2007–2011 Vermont Health Care Cost and Utilization Report

Analytic Methodology

V1.1

May 13, 2014

Note: This analytic methodology is appropriate for the *2007–2011 Vermont Health Care Cost and Utilization Report* as our methods are continually refined. Interested parties are encouraged to refer to the appropriate methodology and report

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HCCI HEALTH CARE COST INSTITUTE

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HCCI HEALTH CARE COST INSTITUTE

1. Introduction

For the *2007–2011 Vermont Health Care Cost and Utilization Report*, the Health Care Cost Institute (HCCI) presented state-level benchmarked statistics of health care spending, utilization, prices, and service intensity for the population of individuals younger than 65 and covered by employer-sponsored private health insurance (ESI). The data behind these statistics came from the Green Mountain Care Board's All Payer Claims Database created by the state of Vermont and containing data provided by nearly all insurers (public and private) in the state. As of June 2013, Vermont held data on about 305,000 privately insured covered lives per year for the years 2007 through 2011. This methodology document, the latest in a series of analytic methodologies from HCCI, describes in detail the methods used to transform raw claims into descriptive statistics.

For this report, HCCI produced an analytic subset of the all payer claims database (APCD) consisting of all non-Medicare claims on behalf of beneficiaries who were younger than age 65 and covered by employer-sponsored health insurance (ESI) and whose claims were filed with a contributing health plan between 2007 and 2011. Figure 1 shows the process HCCI used to clean the ESI claims data. HCCI categorized claims, calculated utilization, and determined resource intensity weights. Vermont collected claims with about 9 months of run-out per year, and, as a result, HCCI used a completion method to estimate the components of claims that were incomplete at the end of the reporting period. No adjustment was performed for inflation, so the estimated dollars in these reports are nominal.

FIGURE 1: PROCESS FLOW

1.1 A note on premiums

The data provided to HCCI by the State of Vermont do not include premium information or their determinants.

1.2 Comparisons to national numbers

HCCI also performed a comparison of comparable statistics made available in the *2012 Health Care Cost and Utilization Report*. For that report, HCCI created an aggregated ESI database (HCCI Aggregated ESI data 2007–2012), the statistics of which are also used in this report to provide a national benchmarks. HCCI's analytic methodology on the creation of that database is available through its Website.

2. Methods

2.1 Data collection

The state of Vermont granted HCCI access to commercial health care claims data in every year between 2007 and 2011. This database included the allowed cost (actual prices paid) to providers for services. To produce the findings in the *2007–2011 Vermont Health Care Cost and Utilization Report*, HCCI used an analytic subset of its data consisting of all eligible claims for insureds younger than age 65 and covered by either fully-insured or self-insured ESI. The claims used in this report represent the health care activity of about 90 percent of all individuals younger than 65 and having ESI in Vermont and about 48.9 percent of the Vermont population. The final analytic subset consisted of about 305,000 covered lives per year, for the years 2007 through 2011 (Table 1). From these base datasets, a single analytical dataset was constructed for analysis using the process shown in Figure 1. Analysis of the analytic dataset is described in Section 3.

TABLE 1: ANALYTIC SUBSET OF VERMONT COVERED LIVES FOR 2007-2011 REPORT – COVERED LIVES BY CALENDAR YEAR

	Medical Members Covered Lives	RX Members Covered Lives
2007	306,093	288,431
2008	310,692	290,074
2009	308,052	284,295
2010	300,577	262,872
2011	299,219	246,408

Source: HCCI, 2014.

Notes: Data refer only to Vermont all payer claims database (VT APCD) holdings of claims for beneficiaries covered by employer-sponsored health insurance and younger than age 65. Data rounded to the nearest 100,000.

