

# 2013 SOA BOOT CAMP

## MEDICARE ADVANTAGE PRICING, PART C RISK SCORES

# Agenda

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- History and Goals of CMS Risk Adjustment
- The CMS HCC Risk Adjustment Model
- Timing of Data Submissions related to Risk Scores
- Risk Score Projections



# History of CMS Risk Adjustment

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Model	LAW	Payment Years	R <sup>2</sup>	Risk Score
<b>AAPCC</b> Adjusted Average Per Capita Cost	TEFRA Tax Equity & Fiscal Responsibility Act	1985-1999	1.0%	Demographic
<b>PIP-DCG</b> Principal Inpatient Diagnostic Cost Group	BBA Balanced Budget Act	2000-2003 (Phased-In)	5.5%	Demographic & Inpatient
<b>CMS-HCC</b> Hierarchical Condition Categories	BIPA Beneficiary Improvement Protection Act	2004-present	12.5%	Demographic & Inpatient & Ambulatory
<b>RX-HCC</b>	MMA (Medicare Modernization Act)	2006-present	25%	Demographic & Inpatient & Ambulatory

# Goals of Risk Adjustment

- **Objective of Risk Adjustment:**
  - To pay plans for the risk of the beneficiaries they enroll, as a way to incent the plan to better manage the member's care.
  - Allows CMS to directly compare bids on a standardized basis.
  - Reduce adverse selection and promotes Plans to enroll all types of risks. This increases access for beneficiaries and reduces gaming.
- Medicare Advantage Plans are paid on a **Prospective** basis, using CMS' "Risk Based" methodology related to the health risk status of plan members.
  - Prospective payment approach-uses diagnosis as a measure of health status (based on historical claims experience) and demographic information of each beneficiary
  - Pay appropriate and accurate payments for subpopulations with significant cost differences based on their risk
- The risk factor is determined by the claims and encounter data submitted by the Medicare Advantage plan on behalf of each member, each year. The diagnosis data accepted by CMS in the prior year will determine the payment the plan will receive for that member the following year (i.e. 2012 dates of service determine 2013 CMS risk score and payment)
- The claims and encounters must be supported by an appropriate, accurate and complete medical record, as the medical record is the only credible documentation recognized by CMS during audits.

# CMS HCC (Hierarchical Condition Categories) Model

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- Used to predict contract medical claims for Medicare Advantage enrollees
- Based on diagnosis codes from either MA plans or Medicare FFS.
- Prospective using inpatient and ambulatory diagnoses from prior year to predict costs for the current year
- Starting point is a demographic/Medicaid/originally disabled factor
- Non-ESRD HCCs for Community and Institutional Members:
  - Diagnostic categories
  - Disease Interactions
  - Disabled/Disease Interactions
- New Enrollees are based on demographics
- Raw Risk Scores are Adjusted for Payment Risk Scores
  - Coding Pattern Differences (0.9509 for 2014)
  - FFS Normalization (1.041 for 2013 & 1.026 for 2014)

# HCC Starting point is a demographic factor

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**Table 1. 2014 CMS-HCC Model Relative Factors for Community and Institutional Beneficiaries**

Variable	Community	Institutional
<b>Female</b>		
0-34 Years	0.197	1.169
35-44 Years	0.205	0.949
45-54 Years	0.263	0.915
55-59 Years	0.326	0.981
60-64 Years	0.392	0.986
65-69 Years	0.288	1.237
70-74 Years	0.348	1.145
75-79 Years	0.437	1.033
80-84 Years	<b>0.539</b>	0.922
85-89 Years	0.677	0.836
90-94 Years	0.815	0.705
95+ Years	0.840	0.533
<b>Male</b>		
0-34 Years	0.121	1.162
35-44 Years	0.124	0.894
45-54 Years	0.181	0.910
55-59 Years	0.269	0.951
60-64 Years	0.311	1.081
65-69 Years	0.288	1.388
70-74 Years	0.356	1.431
75-79 Years	0.442	1.391
80-84 Years	0.543	1.327
85-89 Years	0.683	1.252
90-94 Years	0.848	1.076
95+ Years	1.028	0.948
<b>Medicaid and Originally Disabled Interactions with Age and Sex</b>		
Medicaid_Female_Aged	<b>0.151</b>	0.067
Medicaid_Female_Disabled	0.085	0.067
Medicaid_Male_Aged	0.177	0.067
Medicaid_Male_Disabled	0.086	0.067
Originally Disabled_Female	0.239	0.013
Originally Disabled_Male	0.163	0.013

