Predictive Modeling Basics and Beyond

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Introductions

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Agenda Topics

- Data and Data Sources.
- Predictive Modeling:
  - Models and their uses;
  - Generating relative risk scores for underwriting.
- Predictive Modeling &
  - Renewal Underwriting;
  - New Business Underwriting.

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Data

Types of Data for Predictive Modeling

- Claims
  - Medical
  - Pharmaceutical
- Eligibility
  - Enrollment
  - Census/Prospective Information
- Benefits
- Self-Reported
- DM and other Programs

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Data Use Pitfalls

- Trusting data without diagnostics;
- Not knowing if data holes are systematic or sporadic;
- Not realizing how really tricky population data really is;
- Asking for too little;
- Not understanding, at least a little, about how the claims were paid.

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Claims Data

Data Elements for Actuarial Modeling

- Individual Identifiers
- Diagnosis
- Services performed
- Unit counts
- Site of Service
- Dates
- Provider information
- Money
- Non-medical information

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Claims Data

Data Elements for Predictive Model building

- Individual Identifiers;
- Diagnosis;
- Kind of Claim
  - Inpatient - DRG's, Admits, Length of Stay;
  - Outpatient Facility - Procedures, RevCode, APCs;
  - Professional - Procedures, Specialty, Rx – NDCs;
- Dates

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Claims information used for PM

Alphabet Soup

- UB 92
- CMS (HCFA) 1500
- Diagnosis
- DRG
- CPTs
- HCPCs

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Sample Claim Form

APPROVED OMB NO. 0938-0279

1

2 UB92

3 PATIENT CONTROL NO.

4 TYPE OF BILL

5 FED. TAX NO.

6 STATEMENT COVERS PERIOD FROM THROUGH

7 COV D.

8 N-C D.

9 C-I D.

10 L-R D.

11

12 PATIENT NAME

13 PATIENT ADDRESS

14 BIRTHDATE

15 SEX

16 MS

ADMISSION 17 DATE 18 HR 19 TYPE 20 SRC

21 D HR

22 STAT

23 MEDICAL RECORD NO.

CONDITION CODES 24 25 26 27 28 29 30

31

32 CODE OCCURRENCE DATE

33 CODE OCCURRENCE DATE

34 CODE OCCURRENCE DATE

35 CODE OCCURRENCE DATE

36 CODE OCCURRENCE SPAN FROM THROUGH

37 A B C

38

39 CODE VALUE CODES AMOUNT

40 CODE VALUE CODES AMOUNT

41 CODE VALUE CODES AMOUNT

42 REV. CD.

43 DESCRIPTION

44 HCPCS / RATES

45 SERV. DATE

46 SERV. UNITS

47 TOTAL CHARGES

48 NON-COVERED CHARGES

49

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

50 PAYER

51 PROVIDER NO.

52 REL INFO

53 ASG BEN

54 PRIOR PAYMENTS

55 EST. AMOUNT DUE

56

57

DUE FROM PATIENT ▶

58 INSURED'S NAME

59 P. REL

60 CERT. - SSN - HIC. - ID NO.

61 GROUP NAME

62 INSURANCE GROUP NO.

63 TREATMENT AUTHORIZATION CODES

64 ESC

65 EMPLOYER NAME

66 EMPLOYER LOCATION

67 PRIN. DIAG. CD.

OTHER DIAG. CODES 68 CODE 69 CODE 70 CODE 71 CODE 72 CODE 73 CODE 74 CODE 75 CODE

76 ADM. DIAG. CD.

77 E-CODE

78

79 P.C.

80 PRINCIPAL PROCEDURE CODE DATE

81 OTHER PROCEDURE CODE DATE (A)

OTHER PROCEDURE CODE DATE (B)

OTHER PROCEDURE CODE DATE (C)

OTHER PROCEDURE CODE DATE (D)

OTHER PROCEDURE CODE DATE (E)

82 ATTENDING PHYS. ID

83 OTHER PHYS. ID (A)

OTHER PHYS. ID (B)

84 REMARKS

85 PROVIDER REPRESENTATIVE X

86 DATE

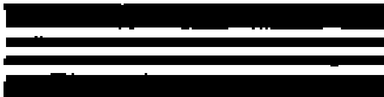
UB-92 HCFA-1450

OCR/ORIGINAL

I CERTIFY THE CERTIFICATIONS ON THE REVERSE APPLY TO THIS BILL AND ARE MADE A PART HEREOF.

Sample Claim Form

PLEASE
DO NOT
STAPLE
IN THIS
AREA



HCFA 1500

CARRIER

PICA

HEALTH INSURANCE CLAIM FORM

PICA

1. MEDICARE (Medicare #) MEDICAID (Medicaid #) CHAMPUS (Sponsor's SSN) CHAMPVA (VA File #) GROUP HEALTH PLAN (SSN or ID) FECA BLK LUNG (SSN) OTHER (ID)

1a. INSURED'S I.D. NUMBER (FOR PROGRAM IN ITEM 1)

2. PATIENT'S NAME (Last Name, First Name, Middle Initial)

3. PATIENT'S BIRTH DATE MM DD YY SEX M F

4. INSURED'S NAME (Last Name, First Name, Middle Initial)

5. PATIENT'S ADDRESS (No., Street)

6. PATIENT RELATIONSHIP TO INSURED Self Spouse Child Other

7. INSURED'S ADDRESS (No., Street)

CITY STATE

8. PATIENT STATUS Single Married Other

CITY STATE

ZIP CODE TELEPHONE (Include Area Code) ( )