2.2 Claims categorization

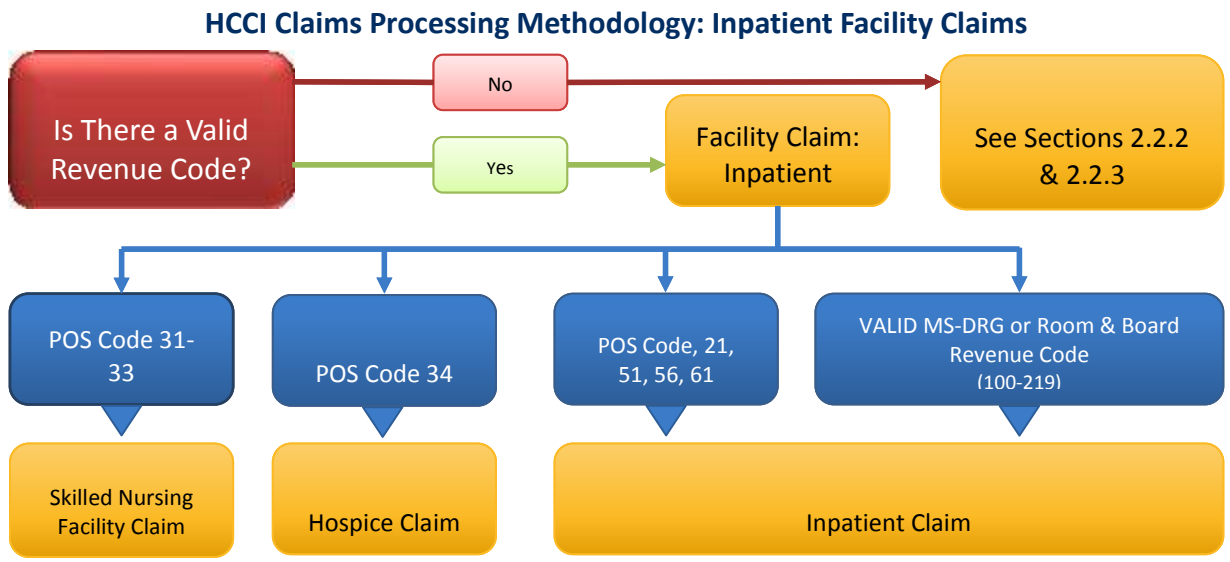
At the highest level, claims data were grouped into four service categories: inpatient facility, outpatient facility, professional procedure, and prescription drugs and devices. HCCI also divided claims into several subservice categories: inpatient subset, which excludes skilled nursing facilities, hospice, and un-groupable claims; outpatient facility visits; outpatient other claims; brand prescriptions; and generic prescriptions.

Inpatient facility claims were from hospitals, skilled nursing facilities (SNFs), and hospices, where there was evidence that the insured stayed overnight (Figure 2). The outpatient facility category contained claims that did not include an overnight stay but included observation and emergency room claims (Figure 3). Both outpatient and inpatient claims were for only the facility charges associated with such claims. HCCI classified professional procedural services provided by physicians and nonphysicians according to the industry's commonly used procedure codes (Figure 4), and the claims were grouped into primary care or specialist care. Prescription claims were coded into 20 therapeutic classes and grouped as either generic or brand name prescriptions (Figure 4).

2.2.1 Facility claims

HCCI categorized as "facility claims" those claims that were billed by places of services. Medical claims with a valid revenue code (i.e., a code assigned to a medical service or treatment for receiving proper payment) were assumed to be facility claims. Failing that, claims were assumed to be professional procedural claims. Once processed, facility claims were grouped into two major service categories—inpatient and outpatient (Figure 2 and Figure 3).

FIGURE 2: FACILITY CLAIMS PROCESS, INPATIENT



2.2.1.1 Inpatient facility claims

Inpatient services are rendered when patients are kept overnight for treatment but not observation (Figure 2). The inpatient services category included claims with the following criteria: place of service (POS) codes 21, 51, 56, and 61; a valid Medicare Severity Diagnosis-Related Group (MS-DRG) code; or a room and board revenue code of 100-219. This category also included SNF and hospice claims.

- Inpatient claims were further classified into one of the following four detailed categories based on the MS-DRG code—medical, surgical, deliveries and newborns—or mental health and substance use (Appendix 4.1).
- Inpatient services were also grouped into mutually exclusive major diagnostic categories (MDCs), developed from ICD-9-CM diagnostic codes (Appendix 4.2).
- SNF and hospice: SNFs provide nursing and rehabilitation services but with less care intensity than would be received in a hospital. This category was used when the POS code was 31-33.[1] Hospice is special care provided by a program or facility for the terminally ill. This category was used when the POS code was 34.
- Some inpatient facility claims could not be categorized as described earlier; these claims were treated as un-groupable.

