

The Johns Hopkins University ACG[°] System:

State of the Art Technology and A Tradition of Excellence In One Integrated Solution



White Paper - Technical December 2012

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1. Introduction

One System, Many Tools, Many Solutions

While population health care needs are rising, resource availability is not, which increases the need for a better understanding of the morbidity burden of populations. Moreover, the increasing interest in the equitable delivery of healthcare, along with the improvement of data systems and data collection, as well as the progressive integration of primary, secondary and community care by management systems all result in growing global interest in risk adjustment.

The Johns Hopkins ACG® System responds to this growing need by creating a common language for healthcare analysis that benefits healthcare providers, purchasers, and consumers. The ACG System was developed by faculty at the Johns Hopkins Bloomberg School of Public Health to help make health care delivery more efficient and more equitable. The ACG System has broad applicability within the government and private sectors of healthcare delivery systems worldwide.

The Johns Hopkins ACG System methodology has been applied to:

- Predict and prioritize high-risk users for inclusion in care management
- Provide a context for clinical screening applications
- Fairly allocate resources within regions, clinics and practitioners
- Set capitation payments
- Evaluate access to care
- Assess the efficiency of clinics and clinical practices
- Improve quality
- Monitor outcomes
- A Perform clinical analysis, evaluation and research

The ACG System's suite of tools has been used to support basic and complex applications in finance, administration, care delivery, and evaluative research for over two decades. These applications have been both real-time (concurrent) and forward-looking (prospective). No other risk adjustment methodology has been used for so many purposes in so many places, while at the same time showing such high levels of quantitative and qualitative success. Internationally, the ACG System is the standard tool used by numerous private and public health care organizations, provider networks, consultants and research institutes. The flexibility and customizability offered by the ACG System demonstrates that we recognize that one size does not fit all. Like health management and analysis itself, using case-mix or risk adjustment methods involves art as well as science.

For more information about the ACG System, please refer to the Johns Hopkins ACG System Applications White Paper.

2. Technical Specifications

2.1 The ACG ® System

The central element of the Johns Hopkins ACG[®] System Release 10i is a Windowsbased reporting application intended to facilitate implementation of the ACG System within health care settings. The Windows-based software is not only a flexible reporting application, but also provides the ability to run the software in batch mode from the command line, allowing individuals to automate or to queue up multiple jobs. In addition, the software is available as a stand-alone assignment module for several non-Windows-based, UNIX[®] platforms including: Solaris SPARC, AIX, and HP-UX RISC. This chapter discusses using and installing all versions of the software.

□ *Tip*: Input and output file requirements as well as batch mode processing are identical across all supported Windows and non-Windows-based UNIX platforms. This simplifies the use of all ACG-based applications within your organization .

System Requirements

The Johns Hopkins ACG System is built to handle relatively large data volumes and processing requirements. The performance of the software is very much based upon the speed and memory of the user's computer.

Operating System

The following versions of Windows are supported:

- Windows XP Professional, with Service Pack 1 or greater
- Windows XP Home
- Windows Vista (32-bit)
- Windows Vista (64-bit)
- Windows 7 (32-bit)
- Windows 7 (64-bit)

In addition, the software is available as a stand-alone assignment module for several non- Windows-based, UNIX platforms including:

- Solaris SPARC
- AIX
- HP-UX RISC

Central Processing Unit (CPU)

Any Intel[®] 32- or 64-bit compatible CPU is supported. Minimally, a Pentium[®] 4 at 2.0 GHz or faster is recommended. The software is designed to take advantage of multi-threaded processors and additional RAM. Please specify if a 64-bit installation is required; a separate installation package is needed.

Memory (RAM)

The recommendation for RAM is a minimum of 512 megabytes (MB) upon start-up. The System will expand memory upon usage according to what the OS will allow.

The size and complexity of the analyses (spreadsheet-like reports) are limited by the amount of RAM on your computer. If you experience Out of Memory errors while running an analysis, you should close any other open applications or otherwise expand the amount of available RAM, and try re-running the analyses.

The application itself consumes approximately 165 MB of hard drive space. The temporary space required to build an ACG data file is approximately four to five times the size of the import data files. An ACG data file can consume anywhere from five to 100 MB per 100,000 patients (depending on the length of member ID, number of diagnoses, etc.). One to ten gigabytes of free disk space is typically sufficient to handle one million patients.

Integration with Third Party Applications

The ACG System includes a Java API which allows clients to process data one member at a time. This may be useful when building applications which provide data to the System interactively; e.g., within a workflow system. The client can utilize this API with a development environment that can interface with Java.

2.2 Data Requirements and Data Input Files

The **Patient File** is required. Either a **Pharmacy File** or a **Medical Services File** (previously called **Diagnosis File)** must accompany the **Patient File**. Inputting the pharmacy, medical services and patient files maximizes predictive model performance.

The file formats need to be text (either comma or tab delimited.)

The files should relate to a single year, but can also relate to longer time periods, provided they are complete and can be identified.

Patient File

Use a single row per individual.

Ideally the patient file will consist of all individuals "at risk" for receiving health services, including "non-users" who will have no utilization and therefore no costs. Typically a patient file will be a list of patients registered within one healthcare organization or a defined geographic region.

This file contains one row per Patient ID only. The only required columns in this file are patient_id, age, and sex (please reference the table below.) We encourage providing as many data elements as possible.

- ▲ Tip: While the minimum data requirements are only patient_ID, age and sex, the suite of ACG Predictive Models are calibrated, at the discretion of the organization (see additional details below) to take advantage of all available data. To maximize performance of these models, be sure to provide both pharmacy_cost and total_cost information for each member.
- Tip: The utilization markers (inpatient_stays, emergency_visits, outpatient_visits, dialysis_service, nursing_service, major_procedure, cancer treatment) are optional and may be calculated by the software directly if detail is provided in the Medical Services file.
- ▲ Tip: The ACG application will use the Windows Regional settings to format the pharmacy cost and total cost fields on input and for display. If these costs fields are formatted other than a comma thousands separator and period decimal separator, make sure that this is reflected in the organization's Regional Options in the Windows Control Panel.

| Column Name | Required | Description | Data Type | Example |
|----------------|----------|---|--------------|---------------|
| Patient ID | Yes | A unique string to identify the individual member. | Text | 9567213984-01 |
| Age | Yes | The patient's age (in years) as of the end of the bservation/reporting period. | Number | 25 |

The following table outlines the patient file's minimal data elements.

| Column Name | Required | Description | Data Type | Example |
|-----------------------------|--------------------------|---|-----------------|---|
| Gender | Yes | A single character or digit to indicate whether the patient is a Male or Female. The software will use F or 2 to identify a Female; all other values indicate Male. | Text | М |
| Total Costs for the year | Optional but recommended | The total cost (pharmacy plus medical) for this patient during the observation period. | Number | 125000 |
| Total Pharmacy cost | Optional | The total pharmacy cost for this patient during the observation period. | Number | 10250 |
| Analysis Fields | Optional | Fields used to stratify for the purpose of reporting. | User Defined | Geographic reference, provider codes, utilization variables (number of admissions, prescriptions, etc.) |

The following table outlines the patient file's optional data elements to maximize functionality of system.

| Column Name | Column Description | Data Type | Example |
|------------------|---|--------------|-----------------|
| line_of_business | A code to indicate the category of the patient's insurance type. This is typically used by a health plan to identify Commercial, Medicaid, Medicare+Choice, or some other similar category. Government or regional counsels might think about substituting region, state, county, or ZIP code. | Text | СОММ |
| company | A code to indicate the financial company for this patient. This is typically used by a health plan to differentiate financial companies, financial products, or state or regional company systems. | Text | Generic Care 01 |
| product | A code to indicate the patient's insurance product type. This is typically used by a health plan to differentiate an HMO, PPO, or POS product line. | Text | НМО |

| Column Name | Column Description | Data Type | Example |
|---------------------|---|--------------|--|
| employer_group_id | A code to indicate the employer or group that this patient is covered under. This is typically used by a health plan to identify an employer (e.g., General Motors) or another logical member/patient grouping (e.g., Maryland Medicaid). | Text | GM |
| employer_group_name | The readable name associated with employer_group_id | Text | General Motors, Inc. |
| benefit_plan | The patient's benefit plan. This is typically used by a health plan to identify a benefit package or group of benefit packages. | Text | HMO Preferred |
| health_system | The health system that this patient is assigned to. This is typically used by a health plan to identify a risk-sharing arrangement or the hospital system in which the patient's PCP belongs. | Text | SignaMed MidWest |
| pcp_id | A code to identify the patient's Primary Care Practitioner | Text | P24050 |
| pcp_name | The readable name associated with pcp_id | Text | Dr. John Doe M.D. |
| pcp_group_id | A code to identify the group or financial company for the patient's primary care practitioner | Text | V9604 |
| pcp_group_name | A readable name associated with pcp_group_id | Text | SignaMed MidWest Family Practice |
| Pregnant | A code to control the ACG pregnancy related grouping logic. 0 or Blank - Determine pregnancy based upon the patient's other diagnoses. 1 - Patient was pregnant during the observation period. Other Value - Patient was not pregnant during the observation period. | Numb er | 0 |

| Column Name | Column Description | Data Type | Example |
|-----------------|--|--------------|-----------|
| Delivered | A code to control the ACG delivery related grouping logic. | Number | 1 |
| | 0 or Blank - Determine delivery based upon the patient's diagnosis. 1 - Patient delivered a baby during the observation period. 9 - Ignore all information about delivery status. Other Value - Patient did not deliver a baby during the observation period. | | |
| Low_birthweight | A code to control the low birth weight related grouping logic. | Number | 9 |
| | 0 or Blank - Determine low birth weight status upon the patient's diagnosis 9 - Ignore all information about low birth weight. 1 - Patient was born with a low birth weight. Other Value - Patient was not born with a low birth weight. | | |
| Pharmacy_cost | The total pharmacy cost for this patient during the observation period. | Numb er | 10250.00 |
| Total_cost | The total cost (pharmacy plus medical) for this patient during the observation period. | Number | 125000.00 |
| Inpatient_stays | Count of acute care inpatient stays for causes that are not related to childbirth and injury. | Number | 1 |

| Column Name | Column Description | Data Type | Example |
|-------------------------|---|--------------|--------------|
| emergency _visits | Count of emergency room visits that did not lead to a subsequent acute care inpatient hospitalization. | Number | 2 |
| outpatient_visits | Count of ambulatory and hospital outpatient visits. | Number | 12 |
| dialysis_service | Patient with Chronic Renal Failure receives dialysis services. | Number | 1 |
| | 1 - Patient received dialysis services during the observation period. Other Value - Patient did not receive dialysis services during the observation period. | | |
| nursing_service | Patient receives nursing services | Number | 2 |
| | Other Value - Patient did not receive nursing services during the observation period. | | |
| major_procedure | Patient had a major procedure performed in an inpatient setting during the observation period. | Number | 0 |
| | 1 - Patient had a major procedure during the observation period. Other Value - Patient did not have a major procedure during the observation period. | | |
| Cancer_treatment | Patient had a chemotherapy or radiation therapy performed during the observation period | Number | 0 |
| | 1 - Patient had cancer treatment during the observation period. Other Value - Patient did not have cancer treatment during the observation period. | | |
| Care_management_program | This string may be defined by the user to identify members enrolled in care management programs. This field may indicate a Y/N value or can be more descriptive of the individual program. | Text | DM: Diabetes |

