Rhode Island Cost Trends Project
Data Use Strategy – Final Recommendations
May 17, 2019

I. Introduction

In 2018, the state of Rhode Island and Brown University were jointly awarded a grant from the Peterson Center on Healthcare for the Rhode Island Health Care Cost Trends Project (Cost Trends Project). The grant's purpose is to engage state-based stakeholders as well as national experts to help determine a) what type of health care performance analyses should be made transparent to influence purchasing decisions and care delivery reforms, b) what investments are needed to sustain this type of analysis, and c) what regulatory options exist for the State to limit the growth in healthcare spending.[1,2] The Cost Trends Project Steering Committee (Steering Committee), consisting of 17 consumer, insurer, provider, and business representatives serves as the advisory body to the State.

To achieve the project's vision, the State and Brown developed three streams of work:

1. **Health care cost growth target:** The Steering Committee developed a methodology for a health care cost growth target during the fall of 2018, for initial operationalization in 2019. The target was set via a compact signed by the Steering Committee members[3] on December 18, 2018 and reinforced by Governor Raimondo's subsequent February 6, 2019 executive order.[4]
2. **Data analysis:** Brown University is conducting an analysis of the State's All-Payer Claims Database (APCD), known as HealthFacts RI, to assess health care system cost performance, including cost drivers and sources of variation.
3. **Data use strategy:** With Steering Committee and other stakeholder guidance the State is developing a "data use strategy" for sustainably leveraging HealthFacts RI in the future to inform Cost Trends Project-related improvements in health care system performance. By "data use strategy", we mean a plan for the design and production of reports from HealthFacts RI intended to inform and motivate improved health care system performance related to the Cost Trends Project.

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[1] The press release announcing the grant award can be found here: www.ohic.ri.gov/press%20releases/Cost-Trends-Press-Release-2018-8-23.pdf. Accessed on February 21, 2019.

[2] Additional information on the RI Healthcare Cost Trends project can be found here: www.ohic.ri.gov/ohic-reformandpolicy-costtrends.php. Accessed on February 21, 2019.

[3] See www.ohic.ri.gov/documents/cost%20trends%20project/Compact-to-Reduce-the-Growth-in-Health-Care-Costs-and-State-Health-Care-Spending-in-RI.pdf. Accessed on February 24, 2019.

[4] See https://files.constantcontact.com/572742fa401/4cea8cdb-7832-4fe2-a790-7ac74b45ddda.pdf. Accessed February 24, 2019.

This report focuses on the third workstream, production of a data use strategy. While HealthFacts RI already publishes several public-facing, interactive reports[5], there is an opportunity to expand upon this infrastructure to create additional reporting of use to Rhode Island stakeholders. The purpose of the Data Use Strategy is to define how the State plans to leverage the APCD on an ongoing basis to support the work of the Cost Trends Project to improve overall health care system performance, inclusive of meeting the Cost Growth Target. EOHHS and OHIC are the state entities accountable for the implementation of the Data Use Strategy.

Implementation of the data use strategy recommendations outlined in this report will be contingent on the State possessing sufficient resources to support the required work.

II. Development of the Data Use Strategy

In order to develop this strategy, project staff conducted the following activities:

1. An invitational one-day conference[6] at Brown University on November 14, 2018. Invited speakers discussed best practices in use of multi-payer claims databases to generate health care system value. State agency representatives from Massachusetts, New Hampshire, Oregon and Vermont presented on their activity, along with a representative of the Washington Health Alliance. Steering Committee members and selected other Rhode Islanders participated in the conference and in discussion of the implications of these best practices for Rhode Island.
2. Two provider focus groups on February 7, 2019 at the Warren Alpert Medical School. These focus groups were designed to gather input regarding the types of APCD-based analyses that would potentially be of value to clinicians and to provider organizations as they strive to provide higher value health care. The first focus group consisted of practicing physicians representing primary care and multiple specialties, while the second focus group consisted of representatives from hospital, long-term services and supports, behavioral health, and dental provider organizations.
3. Multiple facilitated Steering Committee conversations. The Steering Committee has held multiple discussion regarding preferred data use strategies. The Steering Committee will continue to advise project staff on strategy design until the data use strategy is complete.