2.2.1.2 Outpatient facility claims

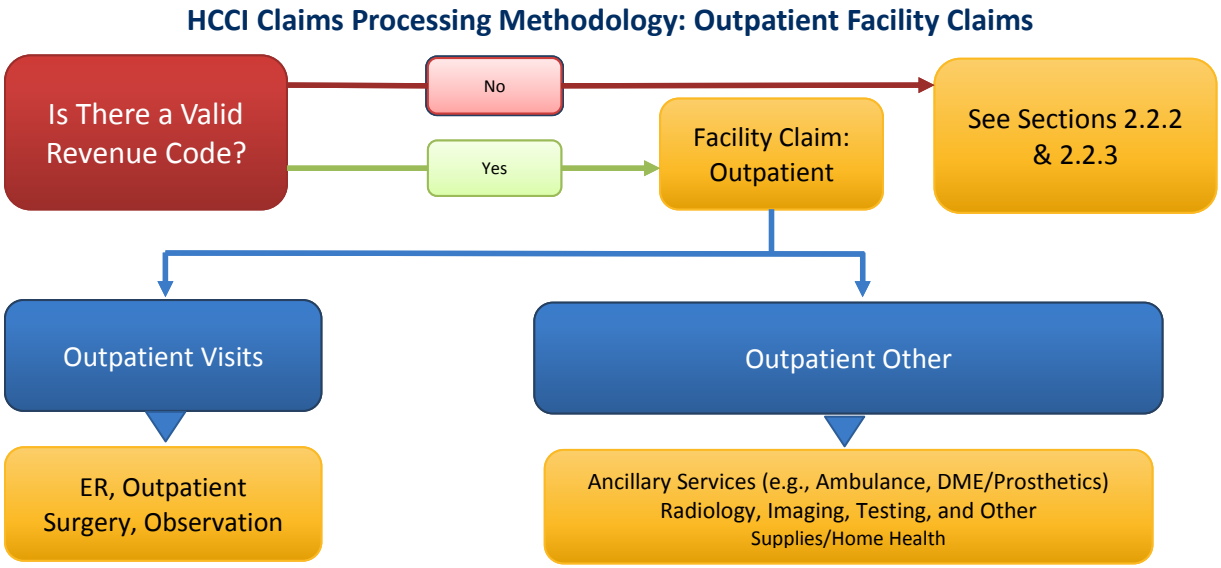
Outpatient services are rendered by the section of a hospital that provides medical services that do not require an overnight stay or hospitalization (e.g., emergency room [ER], outpatient surgery, observation room). These services can also be provided at freestanding outpatient facilities (e.g., radiology clinic). The outpatient category was used for all facility claims not characterized as inpatient (Figure 3).

- Outpatient claims were classified into subservice categories on the basis of both revenue code and the Current Procedural Terminology/Healthcare Common Procedure Coding System (CPT/HCPCS) code. Outpatient claims may have multiple services billed on the same claim, so a hierarchy system was used to determine which detail line to use for categorization (Appendix 4.3).
- The categories with the highest ranking values were ER, outpatient surgery, and observation. Claims with these services were categorized as visits, in which all the detailed records on the claim were grouped together in a single visit and assigned to the detailed category with the highest hierarchical value.

- Outpatient services not categorized as ER, outpatient surgery, or observation were counted as "outpatient other."[2] Therefore, each service on the claim was categorized and counted separately.

- Outpatient exceptions: Claims without the presence of a revenue code for services with CPT/HCPCS codes for ambulance, home health, and durable medical equipment/prosthetics/supplies were mapped to the outpatient ancillary services category. Hospice procedures given as outpatient services are categorized as outpatient other claims

FIGURE 3: FACILITY CLAIMS PROCESS, OUTPATIENT



2.2.1.3 Professional procedure claims

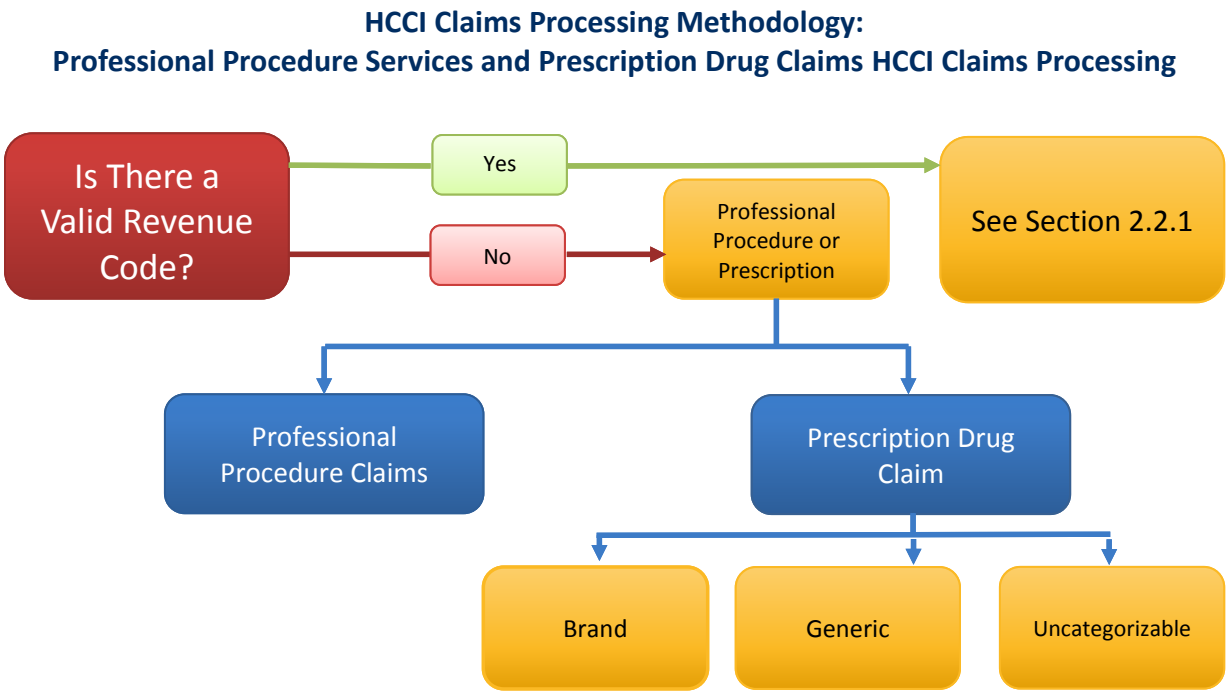
Professional procedure claims are claims filed by a health care professional for medical services provided (Figure 4). Claims with no valid revenue code were assumed to be a professional