Employed Full-Time Student Part-Time Student

ZIP CODE TELEPHONE (INCLUDE AREA CODE) ( )

9. OTHER INSURED'S NAME (Last Name, First Name, Middle Initial)

10. IS PATIENT'S CONDITION RELATED TO:

11. INSURED'S POLICY GROUP OR FECA NUMBER

a. OTHER INSURED'S POLICY OR GROUP NUMBER

a. EMPLOYMENT? (CURRENT OR PREVIOUS) YES NO

a. INSURED'S DATE OF BIRTH MM DD YY SEX M F

b. OTHER INSURED'S DATE OF BIRTH MM DD YY SEX M F

b. AUTO ACCIDENT? YES NO PLACE (State)

b. EMPLOYER'S NAME OR SCHOOL NAME

c. EMPLOYER'S NAME OR SCHOOL NAME

c. OTHER ACCIDENT? YES NO

c. INSURANCE PLAN NAME OR PROGRAM NAME

d. INSURANCE PLAN NAME OR PROGRAM NAME

10d. RESERVED FOR LOCAL USE

d. IS THERE ANOTHER HEALTH BENEFIT PLAN? YES NO *If yes, return to and complete item 9 a-d.*

READ BACK OF FORM BEFORE COMPLETING & SIGNING THIS FORM.

12. PATIENT'S OR AUTHORIZED PERSON'S SIGNATURE I authorize the release of any medical or other information necessary to process this claim. I also request payment of government benefits either to myself or to the party who accepts assignment below.

SIGNED DATE

13. INSURED'S OR AUTHORIZED PERSON'S SIGNATURE I authorize payment of medical benefits to the undersigned physician or supplier for services described below.

SIGNED

14. DATE OF CURRENT: MM DD YY ILLNESS (First symptom) OR INJURY (Accident) OR PREGNANCY(LMP)

15. IF PATIENT HAS HAD SAME OR SIMILAR ILLNESS. GIVE FIRST DATE MM DD YY

16. DATES PATIENT UNABLE TO WORK IN CURRENT OCCUPATION FROM MM DD YY TO MM DD YY

17. NAME OF REFERRING PHYSICIAN OR OTHER SOURCE

17a. I.D. NUMBER OF REFERRING PHYSICIAN

18. HOSPITALIZATION DATES RELATED TO CURRENT SERVICES FROM MM DD YY TO MM DD YY

19. RESERVED FOR LOCAL USE

20. OUTSIDE LAB? YES NO $ CHARGES

21. DIAGNOSIS OR NATURE OF ILLNESS OR INJURY. (RELATE ITEMS 1,2,3 OR 4 TO ITEM 24E BY LINE)

1. ___ . ___ 3. ___ . ___

2. ___ . ___ 4. ___ . ___

22. MEDICAID RESUBMISSION CODE ORIGINAL REF. NO.

23. PRIOR AUTHORIZATION NUMBER

24. A DATE(S) OF SERVICE From MM DD YY To MM DD YY	B Place of Service	C Type of Service	D PROCEDURES, SERVICES, OR SUPPLIES (Explain Unusual Circumstances) CPT/HCPCS MODIFIER	E DIAGNOSIS CODE	F $ CHARGES	G DAYS OR UNITS	H EPSDT Family Plan	I EMG	J COB	K RESERVED FOR LOCAL USE
1										
2										
3										
4										
5										
6										

25. FEDERAL TAX I.D. NUMBER SSN EIN

26. PATIENT'S ACCOUNT NO.

27. ACCEPT ASSIGNMENT? (For govt. claims, see back) YES NO

28. TOTAL CHARGE $

29. AMOUNT PAID $

30. BALANCE DUE $

31. SIGNATURE OF PHYSICIAN OR SUPPLIER INCLUDING DEGREES OR CREDENTIALS (I certify that the statements on the reverse apply to this bill and are made a part thereof.)

SIGNED DATE

32. NAME AND ADDRESS OF FACILITY WHERE SERVICES WERE RENDERED (If other than home or office)

33. PHYSICIAN'S, SUPPLIER'S BILLING NAME, ADDRESS, ZIP CODE & PHONE #

PIN# GRP#

PATIENT AND INSURED INFORMATION

PHYSICIAN OR SUPPLIER INFORMATION

(APPROVED BY AMA COUNCIL ON MEDICAL SERVICE 8/88)

PLEASE PRINT OR TYPE

APPROVED OMB-0938-0008 FORM CMS-1500 (12/90), FORM RRB-1500,
APPROVED OMB-1215-0055 FORM OWCP-1500, APPROVED OMB-0720-0001 (CHAMPUS)

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Individual Identifiers

- This is the first thing to get straight; everything else goes from here
- These should be unique – but they are often so unique that they change with a new data system or when the beneficiary changes status or benefits or product
- They may have different lengths or formats in different systems
- You may need these to merge the information from the enrollment data to the information on the claims data – looked for dropped records

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Diagnosis Codes

- Diagnosis Codes state what is wrong with the patient or what might be wrong (rule out diagnosis and sometimes, admitting diagnosis).
- Diagnosis codes come, but seldom go. Keep track of changes annually. (One reason to use a grouper system: someone else responsible for the updates!).
- Diagnoses are structured mainly by disease – neoplasm, infectious disease, maternity, disorders of the nervous system, but there are V codes as well which have other information.