Finally, project staff reviewed data use strategy options with Rhode Island executive branch staff from EOHHS, OHIC, and the Governor's Office.

[5] Additional information on HealthFacts RI, including its existing reports, can be found here: http://health.ri.gov/data/healthfactsri/. Accessed on February 22, 2019.
[6] A summary of conference proceeding are available at www.ohic.ri.gov/documents/cost%20trends%20project/data-use-strategies-conference-proceedings-2018-11-20_v2.pdf. Accessed February 24, 2019.

III. Target Audience

The November 2018 conference revealed that states and regional collaboratives have targeted their analyses of their APCDs for different audiences and for different uses. There are three priority audiences for Rhode Island's Cost Trends Project data use strategy: 1) providers and provider organizations; 2) employer purchasers; and 3) the public, which is defined to be inclusive of, but not limited to, state agencies, legislators and patients.

IV. Data Use Strategy

There are two types of Cost Trends Project-related analyses that can be performed with HealthFacts RI data. The first type is a series of routinely produced, commonly structured analyses to be published on a regular schedule. The second type consists of ad hoc analyses focusing on discrete topics of interest to the State and Rhode Island stakeholders. This recommended data use strategy focuses upon routinely produced, commonly structured analyses to be published on a regular schedule.

Based on the aforementioned research activities, this report recommends that Rhode Island's Cost Trends Project-related data use strategy for HealthFacts RI focus upon five types of analyses. Each of these reports should be produced with stratification by insurance coverage (e.g., commercial, Medicaid, Medicare), by provider[7] and, when appropriate, by geography. When possible, analyses should also incorporate stratification of children and adults. Particular focus should be paid to specialist physician performance where appropriate in all analyses. Finally, analyses should display change over time.

Because it will likely be beyond the State's capacity to operationalize all five types of analyses simultaneously, this report recommends phased implementation based on priority. Priorities were set after collecting feedback from Rhode Island stakeholders who responded to a State request for public comment and discussion of the Steering Committee. Recommended analyses are prioritized as follows[8]:

1. cost drivers
    a. utilization variation
        i. frequency
        ii. intensity
        iii. site of care
    b. price and cost variation
        i. by service (price)
        ii. by episode of care (cost)