procedure claim.

Claims were classified into HCCI's professional procedure detailed categories based on their CPT/HCPCS code (Appendix 4.4). Exceptions to the professional procedure codes were all facility-administered drugs (CPT/HCPCS codes J0000–J9999) and were mapped to the administered drugs detailed service category within professional procedures, regardless of whether a revenue code was present on the claim.

If information was available, the claim was also categorized by the provider's specialty (Appendix 4.4). Physicians and other professionals were categorized as primary care providers if they were coded as family practice, geriatric medicine, internal medicine, pediatrics, or preventive medicine.

FIGURE 4: PROFESSIONAL PROCEDURE AND PRESCRIPTION CLAIMS PROCESSES



2.2.1.4 Prescription drug claims

As seen in Figure 4, prescription drug or pharmacy claims were categorized as either brand or generic on the basis of their National Drug Code (NDC). Any drug unidentifiable as either brand

or generic was grouped as "uncategorized". These uncategorizable drugs are included in the overall prescription drug trends but not included as a subservice category of prescriptions. Administered drugs and any devices identified as professional procedures rather than scripts were categorized as professional procedures (Appendix 4.4). Prescription claims were grouped into one of the 20 American Hospital Formulary Service (AHFS) therapeutic classes based on the claim's NDC (Appendix 4.5). AHFS therapeutic classes are developed and maintained by the American Society of Health-System Pharmacists.[3]

2.3 Grouping and counting methodologies

2.3.1 Unit counting (utilization) methodology

To correctly calculate the utilization count, HCCI analyzed reimbursements for claims. In the following rules, *reimbursement* refers to any monetary payment to a provider, whether a professional procedure provider, facility, or pharmaceutical vendor.

- If the reimbursement dollars for an admission, visit, or professional procedure were equal to 0, the utilization count was set at 0.
- If the reimbursement dollars for an admission, visit, or professional procedure were less than 0, the utilization count was set at minus 1. Negative reimbursement amounts occur from claim reversals, making it important to reverse the utilization count as well.
- If the reimbursement dollars for an admission, visit, or professional procedure were greater than 0, the utilization count was set at 1.

Service category-specific rules are as follows:

- Inpatient, SNF, and hospice facility
  - If multiple claims had the same patient identification, facility categorization (inpatient, SNF, or hospice), and provider with overlapping or contiguous admission or discharge dates, they were grouped into one admission.
  - The length of stay was determined as the discharge date less the admission date. If multiple claims were combined into one admission, the discharge date used was the latest discharge date among all claims; the admission date used was the earliest admission date among all the claims.
- Outpatient facility

- For ER, outpatient surgery, and observation claims (outpatient visits):
  - a visit was defined as all claims for the same patient, same provider, and same beginning service date, and
  - if a claim had multiple beginning service dates among its various detail claim lines, the earliest date was used as the beginning service date for the entire claim.
- For all other outpatient claims, utilization counts were record counts adjusted for the reimbursement dollars. These are referred to as outpatient other counts.[4]

- Professional procedures

For all professional procedure claims, utilization counts were record counts adjusted for the reimbursement dollars and are referred to as professional procedure counts.

- Prescriptions

Prescription drug claims were captured by scripts filled. Each prescription refill was considered a claim, as was every prescription; therefore, if a prescription was filled four times, four claims were counted. For the 2007–2011 Vermont Health Care Cost and Utilization Report HCCI calculated utilization through filled days, as scripts may be for different lengths of time and obscure changes in prescription utilization.

2.3.2 Intensity weights methodology

In general, intensity reflects the complexity of the service provided or the level of resources required for treatment. HCCI divided price per medical service into two components—intensity-adjusted price and intensity per service. The following section provides details on how intensity weights were assigned by service category. Our methodology bears some resemblance to that employed in Dunn, Liebman, and Shapiro.[5] For the *For the 2007–2011 Vermont Health Care Cost and Utilization Report*, HCCI did not implement an intensity-weighting strategy for pharmacy claims.

