VERMONT Blueprint for Health

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Supporting Documentation

Vermont Blueprint for Health – Facility Price Transparency Reporting

This document was prepared by
ONPOINT Health Data

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Summary of Methods

The Vermont Blueprint Facility Price Transparency Reporting was commissioned by the Department of Vermont Health Access to research variation in episode cost for 10 common inpatient procedures, outpatient procedures, and outpatient diagnostic tests provided to Vermont residents at hospitals throughout Vermont and neighboring states. The report is based on the state's all-payer claims database (APCD), the Vermont Health Care Uniform Reporting & Evaluation System (VHCURES). The database contains administrative claims data, including payments submitted by commercial insurers (e.g., BCBS, Aetna, MVP, Cigna). This first report (Phase 1) is based on commercial insurer data only for services provided during calendar year 2015. Additional reporting from public payer (i.e., Medicaid and Medicare) claims data is under consideration.

The episode cost includes the combined facility and professional services. Cost is based on the allowed amounts (i.e., payer paid plus member out-of-pocket) as reflected on the administrative claims from VHCURES. This does not reflect what it cost for providers to provide services or what providers charged for services.

Similar reporting can be found in other states with APCDs. As in this report, wide variation in episode cost by provider has been found. This report does not intend to explain the causes of the variation in cost at Vermont hospitals and provides no information on the quality of care or patient experience at Vermont hospitals. Differences in provider or insurer coding, data processing, and reimbursement arrangements not reflected in administrative claims data might contribute to some of the variances shown in this report.

This analysis includes Vermont patients who underwent at least one of the 10 inpatient procedures, outpatient procedures, or outpatient diagnostic tests listed in Table 1 at a facility listed in Table 2 during 2015.

Table 1: Inpatient and Outpatient Procedures

Procedure Description	Procedure Setting	Total Episode Cost Method
Cesarean section	Inpatient	All medical claims during the stay in the hospital
Total hip replacement	Inpatient	All medical claims during the stay in the hospital
Total knee replacement	Inpatient	All medical claims during the stay in the hospital
Screening colonoscopy	Outpatient diagnostic endoscopy	All medical claims on same date of procedure
Knee arthroscopy	Outpatient surgery	All medical claims on same date of surgery
Laparoscopic gall bladder surgery	Outpatient surgery	All medical claims on same date of surgery
Chest X-ray (2 views)	Outpatient X-ray	All medical claim lines with same CPT code on same date of procedure
CT scan of abdomen and pelvis	Outpatient diagnostic CT scan	All medical claim lines with same CPT code on same date of procedure
Digital mammography screening	Outpatient diagnostic screening	All medical claim lines with same CPT code on same date of procedure
Ultrasound exam of breasts	Outpatient diagnostic ultrasound	All medical claim lines with same CPT code on same date of procedure

Methodology Details

There is no national "gold standard" methodology for the reporting of cost at the procedure and provider level. This report used methods similar to those that can be found in use by public health care "price transparency" websites. Similarities between this analysis and common web-based reporting include:

- A "consumer-focused" approach that combines both the hospital claims cost and the professional (e.g., obstetrician, orthopedic surgeon, gastroenterologist, radiologist) claims cost into a single episode cost
- Use of a calculated "allowed amount," which is the sum of the plan's paid amount and the member's copay amount, deductible amount, and coinsurance amount
- Use of the median (i.e., the midpoint) cost of patients for each procedure at each hospital, which reduces the impact of extreme outliers at the high and low ends of cost for each procedure at each hospital — a method that is preferred to the use of an average, which can be impacted by extreme outliers

The methodology used to create episode cost varied by three types of services — inpatient procedures, outpatient procedures, and outpatient diagnostic tests — as described in further detail below.