Medical Services File

There may be multiple records per individual.

| Column Name | Column Description | Data Type | Example | | | |
|----------------------------------|---|---|-------------------|--|--|--|
| patient_id | A unique string to identify this individual patient. | Text | 9567213984- 01 | | | |
| dx_version_1 | The code set of the diagnosis code in dx_cd_1. The ACG grouping logic currently supports ICD Versions 9, 10 and 10-CM, Read codes, as well as ICPC. | t of the diagnosis code The ACG grouping logic oports ICD Versions 9, M, Read codes, as well | | | | |
| dx_cd_1 | The diagnosis code. In ICD coding, this code cannot be longer than seven characters. Optionally, an explicit decimal can be included. If a decimal is included, it must be in the fourth position. If a decimal is not included, then the diagnosis code cannot be longer than six characters. | Text | 070.22 | | | |
| dx_version_2 | The code set for the related dx_cd_2 column. | Text | 9 | | | |
| dx_cd_2 | The diagnosis code. | Text | 070.22 | | | |
| dx_version_3 | The version for the related dx_cd_3 column. | Text | 9 | | | |
| dx_cd_3 | The diagnosis code. | Text | 070.22 | | | |
| dx_version_4 | The version for the related dx_cd_4 column. | Text | 9 | | | |
| dx_cd_4 | The diagnosis code. | Text | 070.22 | | | |
| dx_version_5 | The version for the related dx_cd_5 column. | Text | 9 | | | |
| dx_cd_5 | The diagnosis code. | Text | 070.22 | | | |
| service_begin_date | The beginning date of the medical service in CCYY-MM-DD format. | Date | 2009-12-31 | | | |
| Service_end_date | The ending date of the medical service in CCYY-MM-DD format. | Date | 2009-12-31 | | | |
| Provider_ID | The servicing provider. | Text | 32415-01 | | | |
| Provider_Specialty | Primary Specialty of Servicing Provider. | Text | FP | | | |
| Provider _Standard_Speciality | Standardized specialty for provider identified by either NPI taxonomy code or U.S. Centers for Medicare | Text | 207Q00000X | | | |

| | and Medicaid Services (CMS) Speciality Code. This field will be used for understanding the plan- specific specialty codes. | | |
|---------------------|---|------|---|
| service_place | The place of service in a format that segments inpatient (IP), emergency department (ED) and outpatient (OP) settings for medical services. A recommended format is the CMS place of service coding. | Text | IP or 21 (the CMS code for acute care inpatient hospital) |
| revenue_code | A code for facility-based services. This is used to identify inpatient confinements through the presence of a room and board revenue center. A recommended format is the CMS revenue center coding. | Text | 0110 |
| procedure_code | The procedure performed by the servicing provider. The recommend- ed format is CPT4, ICPC, OPCS, and/or HCPCS | Text | H028(an OPCS code capturing an appendectomy) |
| Revenue_code_type | Reserved for future international use; the default is null or UR to identify CMS Revenue codes. | Text | UR |
| Procedure_code_type | Reserved for future international use; the default is null or UP to identify CPT4 codes. | Text | UP |

Pharmacy File

There may be multiple records per individual.

| Column Name | Column Description | Data Type | Example |
|----------------|---|--------------|-------------------|
| patient_id | A unique string to identify this individual patient. | Text | 9567213984- 01 |
| rx_fill_date | The date that the prescription was filled in CCYY-MM-DD format. Required for medication adherence. | Date | 2006-01-01 |
| rx_code | The pharmacy code. | Text | 00591505210 |
| rx_code_type | The type of Rx code in the rx_code column. This column can contain an N for an NDC code, or an A for an ATC code. | Text | N |
| Rx_days_supply | The number of refill days per prescription. Required for medication adherence. | Number | 30 |

Note: The inclusion of provider and procedure information is used for provider attribution and categorization of services used to predict hospitalization. The traditional ADG, ACG, EDC and Rx-MG markers are still based exclusively on diagnoses and pharmacy information.

2.3 Results of the Grouping Process

Once the ACG processing is complete, the user is returned to the ACG System for Windows desktop. The user can now begin to review the results of the grouping process, customize the standard analyses using filters and groups, or save the data for future review and/or analysis.

The following seven report tabs will be on the desktop:

2.3.1 Summary Statistics Tab

The first tab presented is Summary Statistics. This information should be used to validate the number of input records, data warnings, and percentage of non-grouped diagnosis and pharmacy codes. Percentages of non-grouped codes above 1% for diagnoses and above 1% for pharmacy codes warrant further investigation.

Which Predictive Model?

The Summary Statistics Tab also provides information on which predictive model was used in selecting the scores (predictions of total cost, pharmacy cost, and probability scores for high total cost and high pharmacy costs) in the summary patient file. The descriptions for each model are described in four sections using the following example:

| Total Cost Model Selected | $DxRx-PM^{1}$ - Total cost ² → Lenient Dx^{3} Total cost ⁴ |
|---------------------------|---|
| Risk Assessment Variables | US non-elderly ⁵ |

¹ Indicates the type of ACG predictive model (Diagnosis (Dx-PM[™]),Pharmacy (Rx-PM[™]), DxRx-PM[™], or DxRxPx-PM[™]).

Indicates the type of prior cost information included in the calibration of the predictive model (no cost, total cost or Rx cost).

³ Indicates what level of diagnostic certainty was applied (lenient or stringent).

Indicates what is being predicted (Total cost or Rx cost).

⁵ Indicates the population to which the model has been calibrated (Non elderly, elderly -65 years or older, or all age model).

2.3.2 Patient Sample Tab

The Patient Sample tab is a sample of records from the ACG output file. In addition to most of the variables found on the input data (age, gender, string of diagnoses), the ACG Output Data contains the list of risk assessment variables assigned by the software. Please see Appendix for additional detail on the ACG Output Data.

| ad Johns | 🖛 Johns Hopkins ACG System 10.0 | | | | | | | | | | | | | | |
|-------------------|---------------------------------|----------------------|--------------|-----------|-----------------|------------------------------------|------------------------|------------------|------------|-----------------|--------------|-------------------|----------|-----------|-----------|
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| ACG Data E | | | | | | | | | | | | | | | |
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| Summary . | stausuts r | adone bampio (Ed | ical weigins | (Age) dei | | ai Cusi, Kisk Disi, (Huspicalizaci | | Suons (| | 1 | [| | | | |
| Patient Id | Age Sex | Line of Business | Company | Product | Employer Id | Employer Name | Benefit Plan | Health System | PCP Id | PCP Name | PCP Group Id | PCP Group Name | Pregnant | Delivered | Low Birth |
| 00001 | 61 F | COMMERCIAL | WEST | HMU | 02 | BILL GATES ENTERPRISES | WEST HIMO | HEALTH SYSTEM AA | AAAB | Angela Avril | AAA CAA | MEDICAL GROUP AAA | | | - |
| 00002 | 1/F | COMMERCIAL | WEDT | HIMO | 02 | DILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEMEA | EAAC 34 AV | Tan Pacella | LAA | MEDICAL GROUP EAA | | | 222 |
| 00003 | 23 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM JA | JAAY | Robert Berry | JAA | MEDICAL GROUP JAA | | | |
| 00004 | 49 1 | COMMERCIAL | WEST | HIMO | 02 | BILL GATES ENTERPRISES | WEST HIMO | HEALTH SYSTEM XA | XAAS | Andrew wister | хад | MEDICAL GROUP XAA | | | |
| 00005 | 48 F | COMMERCIAL | WEST | HMU | 02 | BILL GATES ENTERPRISES | WESTHINU | HEALTH SYSTEM AA | АНАУ | Angela Overton | ААА | MEDICAL GROUP AAA | | | |
| 00006 | 59 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM BA | BAAR | David Regis | BAA | MEDICAL GROUP BAA | | | |
| 00007 | 20 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM FA | FAAQ | Karen Davis | FAA | MEDICAL GROUP FAA | | | |
| 00008 | 47 M | COMMERCIAL | WEST | HMU | 02 | BILL GATES ENTERPRISES | WEST HIMU | HEALTH SYSTEM PA | FAAS | Karen Franks | гаа | MEDICAL GROUP FAA | | | |
| 00009 | 10 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM IA | IAAL | Mark Goering | IAA | MEDICAL GROUP IAA | | | |
| 00010 | 17 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM LA | LAAU | Frank Zinger | LAA | MEDICAL GROUP LAA | | | |
| 00011 | 11 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM UA | UAAD | Stephen Goering | UAA | MEDICAL GROUP UAA | | | |
| 00012 | 8 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM YA | YAAM | Andrew Yale | YAA | MEDICAL GROUP YAA | | | |
| 00013 | 14 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM ZA | ZAAR | Amanda Nabors | ZAA | MEDICAL GROUP ZAA | | | |
| 00014 | 16 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM ZA | ZAAX | Amanda Kerns | ZAA | MEDICAL GROUP ZAA | | | |
| 00015 | 60 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM EA | EAAB | Ian Orange | EAA | MEDICAL GROUP EAA | | | |
| 00016 | 15 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM EA | EAAX | Ian Varison | EAA | MEDICAL GROUP EAA | | | |
| 00017 | 2 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM MA | MAAA | Donna Evans | MAA | MEDICAL GROUP MAA | | | |
| 00018 | 32 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM XA | XAAW | Andrew Berry | XAA | MEDICAL GROUP XAA | | | |
| 00019 | 43 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM BA | BAAB | David Berry | BAA | MEDICAL GROUP BAA | | | |
| 00020 | 10 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM BA | BAAT | David Torik | BAA | MEDICAL GROUP BAA | | | |
| 00021 | 11 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM BA | BAAW | David Wister | BAA | MEDICAL GROUP BAA | | | |
| 00022 | 40 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM HA | HAAR | Lou Johnson | HAA | MEDICAL GROUP HAA | | | |
| 00023 | 46 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM OA | OAAZ | Jonathan Evans | OAA | MEDICAL GROUP OAA | | | |
| 00024 | 10 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM XA | XAAN | Margaret Zinger | XAA | MEDICAL GROUP XAA | | | |
| 00025 | 11 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM XA | XAAQ | Andrew Parker | XAA | MEDICAL GROUP XAA | | | |
| 00026 | 13 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM XA | XAAT | Andrew Argen | XAA | MEDICAL GROUP XAA | | | |
| 00027 | 33 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM XA | XAAV | Andrew Ingersol | XAA | MEDICAL GROUP XAA | | | |
| 00028 | 1 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM XA | XAAW | Andrew Berry | XAA | MEDICAL GROUP XAA | | | |
| 00029 | 34 M | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM DA | DAAG | Ian Ibert | DAA | MEDICAL GROUP DAA | | | |
| 00030 | 35 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM DA | DAAW | Ian London | DAA | MEDICAL GROUP DAA | | | |
| 00031 | 39 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM DA | DAAY | Ian Morris | DAA | MEDICAL GROUP DAA | | | |
| 00032 | 35 F | COMMERCIAL | WEST | HMO | 02 | BILL GATES ENTERPRISES | WEST HMO | HEALTH SYSTEM FA | FAAH | Ida Fearson | FAA | MEDICAL GROUP FAA | | | |
| 4 00000 | EC M | COMMEDICIAL | UPCT | 11640 | 00 | DTUL CATEC ENTERDODICEC | LUPCT LIMAS | UEALTH OVETEM OA | 044C | Des Hear | ~** | MEDICAL CROUP OAA | | | |
| 200000 | | | | | | | | | | | | | | | |