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Diagnosis formats (ICD-9)

- 3 digits are the most basic of the diagnoses
  - Diabetes Mellitus 250

- 4 digits are used for more description
  - 250.0 Diabetes mellitus without mention of complication
  - 250.1 Diabetes with ketoacidosis
  - 250.2 Diabetes with hyperosmolarity
  - 250.4 Diabetes with renal manifestations
  - 250.5 Diabetes with ophthalmic manifestations
  - 250.6 Diabetes with neurological manifestations
  - 250.7 Diabetes with peripheral circulatory disorders
  - 250.8 Diabetes with other specified manifestations
  - 250.9 Diabetes with unspecified complication

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Diagnosis formats (ICD-9)

- Sometimes a 5th digit is used for more detail

- Every 4 digit diabetes diagnosis can be further clarified into Type I or II, not stated as uncontrolled or uncontrolled, e.g.:
  - **250.60 Diabetes with neurological manifestations, type II or unspecified type, not stated as uncontrolled;**
  - **250.61 Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled;**
  - **250.62 Diabetes with neurological manifestations, type II or unspecified type, uncontrolled;**
  - **250.63 Diabetes with neurological manifestations, type I [juvenile type], uncontrolled.**

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Diagnosis formats (ICD-9)

- Note some claims systems, say that if a 3-digit code has 4-digit codes that further describe it, then the 3-digit code is not acceptable for claim submission. If a 4-digit code has 5-digit codes that further describe it, then the 4-digit code is not acceptable for claim submission.

- For PM, all 5 is best but don’t abandon your project because you only have 3.

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Identification Algorithms (Groupers)

Examples:

- Commercial: ETGs, DXGs, GPIs, etc. Map diagnosis codes into groups that are predictive of resource utilization. May be better for one use than others.

- Self-developed: e.g. DMAA definitions/disease management industry definitions (see example, next page). Use-specific – may not be the best identification algorithm for underwriting applications.

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Identification Algorithms (Groupers)

Medical Claims Only

ICD-9-CM CODES - ASTHMA	DESCRIPTION
493.xx	Asthma
493.01	Extrinsic Asthma, with mention of status asthmaticus or acute exacerbation or unspecified
493.02	Asthma, with acute exacerbation
493.10	Asthma, without mention of status asthmaticus or acute exacerbation or unspecified
493.11	Asthma, with mention of status asthmaticus
493.12	Asthma, with acute exacerbation
493.9	Asthma, unspecified
493.90	Asthma, unspecified without mention of status asthmaticus or acute exacerbation or unspecified
493.91	Asthma, unspecified with mention of status asthmaticus
493.92	Asthma, unspecified with acute exacerbation
493.2	Chronic obstructive asthma
493.20	Chronic obstructive asthma, without mention of status asthmaticus
493.21	Chronic obstructive asthma, with mention of status asthmaticus
493.22	Chronic obstructive asthma, with acute exacerbation

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Services Performed

- DRG
- CPT
- HCPC
- Revenue Code
- APC
- Other

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Diagnosis Related Groups (DRG's)

- Inpatient payment method that combines diagnosis/diagnoses with services performed to give a case rate.
- Used for nearly all Medicare claims and some commercial claims.
- Need to watch for outlier claims.
- New MS-DRGs are effective and will be coming through in the data soon.

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DRG Example

DRG	Type	Description	Weight
506	SURG	BURN W SKIN GRAFT OR INHAL INJ W CC OR SIG TRAUMA	4.7246
507	SURG	BURN W SKIN GRFT OR INHAL INJ W/O CC OR SIG TRAUMA	2.2603
508	MED	BURN W/O SKIN GRFT OR INHAL INJ W CC OR SIG TRAUMA	1.6171
509	MED	BURN W/O SKIN GRFT OR INH INJ W/O CC OR SIG TRAUMA	1.1338

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CPT – Current Procedural Terminology

CPT's specifically describe services.

- For example 99201 is the code for a brief office visit with a new patient.
- The first digit of the code indicates the broad category –
  - 0 Anesthesia
  - 1-6 Surgery
  - 7 Radiology
  - 8 Pathology
  - 9 Medicine
- 99 Evaluation and Management (OV).

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CPT

Sequential CPTs are usually very closely related.

These are all destruction of skin lesions:

17260 - lesion diameter 0.5 cm or less

17261 - lesion diameter 0.6 to 1.0 cm

17262 - lesion diameter 1.1 to 2.0 cm

17263 - lesion diameter 2.1 to 3.0 cm

17264 - lesion diameter 3.1 to 4.0 cm

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CPT notes

- Modifiers are used to further explain the situation in which the procedure was performed.
- There are more than 40 modifiers.
- Some examples:
  - 26 Professional Component
  - 47 Anesthesia by Surgeon
  - 51 Multiple Procedures
  - 52 Reduced Service
  - 62 Two Surgeons
  - 63 Procedure Performed on Infants
  - 66 Surgical Team
  - 76 Repeat Procedure by Same Physician
  - 80 Assistant Surgeon

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CPT tips

- CPT’s are updated at least annually.
- Don’t ignore modifiers when calculating average costs.
- Homegrown codes *should* be disappearing, but check to make sure.
- Check the totals spent by code to make sure there are no unexpected codes or there are no codes with a surprising amount of money, indicating a catch-all bucket.
- Keep track of terminated codes so they bucket correctly if they show up later.