Methodology Details by Type of Service

Inpatient Procedures

Cesarean Section, Total Hip Replacement, Total Knee Replacement

Each claim was attributed to a facility using the rendering provider's National Provider Identifier (NPI) associated with the claim and used a base population that included patients with an inpatient facility medical claim that met all of the following criteria:

- Had any International Classification of Diseases (ICD) procedure code listed for an inpatient procedure in Table 3. This included either the listed ICD-9 code or the updated ICD-10 code if the procedure occurred after October 1, 2015, when ICD-10 codes became effective and replaced the ICD-9 coding system
- Had a first service date in calendar year 2015
- Had a paid date in 2015 or in the first three months of 2016 to capture claims with delayed payments
- Was a claim record provided by the primary payer (all claims not paid as primary are excluded)

All medical claims with a service date between the admission date and the discharge date were included. All medical claim allowed amounts from both the facility and professional components were summed together to calculate each episode's total cost. Any services provided pre-admission (e.g., preparations for the hospitalization) or post-discharge (e.g., readmissions or physical therapy) were not included in the total episode cost due to the lack of consensus on methods to determine attribution of pre- and post-discharge costs to hospitals.

Outpatient Procedures

Screening Colonoscopy, Knee Arthroscopy, Laparoscopic Gall Bladder Surgery

Each claim was attributed to a facility using the rendering provider's NPI associated with the claim and used a base population that included patients with an outpatient facility medical claim that met all of the following criteria:

- Had a CPT procedure code listed for an outpatient procedure in Table 3
- Had a first service date in calendar year 2015
- Had a paid date in 2015 or in the first three months of 2016 to capture claims with delayed payments
- Was a claim record provided by the primary payer (all claims not paid as primary were excluded)

For outpatient procedures that typically include facility, anesthesiologist, and professional components — screening colonoscopy, knee arthroscopy, and laparoscopic gall bladder surgery — all medical claims on the same date of service were summed together to create each episode's total cost. Any services provided on dates before or after the date of the procedure were not included in the total episode cost as there is lack of consensus on methods to determine attribution of pre- and post-discharge cost to hospitals.

Outpatient Diagnostic Tests

Chest X-ray (Two Views), CT Scan of Abdomen and Pelvis, Digital Mammography Screening, Ultrasound Exam of Breasts

Each claim was attributed to a facility using the rendering provider's NPI associated with the claim and used a base population that included patients with an outpatient facility medical claim that met all of the following criteria:

- Had a CPT procedure code listed for an outpatient procedure in Table 3
- Had a first service date in calendar year 2015
- Had a paid date in 2015 or in the first three months of 2016 to capture claims with delayed payments
- Was a claim record provided by the primary payer (all claims not paid as primary were excluded)

For the examined outpatient diagnostic tests, which typically include a facility and a radiologist or other professional that reads the results, all medical claim lines on the same date of service with only that specific CPT-coded service were summed together to create each episode's total cost. This approach ensured that other services that might have been provided on that date of service (e.g., emergency room services, office visits) were not included in the episode cost. Any services provided on dates before or after the date of the diagnostic test were not included in the total episode cost.

Additional Notes

The results of this analysis include the total episode cost for each procedure stratified by hospital facility where the procedure took place. The summary results at the hospital and procedure level are reported as the count of services and the median episode cost.

The median is the most commonly used method to report cost in this type of "price transparency" reporting. It represents the midpoint or value for which half of the cases fell above and half of the cases fell below. Unlike an average, the median reduces the influence that cases with extremely high or low cost for a specific procedure at a specific hospital will have on the results for that hospital.

As part of quality assurance checks, reporting was also generated within each procedure at each hospital showing additional statistics at the 5th, 25th, 75th, and 95th percentiles. These additional statistics were provided to hospitals so that they could further evaluate the distributions of patient episode costs being reported.

Strengths & Limitations

This report demonstrates variations in the cost of procedures at hospitals for Vermont residents with commercial health insurance coverage during 2015. It makes use of a robust, all-payer claims database, Vermont's VHCURES, and examines a set of high-volume procedures provided at most Vermont hospitals. While evaluating variation at the procedure-specific level enables the direct comparability of specific services, this approach cannot be used to determine variation for all services provided at these hospitals. An evaluation comparing all procedures and services would require alternative methods such as case-mix adjusted analyses. Valid methods that use claim allowed amounts, combine facility and professional cost into episodes, and use medians to reduce the impact of extreme outlier cases were employed. These methods are similar to those being used by other states for health care price transparency reporting. Reporting methods and results additionally were subject to a rigorous quality control and review process.

The report did not adjust for patient severity or complexity of illness for which there is no consensus on a "gold standard" method. For inpatient services, methods could be employed to further stratify patients (e.g., All Patient Refined Diagnosis Related Grouper (APR-DRG) severity of illness). For several services, severity or complexity of patient illness should have no impact on cost (e.g., chest X-ray, CT scan of the abdomen and pelvis).