2.3.3 Local Weights Tab

The Local Weights tab provides a distribution of members and cost by ACG. In addition, relative weights have been calculated using the local cost data provided during the import phase. These weights are calculated as the average cost per member for each ACG divided by the average cost per member overall. Relative weights are presented in several standard analyses produced by the software. The choice of local or national weights is also offered within these analyses.

| ag John | s Hopkins ACG System 10.0 | | | | |
|-------------------------|--|------------------------------|-----------------|---------------------------|-------|
| <u>F</u> ile <u>E</u> d | lit <u>V</u> iew <u>A</u> nalyze <u>T</u> ools <u>H</u> elp | | | | |
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| Sam | | | | | ~ |
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| ACG Data | a File (Sample.acgd) | | | | |
| Summar | y Statistics $ig angle$ Patient Sample $ig angle$ Local Weights $ig angle$ Age/Gender Dist $ig angle$ Tota | l Cost Risk Dist \setminus | Hospitalization | n Risk Dist 🛛 Build Optic | ons \ |
| ACG Cd | ACG Description | Patient Count | Total Cost | Concurrent Weight | |
| 0100 | Acute Minor, Age 1 | 16 | 17,877.16 | 0.32 | - |
| 0200 | Acute Minor, Age 2 to 5 | 101 | 41,292.99 | 0.12 | |
| 0300 | Acute Minor, Age > 5 | 819 | 374,804.50 | 0.13 | |
| 0400 | Acute Major | 309 | 369,059.71 | 0.34 | |
| 0500 | Likely to Recur, w/o Allergies | 398 | 261,743.27 | 0.19 | |
| 0600 | Likely to Recur, with Allergies | 48 | 29,489.27 | 0.17 | |
| 0700 | Asthma | 14 | 7,960.30 | 0.16 | |
| 0800 | Chronic Medical, Unstable | 44 | 101,463.61 | 0.66 | 222 |
| 0900 | Chronic Medical, Stable | 214 | 190,738.20 | 0.25 | |
| 1000 | Chronic Specialty, Stable | 7 | 1,450.08 | 0.06 | |
| 1100 | Eye/Dental | 140 | 71,268.35 | 0.14 | |
| 1200 | Chronic Specialty, Unstable | 33 | 41,214.63 | 0.35 | |
| 1300 | Psychosocial, w/o Psych Unstable | 99 | 110,517.23 | 0.32 | |
| 1400 | 1400 Psychosocial, with Psych Unstable, w/o Psych Stable | | 18,997.32 | 0.67 | |
| 1500 | 500 Psychosocial, with Psych Unstable, w/ Psych Stable | | 52,648.74 | 1.50 | |
| 1600 | Preventive/Administrative | | 229,990.22 | 0.10 | |
| 1711 | Pregnancy: 0-1 ADGs, delivered | 12 | 112,473.80 | 2.66 | |
| 1712 | Pregnancy: 0-1 ADGs, not delivered | 10 | 18,391.34 | 0.52 | |
| 1721 | Pregnancy: 2-3 ADGs, no Major ADGs, delivered | 44 | 415,698.62 | 2.68 | |
| 1722 | Pregnancy: 2-3 ADGs, no Major ADGs, not delivered | 18 | 34,648.95 | 0.55 | |
| 1731 | Pregnancy: 2-3 ADGs, 1+ Major ADGs, delivered | 6 | 52,789.77 | 2.50 | |
| 1732 | Pregnancy: 2-3 ADGs, 1+ Major ADGs, not delivered | 4 | 15,291.42 | 1.09 | |
| 1741 | Pregnancy: 4-5 ADGs, no Major ADGs, delivered | 24 | 251,608.97 | 2.98 | |
| 1742 | Pregnancy: 4-5 ADGs, no Major ADGs, not delivered | | 91,344.97 | 1.30 | |
| 1751 | Pregnancy: 4-5 ADGs, 1+ Major ADGs, delivered | 14 | 154,481.69 | 3.14 | |
| 1752 | Pregnancy: 4-5 ADGs, 1+ Major ADGs, not delivered | 5 | 20,116.23 | 1.14 | |
| 1761 | Pregnancy: 6+ ADGs, no Major ADGs, delivered | 21 | 270,756.26 | 3.66 | |
| 1762 | Pregnancy: 6+ ADGs, no Major ADGs, not delivered | 19 | 74,104.39 | 1.11 | |
| 1771 | Pregnancy: 6+ ADGs, 1+ Major ADGs, delivered | 31 | 569,945.75 | 5.22 | |
| 1772 | Pregnancy: 6+ ADGs, 1+ Major ADGs, not delivered | 15 | 177,549.97 | 3.36 | |
| 1800 | Acute Minor and Acute Major | 515 | 840,803.39 | 0.46 | |
| 1900 | Acute Minor and Likely to Recur, Age 1 | 25 | 33,971.60 | 0.39 | |
| 2000 | Acute Minor and Likely to Recur, Age 2 to 5 | 135 | 111,510.40 | 0.23 | - |
| L0400 | | 400 | 100 701 50 | | |

2.3.4 Age/Gender Distribution Tab

The Age/Gender Distribution displays the percent distribution of members in the population by age and gender. The age bands are calculated by the system and are used as input to the predictive model and as the basis for age/gender adjusting the standardized morbidity ratio analyses. This tab provides an opportunity to review the distribution and to ensure that the age field was input into the system correctly.

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| Summary S | Statistics | Patient | Sample $\setminus I$ | ocal Weight: | s ^V Age/ | Gender 🖣 | • |
| Age Band | Males | Male % | Females | Female % | Total | Total % | |
| 00-04 | 426 | 2.97 | 416 | 2.90 | 842 | 5.87 | |
| 05-11 | 695 | 4.85 | 736 | 5.13 | 1,431 | 9.98 | |
| 12-17 | 740 | 5.16 | 747 | 5.21 | 1,487 | 10.37 | |
| 18-34 | 1,508 | 10.52 | 1,694 | 11.82 | 3,202 | 22.34 | |
| 35-44 | 1,094 | 7.63 | 1,215 | 8.48 | 2,309 | 16.11 | |
| 45-54 | 1,346 | 9.39 | 1,555 | 10.85 | 2,901 | 20.24 | |
| 55-64 | 1,011 | 7.05 | 1,153 | 8.04 | 2,164 | 15.09 | |
| 65-69 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | |
| 70-74 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | |
| 75-79 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | |
| 80-84 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | |
| 85+ | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | |
| All Ages | 6,820 | 47.57 | 7,516 | 52.43 | 14,336 | 100.00 | |
| | | | | | | | |
| | | | | | | | _ |

2.3.5 Total Cost Risk Distribution Tab

The Total Cost Risk Distribution tab shows the percent distribution of the population across 4 ranges of probability scores predicting total cost. In a typical population, a very small percentage of patients will have probability scores greater than 0.40. This distribution gives the user a sense of the percentage of patients that would be reviewed when selecting each of these high-risk cut points.

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| ent Sample \backslash Local Weights \backslash | Age/Gende | er Dist 🍸 To | otal Cost Risk Dist 🏹 4 | • |
| High Total Cost Probability Number Percent Cumulative Percent | | | | |
| 0.80 or higher | 0 | 0.00 | 0.00 | |
| 0.60-0.79 | 0 | 0.00 | 0.00 | |
| 0.40-0.59 | 0 | 0.00 | 0.00 | |
| Less than 0.40 | 14,336 | 100.00 | 100.00 | |
| Total | 14,336 | 100.00 | 100.00 | |
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2.3.6 Hospitalization Risk Distribution Tab

The Hospitalization Risk Distribution tab shows the percent distribution of the population across 4 ranges of probability scores predicting hospitalization within 12 months. In a typical population, a very small percentage of patients will have probability scores greater than 0.40. This distribution gives the user a sense of the percentage of patients that would be reviewed when selecting each of these high-risk cut points.

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| Hospitalization Probability Number Percent Cumulative Percent | | | | | |
| 0.80 or higher | 1 | 0.01 | 0.01 | | |
| 0.60-0.79 | 10 | 0.07 | 0.08 | | |
| 0.40-0.59 | 38 | 0.27 | 0.34 | | |
| Less than 0.40 | 14,287 | 99.66 | 100.00 | | |
| Total | 14,336 | 100.00 | 100.00 | | |
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2.3.6 Build Options Tab

The build options tab stores information about the source files, filters and parameters used to build the .acgd file.

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| sample.acgd | | | |
| ACG Data File (sample.acgd) | | | |
| \langle Hospitalization Risk Dist \rangle Build C | Options \ | | |
| Option | Selection | | |
| Patient File | Sample | | |
| Patient Filter | (None) | | |
| Medical File | Sample | | |
| Pharmacy File | Sample | | |
| Risk Assessment Variables | US Non-Elderly | | |
| All Models/Best Models | All | | |
| Ignore/Use Prior Costs | Use | | |
| Diagnostic Certainty | Lenient | | |
| Automatic Diagnosis Filters | Use | | |
| Utilization Markers | Calculate | | |
| Ignore/Use Pharmacy Procedures | Use | | |
| Observation Begin Date | | | |
| Observation End Date | | | |
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2.4 ACG System Reports

The ACG System provides access to a number of standard reports. The format of the report is static, but the focus of the analyses may be customized to the needs of the user with the application of groups and filters. The columns and descriptions for each available analysis follow in the Appendix, which explains each of these analyses in more detail.

