0.17M	\$1.36M	\$41.80M	\$66.88M	\$0.52M	\$0.04M	\$4.11M
Morrisville	\$18.75M	\$7.25M	\$2.22M	\$0.59M	\$29.22M	\$0.61M	\$56.39M	\$3.03M	\$6.11M
Newport	\$27.92M	\$0.85M	\$0.16M	\$1.41M	\$13.48M	\$1.16M	\$4.07M	\$86.80M	\$30.11M
Randolph	\$11.79M	\$9.17M	\$1.30M	\$0.72M	\$3.93M	\$0.66M	\$0.21M	\$0.15M	\$24.11M
Rutland	\$49.73M	\$1.43M	\$4.47M	\$3.98M	\$28.33M	\$17.40M	\$0.18M	\$0.31M	\$40.11M
Springfield	\$38.38M	\$0.90M	\$2.19M	\$10.72M	\$2.34M	\$0.49M	\$0.07M	\$0.14M	\$53.11M
St. Albans	\$30.61M	\$1.89M	\$1.00M	\$1.74M	\$68.32M	\$1.56M	\$2.00M	\$0.64M	\$2.11M
St. Johnsbury	\$37.32M	\$2.34M	\$0.47M	\$1.43M	\$8.23M	\$0.67M	\$1.31M	\$5.25M	\$36.11M
White River Jct	\$54.23M	\$9.83M	\$1.04M	\$2.24M	\$4.82M	\$0.33M	\$0.35M	\$0.41M	\$154.11M

Select Measures

Total Allowed Amount

Year

- 2014
- 2015
- 2016
- 2017
- 2018
- 2019

Insurance

- (All)
- Commercial
- Medicaid
- Medicare

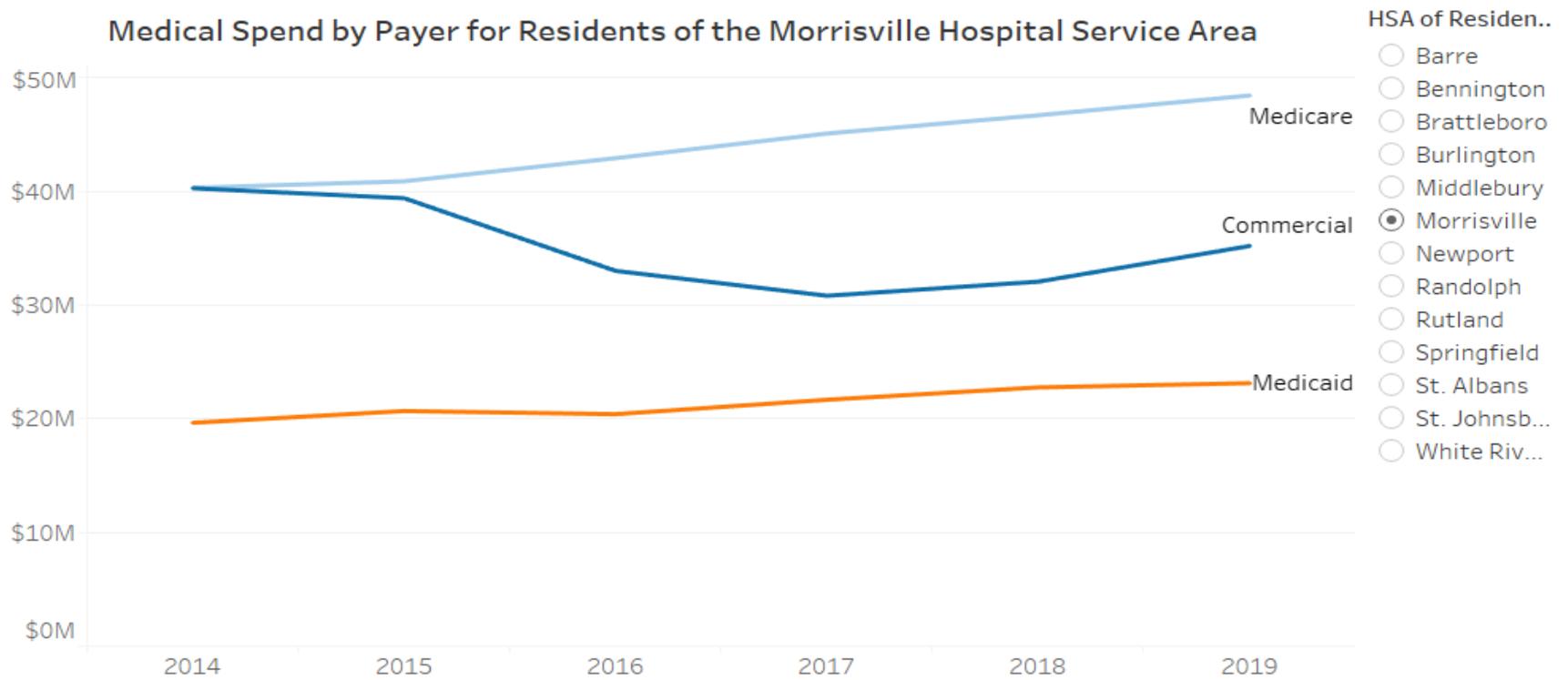
Claim Type

- (All)
- Medical
- Pharmacy

A visual representation of the volume from the Hospital Service Area of Residence to the Hospital Service Area where care was received.