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HCPCS (Healthcare Common Procedure Coding System)

HCPCS includes all sorts of things:

- Ambulance, DME, Dental, Orthotics, Dental, Supplies, Screening Services, Injectable Drugs, New Technologies, etc, etc.

- They can be used for physician claims and facility claims.

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HCPCS

Some codes are by definition temporary:

C Codes are transitional pass throughs for outpatient services, stents, pacemakers, injectables.

G Codes are for professional services

advanced imaging, cancer screening, therapy, ESRD services.

S Codes are for drugs, services, and supplies for which there are no national codes.

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HCPCS

- When doing looking for services don't forget temporary HCPCS.
- Watch the unit measure, which can change./
- Link temporary services in prior year claims to final HCPC or CPT.
- Test data to see if codes are really what you think they are.
- Update crosswalk tables.

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Revenue Codes

- Persistently used for Outpatient services although they are notoriously general.
  - For example the code 250, pharmacy, can be used for injections and aspirin.
  - Even if there are specific codes, such as 421 Therapy hourly charge, the bill may be for 420, therapy.

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Revenue Codes

- If a claim has something more specific than a revenue code use it to categorize the claim.
- While revenue codes are mostly standardized, there are a lot of home grown categories that show up in the revenue code list.
- Worth testing any cross walk between CPT/HCPC and Revenue code to see what doesn't make sense or to find if it is a consistent mapping.

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Enrollment Data

- Check that the individual identifier matches claims identifier.
- Know how the identifier changes as the member changes plans or groups or it will be hard to study individuals.
- Restate membership for retroactivity.
- Don't just use the membership as the denominator, merge membership information to claims to find out if there are anomalies or to get geography and demographics.

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Non-medical “by” values

You may want to produce studies by something not inherently medical such as:

- Geography
- Group
- Product line
- Disease Management participation

DON’T use the claims information for this.

Use the enrollment files or the DM files.

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Running risk scores

Data needed:

- Age
- Gender
- Diagnosis codes
- And possibly:
  - Procedure codes
  - NDC codes
  - Eligibility Category
  - Prior claims amounts
  - Self-reported data.

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Running risk scores

- Model type
  - Concurrent
  - Prospective
  - Truncated
  - New types – underwriting, high cost claimant, likelihood of hospitalization.
- For underwriting – generally we want prospective and, potentially, truncated.

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Risk Scores for Underwriting

- Some models predict what a member SHOULD cost.
- Underwriting cares what a member WILL cost.
- Possibly adjust commercial model to reflect member utilization patterns (high utilizer, etc.).

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Running Risk Scores

- Input files:
  - Eligibility data
  - Claims or diagnosis data
  - Rx data
  - Model parameters (could be a file or could be selected via other methods).

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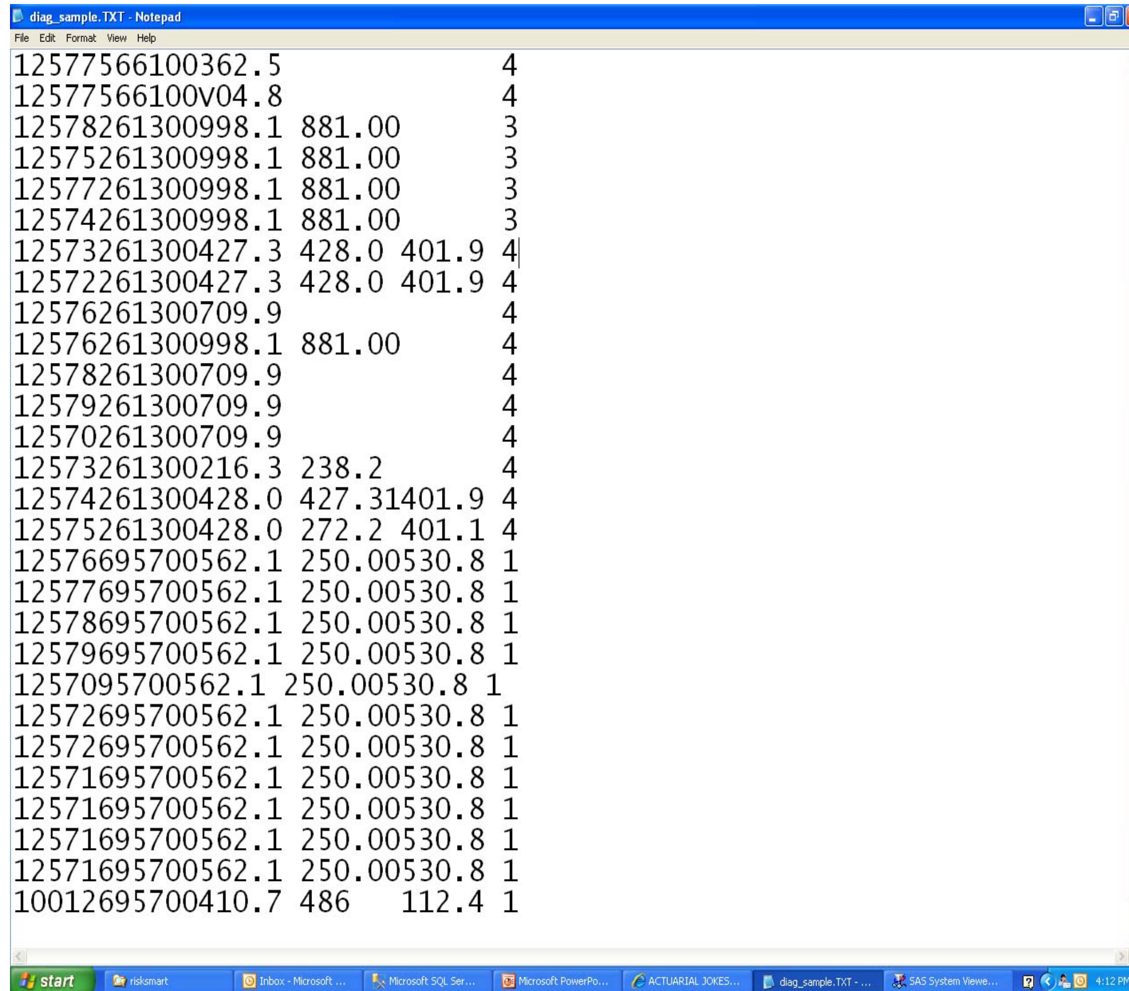
Sample Input File