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| Patients processed 6 | R×MG | By RUB I | Distribu | ition | | | | |
| Diagnosis fields found | Stand | ardized N | 1orbidit | y Ratio B | y MEDC | | | |
| Diagnoses processed | Stand | ardized N | 1orbidit | y Ratio B | y EDC | | 13 | |
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| Unique diagnoses en | Stand | ardized N | 1orbidit | y Ratio B | y Rx-MG | | 12-51 | |
| Average number of u | Cost I | Prediction | is By Se | elect Con | ditions | | | |
| Of those with a diagr | Cost I | Prediction | is For S | ielected R | tx-MGs | | | |
| Unique unknown diag | Hospi | al Predic | tions Fo | or Select | Major Cond | litions | | |
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| Patients with unknow | Pharn | acy Adh | erence | By Drug (| Class | | | |
| Percent of unique dia | Actua | rial Cost | Project | ions | | | | |
| Unique matched diag | Simple | e Profile | | | | | | |
| Unique unknown diag | Care | Managem | ent Lis | t | | | | |
| Patients with unsupp | Patier | nt Clinical | Profile | Report | | | | |
| Patients with unsupp | Comp | rehensive | e Patier | nt Clinical | Profile Rep | ort | | |
| Pharmacy codes proc | Patier | nt List | | | | | 44 | |
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| Last Pharmacy Hill Da | Warn | ng Distrib | oution | | | | -12-31 | |
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2.4.1 Simple Profile

The Simple Profile Analysis compares actual costs to expected costs for all patients within the same stratification, in order to present a simplified profile.

2.4.2 Care Management List

The Care Management List produces the 1,000 patients that match the selected filters that have the highest probability of having high total costs in the year following the observation period. The data are sorted in descending order by the Probability High Total Cost. The user can use the filtering criteria to isolate a more targeted cohort of patients for further analysis and review. For example, identifying current low users with the high probability of future expense captures individuals who may have the greatest opportunity for early intervention before expenses escalate.

A single member on the filtered list can be sent to the Patient Clinical Profile Report for additional information.

2.4.3 Hospital Predictions for Select Major Conditions

The Hospital Predictions for Select Major Conditions analysis describes hospitalization risk and predicts expenditures in the subsequent time period by a select list of EDCs. The EDCs selected are chronic conditions that contribute independently to the predictive models. This analysis allows the user to stratify a particular population by predicted hospital risk. This can be helpful in sizing programs or understanding the inpatient resource expectations for specific risk groups. The probability score thresholds have the option to reflect any of the hospitalization risk scores. The average predicted resource use columns have the option to reflect total cost or pharmacy cost.

2.4.4 Pharmacy Adherence for Select Conditions Analysis

The Pharmacy Adherence for Select Conditions Analysis describes the medication possession within the population for 17 chronic conditions that are usually treated with pharmaceuticals. Within each condition, this analysis identifies the population of members that have experienced a gap in medication possession in excess of a grace period. The condition level medication possession ratio is provided as a metric to measure characteristics of medication adherence within the target population.

2.4.5 Pharmacy Adherence by Drug Class Analysis

The Pharmacy Adherence by Drug Class Analysis decribes the medication possession within the population for 17 chronic conditions and the corresponding drug classes associated with chronic medication usage. Within each condition, the Pharmacy Adherence for Select Conditions Analysis identifies the population of members prescribed within each drug class that have experienced a gap in medication possession in excess of a grace period The drug class level medication possession ratio is provided as a metric to measure characteristics of medication adherence within the target population. By definition, this report shows only "treated" members. Members may be represented in more than one drug class for a single condition.

2.4.6 Patient Clinical Profile Report

The Patient Clinical Profile Report produces a report for one or more patients that present a profile of their current and predicted costs, along side relative predicted resource utilization, and clinical indicators. This report assists clients with understanding member level risk and resource needs. It is intended to assist with the clinical screening process.

2.4.7 Comprehensive Patient Clinical Profile Report View

The Comprehensive Patient Clinical Profile Report is an expanded version of the Patient Clinical Profile Report that presents a profile of an individual patient or group of patients including current and predicted costs, relative predicted resource utilization, risk of hospitalization, coordination, pharmacy adherence and clinical indicators. This report assists clients with understanding member level risk and resource needs. It is intended to assist with the clinical screening process.

2.4.8 Other Reports and Analyses

RUB Distribution

In many instances users may find it useful to collapse the full set of ACGs into fewer categories, particularly where resource use similarity and not clinical cogency is a desired objective. Often a fewer number of combined categories will be easier to handle from an administrative perspective. ACGs can be combined into what are called Resources Utilization Bands (RUBs).

The software automatically assigns 6 RUB classes:

- 0 No or Only Invalid Dx
- 1 Healthy Users
- 2 Low
- 3 Moderate
- 4 High
- 5 Very High

The RUB Distribution Analysis produces a frequency distribution by Resource Utilization Band. The report layout is show in Appendix section 4.1.1.

ACG Distribution

The foundation of the ACG System is the original Adjusted Clinical Group algorithm. ACGs assign persons to unique, mutually-exclusive morbidity categories based on patterns of disease and expected resource requirements. ACGs can be used in place of traditional age/sex categories when attempting to account for variations in morbidity burden across two or more patient populations. A person falls into one of 94-plus mutually-exclusive ACG health status categories based on a combination of ADGs, age, gender and, if available, birth weight for newborns and delivery status for pregnant women. The ACG Distribution Analysis produces a frequency distribution by ACG code.

ADG Distribution

ACG actuarial cells are based on building blocks called Aggregated Diagnosis Groups (ADGs[™]). Each ADG is a grouping of diagnosis codes that are similar in terms of severity and likelihood of persistence of the health condition over time. All ICD-9 codes assigned by clinicians over an extended period, such as a year, are assigned to one of 32 ADGs. ADGs can be considered a type of morbidity marker. A person may have multiple ADGs. The ADG Distribution Analysis produces a frequency distribution by ADG code. Since a patient can be assigned to potentially more than one ADG code, the total frequency will probably be larger than the overall patient count.

Population Distribution by Age Band and Morbidity

The Population Distribution by Age and Morbidity Analysis produces a frequency distribution by Age Band and Resource Utilization Band. This analysis can be used to directly compare two populations to understand differences in risk and to validate the imported data.

MEDC by RUB Distribution

The MEDC by RUB Distribution Analysis produces a frequency distribution by Major Expanded Diagnosis Cluster (MEDC[™]) and by Resource Utilization Band (RUB). A patient can be assigned to multiple MEDC codes, but only one RUB. This report is useful for case managers because it helps to illustrate that not all individuals with a certain type of condition may be in need of intervention or case management. Rather, it is individuals in the far right of the table, those individuals exhibiting a specific condition AND multiple co-occurring conditions who are most likely to need high levels of health care services. This analysis has the option to report the estimated concurrent resource use in terms of local weights or reference weights. Using local weights, each of the rows is compared to the average of the population while using reference weights. Each of the rows is compared to a reference database.

EDC by RUB Distribution

The EDC by RUB Distribution Analysis produces a frequency distribution by Expanded Diagnosis Cluster (EDC) and by Resource Utilization Band (RUB). A patient can be assigned to multiple EDC codes, but only one RUB. This report is useful for case managers because it helps to illustrate that not all individuals with a certain condition may be in need of intervention or case management. Rather, it is individuals in the far right of the table, those individuals exhibiting a specific condition AND multiple co-occurring conditions who are most likely to need high levels of health care services. This analysis has the option to report the estimated concurrent resource use in terms of local weights or reference weights.

Rx-MG by RUB Distribution Analysis

The Rx-MG by RUB Distribution Analysis produces a frequency distribution of Rx-Defined Morbidity Group (Rx-MG[™]) by Resource Utilization Band (RUB). A patient can be assigned to multiple Rx-MG codes, but only one RUB. Just as there is variability of cost across disease category using diagnoses, there is variability of cost across disease category using pharmacy data. This report is useful for case managers because it helps to illustrate that not all individuals taking a certain type of medication may be in need of intervention or case management.Rather, it is individuals in the far right of the table, those individuals exhibiting a specific condition AND multiple co-occurring conditions who are most likely to need high levels of health care services. This analysis has the option to report the estimated concurrent resource use in terms of local weights or reference weights.

Standardized Morbidity Ratio by MEDC

The Standardized Morbidity Ratio Analysis produces a summary by Major EDC (MEDC) with Observed, Expected and O/E ratio. This report is useful in understanding how the prevalence of certain conditions, as defined by MEDCs, are more or less common than average across the subpopulation of interest. The significance indicator identifies categories that are statistically

different from the age/sex adjusted expected value. At the user's discretion, the expected values can be derived from either the population mean or the reference benchmark data.

Standardized Morbidity Ratio by EDC

The Standardized Morbidity Ratio Analysis produces a summary by EDC with Observed, Expected and O/E ratio. This report is useful in understanding how the prevalence of certain conditions, as defined by EDCs, are more or less common than average across the subpopulation of interest. The significance indicator identifies categories that are statistically different from the age/sex adjusted expected value. At the user's discretion, the expected values can be derived from either the population mean or the reference benchmark data.

Standardized Morbidity Ratio by Major Rx-MG

The Standardized Morbidity Ratio Analysis produces a summary by Major Rx-MG with Observed, Expected and O/E ratio. This report is useful in understanding how the prevalence of certain conditions, as defined by Major Rx-MGs, are more or less common than average across the subpopulation of interest. The significance indicator identifies categories that are statistically different from the age/sex adjusted expected value. At the user's discretion, the expected values can be derived from either the population mean or the reference benchmark data.

Standardized Morbidity Ratio by Rx-MG

The Standardized Morbidity Ratio Analysis produces a summary by Rx-MG with Observed, Expected and O/E ratio. This report is useful in understanding how the prevalence of certain conditions, as defined by Rx-MGs, are more or less common than average across the subpopulation of interest. The significance indicator identifies categories that are statistically different from the age/sex adjusted expected value. At the user's discretion, the expecte values can be derived from either the population mean or the reference benchmark data.

Cost Predictions by Select Conditions

The Cost Predictions by Select Conditions Analysis describes risks and predicts expenditures in the subsequent time period for selected medical conditions. This analysis allows the user to stratify a particular population by predicted risk. This can be helpful in sizing programs or understanding the resource expectations for specific risk groups. At the user's discretion, the average predicted resource use columns may be selected to reflect either total cost (including pharmacy cost) or pharmacy cost only.