Select Year, Claim Type, and Measures of interest to see the migration between Hospital Service Areas and the effects on volume and costs.

Medical Spend by Payer for Residents of the Morrisville Hospital Service Area



Year

- 2014
- 2015
- 2016
- 2017
- 2018
- 2019

Out of Pocket Trends for Morrisville Residents in 2019

		Medical	Pharmacy
Commercial	Average Out Of Pocket	\$124	\$35
	Median Out of Pocket	\$25	\$8
Medicaid	Average Out Of Pocket	\$1	\$4
	Median Out of Pocket	\$0	\$2
Medicare	Average Out Of Pocket	\$124	\$39
	Median Out of Pocket	\$34	\$9

In 2019, patients residing in the Morrisville HSA with All insurance spent 42% to 58% on health care expenses outside of their HSA compared to within their HSA, respectively.

Next Steps & Phase 2

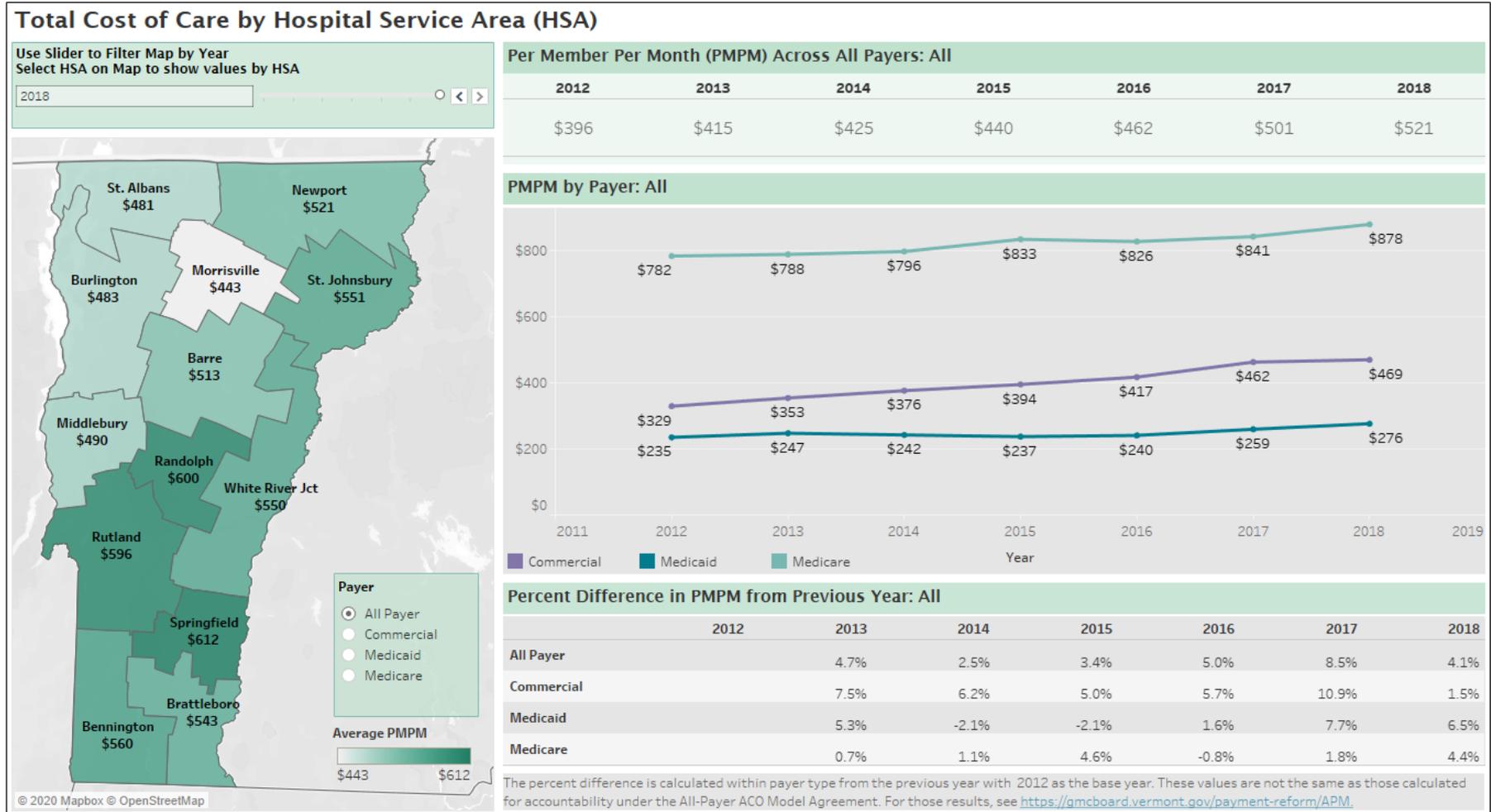


- For Phase 1:
 - The interactive visualization and HIPAA-complaint public use data file will be available on our website soon.
- For Phase 2:
 - Incorporating patient-level risk measures like the ACG risk score.
 - Adding visit counts, to expand on the current measure of claim count.
 - Adding visit types, to help identify *why* patients travel for care.

All-Payer Model Total Cost of Care Dashboard

Jessica Mendizabal

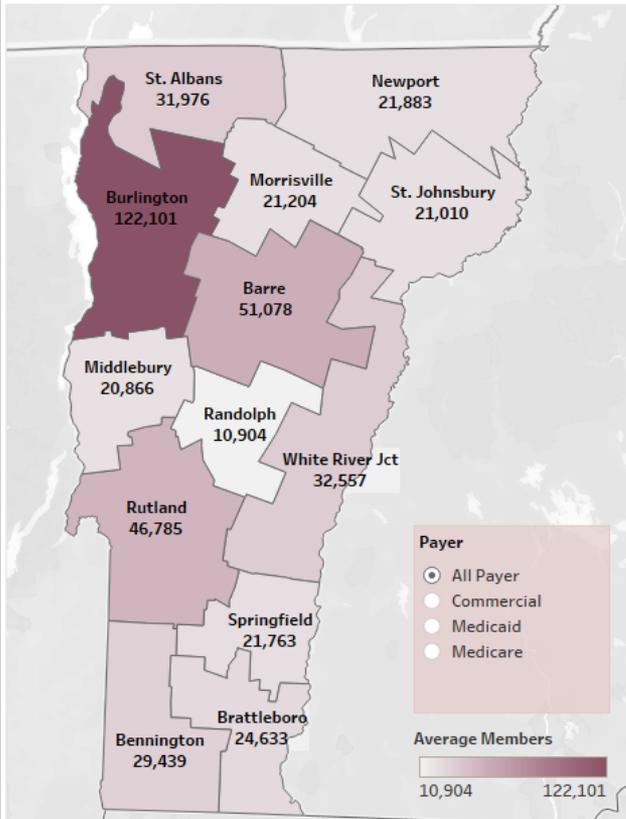
All-Payer Total Cost of Care Interactive Visualization



Average Members by Hospital Service Area (HSA)

Use Slider to Filter Map by Year
Select HSA on Map to show values by HSA

2018

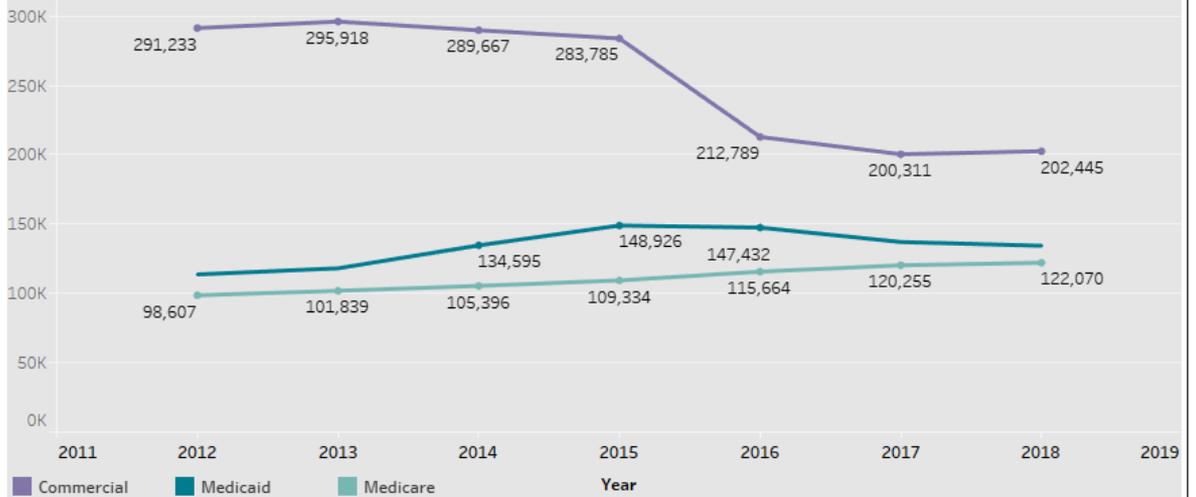


© 2020 Mapbox © OpenStreetMap

Average Members Across All Payers: All

2012	2013	2014	2015	2016	2017	2018
503,478	515,843	529,658	542,045	475,885	457,594	458,839