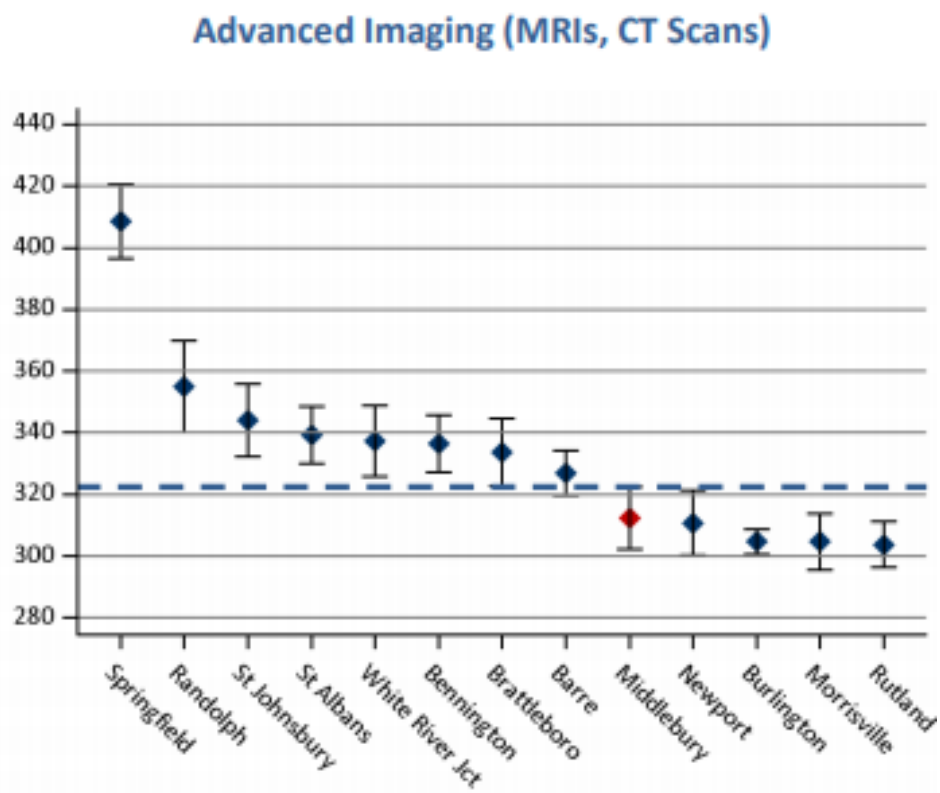
[7] Provider level analysis will be statistically viable under some circumstances and not others. In some instances, accountable care organization (ACO) and accountable entity (AE) analysis will be more viable than practice or clinician-level analysis. The State should ensure that only statistically valid performance data are published.

[8] The State will be sensitive to the possible need to delay any analyses should missing non-claims data potentially have a substantial impact on findings.

2. cost growth drivers
3. cost drivers (cont'd)
    a. low-value services
    b. potentially preventable services
4. population demographics, including social determinants of health
5. quality of care

Discussion of these five analysis types, including an explanation of terms, follows below, along with representative examples drawn from work performed and published in other states. The analyses should highlight precisely where individual and collective provider action is needed to constrain cost growth, as well as possible action by other key stakeholders who do, or can, influence costs.

1. **Cost Drivers:** Cost drivers are the factors that most contribute to the total cost of care for a population of patients. HealthFacts RI should be used to support analyses that deconstruct these factors contributing to the total cost of care. The two highest priority analyses in this area are a) utilization variation and b) price and cost variation.
    a. Utilization Variance: The APCD should be analyzed to assess variation in risk-adjusted use of those services that significantly contribute to the total cost of care. These analyses should be used to help tease out to what degree service utilization varies within the state and compared to external benchmarks. It should further breakdown service utilization to look separately at the impact of service frequency, service intensity, and site of care. One example of such an analysis is the Vermont Blueprint for Health's calculation of risk-adjusted advanced imaging utilization per 1,000 members by county. This type of analysis could be performed in Rhode Island by insurer, insurance line of business, geography and by large provider.



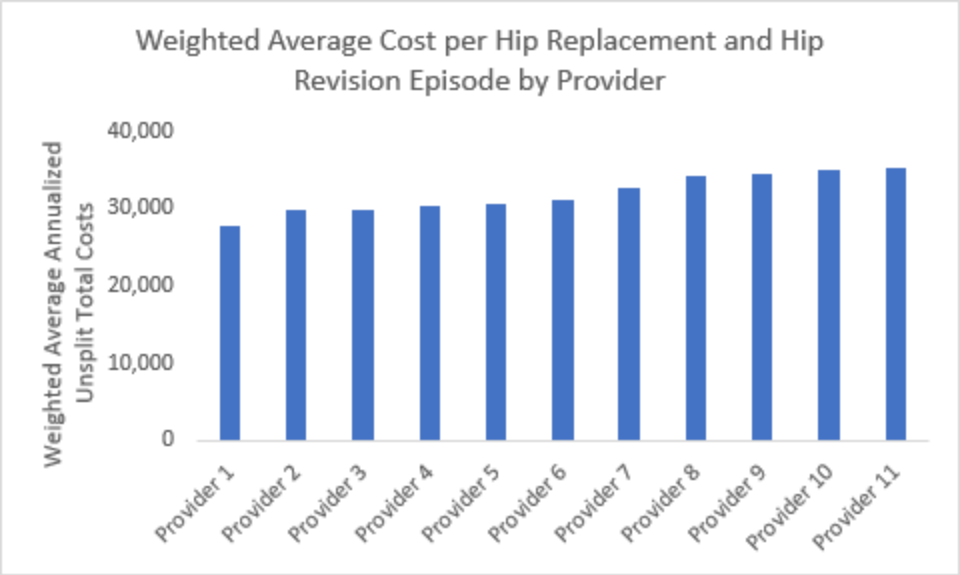
Source: Vermont Blueprint for Health. Blueprint Hospital Service Area Profile for Middlebury for July 2016-June 2017. Figure 8.