Cost Predictions by Rx-MGs

The Cost Predictions by Rx-MGs describes risks and predicts expenditures in the subsequent time period by Rx-MGs (and using only pharmacy data). This analysis allows the user to stratify a particular population by predicted risk. This can be helpful in sizing programs or understanding the resource expectations for specific risk groups. The average predicted resource use columns have the option to reflect total cost or pharmacy cost.

Actuarial Cost Projections

The Actuarial Cost Report represents a summary of information relevant for actuarial purposes and for differentiating groups as high medium and low risk. This analysis provides a number of aggregate measures for both current and future costs expressed as a relative index (scores equal to 1.0 indicate average morbidity or risk, greater than 1.0 indicate greater than average morbidity burden or risk and less than 1.0 less than average).

The Reference CMI is a concurrent measure that compares the group case mix to the referenced benchmark used in the selected Risk Assessment Variables based on the mix of ACGs assigned to the members of the group. The Local CMI is a similar measure but the comparison group is based on the population presented to the ACG System. Mean Total PRI is a measure of prospective risk using the ACG Predictive Model to forecast total cost relative to the plan average. Likewise, the Mean Rx PRI measures the prospective risk of pharmacy cost relative to the plan average.

There are additional rate-based measures provided to describe the factors contributing to group risk. Comparisons can be made between the group and the population mean by comparing the groups tab to the "overall" tab in the analysis window.

Patient List Analysis

The Patient List Analysis generates all of the output of the system as a single row per patient. This is very similar to the information that is presented in the patient sample, but the user may apply filters prior to exporting the data.

Warning List

The Warning List produces a list of all patients that had ACG calculation warnings. The list layout can be found in Appendix section 4.1.7.

Warning Distribution Analysis

The Warning Distribution Analysis produces a frequency distribution by Warning.

3. Conclusion

The ACG System is available under the auspices of a world-renowned academic research institution: The Johns Hopkins University. The ACG System Research and Development team has been performing risk measurement and categorization research for over 30 years. The Johns Hopkins Bloomberg School of Public Health has an unwavering commitment to the ongoing development of the ACG System and its dissemination to both private sector and government users. The goal of the ACG System is to promote equitable, effective, and efficient health care around the globe; the Johns Hopkins ACG System is part of our strategy.

Many software vendors integrate the ACG System into their own products. Our distributors include leading health care analytic firms that have integrated the ACG System into their own products and services.

For more information about the ACG System, please refer to the Johns Hopkins ACG System Applications White Paper.

3.1 How to Contact Us

Dr. Karen Kinder Executive Director, ACG International Roemerstrasse 63 54455 Serrig Germany Phone: +49-6581-998456 e-mail: kkinder@jhsph.edu

More Information

For the latest information about our product and services, please see the following website:

http://www.acg.jhsph.edu

4.1 ACG System Available Reports

4.1.1 Simple Profile

| Column Name | Definition |
|-----------------------------------|---|
| Patient Count | The number of patients within the current stratification. |
| Total Actual Cost | Sum of total cost within the current stratification. |
| Plan Average Total Cost | Sum of total cost / total patient count for entire plan. Note that this is taken from the complete data file, ignoring any report-specific filters. |
| Actual To Plan Average | A ratio expressing the actual cost to plan average cost. A value greater than 1 indicates the actual cost is greater than the plan average. Calculated as Total Actual Cost / Patient Count / Plan Average Total Cost. |
| ACG Adjusted Expected Cost | Expected costs based upon the ACGs experienced within the current stratification. Calculated as the sum of (number of patients within each ACG within the current stratification x the plan-wide average cost per ACG) for all ACGs. Note that the plan-wide average cost per ACG is taken from the complete data file, ignoring any report-specific filters. |
| Expected to Plan Average | A ratio expressing the expected cost to the plan average cost. A value greater than 1 indicates that the expected costs were higher than the actual costs. Calculated as ACG Adjusted Expected Cost / Patient Count / Plan Average Total Cost. |
| Actual to Expected Ratio | A ratio expressing the actual costs to the ACG expected costs. A value greater than 1 indicates that the actual costs were higher than the expected costs. Calculated as Total Actual Cost / ACG Adjusted Expected Cost. |
| Case-Mix vs. Reference Data | Calculated as the mean of Reference Unscaled Concurrent Weight within the current stratification. |

4.1.2 Care Management List

| Column Name | Definition |
|---------------------------------------|---|
| Patient ID | A unique identifier for the patient. |
| Age | The patient's age at the end of the observation period. |
| Sex | The patient's sex. |
| Total Cost | The total medical and pharmacy cost for this patient during the observation period. |
| Rescaled Total Cost Resource Index | The rescaled (adjusted with local data) estimated total costs for the year following the observation period, expressed as a relative weight. |
| Chronic Condition Count | The number of EDCs this patient has that indicate chronic condition diagnoses. |
| Frailty Flag | A flag indicating that this patient appears to be clinically frail. |
| Rheumatoid Arthritis | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication.) |
| Persistent Asthma | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication.) |
| Age-Related Macular Degeneration | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication.) |
| | |
| Bi-Polar Disorder | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT= Treated with Pharmacy.) |
| Chronic Renal Failure | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication.) |
| Congestive Heart Failure | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication,) |
| | |

| Column Name | Definition |
|---------------------------------|--|
| Depression Diabetes | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.)A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx |
| | Indication, TRT=Treated with Pharmacy.) A flag indicating if this patient has this medical condition and how it was |
| Glaucoma | indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| Human Immunodeficiency Virus | |
| Hypertension | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| Hypothyroidism | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| Immunosuppresion/Transplant | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| Ischemic Heart Disease | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| Disorders of Lipid Metabolism | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| Osteoporosis | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| Parkinson's Disease | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication.) |
| Schizophrenia | |
| Seizure Disorders | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy.) |
| | |

4.1.3 Hospital Predictions for Select Major Conditions

| Column Name | Definition |
|-------------------------------------|--|
| Condition | Selected medical conditions and ALL CASES (which includes all patients, even those without any of the listed conditions.) |
| Total Cases | The number of patients that had Condition within the current stratification. |
| Cases Prob<0.4 | The number of Total Cases that have a probability of hospitalization < 0.4. |
| Cases Prob≥0.4 | The number of Total Cases that have a probability of hospitalization \geq 0.4. |
| Cases Prob≥0.6 | The number of Total Cases that have a probability of hospitalization \geq 0.6. |
| Cases Prob≥0.8 | The number of Total Cases that have a probability of hospitalization \geq 0.8. |
| Avg. Pred. Resource Use | The mean of the predicted cost resource index for all patients within the current stratification. |
| Avg. Pred. Resource Use Prob<0.4 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of hospitalization < 0.4. |
| Avg. Pred. Resource Use Prob≥0.4 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of hospitalization ≥ 0.4 . |
| Avg. Pred. Resource Use Prob≥0.6 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of hospitalization ≥ 0.6 . |
| Avg. Pred. Resource Use Prob≥0.8 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of hospitalization ≥ 0.8 . |

4.1.4 Pharmacy Adherence for Select Conditions Report Layout

| Column Name | Definition |
|--|--|
| Condition | Selected medical conditions. |
| Eligible Cases | The number of patients with evidence of the Condition. |
| Cases not meeting Treatment Criteria | The number of patients identified as ICD, Rx, or BTH for the condition. |
| Cases Meeting Treatment Criteria | The number of patients identified as TRT for the condition. |
| Cases with No Rx Gap | Of those identified as TRT, the number of patients with Rx Gaps=0 for the condition. |
| Cases with 1+ Rx Gap | Of those identified as TRT, the number of patients with Rx Gaps>0 for the condition. |
| Avg. PRI All Eligible Cases | The mean of the predicted cost resource index for all patients within the current stratification. |
| Avg. PRI not Meeting Treatment Criteria | The mean of the predicted cost resource index for all patients within the current stratification that have been identified as ICD, Rx, or BTH for the condition. |
| Avg. PRI Meeting Treatment Criteria | The mean of the predicted cost resource index for all patients within the current stratification that have been identified as TRT for the condition. |
| Avg PRI No Rx Gaps | Of those identified as TRT, the mean of the predicted cost resource index for all patients within the current stratification that Rx Gaps=0. |

| Column Name | Definition |
|--------------------------------------|--|
| Avg. PRI 1+ Rx Gaps | Of those identified as TRT, the mean of the predicted cost resource index for all patients within the current stratification that Rx Gaps>0. |
| Avg. CSA | Of those identified as TRT, the mean CSA within the current stratification. |
| Avg. MPR | Of those identified as TRT, the mean MPR within the current stratification. |
| Avg # Rx Gaps for High Risk Cases | The mean number of Rx Gaps for those patients within the current stratification that are identified as TRT and have a probability of high cost >0.4. |

4.1.5 Patient Clinical Profile

| Column Name | Definition |
|--------------------------------------|---|
| Patient Id | The patient's unique identifier. |
| PCP Id | The primary care practitioner assigned to the patient. |
| Product | The product identifier the patient is assigned to. |
| Age | The patient's age in years. |
| Gender | The patient's gender (F=Female, M=Male). |
| Resource Utilization Band | The resource utilization band assigned to this patient. |
| Local Weight | The local concurrent weight assigned to this patient. This weight represents the relative expected resource utilization for this patient, based upon their ACG code. |
| Total Cost | The total cost (pharmacy plus medical) reported for this patient during the observation period. |
| Rx Cost | The total pharmacy cost reported for this patient during the observation period. |
| Chronic Condition Count | The chronic condition count assigned to this patient. |
| Hospital Dominant Morbidity Types | A count of ADGs containing trigger diagnoses indicating a high probability (typically greater than 50 %) of future admission. |
| Frailty Flag | A flag for any one of 12 diagnostic clusters that represent discrete conditions consistent with frailty (e.g., malnutrition, dementia, incontinence, difficulty in walking, etc.) |
| Total Cost | The patient's total costs during the observation period. |
| Rx Cost | The patient's pharmacy costs during the observation period. |
| Model | The specific ACG model parameters used in predicting total cost and pharmacy cost. |

| Column Name | Definition |
|-------------------------------------|---|
| Probability High Total Cost | The probability that this patient will be in the top 5 percent of total cost in the subsequent year. |
| Predicted Total Cost Range | The predicted total cost for this patient for the subsequent year. |
| Probability High Rx Cost | The probability that this patient will be in the top 5 percent of pharmacy cost in the subsequent year. |
| Predicted Rx Cost | The predicted pharmacy cost for this patient for the subsequent year. |
| Age-Related Macular Degeneration | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication). |
| Bi-Polar Disorder | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, TRT=Treated with Pharmacy). |
| Congestive Heart Failure | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy). |
| Depression | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy). |
| Diabetes | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy). |
| Glaucoma | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy). |
| Human Immunodeficiency Virus | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy). |
| Disorders of Lipid Metabolism | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy). |
| Hypertension | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy). |
| Hypothyroidism | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy). |

| Column Name | Definition |
|----------------------------------|---|
| Immunosuppression/ Transplant | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy). |
| Ischemic Heart Disease | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, TRT=Treated with Pharmacy). |
| Osteoporosis | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with |
| Parkinson's Disease | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with |
| Persistent Asthma | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with |
| Rheumatoid Arthritis | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with |
| Schizophrenia | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, TRT=Treated with Pharmacy). |
| Seizure Disorders | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with |
| COPD | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication). |
| Chronic Renal Failure | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication). |
| Low Back Pain | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication). |
| Avg Gap | For periods identified as a gap in medication possession, the average number of days without medication. |
| High Impact Conditions | A subset of EDCs and Rx-MGs assigned to the current patient and which are expected to have a significant contribution to future cost. |
| Moderate Impact Conditions | A subset of EDCs and Rx-MGs assigned to the current patient and which are expected to have a moderate contribution to future cost. |
| Low Impact Conditions | A subset of EDCs and Rx-MGs assigned to the current patient and which are expected to have minimal contribution to future cost. |