# The Conditions and their Risk Factors (sample)

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Disease	Coefficients	Community	Institutional
HCC1	HIV/AIDS	0.470	1.904
HCC2	Septicemia, Sepsis, Systemic Inflammatory Response Syndrome/Shock	0.535	0.575
HCC6	Opportunistic Infections	0.440	0.344
HCC8	Metastatic Cancer and Acute Leukemia	2.484	1.203
HCC9	Lung and Other Severe Cancers	0.973	0.674
HCC10	Lymphoma and Other Cancers	0.672	0.412
HCC11	Colorectal, Bladder, and Other Cancers	0.317	0.296
HCC12	Breast, Prostate, and Other Cancers and Tumors	0.154	0.198
HCC17	Diabetes with Acute Complications	0.368	0.474
HCC18	Diabetes with Chronic Complications	0.368	0.474
HCC19	Diabetes without Complication	0.118	0.182
HCC21	Protein-Calorie Malnutrition	0.713	0.399
HCC22	Morbid Obesity	0.365	0.579
HCC86	Acute Myocardial Infarction	<b>0.275</b>	0.515
HCC170	Hip Fracture/Dislocation	<b>0.446</b>	-



# Disease Interactions

<b>Disease Interactions</b>	<b>Description</b>	<b>Community</b>	<b>Institutional</b>
CANCER_IMMUNE	Cancer*Immune Disorders	0.947	-
CHF_COPD	Congestive Heart Failure*Chronic Obstructive Pulmonary Disease	0.259	0.221
CHF_RENAL	Congestive Heart Failure*Renal Disease	0.317	-
COPD_CARD_RESP_FAIL	Chronic Obstructive Pulmonary Disease*Cardiorespiratory Failure	0.456	0.506
DIABETES_CHF	Diabetes*Congestive Heart Failure	0.182	0.189
SEPSIS_CARD_RESP_FAIL	Sepsis*Cardiorespiratory Failure	0.214	-
ARTIF_OPENINGS_PRESSURE_ULCER	Artificial Openings for Feeding or Elimination*Pressure Ulcer	-	0.282
ASP_SPEC_BACT_PNEUM_PRES_ULCER	Aspiration and Specified Bacterial Pneumonias*Pressure Ulcer	-	0.495
COPD ASP_SPEC_BACT_PNEUM	COPD*Aspiration and Specified Bacterial Pneumonias	-	0.319
SCHIZOPHRENIA_CHF	Schizophrenia*Congestive Heart Failure	-	0.212
SCHIZOPHRENIA_COPD	Schizophrenia*Chronic Obstructive Pulmonary Disease	-	0.389
SCHIZOPHRENIA_SEIZURES	Schizophrenia*Seizure Disorders and Convulsions	-	0.452
SEPSIS_ARTIF_OPENINGS	Sepsis*Artificial Openings for Feeding or Elimination -	0.553	-
SEPSIS ASP_SPEC_BACT_PNEUM	Sepsis*Aspiration and Specified Bacterial Pneumonias	-	0.339
SEPSIS_PRESSURE_ULCER	Sepsis*Pressure Ulcer	-	0.522

# Disease Interactions

<b>Disabled/Disease Interactions</b>	<b>Description</b>	<b>Community</b>	<b>Institutional</b>
DISABLED_HCC6	Disabled, Opportunistic Infections	0.451	-
DISABLED_HCC34	Disabled, Chronic Pancreatitis	0.548	-
DISABLED_HCC39	Disabled, Bone/Joint Muscle Infections/Necrosis	-	0.383
DISABLED_HCC46	Disabled, Severe Hematological Disorders	1.347	-
DISABLED_HCC54	Disabled, Drug/Alcohol Psychosis	0.331	-
DISABLED_HCC55	Disabled, Drug/Alcohol Dependence	-	-
DISABLED_HCC77	Disabled, Multiple Sclerosis	-	0.407
DISABLED_HCC85	Disabled, Congestive Heart Failure	-	0.441
DISABLED_HCC110	Disabled, Cystic Fibrosis	2.415	-
DISABLED_HCC161	Disabled, Chronic Ulcer of the Skin, Except Pressure Ulcer	-	0.430
DISABLED_HCC176	Disabled, Complications of Specified Implanted Device or Graft	0.503	-
DISABLED_PRESSURE_ULCER	Disabled, Pressure Ulcer	-	0.270