Price Variation by Service and Cost Variation by Episode of Care: In this instance, "price" refers to the amount a provider is paid for a given service, whereas "cost" refers to the aggregate payments across a range of providers for the treatment of an episode of care, such as total hip replacement or treatment of diabetes for a year.

Analysis of price variation will make transparent the impact of market power on variation in commercial market prices. Great care will need to be taken, however, to avoid transparency of actual rates in a manner that would cause cost growth to accelerate.

Analysis of cost variation by episode for the treatment of chronic illness, acute illness, and common high cost procedures could help providers determine areas to assess potential workflow and process improvement methods to reduce costs. To be valuable, it would helpful to display the median and range of prices/costs, and potentially insight into the reasons for variation.

During 2017 Altarum conducted an episode-of-care cost analysis for OHIC using HealthFacts RI data for both Medicaid and commercially insured populations. An example from this analysis depicting all costs (facility, professional inpatient, professional outpatient, physical therapy, pharmacy, etc.) associated with individual Rhode Island orthopedic surgeons follows below.



Source: Altarum analysis for OHIC, 2018.

2. **Cost Growth Drivers:** Cost growth drivers are the leading factors contributing to cost growth over the course of one or more years. HealthFacts RI should be used to support multi-payer analyses that deconstruct the factors contributing to longitudinal cost growth. The analyses should include a focus on high-volume, high-cost services.

   The State previously commissioned a total cost of care study examining cost drivers from 2011 to 2013.[9] These analyses could be expanded and produced on a routine basis to help Rhode Island better understand its cost growth drivers, not every several years, but annually.

   A best-practice example of cost driver analysis comes from the Washington Health Alliance. The Alliance looks at four factors contributing to cost growth by major service category.[10] The four factors are change in a) service intensity, b) unit price, c) patient characteristics, and service frequency. An example is provided below.

[9] Wakely Consulting Group (2015). Rhode Island Total Cost of Care Study. Drivers of Medical Cost in Rhode Island from 2011 to 2013. Prepared for the Rhode Island Office of the Health Insurance Commission and to support the work of the Health Care Planning and Accountability Advisory Council. www.ohic.ri.gov/documents/Report-2015-Total-Cost-Of-Care-Study.pdf

[10] Major service categories can be defined in multiple ways. The example from Washington Health Alliance illustrates one potential breakout of service categories. Broader categories such as hospital inpatient, hospital outpatient, and pharmacy could also be used.