4.1.6 Comprehensive Patient Clinical Profile

| Column Name | Definition |
|-----------------------------|--|
| Patient Id | The patient's unique identifier. |
| Age | The patient's age in years. |
| Gender | The patient's gender (F=Female, M=Male). |
| PCP Id | The primary care practitioner assigned to the patient. |
| Product | The product identifier the patient is assigned to. |
| Resource Utilization Band | The resource utilization band assigned to this patient. |
| Local Weight | The local concurrent weight assigned to this patient. This weight represents the relative expected resource utilization for this patient, based upon their ACG code. |
| Model | The specific ACG model parameters used in predicting total cost and pharmacy cost. |
| Total Cost | The patient's total costs during the observation period. |
| Rx Cost | The patient's pharmacy costs during the observation period. |
| Probability High Total Cost | The probability that this patient will be in the top five percent of total cost in the subsequent year. |
| Predicted Total Cost Range | The predicted total cost for this patient for the subsequent year. |
| Probability High Rx Cost | The probability that this patient will be in the top five percent of pharmacy cost in the subsequent year. |
| Predicted Rx Cost Range | The predicted pharmacy cost for this patient for the subsequent year |

| Column Name | Definition |
|--|--|
| High Risk Unexpected Pharmacy | A flag (Y/N) indicating the patient has a probability >0.4 of being high morbidity and having unexpectedly high pharmacy use. |
| Chronic Condition Count | The chronic condition count assigned to this patient. |
| Active Ingredient Count | The number of different active ingredients/route of administration combinations prescribed to this patient. |
| Frailty Flag | A flag for any one of 12 diagnostic clusters that represent discrete conditions consistent with frailty (e.g., malnutrition, dementia, incontinence, difficulty in walking, etc.) |
| Coordination Risk | Categorization of the patient's risk of poor coordination of care, codified as Unlikely Coordination Issue (UCI), Possible Coordination Issue (PCI), or Likely Coordination Issue (LCI). |
| # Unique Provider Seen | An indication of the number of physicians providing outpatient evaluation and management services to this patient. |
| # Specialty Types Seen | An indication of the number of specialties providing outpatient evaluation and management services to this patient. |
| Generalist Seen | A flag (Y/N) indicating outpatient evaluation and management services were provided by a Generalist. |
| Management Visit Count | The count of face-to-face outpatient visits that were used as the denominator for the Majority Source of Care Percent. |
| % Visits by Majority Source of Care | Percent of the outpatient visits provided by the physician(s) that saw the patient most over the observation period. |
| Outpatient Visits | Count of ambulatory and hospital outpatient visits. |
| ER Visits | Count of emergency room visits that did <u>not</u> lead to a subsequent acute care inpatient hospitalization. |
| Inpatient Admissions | Count of acute care inpatient stays for causes that are <u>not</u> related to child- birth and injury. |
| Major Procedure Performed | A flag (Y/N) indicating the patient had a major inpatient procedure performed. |
| Dialysis Service | A flag (Y/N) indicating the patient had a dialysis service performed. |
| Nursing Service | A flag (Y/N) indicating the patient had a nursing service performed. |
| Cancer Treatment | Indicates patient had cancer treatment performed during the observation period. |
| Hospital Dominant Morbidity Types | A count of ADGs containing trigger diagnoses indicating a high probability (typically greater than 50 %) of future admission |

| Column Name | Definition |
|--|--|
| Probability Hospital Admission (six months) | The probability that this patient will experience a hospitalization in the subsequent six months. |
| Probability Hospital Admission (12 months) | The probability that this patient will experience a hospitalization in the subsequent 12 months. |
| Probability ICU/CCU Admission | The probability that this patient will experience an ICU / CCU hospitalization in the subsequent 12 months. |
| Probability Injury-Related Admission | The probability that this patient will experience an injury-related hospitalization in the subsequent 12 months. |
| Probability Long-term Admission (12+ days) | The probability that this patient will experience an extended hospitalization in the subsequent 12 months. |
| Age-Related Macular Degeneration | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication). |
| Bi-Polar Disorder | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Congestive Heart Failure | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Depression | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Diabetes | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Glaucoma | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |

| Column Name | Definition |
|--------------------------------|---|
| Human Immunodeficiency Virus | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Disorders of Lipid Metabolism | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Hypertension | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Hypothyroidism | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Immunosuppression / Transplant | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Ischemic Heart Disease | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Osteoporosis | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Parkinson's Disease | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx |

| Column Name | Definition |
|-----------------------|---|
| | BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Persistent Asthma | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Rheumatoid Arthritis | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Schizophrenia | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| Seizure Disorders | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Treated with Pharmacy), CSA and MPR are measures of medication possession, Refill gaps indicate any gaps in possession in excess of a grace period, Untreated indicates members identified with the condition without indication of ongoing medication. |
| COPD | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication). |
| Chronic Renal Failure | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication). |
| Low Back Pain | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication). |
| Drug Class | The targeted chronic medication drug class prescribed to the patient for the selected condition |
| Days' Supply | The total prescribing days within the drug class for the observation period |
| Gaps | An integer count indicating that number of times during the observation period the patient was without medication in excess of a grace period. |
| Gap Days | For periods identified as a gap in medication possession, the sum of days without medication. |

| Column Name | Definition |
|----------------------------|---|
| Max Days | For periods identified as a gap in medication possession, the |
| | longest period of time without medication |
| High Impact Conditions | A subset of EDCs and Rx-MGs assigned to the current patient and which are expected to have a significant contribution to |
| Moderate Impact Conditions | A subset of EDCs and Rx-MGs assigned to the current patient and which are expected to have a moderate contribution to future |
| Low Impact Conditions | A subset of EDCs and Rx-MGs assigned to the current patient and which are expected to have minimal contribution to future |



4.1.7 Other Reports and Analyses

Resource Utilization Band (RUB) Distribution

| Column Name | Definition |
|------------------------------|---|
| Resource Utilization Band | Each RUB that was assigned to a patient within the current stratification. |
| RUB Description | The description for the resource utilization band. |
| Frequency | The number of patients with this RUB and in this stratification that meet the optional filter criteria. |
| Freq % | The percentage of patients within this stratification and meeting the optional filter criteria that were assigned this RUB. |

ACG Distribution

| Column Name | Definition |
|-----------------|---|
| ACG Cd | Each ACG code that was assigned to a patient. |
| ACG Description | The description for ACG Cd. |
| Frequency | The number of patients with this ACG in this stratification meeting the optional filter criteria. |
| Freq % | The percentage of patients within this stratification and meeting the optional filter criteria that were assigned this ACG. |

ADG Distribution

| Column Name | Definition |
|-----------------|---|
| ADG Cd | Each ADG code that was assigned to at least one patient in this stratification. |
| ADG Description | The description for ADG Code. |
| Frequency | The number of patients with this ADG in this stratification meeting the optional filter criteria. |
| Freq % | The percentage of patients within this stratification and meeting the optional filter criteria that were assigned this ADG. |



| Column Name | Definition |
|---------------|--|
| Age Band | Each Age Band that was assigned to a patient within the current stratification |
| Patient Count | The number of patients in the related age band and stratification. |
| RUB 0 | The percent of all patients in this stratification in the related Age Band with RUB 0. |
| RUB 1 | The percent of all patients in this stratification in the related Age Band with RUB 1. |
| RUB 2 | The percent of all patients in this stratification in the related Age Band with RUB 2. |
| RUB 3 | The percent of all patients in this stratification in the related Age Band with RUB 3. |
| RUB 4 | The percent of all patients in this stratification in the related Age Band with RUB 4. |
| RUB 5 | The percent of all patients in this stratification in the related Age Band with RUB 5. |
| Total | The percent of all patients in this stratification in the related Age Band. |

Population Distribution by Age Band and Morbidity



MEDC by RUB Distribution

| Column Name | Definition |
|--|---|
| MEDC Cd | Each MEDC code that was assigned to at least one patient with a RUB > 0. |
| MEDC Description | The description for MEDC Cd. |
| Total Cases | The number of patients that are assigned the related MEDC Cd. |
| Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification across all RUBs. |
| RUB 1 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 1 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 2 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 2 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 3 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 3 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 4 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 4 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 5 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 5 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |



EDC by RUB Distribution

| Column Name | Definition |
|--|---|
| EDC Cd | Each EDC code that was assigned to at least one patient with a RUB > 0. |
| EDC Description | The description for EDC Cd. |
| Total Cases | The number of patients that are assigned the related EDC Cd. |
| Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification across all RUBs. |
| RUB 1 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 1 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 2 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 2 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 3 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 3 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 4 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 4 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 5 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 5 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |



| | Rx-MG | by | RUB | Distribution |
|--|-------|----|-----|--------------|
|--|-------|----|-----|--------------|

| Column Name | Definition |
|--|---|
| Rx-MG Cd | Each Rx-MG code that was assigned to at least one patient with a RUB > 0. |
| Rx-MG Description | The description for Rx-MG Cd. |
| Total Cases | The number of patients that are assigned the related Rx-MG Cd. |
| Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification across all RUBs. |
| RUB 1 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 1 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 2 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 2 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 3 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 3 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 4 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 4 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |
| RUB 5 % Dist | The percentage of patient assignments to this stratification in this RUB is out of the total patients in this RUB. |
| RUB 5 Est. Concurrent Resource Use | The mean of the national rescaled or local concurrent weight (based upon which weight type was selected in Report Options) for all patients in this stratification in this RUB. |