Diagnosis File Sample



diag_sample.TXT - Notepad

```
12577566100362.5            4
12577566100V04.8            4
12578261300998.1 881.00     3
12575261300998.1 881.00     3
12577261300998.1 881.00     3
12574261300998.1 881.00     3
12573261300427.3 428.0 401.9 4
12572261300427.3 428.0 401.9 4
12576261300709.9            4
12576261300998.1 881.00     4
12578261300709.9            4
12579261300709.9            4
12570261300709.9            4
12573261300216.3 238.2      4
12574261300428.0 427.31401.9 4
12575261300428.0 272.2 401.1 4
12576695700562.1 250.00530.8 1
12577695700562.1 250.00530.8 1
12578695700562.1 250.00530.8 1
12579695700562.1 250.00530.8 1
1257095700562.1 250.00530.8 1
12572695700562.1 250.00530.8 1
12572695700562.1 250.00530.8 1
12571695700562.1 250.00530.8 1
12571695700562.1 250.00530.8 1
12571695700562.1 250.00530.8 1
12571695700562.1 250.00530.8 1
10012695700410.7 486   112.4 1
```

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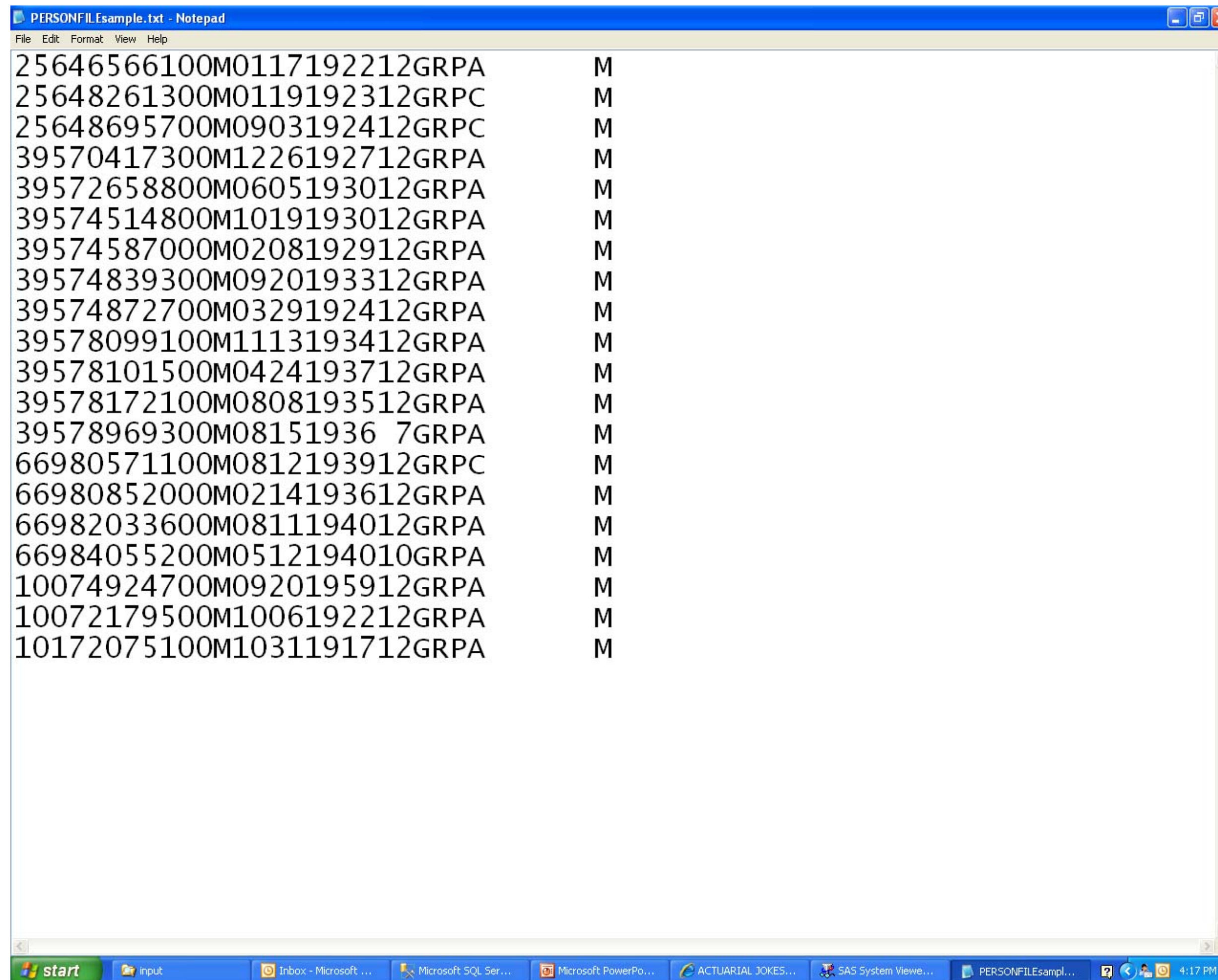
Sample Input File