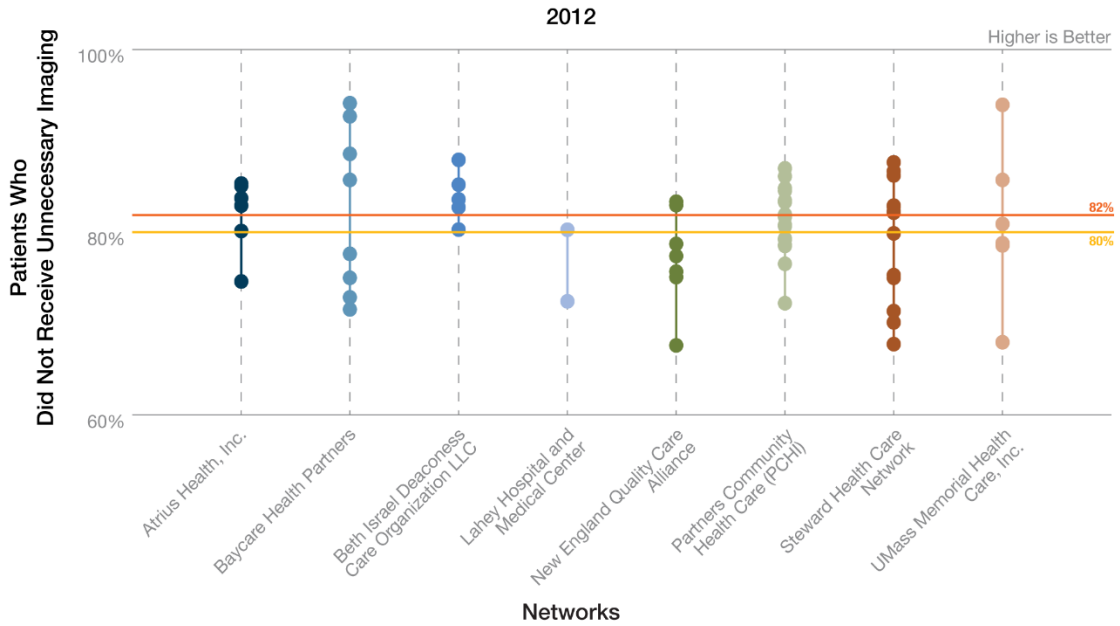
Service	THIS YEAR's Spending (PMPM)	LAST YEAR's Spending (PMPM)	Change (%)	Change (PMPM)	What is contributing to the change in spending? (PMPM) changes in Age/Gender Mix account for:	changes in Service Frequency account for:	changes in Treatment Intensity account for:	changes in Price Level account for:	Total Change in Spending
Pulmonary Edema	$22.90	$21.99	4.2%	$0.92	$0.08	($0.05)	($0.01)	$0.89	$20,612
COPD	$18.99	$17.66	7.5%	$1.33	$0.11	$0.25	$0.44	$0.53	$29,908
Pneumonia	$27.32	$25.40	7.5%	$1.91	$0.17	$0.14	$0.16	$1.43	$43,023
Perc CV Procedures	$26.45	$25.13	5.3%	$1.32	$0.15	$0.03	$0.03	$1.12	$29,756
Circulatory Disorders	$18.88	$18.12	4.2%	$0.76	$0.09	$0.00	$0.01	$0.65	$16,988
Heart Failure	$22.77	$22.31	2.0%	$0.46	$0.06	($0.00)	($0.00)	$0.40	$10,246
Cardiac Arrhythmia	$27.33	$26.51	3.1%	$0.82	$0.09	$0.01	$0.05	$0.66	$18,445
Spinal Fusion	$13.70	$12.88	6.4%	$0.82	$0.06	$0.33	$0.08	$0.35	$18,492
Major Joint Replacement	$16.08	$15.11	6.4%	$0.96	$0.08	$0.14	$0.20	$0.55	$21,706
Cellulitis	$28.26	$25.72	9.9%	$2.54	$0.13	$1.53	$0.01	$0.89	$57,227
Metabolic disorders	$19.26	$17.53	9.9%	$1.73	$0.07	($0.06)	($0.01)	$1.73	$39,006
Urinary Tract Infections	$23.01	$22.55	2.0%	$0.46	$0.03	$0.18	$0.27	($0.01)	$10,355
Septicemia	$10.93	$10.60	3.1%	$0.33	$0.01	$0.12	$0.13	$0.07	$7,377
	$275.87	**$261.51**	**5.5%**	**$14.36**	**$1.13**	**$2.62**	**$1.35**	**$9.27**	**$323,141**
					8%	**18%**	**9%**	**65%**	

Source: Washington Health Alliance. Spending Trend Analysis as presented by Nancy Giunto at the November 14, 2018 Rhode Island Cost Trends Data Use Conference.

