
NHCHIS and Population Based Risk Adjustment: Looking Beyond HealthCost

March 20, 2008

Tyler Brannen

NH Insurance Department

NH CHIS (Comprehensive Health Information System)

- Carriers and TPAs required to submit medical and Rx claims data as well as HEDIS
 - NH Insurance Department adopts rules for data submission
 - NH DHHS develops rules for the release of data
 - A resource for insurers, employers, providers, purchasers of health care, and state agencies to understand health care utilization, expenditures and performance
-

Purpose of the HealthCost website

- Provide patients with useful information about the price of health care services so that they can make more informed decisions about where to seek care and what it will cost them.
-

Internet Explorer browser window showing the URL <http://www.nhhealthcost.org/>. The browser title is "Health Cost". The page header includes the text "an official NEW HAMPSHIRE government website" and the logo "NH HEALTH COST". A navigation menu contains links for Home, Health Costs by Procedure, FAQs and Methodology, Resources, and Contact Us. The date "Wednesday, January 16, 2008" is displayed in the bottom right corner of the header area.

WELCOME!

HealthCost provides information on the price of medical care in New Hampshire. The New Hampshire Insurance Department and the Commissioner's Advisory Committee on Health Insurance developed the Health Care Cost of Procedure (HealthCost) website in 2005.

WHAT IS THE PURPOSE OF HEALTHCOST?

This site gives patients information about the price of health care services. The price information is based on paid claims data collected from New Hampshire's health insurers by the New Hampshire Department of Health and Human Services as part of the Comprehensive Health Care Information System. This website serves as a resource to help you make informed decisions about purchasing health care services and insurance.

WHAT SHOULD I KNOW ABOUT MY HEALTH INSURANCE PLAN, AND THE PRICE OF MY HEALTH CARE?

It is important to understand your health insurance coverage. The price you pay for the purchase of a health care service will vary depending on whether you are insured or uninsured, the type of insurance you have, and the insurance carrier that is providing the insurance. Insurance plans work differently and cover different types of medical services. The specific details of your plan and the carrier from which you purchase a policy may affect how much you pay for health care services. You can find

<http://www.nhhealthcost.org/insuredWizardUserInput.aspx?procedure=33&procedureName=Vaginal+Birth+and+New+Bab>

Edit View Favorites Tools Help

Health Cost

an official **NEW HAMPSHIRE** government website

NH HEALTH COST

[Home](#)
[Health Costs by Procedure](#)
[FAQs and Methodology](#)
[Resources](#)
[Contact Us](#)

Tuesday, December 04, 2007

Detailed estimates for Vaginal Birth and New Baby (inpatient)

Procedure: [Vaginal Birth and New Baby \(inpatient\)](#)

Insurance Plan: Anthem - NH, Health Maintenance Organization (HMO)

Within: 1000 miles of 03062

Deductible and Coinsurance Amount: \$0.00 / 0%

Lead Provider Name	Estimate of What you Will Pay	Estimate of What Insurance Will Pay	Estimate of Combined Payments	Precision of the Cost Estimate	Typical Patient Complexity	Contact Info
SPEARE MEMORIAL HOSPITAL	\$0	\$6063	\$6063	LOW	LOW	SPEARE MEMORIAL HOSPITAL 603.536.1120
WEEKS MEDICAL CENTER	\$0	\$6063	\$6063	MEDIUM	VERY LOW	WEEKS MEDICAL CENTER 603.788.4911
PARKLAND	\$0	\$6170	\$6170	MEDIUM	VERY HIGH	PARKLAND MEDICAL

Population Based Risk Adjustment

- It's not a Diagnosis Related Group
 - It's not an episode
 - Originally designed as a tool for adjusting capitation payments based on diagnoses and expected resources needed to treat the population
 - Response to “my patients are sicker”
 - Risk adjustment tools are not necessarily predictive modeling tools
-

Chronic Illness and Disability Payment System (CDPS)

- Risk adjustment system used in HealthCost (www.nhhealthcost.org)
 - A diagnostic classification system designed for Medicaid programs to make health-based capitated payments for TANF and disabled Medicaid beneficiaries.
 - Primary inputs are diagnoses, age, gender, and length of enrollment
 - Developed at the University of California, San Diego
-

HealthCost and Risk Adjustment

- Risk adjustment definition provided: “**Patient Complexity** – This is an indication of how healthy or sick the patients are that are seen for this particular procedure at this health care provider. Some health care providers see sicker patients, or patients that are more complex, and thus there may be more costs associated with treating them.”
-