Member File Sample



PERSONFILEsample.txt - Notepad

```
2564656610OM0117192212GRPA        M
2564826130OM0119192312GRPC        M
2564869570OM0903192412GRPC        M
3957041730OM1226192712GRPA        M
3957265880OM0605193012GRPA        M
3957451480OM1019193012GRPA        M
3957458700OM0208192912GRPA        M
3957483930OM0920193312GRPA        M
3957487270OM0329192412GRPA        M
3957809910OM1113193412GRPA        M
3957810150OM0424193712GRPA        M
3957817210OM0808193512GRPA        M
3957896930OM08151936 7GRPA        M
6698057110OM0812193912GRPC        M
6698085200OM0214193612GRPA        M
6698203360OM0811194012GRPA        M
6698405520OM0512194010GRPA        M
1007492470OM0920195912GRPA        M
1007217950OM1006192212GRPA        M
1017207510OM1031191712GRPA        M
```

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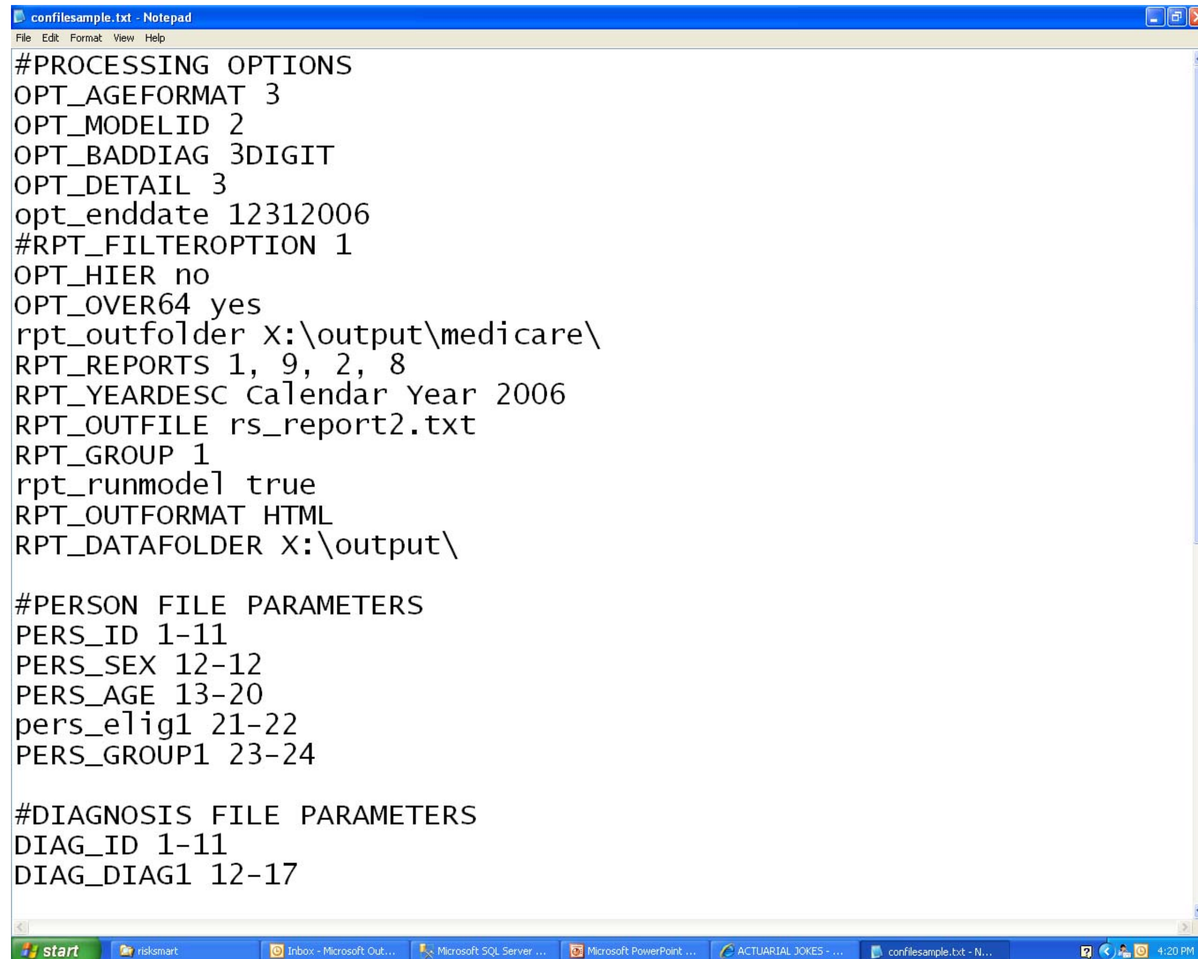
Sample Input File