3. **Cost Drivers:** Two additional priority analyses in understanding the factors contributing to total costs are a) low-value services and b) potentially preventable services.
    a. Low-value Services: Low-value services produce little or no patient benefit, and may even result in patient harm. HealthFacts RI should be used to produce analyses of low-value service provision and associated costs. Multiple studies have documented health care spending associated with low-value services.[11,12] This type of analysis aligns with national and state efforts to avoid unnecessary testing, treatments, and procedures[13,14].

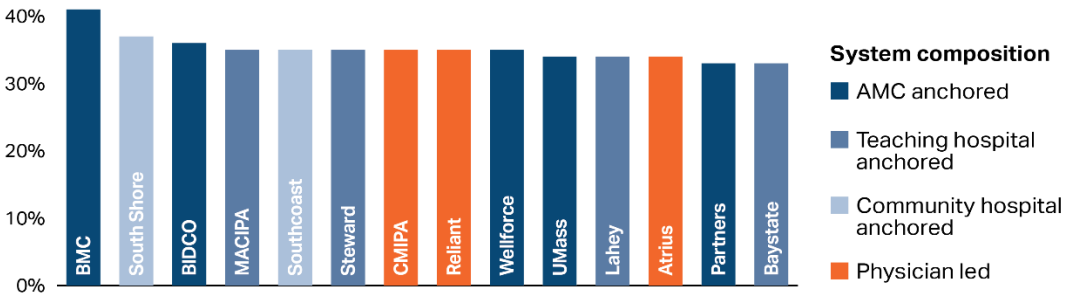
       Massachusetts publishes analyses on low-value services, including comparisons to benchmarks and variation among provider groups, as shown below.

[11] Reid RO, Rabideau B, Sood N. Low-Value Health Care Services in a Commercially Insured Population. *JAMA Internal Medicine.* 2016;176(10):1567–1571.
[12] Schwartz AL, Landon BE, Elshaug AG, Chernew ME, McWilliams JM. Measuring low-value care in Medicare. *JAMA Internal Medicine* 2014;174(7):1067-76.
[13] Information regarding Choosing Wisely can be found here: www.choosingwisely.org/. Accessed on February 22, 2019.
[14] Information regarding Choosing Wisely RI can be found here: www.ribgh.org/choosing-wisely-ri. Accessed on February 24, 2019.



Source: Massachusetts Center for Health Information and Analysis. 2014 A Focus on Provider Quality.

b. Potentially Preventable Services: Potentially preventable services are typically acute care services that could perhaps have been avoided through the more effective or efficient provision of ambulatory services. The APCD should provide analyses on frequency of potentially-preventable services, such as variation in avoidable emergency department use. These analyses could help shed light on areas for performance improvement. An example analysis of risk and demographic-adjusted avoidable emergency department use from Massachusetts can be found below.



Source: Massachusetts Health Policy Commission. Avoidable ED Visits as presented by David Auerbach at the November 14, 2018 Rhode Island Cost Trends Data Use Conference. Risk and demographic-adjusted by system composition.

4. **Population Demographics, Including Social Determinants of Health:** HealthFacts RI should be supplemented with other public data sets that capture patient demographics such as race, language and ethnicity and social determinants of health information (e.g., housing status, income). Supplementing the APCD with these additional sources could highlight communities of highest social risk.