# Hierarchies

**Table 4. Disease Hierarchies for the 2014 CMS-HCC Model**

Hierarchical Condition Category (HCC)	If the HCC Label is listed in this column...	...Then drop the HCC(s) listed in this column
8	Metastatic Cancer and Acute Leukemia	9,10,11,12
9	Lung and Other Severe Cancers	10,11,12
10	Lymphoma and Other Cancers	11,12
11	Colorectal, Bladder, and Other Cancers	12
17	Diabetes with Acute Complications	18,19
18	Diabetes with Chronic Complications	19
27	End-Stage Liver Disease	28,29,80
28	Cirrhosis of Liver	29
46	Severe Hematological Disorders	48
54	Drug/Alcohol Psychosis	55
57	Schizophrenia	58
70	Quadriplegia	71,72,103,104,169
71	Paraplegia	72,104,169
72	Spinal Cord Disorders/Injuries	169
82	Respirator Dependence/Tracheostomy Status	83,84
83	Respiratory Arrest	84
86	Acute Myocardial Infarction	87,88
87	Unstable Angina and Other Acute Ischemic Heart Disease	88
99	Cerebral Hemorrhage	100
103	Hemiplegia/Hemiparesis	104
106	Atherosclerosis of the Extremities with Ulceration or Gangrene	107,108,161,189
107	Vascular Disease with Complications	108
110	Cystic Fibrosis	111,112
111	Chronic Obstructive Pulmonary Disease	112
114	Aspiration and Specified Bacterial Pneumonias	115
134	Dialysis Status	135,136,137
135	Acute Renal Failure	136,137
136	Chronic Kidney Disease (Stage 5)	137
157	Pressure Ulcer of Skin with Necrosis Through to Muscle, Tendon, or Bone	158,161
158	Pressure Ulcer of Skin with Full Thickness Skin Loss	161
166	Severe Head Injury	80,167



# New Enrollee Factors - Aged & Disabled (Different Factors for Chronic Condition SNPs)

**Table 2. 2014 CMS-HCC Model Relative Factors for Aged and Disabled New Enrollees**

	<b>Non-Medicaid &amp; Non-Originally Disabled</b>	<b>Medicaid &amp; Non-Originally Disabled</b>	<b>Non-Medicaid &amp; Originally Disabled</b>	<b>Medicaid &amp; Originally Disabled</b>
<b>Female</b>				
0-34 Years	1.383	1.433	-	-
35-44 Years	1.383	1.433	-	-
45-54 Years	1.383	1.788	-	-
55-59 Years	1.485	1.889	-	-
60-64 Years	1.582	1.950	-	-
65 Years	0.927	1.497	1.672	2.103
66 Years	0.927	1.497	1.672	2.103
67 Years	0.998	1.547	1.675	2.124
68 Years	0.998	1.547	1.675	2.124
69 Years	0.998	1.547	1.675	2.124
70-74 Years	1.173	1.686	1.859	2.346
75-79 Years	1.395	1.876	1.970	2.464
80-84 Years	1.589	2.065	2.252	2.642
85-89 Years	1.813	2.309	2.252	2.642
90-94 Years	1.813	2.309	2.252	2.642
95 Years or Over	1.813	2.309	2.252	2.642
<b>Male</b>				
0-34 Years	1.314	1.326	-	-
35-44 Years	1.314	1.326	-	-
45-54 Years	1.380	1.740	-	-
55-59 Years	1.495	1.910	-	-
60-64 Years	1.526	1.922	-	-
65 Years	0.957	1.617	1.604	2.116
66 Years	0.957	1.617	1.604	2.116
67 Years	1.010	1.651	1.653	2.189
68 Years	1.010	1.651	1.653	2.189
69 Years	1.010	1.651	1.653	2.189
70-74 Years	1.220	1.872	1.827	2.344
75-79 Years	1.431	1.962	1.939	2.547
80-84 Years	1.677	2.186	2.181	2.547
85-89 Years	1.936	2.439	2.181	2.547
90-94 Years	1.936	2.439	2.181	2.547
95 Years or Over	1.936	2.439	2.181	2.547