Parameter File Sample



```
#PROCESSING OPTIONS
OPT_AGEFORMAT 3
OPT_MODELID 2
OPT_BADDIAG 3DIGIT
OPT_DETAIL 3
opt_enddate 12312006
#RPT_FILTEROPTION 1
OPT_HIER no
OPT_OVER64 yes
rpt_outfolder X:\output\medicare\
RPT_REPORTS 1, 9, 2, 8
RPT_YEARDESC Calendar Year 2006
RPT_OUTFILE rs_report2.txt
RPT_GROUP 1
rpt_runmodel true
RPT_OUTFORMAT HTML
RPT_DATAFOLDER X:\output\

#PERSON FILE PARAMETERS
PERS_ID 1-11
PERS_SEX 12-12
PERS_AGE 13-20
pers_elig1 21-22
PERS_GROUP1 23-24

#DIAGNOSIS FILE PARAMETERS
DIAG_ID 1-11
DIAG_DIAG1 12-17
```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Running Risk Scores

- Output Files
  - Most important – risk score file – member level, diagnosis category flags, cost prediction, risk score.
  - Statistics about the model run.
  - Possibly reports.

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Sample Output Files

Output Statistics

APPENDIXc.TXT - Notepad

File Edit Format View Help

```
OPTIONS:

Name:                                                     Commercial All-Encounter Explanation Me
Population group:                                         Commercial
Model Variant:                                            All-encounter, DCG/HCC
Model Purpose:                                            Explanation
Model Outcome:                                            Medical expenses including pharmacy exp


Maximum number of observations processed:                 MAX
Level of detail output:                                   Accs, CCs, and DxGroups
Impose hierarchies:                                       No
Location of expenditure information:                      Person
Include over age 64:                                      Yes
ICD Modification:                                         ICD-9-US
Pharmacy Classification:                                  NDC-US
Handle bad pharmacy:                                      Output invalid pharmacy
Handle bad diagnoses:                                     Use diagnoses valid at 3-digit level an


Handle bad enrollment:                                    Output invalid enrollments
Is source variable provided?:                             Yes
Are procedure codes provided?:                            No
Date for calculating age:                                 Dec 31, 2006
Maximum number of diagnoses per record:                          3
Maximum number of procedures per record:                  0




COUNTS FROM DIAGNOSIS FILE

IDs in diagnosis file:                                      232,873
IDs with no match in person file:                                 0


Number of records in diagnosis file:                      3,869,786
Number of records with no match in person file:                   0


COUNTS FROM DIAGNOSES MATCHED WITH PERSON FILE

Number of IDs:                                              232,873
Number of IDs of people who were ever in the hospital:       18,729
```

start | output | Inbox - Microsoft Out... | Microsoft SQL Server ... | Microsoft PowerPoint ... | ACTUARIAL JOKES - ... | APPENDIXc.TXT - Not... | 4:27 PM

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Sample Output Files

Output Statistics

APPENDIXc.TXT - Notepad

File Edit Format View Help

```
Number of diagnosis records with source of 11:                                  0

COUNTS FROM PERSON FILE

Total IDs in either input file:                                           316,356
IDs in person file:                                                       316,356
IDs in person file output to file:                                        316,356
IDs in diagnosis file but not in person file:                                   0
IDs with invalid age:                                                           0
IDs with invalid sex:                                                           0
IDs with age <0:                                                                0
IDs with age 65 and over:                                                   3,279
IDs in person file not output to file:                                          0

COUNTS FROM OUTPUT FILE

Total IDs in output file:                                                 316,356
IDs eligible at all in year 1:                                            316,356
Eligible-year equivalents year 1:                                         282,616
Average number of months eligible, year 1:                                  10.72
Number of IDs with at least one diagnosis:                                232,873
IDs with no diagnosis record:                                              83,483

Number of people with:
  Year 1 expenditures >=0:                                                316,356
  Year 1 expenditures >0:                                                       0
  Year 1 expenditures <0:                                                       0
  Year 1 expenditures missing or =0:                                      316,356

Number of IDs with any diagnosis assigned to an HCC:                      232,540
Number of people with any hospitalization in RiskSmart file:               18,729
Percent of individuals with any diagnosis:                                 73.61%
Percent of individuals with a hospitalization:                              5.92%
Percent of positive health expenditures in year 1:                             0%

Average year 1 expenditures per person:                                      0.00
Average year 1 expenditures per eligible year:                               0.00

Sum of actual year 1 expenditure:                                            0.00
Sum of negative year 1 expenditure:                                          0.00


AVERAGE RISK SCORES, WEIGHTED BY ELIGIBILITY


PRED02C Average risk, age/sex, year 2, Commercial:                            N/A
PRED31C Average risk, all-encounter, year 1, Commercial:                    1.428
```

start | output | Inbox - Microsoft Out... | Microsoft SQL Server ... | Microsoft PowerPoint ... | ACTUARIAL JOKES - ... | APPENDIXc.TXT - Not... | 4:29 PM