Development of the Risk Value

- Patients assigned risk values based on the presence of specific diagnoses
 - Different diagnoses categories have different weights
 - Patients are pooled together so that one population can be compared to another
 - A relative difference in the expected resource needs is calculated
-

Example of Risk Among Patient Populations with a Vaginal Delivery

	Hospital A	Hospital B	Hospital C
HealthCost Patient Complexity Value	High	Medium	Low
Relative Risk Score	1.14	1.02	0.99
Cardiovascular Low	7.3%	7.9%	2.6%
Cardiovascular Very Low	2.9%	1.6%	2.6%
Psychiatric Low	20.9%	13.5%	7.8%
Pulmonary Low	12.1%	7.9%	9.1%
Gastrointestinal Low	13.1%	6.4%	10.4%
Renal Medium	4.4%	1.6%	0.0%
Renal Low	2.9%	7.9%	10.4%
Genital Extra Low	9.2%	15.9%	3.9%

Patient Complexity break points: VH = 1.1694, H = 1.0820, M = .9943, L = .9476

Future Risk Adjustment Efforts...

- What is happening in the insurance marketplace?
 - What insurance covers the sickest patients?
 - Which carriers have the sickest members?
 - What are the limitations with the data?
 - Are insurance regulations that deal with adverse risk helpful?
-

What insurance covers the sickest patients?

Insurance Type	Risk Score	Example of Impact on Costs
PPO	0.9632	\$3,756
HMO	0.986	\$3,845
POS	1.0841	\$4,228
Indemnity	1.1837	\$4,616

Analysis based on NHCHIS claims data YE 3/31/07

Which Carriers have the Sickest Patients?

Carrier	Risk Score	Example of Impact on Costs
A	0.9254	\$3,609
B	0.9728	\$3,794
All Other Insurance	0.9768	\$3,810
D	0.9786	\$3,816
E	0.9849	\$3,841
P	0.9891	\$3,858
G	1.0104	\$3,940
H	1.0382	\$4,049
I	1.2170	\$4,746

What About Just HMO Products?

Carrier	Risk Score	Example of Impact on Costs
All Other Insurance	0.837	\$3,265
G	0.930	\$3,627
B	0.973	\$3,794
P	0.980	\$3,821
H	1.031	\$4,021

POS?

Carrier	Risk Score	Example of Impact on Costs
All Other Insurance	0.943	\$3,679
D	0.979	\$3,816
P	1.065	\$4,153
G	1.124	\$4,385
H	1.209	\$4,717

PPO

Example of Impact on Costs

Carrier	Risk Score	Costs
P	0.906	\$3,535
A	0.925	\$3,609
E	0.985	\$3,841
All Other Insurance	0.985	\$3,843
G	1.005	\$3,918
H	1.063	\$4,144

Indemnity

Carrier	Risk Score	Example of Impact on Costs
All Other Insurance	0.969	\$3,781
I	1.217	\$4,746
P	1.225	\$4,778
G	2.578	\$10,054

Do patients with really high claims experience have high risk scores?

- Portion of patients with >\$100,000 in medical claims = 0.2% of total
 - Portion of total carrier payments = 13.4%
 - Average risk score = 7.01
 - Top 25% of these patients have a risk score greater than 9.6
 - Bottom 25% of these patients have a risk score less than 2.35
-

Do patients with the highest risk scores have a really high claims experience?

- Top 1% of patients with the highest risk scores
 - Portion of total payments for these patients = 14.9%
 - Average risk score = 9.48
 - Minimum risk score = 6.17
 - Top 25% of these patients have annual claims costs greater than \$54,410
 - The average claims costs = \$46,654
 - Bottom 25% have annual claims costs less than \$4,267
-

Data Limitations

- Variations in data integrity between carriers and providers
 - Number of diagnosis codes
 - Truncation of diagnosis codes
 - Covered benefits and primary vs. secondary coverage
 - Pharmacy included, or not?
 - Policyholder vs. resident
-

Recap

- Population based risk adjustment
 - Chronic Illness & Disability Payment System (CDPS)
 - Use in HealthCost
 - Future – differences by carrier, insurance product, and evaluation of the regulatory environment
 - High cost patients/predictive modeling
 - Data limitations
-

Questions

Tyler Brannen

Health Care Statistician

NH Insurance Department

Tyler.Brannen@ins.nh.gov

603-271-7973 ext 226