# Risk Score Example (new complexity of blending 2013 HCC scores with 2014 scores for 2014 payments)

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- **Risk Score Example: Mrs. Jones**
  - 81 years old, Resides in the home
  - Original reason for entitlement is Aged
  - Medicaid eligible
  - Plan submitted six diagnostic codes with dates of service during last year
    - Acute Myocardial Infarction – 410.21, 410.41, 410.91
    - Hip Fracture – 821.00, 821.10, 821.20
- **Which model applies?**
  - Part C CMS-HCC
- **Which risk factors apply?**
  - Community
  - Female 80-84 years old = **0.539**
  - Medicaid Female, aged = **0.151**
  - ICD-9 410.21, 410.41, 410.91 map to HCC 86 Acute Myocardial Infarction = **0.275**
  - ICD-9 821.00, 821.10, 821.20 map to HCC 170 Hip Fracture/Dislocation = **0.446**
- **What is her raw risk score?**
  - **$0.539 + 0.151 + 0.275 + 0.446 = 1.411$**
- **Final Adjustments for 2014 HCC Score (Coding Pattern Differences & FFS Normalization)**
  - **$1.411 \times 0.9509 / 1.026 = 1.3077$**
- **Blending with 2013 Risk Score (Assume final 2013 HCC Score is 1.2500)**
  - **$(75\% \times 1.3077) + (25\% \times 1.2500) = 1.2933$**

# Revenue Payments January through June

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## Dates of Service

Jul11 Aug11 Sep11 Oct11 Nov11 Dec11 Jan12 Feb12 Mar12 Apr12 May12 Jun12 Jul12 Aug12 **Sep12** Oct12 Nov12 Dec12

Sweep 1  
Lag Period  
Sweep Date



## Revenue Year 2013

Jan13 Feb13 Mar13 Apr13 May13 Jun13 Jul13 Aug13 Sep13 Oct13 Nov13 Dec13



Ultimately, CY 2013 revenue will be based on diagnosis codes from services that were incurred in CY 2012. However, starting in January 2013, Risk Scores and the associated CMS revenue are estimated based upon a lagged time period (July 2011-June 2012) due to data availability.

# Revenue Payments June through December

## Dates of Service

*Non-Lagged, Calendar Year Diagnosis Data*

Sweep 2  
Non-Lag  
Sweep Date

Jul11 Aug11 Sep11 Oct11 Nov11 Dec11 Jan12 Feb12 Mar12 Apr12 May12 Jun12 Jul12 Aug12 Sep12 Oct12 Nov12 Dec12 **Mar13**

## Revenue Year 2012

*Retroactive  
Adjustments*

*1<sup>st</sup> Half Revenue Year*

Jan13 Feb13 Mar13 Apr13 May13 Jun13

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*2<sup>nd</sup> Half Revenue Year*

Jul13 Aug13 Sep13 Oct13 Nov13 Dec13

In July of each Revenue Year, CMS will switch from lagged to non-lagged diagnosis data. CMS will restate the risk scores for the 1<sup>st</sup> half of the year based on the updated data. This will generate a lump sum positive or negative payment between CMS and the Company. In addition, all monthly payments going forward for the rest of the year will be based on the non-lagged calendar year data.

# Revenue Payments – Final Adjustment

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- In August of the year after a “Revenue Year” (August 2014 for Revenue Year 2013), CMS will make one final true-up payment and restatement of risk scores to account for any diagnosis codes that were incurred in CY 2012 that were reported to CMS by 1/31/14
- Companies get more than a full year of opportunity to report run-out .
- This provides opportunities for companies to perform retroactive initiatives to ensure correct diagnosis reporting.



