

Utah's All Payer Claims Database

2014 Maternity Cost Comparisons: Background and Methodology

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Background

Utah's All Payer Claims Database

The Utah Department of Health, Office of Health Care Statistics (OHCS) is responsible for the creation and management of the All Payer Claims Database (APCD) under authority granted to the Department and the Health Data Committee (HDC).¹ Licensed commercial health insurance carriers covering 2,500 or more are required to submit member eligibility, medical claims, dental claims, and pharmacy claims as well as a health care provider file by administrative rule.² In addition to commercial insurance data, the APCD collects data from Medicaid. OHCS contracts with 3M Health Information Systems (3M) for APCD data collection and processing. 3M also enhances data with risk adjusters, cost calculations, National Committee for Quality Assurance (NCQA) quality measures, and patient-provider attribution before delivering the APCD back to OHCS.

Utah's Facility Encounter Database

OHCS is also responsible for the collection and management of inpatient, emergency department (ED), and ambulatory surgery encounter data. The inpatient discharge data has been collected since 1992 and the ED and ambulatory surgery data since 1996. These data include medical codes, patient characteristics, services received, and charges billed for each encounter. All licensed facilities are required to submit quarterly and the data is processed and released annually.³

Public Reporting

These claims and encounter data are intended “to facilitate the promotion and accessibility of quality and cost-effective health care.”⁴ The Office of Health Care Statistics is required to produce health care provider comparisons and make the information available to the public free of charge. Comparative information may include generally accepted cost and quality measures.

Methodology

The Transparency Advisory Group (TAG) is a subcommittee of the HDC tasked with convening public meetings of community stakeholders to provide guidance on healthcare cost and quality transparency. TAG is jointly staffed by OHCS and HealthInsight and was specifically formed to promote health care transparency. TAG looks to national standards for measuring healthcare cost and quality when possible.

In 2014, HealthInsight conducted a survey of TAG participants and three focus groups to determine topics for reporting cost transparency publicly. Maternity cost was one of the top responses and was selected for development. After defining professional procedure and facility fees with medical professionals, OHCS produced cost data by small health areas and HealthInsight published the first maternity cost module on UtahHealthScape.org in December

¹ Utah Code 26-33a-104. <https://le.utah.gov/xcode/Title26/Chapter33A/26-33a-S104.html>

² Utah Administrative Rule R428-15. <http://www.rules.utah.gov/publicat/code/r428/r428-015.htm>

³ Utah Administrative Rule R428-10. <http://www.rules.utah.gov/publicat/code/r428/r428-010.htm>

⁴ Utah Code 26-33a-106.5. <http://le.utah.gov/xcode/Title26/Chapter33A/26-33a-S106.5.html>

2014.⁵ This methodology section describes how the second maternity cost module was produced to compare facilities.

Attributing Mothers to a Hospital

3M All Patient Refined Diagnostic Related Groups (APR-DRG)⁶ are used to identify delivery encounters in the inpatient discharge dataset and claims in the All Payer Claims Database (APCD). Delivery encounters and claims are defined by the following APR-DRGs:

540 - Cesarean Delivery

560 - Vaginal Delivery

Using these APR-DRGs, 28,749 deliveries were identified in the APCD. Deliveries with “major” or “extreme” severity of illness as determined by the APR-DRG software were left out of the analysis so that only the cost of minor and moderate risk (commonly described as “normal”) deliveries are included. There are 1,090 deliveries with major or extreme severity of illness. Medicaid claims are not included in this analysis for two reasons: 1. costs associated with Medicaid may not be comparable to the commercial market, and 2. Medicaid treats all enrollees as individuals without dependents which complicates attributing a baby (neonate) to its mother (delivery). This leaves us with a final count of 27,659 deliveries in this analysis.

The cost associated with medical claims were attributed to a hospital. However, there is no standard for attributing patients or claims to a health care provider and variation in billing practices makes identifying hospitals in the APCD challenging. OHCS leveraged patient data submitted by the hospitals to supplement the APCD and attribute maternity cost to the hospitals. The following logic was developed:

1. Claim and inpatient discharge records must have matching birthdate, service data, APR-DRG and at least one of the claim or inpatient discharge record must have a valid entry for SSN, then:
 - a. Claim and inpatient discharge records must have matching patient last 4 digits of Social Security Numbers, or
 - b. Charge amounts must match exactly, or
 - c. Zip codes must match exactly, or
 - d. Patient first and last name must match exactly
 - e. The primary diagnosis and principal procedures must match exactly, or

Applying this logic resulted in attributing 24,234 of the 27,659 deliveries (87.62%) identified in the APCD to a hospital. Only 161 possible mismatches were identified during the review. A possible mismatch is defined where only one SSN is present and the zip codes do not match and the charge differences are greater than \$3.00.

⁵ Maternity Cost Module on UtahHealthScape. <http://utahhealthscape.org/?p=fcc>

⁶ 3M APR DRG Classification System and 3M APR DRG Software.

http://multimedia.3m.com/mws/media/478415O/3m-apr-drg-fact-sheet.pdf?fn=aprdrg_fs.pdf

Attributing Babies to a Hospital

Similarly to deliveries, APR-DRGs are used to identify neonate encounters in the inpatient discharge dataset and the APCD. Only neonates that were defined as normal newborns were included. These neonate encounters are defined by the following APR-DRGs:

626 - Neonate Birthweight 2000-2499g, Normal Newborn or Neonate w Other Problem

640 - Neonate Birthweight >2499g, Normal Newborn or Neonate w Other Problem

There are 18,553 neonates in the APCD. Neonates with “major” or “extreme” severity of illness as determined by the APR-DRG software were left out of the analysis so that only normal costs are included. There are 670 deliveries with major or extreme severity of illness. Duplicate claims were removed from analysis by selecting the claim with the greater allowed amount and dropping the others. After de-duplication, there are 17,403 remaining individuals.

The following logic was developed to attribute neonates to a hospital:

1. Identify babies by looking for claims with neonate APR-DRG.
2. Link baby to mother using subscriber dependent information in the eligibility file.
 - a. Mother must be at least 14 years old, female, and the subscriber, spouse, life partner, or significant other.
3. Use the maternal algorithm described above to attribute mothers to hospitals.
 - a. In addition to the 560 and 540 APR-DRGs, APR-DRG 541 (Vaginal Delivery w Sterilization &/or D&C) and 542 (Vaginal Delivery w Complicating Procedures Exc Sterilization &/or D&C) are used to identify potential mothers for babies.

Applying this logic resulted in attributing 14,064 of the 17,403 neonates (80.81%) identified in the APCD to a hospital. In this case, the only source of mismatching is if the mothers were incorrectly attributed to the wrong hospital.

Calculating Cost

The cost of deliveries and neonates was calculated using allowed amounts from claims data. Allowed amounts are calculated by summing the amounts paid by the health insurance carrier and the patient. Claims with negative allowed amounts were removed from analysis. The data is then reported to HealthInsight as quartiles with mean and standard deviation.

Additional Information

Please contact OHCS at healthcarestat@utah.gov with any questions regarding clinic quality comparisons.

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