This report provides information on variation in cost of procedures, including both facility and professional costs. The facility and professional components of cost were not evaluated separately. While the professional components of cost may have some variation, the facility components typically represent the highest proportion of cost and may drive most of the variation between hospitals.

This report does not provide information at the specific commercial payer level as this would have led to small denominators for the single year of data reported. It should be noted that different commercial payers may reimburse hospitals at different rates. This would be a limitation if some Vermont hospitals had a very different mix of commercial payers (e.g., BCBS, MVP, Aetna, Cigna) compared to other hospitals.

In adherence to blinding rules from the U.S. Centers for Medicare & Medicaid Services (CMS), no hospital was reported if the volume of services for a procedure was less than 11. While there is no agreed upon standard for how large a sample size is needed to report a reliable median, the median cost reported will always be more reliable when the count of procedures is higher.

This report provides no information on the quality of care or patient experience at Vermont hospitals. There is no consensus or "gold standard" for measurement of quality of care at the procedure-specific level and likely would require data sources not available in the VHCURES claims data.

Differences in provider or insurer coding, data processing, and reimbursement arrangements not reflected in administrative claims data may contribute to the variances shown in the report. Although every effort was made to ensure the report's validity and accuracy, the analysis is based on data provided by other organizations and is therefore subject to the limitations of the coding and financial information inherent in administrative claims files.

This report is not intended to explain the causes of the variations. There are potentially many factors contributing to the variations. To understand the causes of these variations would require additional analysis and may require additional data not available from the VHCURES claims.

These notes are provided to enhance the user's understanding of relative cost variances reported and as a caution about potential limitations when interpreting or using these results.

Appendix

Table 2. Included Facilities

Facility Name	Facility Name
Albany Medical Center (NY)	North Country Hospital
Baystate Medical Center (MA)	Northeastern Vermont Regional Hospital
Brattleboro Memorial Hospital	Northwestern Vermont Medical Center
Brattleboro Retreat	Porter Medical Center
Central Vermont Medical Center	Rutland Regional Medical Center
Copley Hospital	Southwestern Vermont Medical Center
Dartmouth-Hitchcock Medical Center (NH)	Springfield Hospital
Gifford Medical Center	University of Vermont Medical Center
Grace Cottage Hospital	Vermont State Hospital
Mt. Ascutney Hospital	Veterans Affairs Medical Center

Table 3. Procedure Codes

Procedure Description	Procedure Code
Cesarean section	ICD9: 74.1 ICD10: 10D00Z0, 10D00Z1, 10D00Z2
Total hip replacement	ICD9: 81.51 ICD10: 0SR9019, 0SR901A, 0SR901Z, 0SR9029, 0SR902A, 0SR902Z, 0SR9039, 0SR903A, 0SR903Z, 0SR9049, 0SR904A, 0SR904Z, 0SR907Z, 0SR90J9, 0SR90JA, 0SR90JZ, 0SR90KZ, 0SRB019, 0SRB01A, 0SRB01Z, 0SRB029, 0SRB02A, 0SRB02Z, 0SRB039, 0SRB03A, 0SRB03Z, 0SRB049, 0SRB04A, 0SRB04Z, 0SRB07Z, 0SRB0J9, 0SRB0JA, 0SRB0JZ, 0SRB0KZ
Total knee replacement	ICD9: 81.54 ICD10: 0SRC07Z, 0SRC0J9, 0SRC0JA, 0SRC0JZ, 0SRC0KZ, 0SRC0L9, 0SRC0LA, 0SRC0LZ, 0SRD07Z, 0SRD0J9, 0SRD0JA, 0SRD0JZ, 0SRD0KZ, 0SRD0L9, 0SRD0LA, 0SRD0LZ
Screening colonoscopy	CPT: 45378
Knee arthroscopy	CPT: 29881
Laparoscopic gall bladder surgery	CPT: 47562
Chest X-ray (2 views)	CPT: 71020
CT scan of abdomen and pelvis	CPT: 74177
Digital mammography screening	CPT: G0202
Ultrasound exam of breasts	CPT: 76641, 76442 (replaces 76645, which was retired in 2015)

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