Standardized Morbidity Ratio by EDC

| Column Name | Definition |
|--------------------------|---|
| EDC Cd | Each EDC code that was assigned to at least one patient. |
| EDC Name | The description for EDC Cd. |
| Patient Count | The number of patients assigned this EDC in this stratification. |
| Observed/1000 | The number per 1,000 patients in the current stratification that were assigned to this EDC. Calculated as Patient Count / total Patient Count within the same stratification for all EDCs x 1000. |
| Age/Sex Expected/1000 | The number of expected observations per 1,000 after adjusting for the age/sex distribution in the current stratification. Calculated as total of (overall age/sex prevalence rate x number of patients in age/sex in current stratification) for all age/sex combinations / number of patients in the current stratification for all EDCs x 1000. |
| SMR | Observed to Expected Ratio. Calculated as (Observed / 1000) / (Age/Sex Expected/1000). |
| 95% Confidence Low | The lower range of the 95% confidence interval. Calculated as SMR - (1.96 x SQRT(SMR / expected count)). |
| 95% Confidence High | The upper range of the 95% confidence interval. Calculated as SMR + (1.96 x SQRT(SMR / expected count)). |
| Significance | An indication of statistical significance. Contains a "-" (minus sign) when the SMR is significant and less than 1, contains a "+" (plus sign) when the SMR is significant and greater than 1. |



Standardized Morbidity Ratio by MEDC

| Column Name | Definition |
|--------------------------|--|
| MEDC Cd | Each MEDC code that was assigned to at least one patient. |
| MEDC Name | The description for MEDC Cd. |
| Patient Count | The number of patients assigned this MEDC in this stratification. |
| Observed/1000 | The number per 1,000 patients in the current stratification that were assigned to this MEDC. Calculated as Patient Count / total Patient Count within the same stratification for all MEDCs x 1000. |
| Age/Sex Expected/1000 | The number of expected observations per 1,000 after adjusting for the age/sex distribution in the current stratification. Calculated as total of (overall age/sex prevalence rate x number of patients in age/sex in current stratification) for all age/sex combinations / number of patients in the current stratification for all MEDCs x 1000. |
| SMR | Observed to Expected Ratio. Calculated as (Observed / 1000) / (Age/Sex Expected/1000). |
| 95% Confidence Low | The lower range of the 95% confidence interval. Calculated as SMR - (1.96 x SQRT (SMR / expected count)). |
| 95% Confidence High | The upper range of the 95% confidence interval. Calculated as SMR + (1.96 x SQRT (SMR / expected count)). |
| Significance | An indication of statistical significance. Contains a "-" (minus sign) when the SMR is significant and less than 1, contains a "+" (plus sign) when the SMR is significant and greater than 1. |



| Column Name | Definition |
|--------------------------|---|
| Major Rx-MG Cd | Each Major Rx-MG code that was assigned to at least one patient. |
| Major Rx-MG Name | The description for Major Rx-MG Cd. |
| Patient Count | The number of patients assigned this Major Rx-MG in this stratification. |
| Observed/1000 | The number per 1,000 patients in the current stratification that were assigned to this Major Rx-MG. Calculated as Patient Count / total Patient Count within the same stratification for all Major Rx-MGs x 1000. |
| Age/Sex Expected/1000 | The number of expected observations per 1,000 after adjusting for the age/sex distribution in the current stratification. Calculated as total of (overall age/sex prevalence rate x number of patients in age/sex in current stratification) for all age/sex combinations / number of patients in the current stratification for all Major Rx-MGs x 1000. |
| SMR | Observed to Expected Ratio. Calculated as (Observed / 1000) / (Age/Sex Expected/1000). |
| 95% Confidence Low | The lower range of the 95% confidence interval. Calculated as SMR - (1.96 x SQRT(SMR / expected count)). |
| 95% Confidence High | The upper range of the 95% confidence interval. Calculated as SMR + (1.96 x SQRT(SMR / expected count)). |
| Significance | An indication of statistical significance. Contains a "-" (minus sign) when the SMR is significant and less than 1, contains a "+" (plus sign) when the SMR is significant and greater than 1. |

Standardized Morbidity Ratio by Major Rx-MG



Standardized Morbidity Ratio by Rx-MG

| Column Name | Definition |
|-------------------------------|--|
| Rx-MG Cd | Each Rx-MG code that was assigned to at least one patient. |
| Rx-MG Name | The description for the Rx-MG Cd. |
| Patient Count | The number of patients assigned to this Rx-MG in this stratification. |
| Observed / 1,000 | The number per 1,000 patients in the current stratification that were assigned to this Rx-MG. Calculated as Patient Count / total Patient Count within the same stratification for all Rx-MGs x 1,000. |
| Age / Sex Expected / 1,000 | The number of expected observations per 1,000 after adjusting for the age / sex distribution in the current stratification. Calculated as total of (overall age / sex prevalence rate x number of patients in age / sex in current stratification) for all age / sex combinations / number of patients in the current stratification for all Rx-MGs x 1,000. |
| SMR | Observed to Expected Ratio. Calculated as: (Observed / 1,000) / (Age / Sex Expected / 1,000). |
| 95% Confidence Low | The lower range of the 95% confidence interval. Calculated as: SMR - (1.96 x SQRT (SMR / Expected Count)). |
| 95% Confidence High | The upper range of the 95% confidence interval. Calculated as: SMR + (1.96 x SQRT (SMR / Expected Count)). |
| Significance | An indication of statistical significance. Contains a "-" (minus sign) when the SMR is significant and less than one, contains a "+" (plus sign) when the SMR is significant and greater than one. |



Cost Predictions by Select Conditions

| Column Name | Definition |
|-------------------------------------|---|
| Condition | Selected medical conditions and ALL CASES (which includes all patients, even those without any of the listed conditions). |
| Total Cases | The number of patients that had Condition within the current stratification. |
| Cases Prob<0.4 | The number of Total Cases that have a probability of being high cost < 0.4. |
| Cases Prob≥0.4 | The number of Total Cases that have a probability of being high cost \geq 0.4. |
| Cases Prob≥0.6 | The number of Total Cases that have a probability of being high cost \geq 0.6. |
| Cases Prob≥0.8 | The number of Total Cases that have a probability of being high cost \geq 0.8. |
| Avg. Pred. Resource Use | The mean of the predicted cost resource index for all patients within the current stratification. |
| Avg. Pred. Resource Use Prob<0.4 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of being high cost < 0.4. |
| Avg. Pred. Resource Use Prob≥0.4 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of being high cost \geq 0.4. |
| Avg. Pred. Resource Use Prob≥0.6 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of being high cost ≥ 0.6 . |
| Avg. Pred. Resource Use Prob≥0.8 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of being high cost ≥ 0.8 . |



Cost Predictions by Rx-MGs

| Column Name | Definition |
|-------------------------------------|---|
| Rx-Morbidity Groups | Rx-MGs and ALL CASES (all patients, even those without any of the listed Rx-MGs. |
| Total Cases | The number of patients that had Rx-Morbidity Group within the current stratification. |
| Cases Prob<0.4 | The number of Total Cases that have a probability of being high $\cos t < 0.4$. |
| Cases Prob≥0.4 | The number of Total Cases that have a probability of being high cost ≥ 0.4 . |
| Cases Prob≥0.6 | The number of Total Cases that have a probability of being high cost \geq 0.6. |
| Cases Prob≥0.8 | The number of Total Cases that have a probability of being high cost \geq 0.8. |
| Avg. Pred. Resource Use | The mean of the predicted resource use for all patients within the current stratification. |
| Avg. Pred. Resource Use Prob<0.4 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of being high cost < 0.4. |
| Avg. Pred. Resource Use Prob≥0.4 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of being high cost \geq 0.4. |
| Avg. Pred. Resource Use Prob≥0.6 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of being high cost \geq 0.6. |
| Avg. Pred. Resource Use Prob≥0.8 | The mean of the predicted cost resource index for all patients within the current stratification that have a probability of being high cost \geq 0.8. |



Actuarial Cost Projections

| Column Name | Definition |
|----------------------------------|--|
| Cases | Number of patients in this stratification. |
| Reference CMI (D) | Average of Reference Unscaled Concurrent Weight in this stratification. Scores <1.0 indicate healthier, >1.0 indicate sicker than the reference population. |
| Local CMI (D) | Average of Local Concurrent Weight in this stratification. Useful only for sub-group analysis. Equal to 1.0 for the total population, interpretation the same as Reference CMI for population sub-groupings. |
| Mean Total PRI | Average or Rescaled Total Cost Resource Index for patients in this stratification. |
| Mean Rx PRI | Average or Rescaled Pharmacy Cost Resource Index for patients in this stratification. |
| % High Risk Total Cost | Percent of patients with Probability High Total Cost > 0.4 in this stratification. |
| % High Risk Hospital | Percent of patients with Probability Inpatient Hospitalization within 12 months > 0.4 in this stratification. |
| % High Risk Hospital-6 months | Percent of patients with Probability Inpatient Hospitalization within 6 months > 0.4 in this stratification. |
| % High Risk ICU Hospital | Percent of patients with Probability Inpatient ICU / CCU Hospitalization > 0.4 in this stratification. |
| % High Risk Extended Hospital | Percent of patients with Probability Extended Hospitalization > 0.4 in this stratification. |
| % High Risk Injury Hospital | Percent of patients with Probability Hospitalization for Injury > 0.4 in this stratification. |
| % HOSDOM (D) | Percent of patients with Hospital Dominant Count \geq 1 in this stratification. |
| % Frail (D) | Percent of patients with indications of Frailty in this stratification. |
| % Psychosocial | Percent of patients with indications of Psychosocial diagnoses in this stratification. |
| % Discretionary (D) | Percent of patients with indications of discretionary diagnoses in this stratification. |
| Age / Sex Relative Risk | The age / sex adjusted relative risk for all patients in this stratification. |
| Observed to Expected (D) | Observed to Expected ratio, calculated as actual cost / ACG adjusted expected cost. Useful only for sub-group analysis. Scores <1.0 consuming less than expected, >1.0 consuming more than expected. |