2.3.2.1 Inpatient facility subset

To weight inpatient facility claims, HCCI excluded SNF, hospice, and un-groupable claims, as these do not have intensity weights. This limited inpatient categorization is referred to as the "inpatient subset." Each inpatient subset admission was assigned an MS-DRG or DRG code to

which a weight was assigned. The Centers for Medicare and Medicaid Services (CMS) assigns every DRG a weight on the basis of the average costs to Medicare of patients classified in that DRG. The weight reflects the average level of resources expended for the average Medicare patient in that DRG relative to the average level of resources for all Medicare patients. DRGs that are more expensive to treat receive a higher weight and vice versa. In this way, DRG weights reflect intensity of treatment. The weights used were generally for fiscal year 2010, with additional 2011 weights when applicable, as published by the CMS.

2.3.2.2 Outpatient facility

To weight outpatient facility claims, each claim line was mapped to a payment code in the Ambulatory Payment Classification (APC) system based on the CPT/HCPCS code on the claim line. The APC weights used were generally for calendar year 2010; additional 2011 weights, as published by the CMS, were used when applicable.

For claims that could not be mapped to an appropriate APC, weights were assigned on the basis of relative value units (RVUs) for facility procedure codes. RVUs, which are based on the resources required to complete each service, are determined by the American Medical Association and published by the CMS. RVU weights were adjusted as were APC weights, based on the difference between calendar year 2010 RVU conversion factor and calendar year 2010 APC base rate.

2.3.2.3 Professional procedures

Each professional procedure was mapped to a CPT/HCPCS code (Appendix 4.4) and was assigned an RVU, either facility or non-facility, on the basis of the place of service. Professional procedures are provided in various settings – hospitals, outpatient facilities, or physician offices. The RVUs used were generally for calendar year 2010; additional 2011 weights, as published by the CMS, were used when applicable. Commercial adjustments were made to account for professional procedures not commonly seen in Medicare claims and for certain professional procedures such as anesthesia. The commercial modifiers are proprietary; therefore, HCCI cannot publish them.

2.3.3 Methodology for imputing missing weights

For outpatient and professional procedure claim lines that were not assigned weights using the methods described, an analysis was conducted to impute a weight. Weights were not imputed for inpatient admissions. The imputation analysis followed four key steps:

- Step 1: A detailed service category was determined for each of the professional procedure codes or revenue codes to be imputed (referred to as imputed codes; see Sections 2.2.1 and 2.2.2).
- Step 2: The average price paid and average APC/RVU weight for each detailed service category were calculated on the basis of the claims with *assigned* weights.
- Step 3. The price ratio between each imputed code and the average price of the corresponding detailed service category was calculated.
- Step 4. The weights for each imputed code were calculated.

2.4 Adjustment methodologies

2.4.1 Claims completion methodology

Claims data reflect health care services performed (i.e., claims incurred) in the year noted. Claims generally require time for submission to the payer, processing, and payments to the provider (sometimes called the *claim payment lag time*, or *run-out period*).

Completion is a standard actuarial practice designed to allow for the calculation of utilization, prices, expenditures, and intensity of health care services when a full set of claims is not available. Services that have outstanding claims may have a missing or incomplete record. Completion allows for the estimation of the cost impact of the outstanding claims to avoid undercounting or under-projecting trends.

Subsequent adjustments, or completion factors, varied by type of measure (i.e., dollars, unit counts, and intensity weights) and detailed service category (i.e., subgroups within the service categories; see Appendix Tables 4.3, 4.4, and 4.5). The factors were based on historical claims payment patterns specific to the HCCI dataset. They were developed using a standard actuarial model for incurred-but-not-paid analysis, as described by Bluhm (Appendix 4.7).[6]

For the 2007–2011 *Vermont Health Care Cost and Utilization Report*, data were collected to reflect claims that were paid within 9 months of being incurred. Work by the VT APCD's data manager, Onpoint Health Data, resulted in the development of a "consolidated claims data base" where Onpoint updated claims during each refresh cycle. Therefore, the consolidated claims data are, at best, a combination of fully adjudicated and incomplete claims. An adjustment was needed to account for the remaining medical claims that would be paid after 9 months of run-out in each year. Prescriptions were considered complete and were not adjusted with completion factors.

3. Analysis

The analytic dataset was composed of information on expenditures, prices paid, utilization, and intensity for insureds younger than 65 and covered by ESI. Analyses consisted of summary statistics on spending and the components of spending. Demographic flags were included for

- five age sub-groupings (ages 0–18, 19–25, 26–44, 45–54, and 55–64);

  four children age sub-groupings (ages 0-3, 4-8, 9-13, 14-18); and

- gender.

HCCI divided claims into four service categories: inpatient facility, outpatient facility, professional procedures, and prescriptions. Within those categories were subservices and detailed services:

- five subservice categories (inpatient subset without SNF, hospice, and un-groupable claims; outpatient visits; outpatient other; generic prescriptions; and brand name prescriptions); and

- multiple detailed service categories (e.g., emergency room visits).