There are numerous data sources from which variables could be drawn into analyses to profile the prevalence and distribution of social determinants of health. One national population health company told OHIC in 2017 that it employed 10 different publicly available data sets.[15] Some examples of these potential data sources are as follows:

Source	Data Elements
Federal and State Data	Food deserts, housing, income, environmental assessment, transportation availability, availability of social services

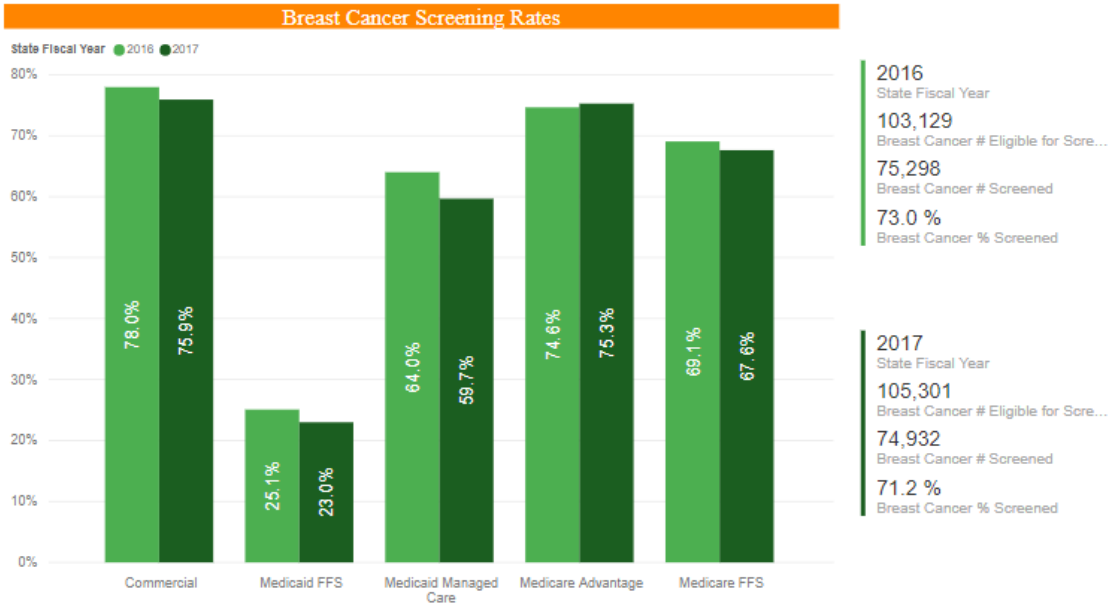
Producing analyses that combine the APCD with supplemental population demographic data, including those highlighting social determinants of health, could help providers better understand their populations and to proactively serve them more holistically, considering both social and medical risk factors. "Hot spotting" analysis could help providers target particular high-risk communities, and even neighborhoods, within their service area. Massachusetts has incorporated patient population demographic information into some of its analyses. An example, structured around ACOs, can be found below.

	Risk score	Zip-code income	Area deprivation index	% over 55	% Self-insured	% Female
Atrius	.96	$83,284	76.7	26%	52%	56.4%
BMC	.89	$63,319	88.5	20%	52%	54.2%
Lahey	1.05	$85,677	77.8	31%	43%	51.7%
MACIPA	.94	$85,615	70.1	28%	47%	53.5%
Partners	1.03	$86,017	76.6	29%	44%	55.5%
Southcoast	1.09	$59,721	97.6	30%	50%	51.4%
Steward	1.05	$70,131	90.1	30%	48%	52.4%
All physician-led	.96	$81,723	80.2	25.8%	47.8%	55.3%
All other hospital-anchored	1.02	$74,485	86.6	29.8%	45.7%	52.6%
All AMC-anchored	1.02	$81,646	80.7	28.3%	44.5%	53.7%

Source: Massachusetts Health Policy Commission. Patient Demographics as presented by David Auerbach at the November 14, 2018 Rhode Island Cost Trends Data Use Conference.