Patient List

| Column | Definition |
|-------------------------------|---|
| Inpatient Hospitalizations | Count of acute care inpatient stays for causes that are <u>not</u> related to child-birth and injury. |
| Emergency Visits | Count of emergency room visits that did <u>not</u> lead to a subsequent acute care inpatient hospitalization. |
| Outpatient Visits | Count of ambulatory and hospital outpatient visits. |
| Dialysis Service | Patient with Chronic Renal Failure receives dialysis services: |
| | 1 - Patient received dialysis services during the observation period. Other value - Patient did not receive dialysis services during the observation period. |
| Nursing Service | Patient receives skilled nursing services: |
| | 1 - Patient received nursing services during the observation period. Other value - Patient did not receive nursing services during the observation period. |
| Major Procedure | Patient had a major procedure performed in an inpatient setting during the observation period: |
| | 1 - Patient had a major procedure during the observation period. Other value - Patient did not have a major procedure during the observation period. |
| Cancer Treatment | Patient had a chemotherapy or radiation therapy performed during the observation period. • 1 - Patient had cancer treatment during the observation period. • Other value - Patient did not have cancer treatment during the observation period. |



| Column | Definition |
|-----------------------|---|
| Pharmacy Cost Band | A banded indicator of historic pharmacy costs based upon pharmacy cost percentiles. Possible values include: |
| | 0 - 0 pharmacy costs |
| | 1 - 1-10 percentile |
| | 2 - 11-25 percentile |
| | 3 - 26-50 percentile |
| | 4 - 51-75 percentile |
| | 5 - 76-90 percentile |
| | 6 - 91-93 percentile |
| | 7 - 94-95 percentile |
| | 8 - 96-97 percentile |
| | 9 - 98-99 percentile |
| Age Band | A banded indicator of patient age. Possible values include: |
| | • <0 |
| | • 00-04 |
| | • 05-11 |
| | • 12-17 |
| | • 18-34 |
| | • 35-44 |
| | • 45-54 |
| | • 55-69 |
| | • 70-74 |
| | • 75-79 |
| | • 80-84 |
| | • 85+ |
| | • Unknown |
| ACG Cd | Adjusted Clinical Groups. The ACG code assigned to this patient. ACGs are assigned persons for unique, mutually exclusive morbidity categories based on patterns of disease and expected resource requirements. |



| Resource Utilization Band | Aggregations of ACGs based upon estimates of concurrent resource that is used to provide a way of separating the population into broad co-morbidity groupings as follows: • 0 - No or Only Invalid Dx • 1 - Healthy Users • 2 - Low • 3 - Moderate • 4 - High | |
|---------------------------------|---|--|
| Reference Unscaled Weight | An estimate of concurrent resource use associated with a given ACG based on a reference database and expressed as a relative value. Each patient is assigned a weight based on their ACG Cd. | |
| Reference Re scaled Weight | Reference weights that are rescaled so that the mean across the population is 1.0. | |
| Local Weight | A concurrent weight assigned to this patient based upon their ACG Cd using local cost data. The weight for each ACG is calculated as the simple average total cost of all individuals assigned to each category divided by the average total cost of all individuals in the source data file. | |
| ADG Codes | Aggregated Diagnosis Groups are the building blocks of the ACG System. Each ADG is a grouping of diagnosis codes that are similar in terms of severity and likelihood of persistence of the health condition over time. This column contains a listing of all ADG codes assigned to this patient, separated by spaces. | |
| ADG Vector | A vector of zeros and ones to indicate which ADG codes this patient was assigned. A one in the fifth position indicates the patient was assigned ADG 5. The letters ADG are prepended to this vector as a convenience to help other database systems (like Microsoft Access) treat this vector as a string. Note: ADG 15 and ADG19 are no longer in use and should always be zero. | |
| EDC Codes | Expanded Diagnosis Clusters codes are all of the EDC codes assigned to this patient, separated by spaces. The EDC taxonomy identifies patients with specific diseases or symptoms that are treated in ambulatory and inpatient settings. | |
| | | |
| MEDC Codes | Major Expanded Diagnoses Clusters codes are all of the MEDC codes assigned to this patient, separated by spaces. The EDC taxonomy is structured into broad clinical categories called MEDCs. | |
| Rx-MG Codes | Pharmacy Morbidity Group codes are all of the Rx-MG codes assigned to this patient, separated by spaces, regardless of the data source for the medication. | |



| Medical Rx- MG Codes | Medical Pharmacy Morbidity Group codes are the subset of Rx-MG codes assigned to this patient, separated by spaces, from medications administered in the provider's office and identified from procedures in the medical services file. |
|--------------------------------------|--|
| Pharmacy Rx-MG Codes | Pharmacy Morbidity Group codes are the subset of Rx-MG codes assigned to this patient, separated by spaces, from medications procured through a retail pharmacy and identified in the pharmacy file. |
| Major Rx-MG Codes | Major Pharmacy Morbidity Group codes are all of the Major Rx-MG codes assigned to this patient, separated by spaces. |
| Major ADG Count | The number of major ADGs assigned to this patient. A major ADG is an ADG found to have a significant impact on concurrent or future resource consumption. There are separate major ADGs for pediatric and adult populations. |
| Frailty Flag | A flag for any one of the 11 diagnostic clusters that represent discrete conditions consistent with frailty (e.g., malnutrition, dementia, incontinence, difficulty in walking). |
| Pregnancy without Delivery | A flag indicating that the patient is pregnant and has not delivered during the observation period. It is presumed that the patient will experience increased resource utilization at delivery in the following period |
| Hospital Dominant Morbidity Types | A count of ADGs containing trigger diagnoses indicating a high probability (typically greater than 50 %) of future admission. |
| Chronic Condition Count | A count of EDCs containing trigger diagnoses indicating a chronic condition with significant expected duration and resource requirements. |
| Diagnoses Used Count | A count of the diagnoses that contributed to morbidity assessment. This includes codes that are in a licensed code set and were not excluded by the filtering criteria for rule-out, suspect and provisional diagnoses. |
| Condition Markers | A series of markers for each condition. |
| [CONDITI ON] Condition | A flag indicating if this patient has this medical condition and how it was indicated (NP=Not Present, ICD=ICD Indication, Rx=Rx Indication, BTH=ICD and Rx Indication, TRT=Meets Dx / Rx treatment criteria). |
| [CONDITION] Rx Gaps | For conditions meeting treatment criteria, the number of gaps in excess of the grace period over the observation period. Not all conditions are evaluated for Rx gaps. |
| [CONDITION] MPR | For conditions meeting treatment criteria, the medication possession ratio ratio of days the patient was in possession of the medication. Not all conditions are evaluated for MPR. |
| | |
| [CONDITION] CSA | For conditions meeting treatment criteria, the continuous, single interval measure of medication acquisition ratio of days the patient was in possession of medication, calculated by averaging the ratio across all prescription intervals. Not all conditions are evaluated for CSA. |



| [CONDITION] Untreated Rx | For conditions meeting treatment criteria, categorizes patients that are expected to receive pharmacy treatment as follows: Y - Not receiving any pharmacy treatment |
|--|---|
| Total Rx Gaps | A sum of the gaps in medication availability across all treated conditions. |
| Unscaled Total Cost Resource Index | ACG Predictive Model (ACG-PM) Predicted Resource Index (PRI) for Total Cost the estimated total costs (including pharmacy costs) for this patient for the year following the observation period. Based upon a reference database (with a mean of 1.0), the predicted value is expressed as a relative weight. Population or subgroup analyses provide comparisons to reference norms. The value is based on best model selection. The model used can be found in the Summary Statistics. |
| Rescaled Total Cost Resource Index | The Total Cost Resource Index rescaled so that the local population mean is 1.0. Subgroup analyses provide comparisons to local norms. |
| Predicted Total Cost Range | A dollar range indicating the estimated total costs (including pharmacy costs) for this patient for the year following the observation period. |
| Probability High Total Cost | ACG-PM Probability Score for total cost the probability that this patient will have high total costs (including pharmacy costs) in the year following the observation period. |
| Unscaled Pharmacy Cost Resource Index | ACG-PM PRI Score for Pharmacy Costs the estimated pharmacy costs for this patient for the year following the observation period. Based upon a reference database (with a mean of 1.0), the predicted value is expressed as a relative weight. |
| Rescaled Pharmacy Cost Resource Index | The Pharmacy Cost Resource Index rescaled so that the overall population mean is 1.0. Sub-group analyses provide comparisons to local norms. |
| Predicted Pharmacy Cost Range | A dollar range indicating the estimated pharmacy costs for this patient for the year following the observation period. |
| Probability High Pharmacy Cost | ACG-PM Probability Score for pharmacy cost the probability that this patient will have high pharmacy costs in the year following the observation period. |
| High Risk Unexpected Pharmacy Cost | Indicates that this patient has high risk of an unexpectedly high pharmacy cost in the year following the observation period. |



| Column | Definition |
|---|---|
| Probability Unexpected Pharmacy Cost | Probability that this patient will have unexpectedly high pharmacy costs in the year following the observation period. |
| Majority Source of Care Percent | Percentage of face-to-face outpatient visits provided by the majority source of care provider. |
| Majority Source of Care Providers | The provider IDs that provided the majority source of care. |
| Unique Provider Count | The number of providers involved in face-to-face outpatient visits for this patient. |
| Specialty Count | The number of different specialties involved in face-to-face outpatient visits for this patient. |
| Generalist Seen | Indicates that no generalist was involved in face-to-face outpatient visits for this patient. |
| Management Visit Count | The total number of face-to-face outpatient visits for this patient. This number represents the denominator of the majority source of care percent. |
| | A marker to stratify patients based upon the likelihood of coordination issues. The values are: |
| Coordination Risk | UCI – Unlikely to experience coordination issues. |
| | PCI – Will possibly experience coordination issues. |
| | LCI – Will likely experience coordination issues. |
| Active Ingredient Count | The number of different active ingredients prescribed to this patient. |
| Probability IP Hospitalization | The probability that this patient will have an inpatient hospitalization in the year following the observation period. |
| Probability IP Hospitalization 6 Mos | The probability that this patient will have an inpatient hospitalization in the six months following the observation period. |
| Probability ICU Hospitalization | The probability that this patient will have an inpatient hospitalization in an ICU / CCUsetting in the year following the observation period. |
| Probability Injury Hospitalization | The probability that this patient will have an inpatient hospitalization due to an injury in the year following the observation period. |
| Probability Extended Hospitalization | The probability that this patient will have an extended inpatient hospitalization in the year following the observation period. |



Warning List

| Column Name | Definition |
|---------------------|--|
| Patient ID | A unique identifier for this patient. |
| ACG Cd | The ACG code that was assigned to this patient. |
| Age | The patient's age as of the end of the observation period. |
| Sex | The patient's gender. |
| Total Cost | The total medical and pharmacy costs for this patient during the observation period. |
| Pharmacy Cost | The total pharmacy costs for this patient during the observation period. |
| Warning Code | An integer indicating a specific warning. |
| Warning Description | A description of the data generating the warning. |

Warning Distribution Analysis

| Column Name | Definition |
|------------------------|--|
| Warning Code | Each warning that was assigned to a patient within the current stratification. |
| Warning Description | The description for the warning. |
| Frequency | The number of patients that encountered this warning within this stratification. |
| Freq % | The percentage that frequency represents out of the total patients processed. |