In the *2017–2011 Vermont Health Care Cost and Utilization Report*, HCCI produced report tables for the service and subservice categories consisting of annual expenditures per capita, annual out-of-pocket expenditures per capita, annual payer expenditures per capita, utilization per 1,000 insureds, average prices, average intensity, and average intensity-adjusted prices. HCCI also produced appendices (*2007–2011 Vermont Health Care Cost and Utilization Report Appendix),* which included multiple detailed service category descriptive statistics for the foregoing list of benchmarks and expanded this to include gender, and age group–level statistics. Definitions of terms used in the report can be found in the glossary on the HCCI Website.

3.1 Population membership

Membership in the ESI population is calculated as the total number of months individuals are insured. From this, insured-years are calculated by member months divided by 12, to estimate 12 months of coverage or the cost for a year of health care.

3.2 Annual expenditures per capita

HCCI captured per capita health care spending on people with ESI by summing in each year all the weighted dollars directly spent on health care services for filed claims and dividing that amount by the number of insured-years. By this method, the per capita health expenditures in the report estimates the cost per insured, even for insureds who did not use health care services.[7] This metric is a subset of overall Vermont health care spending and may not be comparable to other metrics of Vermont spending because it covers only persons younger than 65 years and having group ESI. Similar methods were used to calculate expenditures per capita out-of-pocket (the dollars paid by members for health services including copays, coinsurance, and deductibles) and expenditures per capita by payers.

3.3 Decomposition of expenditures per capita

In the *Vermont Health Care Cost and Utilization Report*s, estimated health care expenditures were determined by the prices paid to providers for each service and the amount of service (utilization). HCCI decomposed spending trends into a price trend and a utilization trend to determine the major drivers of the health care cost curve.

3.4 Utilization per 1,000 insured

In the *Vermont Health Care Cost and Utilization Report*, HCCI calculated utilization rates per 1,000 insureds. The total service count was produced by summing for each service category the admissions, professional procedures, visits, scripts, or filled prescription days. The resulting amount was divided by the number of insured years. This provided a per-individual utilization count by service category, which was then multiplied by 1,000.

3.5 Average price per service

In the *Vermont Health Care Cost and Utilization Report*, HCCI calculated average price per service by dividing total expenditure by total utilization per service or subservice category. By this method, the derived calculation includes the "prices" paid by the payer and the insured out of pocket.

3.6 Decomposition of average prices

HCCI also decomposed prices per service into a complexity of services (intensity) component and an intensity-adjusted price component to help isolate whether price per service increases were driven by intensity of care or by rising unit prices. Intensity-adjusted price, or unit price, gives HCCI the average allowed cost per service, deflated by the sum of the weights across all

the services in the category, or average price-per-service weight. Because weights are a measure of how much care is required to treat a patient in a given service category, the sum of the weights is a measure of the total amount, or intensity of care, delivered.

SNF, hospice, and un-groupable inpatient admissions have inconsistent DRG codes, creating difficulty in calculating intensity and intensity-adjusted price for these service categories. Therefore, inpatient facility intensity and intensity-adjusted price trends are reported for the inpatient subset.

Outpatient and professional procedure claims were assigned weights using the relevant APC or RVU codes, as discussed (see 2.4.2 and 2.4.3). After weights were assigned to outpatient services and professional procedures, HCCI calculated intensity per service.

Using the DRG weights allowed HCCI to measure differences in how much service a typical admission got on the basis of the DRGs in that admission category. Intensity-adjusted prices were calculated for the inpatient, outpatient, and professional procedure service categories. These were not calculated for prescriptions because they were not assigned intensity weights.

4. Appendix

4.1 Inpatient facility detailed service categories and corresponding MS-DRG codes [V26.0]

Medical	Surgical and Transplant	Deliveries & Newborns	Mental Health & Substance Use
52–103	1–13	765–768	876
121–125	20–42	774 & 775	880 – 887
146–159	113–117	789–793	894 – 897
175–208	129–139	794 & 795	
280–316	163–168		
368–395	215–265		
432–446	326–358		
533–566	405–425		
592–607	453–517		
637–645	573–585		
682–700	614–630		
722–730	652–675		
754–761	707–718		
776–782	734–750		
808–816	769 & 770		
834–849	799–804		
862–872	820–830		
913–923	853–858		
933–935	901–909		
945–951	927–929		
963–965	939–941		
974–977	955–959		
998	969 & 970		
	981–989		