Average Members Per Month: All



Percent Difference from Previous Year: All

	2012	2013	2014	2015	2016	2017	2018
All Payer		2.5%	2.7%	2.3%	-12.2%	-3.8%	0.3%
Commercial		1.6%	-2.1%	-2.0%	-25.0%	-5.9%	1.1%
Medicaid		3.9%	14.0%	10.6%	-1.0%	-7.1%	-2.0%
Medicare		3.3%	3.5%	3.7%	5.8%	4.0%	1.5%

The percent difference is calculated within the primary payer type from the previous year with 2012 as the base year. Note that the commercial population in VHCURES changed substantially in March of 2016 in response to a US Supreme Court decision, which ruled that states could not compel many self-insured companies to submit data. The effect in Vermont is estimated to be approximately half of the self-funded market (~70,000 covered lives).

Vermont Hospital System Financial Report Dashboard

David Glavin, M.S.

Browsing Information:

- To view different analyses select from tabs above
- For optimal viewing a desktop monitor is recommended
- Use the latest version of these browsers :
 - Google Chrome
 - Firefox
 - Safari
- The visualizations are not compatible with:
 - Microsoft Edge
 - MS Internet Explorer

Data Source:

2013-2019 Actuals Budget Versions and 2020 Mid-Year Budget Version pulled from the GMCB's Adaptive Insights database

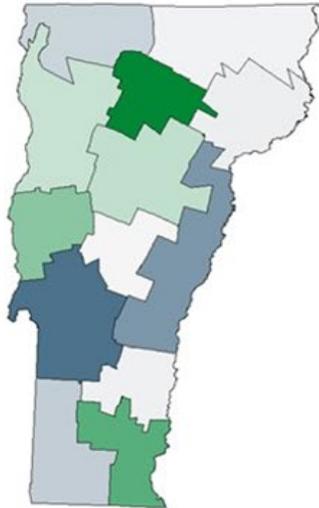
All data within the GMCB's Adaptive Insights database is submitted by the 14 regulated Vermont hospitals

****Rebased Budgets:**

In March of 2018, the Green Mountain Care Board adjusted the FY2018 Budget NPR/FPP base for two hospitals - Porter Medical Center and the University of Vermont Medical Center (UVMCC). These "Rebased Budgets" are more closely aligned with the hospitals' FY2017 Actual NPR/FPP results; they served as the base from which to calculate NPR/FPP growth in the two hospitals' FY2019 budgets.

Formulas:

Select [here](#) to access formulas used for the calculations of statistics used in this visualization



Vermont Hospital System Financial Report

Oct. 2015 – Sept. 2019

(including GMCB Approved Budgets for Oct. 2019 – Sept. 2020)

***To view different analyses select tabs above**

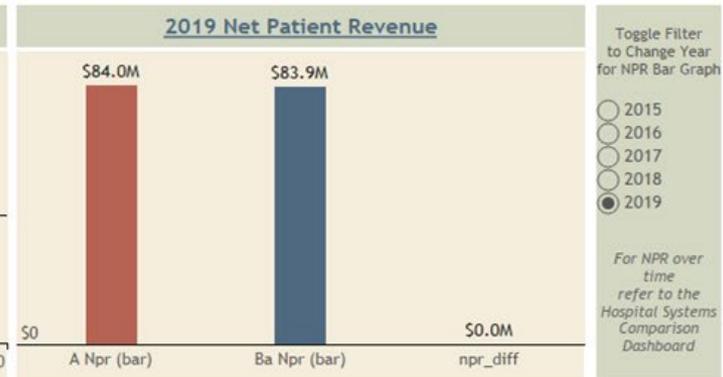
Published April 2020

2019 Financial Snapshot - Brattleboro Memorial Hospital



2019 Approved Budget (Brattleboro)	
Approved Net Patient Revenue	\$83,947,707
Approved Operating Revenue	\$87,168,852
Approved Operating Expenses	\$87,154,734
Approved Non Operating Revenue	\$758,000
Approved Days Cash On Hand	196

2019 Financial Actuals (Brattleboro)	
Actual Net Patient Revenue	\$83,994,257
Actual Operating Revenue	\$87,765,845
Actual Operating Expenses	\$87,095,267
Actual Non Operating Revenue	\$782,350
Actual Days Cash On Hand	157
Net Operating Income/Loss	\$670,579
Total Income/Loss	\$1,452,929



Questions and Discussion