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Sample Output Files

Output Data

outm.TXT - Notepad

File Edit Format View Help

```
445829256001215 1927 79212          0          10 120010001.000        3.00  0.00  1.00  0.00   0.970  0.496  0.0000000
0000001000001000110000000000000000000000000000000000000000000010000000000grpC                 F #
445850036001206 1916 90212          0          10 150010001.000       30.00  0.00 25.00  0.00   1.273  5.009  0.0001000
000110101000110000000000000000000000000000000000000000000100001000000000000grpa               F #
445822665001023 1917 89212          0          10 140010001.000       15.00  0.00 10.00  0.00   1.229  2.460  0.0000000
0000000000001000100000000000000000000000000000000000000000010000000000000grpa                 F #
445827030000910 1923 83212          0          10 130010001.000        1.50  0.00  1.00  0.00   1.112  0.255  0.0000100
000000000000000000000000000000000000000000000000000000000100001100001000000grpC               F #
445865661000117 1922 84112          0          10 290110001.000        0.50  0.00  0.00  0.00   1.316  0.093  0.0000000
0000000000000000000000000000000000000000000000000000000000010000000000000grpa                 M #
445882613000119 1923 83112          0          10 290110001.000        7.50  0.00  5.00  0.00   1.316  1.473  0.0000010
000000000000000000000000000000000000000000000000000000000000000000000000000grpC               M #
445886957000903 1924 82112          0          10 290110001.000       40.00  0.00 25.00  0.00   1.316  6.926  0.0001111
0001001010001000000000000000000000000000000000000010011000001000010001100010grpC              M #
445800134000109 1927 79212          0          10 120010001.000        7.50  0.00  5.00  0.00   0.970  1.360  0.0000100
0000000000000000100000000000000000000000000000000000000000100001000000000grpa                 F #
445801188000206 1927 79212          0          10 120010001.000       10.00  0.00 10.00  0.00   0.970  1.759  0.0000000
0000000000000000000000000000000000000000000000000000000000010000000000000grpC                 F #
445802787001229 1926 80212          0          10 130010001.000       20.00  0.00 10.00  0.00   1.112  3.515  0.0000000
000110100001101000000000000000000000000000000000000000100000000000000000grpa                  F #
445804173001226 1927 79112          0          10 280110001.000        7.50  0.00  5.00  0.00   1.145  1.344  0.0000100
0000000000001000000000000000000000000000000000000000000000010000000000000grpa                 M #
669804431000320 1926 80212          0          10 130010001.000        4.00  0.00  1.00  0.00   1.112  0.765  0.0000000
0000101000001001000000000000000000000000000000000000000000010000000000000grpC                 F #
669820627000509 1929 77212          0          10 120010001.000        0.70  0.00  0.00  0.00   0.970  0.127  0.0000100
000000000000000000000000000000000000000000000000010000000000001100000000000grpC               F #
669826588000605 1930 76112          0          10 280110001.000        1.00  0.00  1.00  0.00   1.145  0.197  0.0000010
000000101000000010000000000000000000000000000000000100000000000000100000000grpa               M #
669827141000801 1921 85212          0          10 140010001.000        2.00  0.00  1.00  0.00   1.229  0.320  0.0000011
00000010000000000000000000000000000000000000000001000000000000010000000000grpa                F #
669827592000119 1930 76212          0          10 120010001.000        2.50  0.00  1.00  0.00   0.970  0.454  0.0000000
0000000000000000000000000000000000000000000000000000000000000000010000000grpa                 F #
```

start | output | Inbox - Microsoft Out... | Microsoft SQL Server ... | Microsoft PowerPoint ... | ACTUARIAL JOKES - ... | outm.TXT - Notepad | 4:34 PM

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Sample Output Files

Output Reports

Clinical Condition Category (CC) Count
Grouped By: 1
Model Dimensions: Medicare All-Encounter Explanation Med Only, Yr 1
Model Number: 2
Year 1
Description: Calendar Year 2006
Hierarchies: Not Imposed

Condition Category (CC)	Current Sample		
	Total	GrpA	GrpC
All People	93,000	74,758	18,242
No Claims	6,347	5,383	964
No Valid Diagnosis	1	1	0
ACC001: Infectious and Parasitic	**13,993**	**11,078**	**2,915**
1: HIV/AIDS	4	4	0
2: Septicemia/Shock	1533	1253	280
3: Central Nervous System Infection	209	173	36
4: Tuberculosis	55	50	5
5: Opportunistic Infections	153	113	40
6: Other Infectious Diseases	13004	10273	2731
ACC002: Malignant Neoplasm	**12,314**	**9,772**	**2,542**
7: Metastatic Cancer and Acute Leukemia	1433	1124	309
8: Lung, Upper Digestive Tract, and Other Severe Cancers	1860	1488	372
9: Lymphatic, Head and Neck, Brain, Other Major Cancers	1871	1474	397
10: Breast, Prostate, Colorectal, Other Cancers/Tumors	9938	7864	2074
ACC003: Benign/In Situ/Uncertain Neoplasm	**20,620**	**16,276**	**4,344**
11: Other Respiratory and Heart Neoplasms	577	462	115
12: Other Digestive and Urinary Neoplasms	6388	5064	1324
13: Other Neoplasms	9217	7233	1984
14: Benign Neoplasms of Skin, Breast, Eyes	10303	8048	2255
ACC004: Diabetes	**19,125**	**15,330**	**3,795**
15: Diabetes with Renal Manifestation	648	545	103
16: Diabetes with Neurologic or Peripheral Circulation Manifestation	3118	2577	541

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Questions?

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