4.2 Mapping to MS-DRG codes

MDC	Major Diagnostic Category Description	MS-DRG
1	Nervous system	020–103
2	Eye	113–125
3	Ear, Nose, Mouth, & Throat	129–159
4	Respiratory System	163–208
5	Circulatory System	215–316
6	Digestive System	326–395
7	Hepatobiliary System & Pancreas	405–446
8	Musculoskeletal System & Connective Tissue	453–566
9	Skin, Subcutaneous Tissue, & Breast	573–607
10	Endocrine, Nutritional, & Metabolic System	614–645
11	Kidney & Urinary Tract	652–700
12	Male Reproductive System	707–730
13	Female Reproductive System	734–761
14	Pregnancy; Childbirth	765–782; 998
15	Newborns & Neonates (Perinatal Period)	789–795
16	Blood, Blood-Forming Organs, & Immunological Disorders	799–816
17	Myeloproliferative Diseases & Disorders	820–849
18	Infectious & Parasitic Disease & Disorders	853–872
19	Mental Diseases & Disorders	876–887
20	Alcohol/Drug Use or Induced Mental Disorders	894–897
21	Injuries, Poison, & Toxic Effects of Drugs	901–923
22	Burns	927–935
23	Factors influencing Health Status	939–951
24	Multiple Significant Trauma	955–965
25	Human Immunodeficiency Virus Infections	969 – 977
PR	Transplants	001 – 017
AL	Extensive Procedures Unrelated to Principal Diagnosis	981-989, 999

4.3 Outpatient facility service categories mapping to CPT/HCPCS, revenue codes hierarchies

HCCI Sub-service Category	HCCI Detailed Service Category	Revenue Codes Mapping (standard UB92 codes only)	2012 CPT/HCPCS Codes Mapping (standard 2012 codes)	Hierarchy Ranking
Visits	Emergency Room	450-452; 456; 459	99281-99292; 99466-99476	1
	Outpatient Surgery	360–362; 367; 369; 481; 490; 499; 790; 799	10021–36410; 36420-58999; 60000–69990; 93501–93581; 0016T–0261T	2
	Observation	760-762; 769	99217–99220	3
Ancillary	Ambulance		A0021–A0999	7
	DME/Prosthetics/Supplies		A4206–A9999; E0100–E8002; K0001–K0899; L0112–L9900	8
	Home Health		99500–99602	9
	Lab/Pathology	300–307; 309–312; 314; 319	36415; 36416; 80047–80440; 80500–80502; 81000–88399; 88720–89398; P2028–P9615	6
Other	Other Outpatient Services	420–424; 429–434; 439–444; 449; 480; 482–483; 489; 720–724; 729–732; 739; 800–804; 809; 820–825; 829–835; 839–845; 849–855; 859; 880–882; 889; 900–919; 944–945; 1000–1005	59000–59899; 90801–90899; 90935–90999; 92626–92633; 92950–93352; 93600–93799; 97001–98943; A4651–A4932; E1500–E1699; H0001–H2037	4
Other	Radiology Services	320–324; 329–333; 335, 339, 340–344; 349–352; 359, 400–404; 409, 610–619	70010–70332; 70336; 70350–70390; 70450–70498; 70540–70559; 71010–71130; 72010–72120; 72170–72190; 71250–71275; 71550–71555; 72125–72133; 72141–72159; 72191–72198; 72200–73140; 73200–73206; 73218–73225; 73500–73660; 73700–73706; 73718–73725; 74000–74022; 74150–74178; 74181–74185; 74190–74775; 75557–75574; 75600–75630; 75635; 75650–76350; 76376–76380; 76390; 76496–76499; 76506–76999; 77001–77003; 77011–77014; 77021–77022; 77031–77059; 77071–77083; 77084; 77261–77799; 78000–79999; 96401–96571; R0070–R0076	5

4.4 Professional procedures detailed service categories mapping to CPT/HCPCS codes

HCCI Sub-Detailed Service Category	HCCI Detailed Service Category	CPT/HCPCS Code Range
Administered Drugs, including Chemo Drugs	Administered Drugs	J0000–J9999
Allergy	Other	95004–95075, 95115–95199
Anesthesia	Anesthesia	00100–02020, 99100–99140
Cardiovascular	Other	92950–93581, 93600–93799, 93875–93998
Consultations	Other	99241–99255
Emergency Room/Critical Care	Other	99281–99292, 99466–99476
Immunizations/Injections	Other	90281–90749, 96360–96379, G0008–G0010
Inpatient Visits	Other	99217–99239, 99304–99340, 99477, 99478–99480
Office Visits	Office Visits	99201–99215, 99341–99350
Ophthalmology	Other	92002–92499, V2020–V2799
Pathology/Lab	Pathology/Lab	80047–89398, P2028–P9615
Physical Medicine	Other	97001–98943
Preventive Visits	Preventive Visits	99381–99387, 99391–99429, 99460–99464
Psychiatry & Biofeedback	Other	90801–90911
Radiology	Radiology	70010–79999, R0070–R0076
Surgery	Surgery	10021–69990 excluding 36415–36416; 0016T–0261T
Other Professional Services	Other	36415–36416, 90935–90999, 91000–91299, 92502–92700, 94002–94799, 95250–95251, 95800–96125, 96150–96155, 96401–96571, 96900–96999, 98960–99091, 99143–99199, 99354–99360, 99363–99380, 99441–99444, 99450–99456, 99465, 99499, 99605–99607, B4034–B9999, C1300–C9899, D0120–D9999, G0027–G9156, H0001–H2037, M0064–M0301, Q0035–Q9968, S0012–S9999, T1000–T5999, V5008–V5299, V5336–V5364, W0000–ZZZZZ

