

Health Claims Data Collection, Processing & Public Transparency

Center for Health Information Analysis (CHIA)

chia.unlv.edu

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March 13, 2012

Overview

- * Introduction (history of CHIA and public reporting)
- * Data Collection and Processing
 - * Setting the Format
 - * Receiving Data
 - * Auditing Data (pre versus post)
 - * Releasing the Data (the LDSUA and the Profile)
- * The Future (real time updates, facility audits)
- * Summary & Conclusion

Introduction

- * CHIA was founded in 1986 under governor Bob Miller as an effort toward hospital cost containment.
 - * Hospital inpatient data were collected.
- * 1988-present Nevada Health Choices was produced for the public.

<http://chia.unlv.edu/nevadahealthchoices/html/nevadahealthchoices.htm>

- * 1988-present Standard Reports were created. In 2009 they were made available to the public in electronic format.

<http://chia.unlv.edu/stdreports/stdreports.html>

Introduction

- * 1993-2003 CHIA received Medicaid Claims and Eligibility data and created many of the reports used by Medicaid.
- * 2000-present Nevada Healthcare Quarterly Reports (NHQR) were converted from paper to electronic format, and made available to the public.

<http://chia.unlv.edu/NHQR/utilizationandfinancial.htm>

Introduction

- * 1995-2000 CHIA received Charge Masters from six of the largest hospitals. These were analyzed along with billing data samples in an effort toward cost containment.
- * The passage of AB146 in 2007 added the collection of:
 - * Hospital outpatient data
 - * Ambulatory Surgical Center data
 - * Public Transparency in health data

<http://www.nevadacomparecare.net/Monahrq/home.html>

Introduction

- * The passage of SB338, 340, 264 and AB160 in 2011 added the public posting of:
 - * Provider Preventable Conditions
 - * Hospital readmission rates (pending)
 - * Surgical procedure frequency by surgeon by facility (pending)
 - * An expansion of Quality Indicators
 - * Posting of the Governor's report, Sentinel Events, and Community Benefit reports

<http://www.nevadacomparecare.net/professionals/default.aspx>

Data Collection and Processing

Setting the Format

- * 2007 CHIA switched from the UB-92 to the UB-04 format. All hospitals were contacted. A survey went out to determine how facilities wanted to submit (837 or flat text file). Almost universally the flat file was chosen.
- * 2008 ASCs were contacted to determine what fields they could submit. Formats were finalized and collection began.

<http://chia.unlv.edu/DataFormats.htm>

Data Collection and Processing

Receiving the Data

- * Patient privacy and data security are primary.
- * Facilities submit data by:
 - * Federal express of disc
 - * Secure FTP server <https://www.nvchia.com/uploads/default.aspx>
 - * Email
- * **All** data submitted are encrypted with strong 1024 bit encryption
<http://chia.unlv.edu/hospitalinpatientdata/html/chiacryptor.htm>
- * Data are submitted on a monthly or quarterly basis.

Data Collection and Processing

Auditing Data (pre-load)

- * When data files arrive they are decrypted and audited. The auditor checks...
 - * That all critical fields are present (Principal diagnosis, payer, gender...)
 - * That values are within range (E.g., payers from 10-28, gender 1,2 or 3...)
 - * That patterns of values look reasonable (E.g., if 90% of patients are male or everyone is Self Pay, this would raise a flag.)
- * If data fail the audit, the facility is sent the audit report and a correction and resubmission are requested.

Number of lines processed: 5173

Number of unique records: 2414

Number of records with errors/warnings: 30

Number of records without errors/warnings: 5143

----- Text File Input Field Stats -----

Max number of any error/warning shown on report: 50

Field Attribute	Error/Warning Percentage	Total Errors/Warnings	Errors/Warnings Displayed	Errors/Warnings Not Displayed
Patient Control Number Missing FL03a	0.02%	1	1	0
Type Of Bill Missing FL04	0.04%	1	1	0
Type Of Bill Freq Code Missing FL04	0.04%	1	1	0
Statement Thru Date Missing FL06	0.04%	1	1	0
Patient Zip Missing FL09d	0.70%	17	17	0
Patient Birth Date Missing FL10	0.04%	1	1	0
Patient Gender Code Missing FL11	0.04%	1	1	0
Patient Marital Status Missing FL81	0.04%	1	1	0
Patient Race Code Missing FL81	0.04%	1	1	0
Patient Start Of Care Date Missing FL12	0.04%	1	1	0
Admission Hour Missing FL13	0.04%	1	1	0
Admission Type Code Missing FL14	0.04%	1	1	0
Referral Source Code Missing FL15	0.04%	1	1	0
Discharge Hour Missing FL16	0.04%	1	1	0
Discharge Status Code				