5. **Quality of Care:** While providers currently have access to quality performance data, they see comparative quality performance data specific to Rhode Island only rarely. HealthFacts RI publishes analyses illustrating performance on key quality measures stratified by insurance type, gender, age, and health status[16], does not yet publish comparative data at the provider level.

[15] Interview with Asit Gossar and Anita Cathral, Evolent Health, March 27, 2017.
[16] HealthFacts RI reports can be found here: https://app.powerbigov.us/view?r=eyJrIjoiMTJhOTlhYWYtY2YzNy00YTQ5LWJkN2QtODg5NzY5ZDY5ZDkxIiwidCI6IjUyY2E2YTU0LTQ0NjUtNDYzNS1iZmYzLTY1ZDBhODQxMjI4OCJ9. Accessed on February 22, 2019.



Source: HealthFacts RI Reports. Breast Cancer Screening Rate. Accessed on February 22, 2019.

The State could leverage this existing infrastructure to create additional comparative quality reports at the provider level.

V. Cost Trends Project Data Use Strategy Oversight and Advice

The Steering Committee should serve as the oversight body for implementation of the data use strategy. To ensure that reports are designed in a fashion that achieves their intended aim, the State should convene a new advisory committee, consisting of provider organization representatives, employer purchasers, and other intended report users. It should also consider participation by statisticians/epidemiologists, economists, informaticists, and payers. The advisory committee should work with the report developers and consider what report designs are most effective for routine publication, advise on refinements to reports, and discuss what ad hoc reports that may be of value to the State. It should also discuss statistical considerations, and processes for vetting report results with providers prior to publication.

The advisory committee should also review findings of all analyses and identify possible actions to address identified opportunities. The committee should then bring recommended actions to the Steering Committee for consideration. Policy solutions could include collaborative quality improvement activity, use of regulatory levers, introduction of legislation, among other options.

VI. Preparing Findings for Cost Trends Project Public Reporting

There should be a commitment to transparency, not only of findings of its analyses but also about the process, including the purpose of any given analysis, the methodology for producing results, the timeframe of an analysis and reporting, and opportunities for stakeholder involvement.

The Cost Trends Project Data Use Strategy oversight body should engage in discussions of its analytic approach. This same group would be given the opportunity to review early de-identified results prior to public reporting. The oversight body should ensure that any new cost-related analyses be pursued with a quality lens to ensure that quality will not be adversely impacted by potential results of the analyses. The body should also consider the impact of disclosing price point information on cost growth, and ensure appropriate caution is used in regard to the level of detail released.

In the event a particular analysis shows that a provider is an outlier (high or low performer), the State should discuss results with that provider prior to public reporting. The oversight body should consider whether to omit outliers from public reporting on a case-by-case basis.

The State should also engage a provider if results of a given analysis are surprising. Those discussions are intended as an opportunity for the State and the provider to review an analysis for accuracy and so the provider can offer any thoughts or explanations for the findings and for the State and provider to ensure there are no issues with the validity of the data. The State and provider may determine after such discussions that the results warrant a footnote or additional context.

The State should also publish its methodology and technical appendices for public reports and analyses.[17]

VII. Future Direction

In the future, the APCD should incorporate non-claims spending data to enhance spending analysis. EOHHS is committed to advancing this policy aim.

Longer-term integration of the APCD and CurrentCare would provide a rich resource to the state. This vision is not feasible in the short-term, as CurrentCare and the APCD both need to make progress in making their data more complete. There are also statutory barriers to linking data from these two sources that would need to be overcome.

VIII. Public Comment Process

The report above describes a strategy for expanded use of HealthFacts RI. This report incorporates written feedback from stakeholders received on or before March 27, 2019,Steering Committee dialogue during its April 15, 2019 meeting, and feedback from the May 14, 2019 stakeholder meeting.

[17] See for example, the Massachusetts Health Policy Commission's technical appendices to the annual cost trends and other reports, www.mass.gov/service-details/annual-cost-trends-report. Accessed on May 17, 2019.