4.5 Prescription detailed service categories matching AHFS class

AHFS Class	HCCI Detailed Service Category
Antihistamine Drugs	Antihistamine Drugs
Anti-Infective Agents	Anti-Infective Agents
Antineoplastic Agents	Other
Autonomic Drugs	Other
Blood Derivatives	Other
Blood Formulation, Coagulation, and Thrombosis	Other
Cardiovascular Drugs	Cardiovascular Drugs
Cellular Therapy	Other
Central Nervous System Agents	Central Nervous System Agents
Contraceptives (foams, devices)	Other
Dental Agents	Other
Diagnostic Agents	Other
Disinfectants (for objects other than skin)	Other
Electrolytic, Caloric, and Water Balance	Other
Enzymes	Other
Respiratory Tract Agents	Other
Eye, Ear, Nose, and Throat Preparations	Other
Gastrointestinal Drugs	Gastrointestinal Drugs
Gold Compounds	Other
Heavy Metal Antagonists	Other
Hormones and Synthetic Substitutes	Hormones and Synthetic Substitutes
Local Anesthetics	Other
Oxytocics	Other
Radioactive Agents	Other
Serums, Toxoids, and Vaccines	Other
Skin and Mucous Membrane Agents	Other
Smooth Muscle Relaxants	Other
Vitamins	Other
Miscellaneous Therapeutic Agents	Other
Devices	Other
Pharmaceutical Aids	Other

4.6 Claims completion example

The following is an example of the estimation of incurred but not paid claims. Please note the numbers in this section are for illustration purposes only: They are *not* actual data.

Month	Paid $ to Date [1]	Completion Factor [2]	Estimated Incurred
Jan–12	$ 21,675,364	1.00	$ 21,727,186
Feb–12	17,339,406	1.00	17,402,178
Mar–12	18,271,837	1.00	18,289,514
Apr–12	20,286,106	1.00	20,339,892
May–12	19,356,580	1.00	19,426,260
Jun–12	17,751,856	0.99	17,945,588
Jul–12	18,256,838	0.99	18,355,884
Aug–12	17,732,384	0.98	18,083,643
Sep–12	17,489,161	0.95	18,481,283
Oct–12	16,893,933	0.93	18,120,909
Nov–12	15,981,513	0.86	18,681,099
Dec–12	11,217,486	0.62	18,028,238
Total	$ 212,252,463	0.94	$ 224,881,674

Notes: [1] $ incurred in the month, paid through 6/30/2013; [2] Completion factors will be developed using a lag triangle method

5. Endnotes

[1] Centers for Medicare and Medicaid Services. Medicare Claims Processing Manual: Chapter 26: Completing and Processing Form CMS-1500 Data Set [Internet]. Baltimore (MD): CMS; 2011 Dec [cited 2012 May 18]. Available from: https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/clm104c26.pdf.

[2] In the *Children's Health Spending Report: 2007–2010* and *Health Care Cost and Utilization Report: 2011*, these were labeled "outpatient other" and as "outpatient procedures" in the *Health Care Cost and Utilization Report: 2010*.

[3] McEvoy, Gerald K., Ed. *AHFS Drug Information 2010*. Bethesda, MD: American Society of Health-System Pharmacists, 2010. Print.

[4] These are referred to as outpatient *other* counts in *Health Care Cost and Utilization Report: 2012*, *Health Care Cost and Utilization Report: 2011*, and as "outpatient procedure" counts in *Health Care Cost and Utilization Report: 2010*.

[5] Dunn, Abe, Eli Liebman, and Adam Hale Shapiro. "Developing a Framework for Decomposing Medical-Care Expenditure Growth: Exploring Issues of Representativeness." *Measuring Economic Sustainability and Progress*. 2012.

[6] Bluhm, W. F., Ed. *Group Insurance*, 4th ed. Winsted: ACTEX Publications, Inc; 2003. P. 811-27. The specific methodology is proprietary and not owned by HCCI.

[7] To calculate total prices paid for total expenditures per capita, the insured and payer expenditures per capita are summed. For facility and professional procedure claims, prices paid

are calculated for all members who have medical insurance. For prescription claims, prices paid are calculated for all members with medical and prescription insurance.