----- GENDER Field Stats -----

Field Value	Total Percentage
M - Male	46.15%
F - Female	53.69%
U - Unknown	0.08%
Blank/Invalid	0.04%

----- PAYER CODE A PRIMARY Field Stats -----

Field Value	Total Percentage
10 - Medicare	9.65%
11 - Black Lung	0%
12 - Charity	0%
13 - Hill Burton Free Care	0%
14 - CHAMPUS/CHAMPVA	0%
15 - Not In Use	0%
16 - Nevada Medicaid	29.95%
17 - Other Medicaid	0%
18 - Self Pay	15.53%
19 - Miscellaneous	0.08%
20 - Commercial Insurer	2.78%
21 - Negotiated Discounts	0%
22 - HMO	13.59%
23 - County Indigent Referral	13.17%
24 - Workman's Compensation	0.87%
25 - Not In Use	0%
26 - Not In Use	0%
27 - Medicare HMO	4.93%
28 - Nevada Medicaid HMO	9.36%
29 - Section 1011 Undocumented Aliens	0%
Unknown Value	0%
Blank Primary Payer Fields	0.04%

Data Collection and Processing

Auditing Data (post-load)

- * After a quarter of data is complete it is loaded into our database. Post-Load audits are then performed. We look at:
 - * Discharge count by month over an entire year to see that there is a reasonable balance of submissions month to month. If anomalies are found, the facility is contacted.
 - * Average daily charges – If charges are submitted incorrectly such as pennies are left off, the charges will show that.

Data Collection and Processing

Auditing Data (post-load)

- * DRGs are checked to make sure all records are grouped (blank or ungroupable DRGs are flagged).
- * If problems are found in data, other audits may occur such as:
 - * Average number of procedures are checked
 - * Mix of – POA, admit type, point of origin, discharge status... (These and more are also checked in the pre-load audit, and are only checked post-load if needed.)
- * If a facility doesn't pass the post-load audit, correction and resubmission is requested.

Data Collection and Processing

Auditing Data

- * **Dealing with Duplicates**

- * In the past CHIA attempted to identify duplicate records based on repeat Patient Control Numbers (PCN). The downside is, each facility uniquely generates its own numbers and these can be duplicated between facilities.
- * Today, monthly discharge counts are checked at the facility level. Anomalies are flagged and raw data is searched.
- * A time/date stamp is put into our database each time data are loaded. This number is used to track duplicate loads.

Sample of Post-Load Audit Count

2011Q2 Records By Month (Inpatient)													
Created On: 12/6/2011 8:38:55 AM													
Hospital_Name	Jul_2010	Aug_2010	Sep_2010	Oct_2010	Nov_2010	Dec_2010	Jan_2011	Feb_2011	Mar_2011	Apr_2011	May_2011	Jun_2011	
Battle Mountain General Hospital	1	3	2	2	1	3	4	1	1	6	3	2	
Boulder City Hospital	38	42	41	35	45	46	51	41	33	54	54	29	
Carson Tahoe Regional Medical Center	896	849	923	872	865	922	954	850	979	938	912	850	
Carson Valley Medical Center	71	60	88	72	81	66	86	60	72	65	67	89	
Centennial Hills Hospital Medical Center	988	829	825	781	831	967	902	878	888	915	830	861	
Churchill Community Hospital	225	218	216	213	161	203	176	179	223	200	195	232	
Desert Canyon Rehabilitation Hospital	72	72	77	77	81	78	76	80	89	85	77	95	
Desert Springs Hospital	895	769	810	918	788	843	849	791	926	863	795	796	
Desert View Regional Medical Center	165	175	185	169	162	165	192	165	203	167	113	110	
Grover C. Dils Medical Center	10	8	7	7	8	10	7	6	9	8	9	5	
HealthSouth Hospital at Tenaya	16	10	12	13	12	13	16	22	30	28	20	10	
HealthSouth Rehabilitation of Henderson	146	133	127	140	133	126	122	124	143	149	142	158	
HealthSouth Rehabilitation of Las Vegas	173	160	153	176	161	166	169	160	177	146	160	140	
Horizon Specialty Hospital-Las Vegas	30	32	21	13	31	52	52	44	50	40	42	40	
Humboldt General Hospital	107	93	79	90	85	94	171	163	122	139	108	100	
Incline Village Community Hospital		1	2				2		1		1		
Kindred Hospital Las Vegas-Desert Springs Campus	30	49	34	36	25	28	38	43	36	25	29	32	
Kindred Hospital Las Vegas-Flamingo Campus	74	66	62	68	52	76	66	75	88	75	80	81	
Kindred Hospital Las Vegas-Sahara Campus	31	40	44	44	36	41	44	40	40	26	43	43	
Mesa View Regional Hospital	133	122	95	94	121	140	103	144	144	114	119	112	
Montevista Hospital	221	271	221	257	231	244	269	251	281	249	278	262	
Mount Grant General Hospital	44	46	63	47	42	42	33	48	55	42	30	58	
Mountain View Hospital	1,482	1,337	1,385	1,422	1,355	1,466	1,408	1,328	1,539	1,471	1,486	1,539	
North Vista Hospital	444	429	417	413	403	509	462	434	510	471	452	462	
Northeastern Nevada Regional Hospital	272	218	255	208	235	241	265	246	255	257	229	251	
Northern Nevada Medical Center	371	336	320	350	315	383	333	305	361	354	361	330	

Data Collection and Processing

Releasing the Data

- * Although no direct patient identifiers are collected, the data are still treated in a secure manner.
- * No researcher can receive data without first having an approved Limited Data Set Use Agreement (LDSUA) in place.

<http://chia.unlv.edu/hospitalinpatientdata/html/acquiringdata.htm>

- * The LDSUA is approved by the State HIPAA officer after examining how the data will be used.
- * The LDSUA is a legally binding document. Breach of document comes with penalties.
- * Data can only be used in the manner specified in the LDSUA. Any variance requires an updated approval.
- * A profile is created for each user. This profile determines what fields will be included in the generated file.

Data Collection and Processing

Releasing the Data

* **The GUID**

- * Every record in the data that CHIA provides to researchers contains a globally unique identifier (**GUID**). This is a 36 digit field generated by Microsoft software tools. No matter who generates one of these codes, anyplace in the world, it is always unique.
- * This number is not sensitive. If a user finds an anomaly in the data, or wants CHIA to look at a particular record, they can email CHIA the GUID for a record(s).

Data Collection and Processing

Releasing the Data

- * **The PUID**

This is a Patient Unique Identifier. It does not say who the patient is, but is unique to patients. It allows patients to be tracked over time. E.g., if a patient has a readmission, the PUID will show it is the same patient as the first admission. Again, we don't know who the patient is, only that it is the same patient.

This field is not available to most researchers.

Data Collection and Processing

Releasing the Data

- * **The Generation of the PUID**
- * The PUID is generated as a probabilistic match
- * It is only generated for adults (children's PUIDs are not reliable – not enough information exists)
- * Tests have shown it to be 99+% accurate over a 15 month period (30,000+ records were used in the test).
- * It is uniquely generated each time a data set is created
- * Due to the high resource use in the generation of the code, updates are only available annually (fiscal/calendar)

Data Collection and Processing

Releasing the Data

- * As per HIPAA guidelines and federal regulations, the minimum number of **sensitive** fields (zip code, dates, race...) are released to perform the requested research.

http://www.phdsc.org/privacy_security/timeline.asp

http://www.access.gpo.gov/nara/cfr/waisidx_02/45cfr164_02.html

- * To receive data, the user must first install encryption software.

<http://chia.unlv.edu/hospitalinpatientdata/html/chiacryptor.htm>

- * Data are submitted to user, encrypted, via a secure FTP server. The data on the server automatically expire after three days.

<https://sharefiles.oit.unlv.edu/>

The Future

real time updates

- * Presently, data are released once a quarter about six months after the quarter is over.
- * In the past data were released closer to the end of each quarter, but changes in data required re-sending data to all users – cumbersome and inconvenient for all.
- * In the future we hope to load **passed** data as they arrive. User would be able to log in, see the status, and in real time submit an order for a download of the latest existing data.

The Future

real time updates

- * A user's login and password would link them to their profile.
- * Data would be generated according to the profile.
- * Data would be encrypted **for the user** and loaded to the secure FTP server.
- * An email notice would be sent to user to retrieve data.
- * Data could only be decrypted by the correct user.

The Future

facility audits

- * **If it proves useful and secure**, an auditor may be written for the facilities. They could audit their own data prior to submitting it to us. If it passes, they could submit it through the auditor. It would be encrypted and sent to CHIA via a secure FTP server.
- * After submission it could be automatically loaded into the database so researchers would have near real time data available.

Summary & Conclusion

- * The Center for Health Information is a UNLV research center. We fulfill state mandates to collect, process, analyze, and publicly report on health data.
- * Our goal is to provide health data and services that will ultimately be used to improve the quality of health in Nevada.

QUESTIONS?