# Projecting Risk Scores: CMS Preferred Methodology (2014)

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- **Two Sources of starting risk score data (both provided by CMS)**
  - Beneficiary File containing 12 months of 2012 membership with retroactive enrollment and retroactive status adjustments (Most Common).
  - Plan-level data for the July 2012 enrollee cohort that reflects retroactive enrollment and retroactive status adjustments.
- **Advantages of Using 2012 Risk Scores from CMS as base:**
  - Consistent with the base period medical expenses
  - Requires no adjustment for seasonality since reflect CY or avg for 2012
  - Reflects complete CY 2011 diagnosis data through final 1/31/13 sweep.
  - CMS adjusts the risk scores to reflect the latest risk score model (2013 and 2014)
  - Do not need to reflect:
    - Transition from lagged to non-lagged
    - Incomplete reporting of diagnosis data
    - Seasonality



# Projecting Risk Scores (CMS Preferred Methodology)

## Sample Calculation (2014 Bid Example)

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### 2014 MA Risk Score Development Illustration

<b>Risk Score Element</b>	<b>HPMS Posted Data 2013 Model</b>	<b>HPMS Posted Data 2014 Model</b>
A Starting Data	1.1000	1.0900
B Covert to Raw - remove normalization	n/a	n/a
C Covert to Raw - remove Coding Pattern Adjustment	n/a	n/a
D Plan Specific Coding Trend	1.0404	1.0404
E Starting Data Adjustments (i x ii x iii below)	n/a	n/a
i) Transition from lagged to non-lagged diagnosis data	n/a	n/a
ii) Incomplete reporting of diagnosis data	n/a	n/a
iii) Seasonality	n/a	n/a
F Other Plan Specific Data Adjustment (Population)	1.0000	1.0000
G Risk Model Adjustment (i x ii / iii below)	n/a	1.0150
i) Raw 2014 HPMS Posted Data	n/a	n/a
ii) Missing diagnosis adjustment	n/a	1.0150 *
iii) Raw 2013 HPMS Posted Data	n/a	n/a
H Raw Risk Score	1.1444	1.1510
I MA Coding Pattern Adjustment	0.9509	0.9509
J Normalization Factor (must calibrate to denominator year; divide)	1.0410	1.0260
<u>K Frailty Factor</u>	<u>0.0000</u>	<u>0.0000</u>
L Interim Risk Score (H x I / J + K)	1.0454	1.0668
M Weight	25%	75%
N Final Weighted Risk Score		<b>1.0614</b>

\* The 2014 HCC Model includes diagnoses previously not used and if the plan sponsor filtered diagnoses to the fewer required diagnoses in previous years, then additional completion of the risk score published by CMS will be necessary

# Projecting Risk Scores: Alternate Methodology (2014)

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- Used for plans with limited or no enrollment during the base period. May also be appropriate if there were significant changes to the plan or enrollment characteristics since the base period.
- For example for the 2014 bids, if there was a plan that was new in 2012 (base year) that had very little enrollment in 2012; however, it had a significant enrollment increase for January 2013. In this case, you will likely have credible risk scores from the CMS Monthly Membership Report (MMR) for January 2013 through March 2013 when you are preparing your 2014 bids in April of 2013.
- Must take care to understand base period population in connection with the 2012 medical costs, and make any necessary medical expense pricing adjustments to reflect the early 2013 population from which risk scores (and hence revenues) are being projected.

# Projecting Risk Scores (Alternative Methodology)

## Likely Adjustments

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- **Conversion to a “Raw” Risk Score-** MMR risk scores reflects FFS Normalization and Coding Pattern Adjustments for the data year. Need to back this out.
- **Impact of Lagged vs. Non-Lagged Diagnosis Data-** If using MMR risk scores from first quarter of 2013, which are based on 6 month lagged diagnosis codes, then will need to adjust to reflect what those risk scores will actually look like once the risk scores are restated to reflect the non-lagged risk score which will be based on calendar year 2012 diagnoses.
- **Run-out of Diagnosis Data** (submissions of diagnoses through January 2014)
- **Seasonality-** often see a decline in risk scores throughout the year as members with higher risk scores may die and new entrants usually have lower risk scores.
- **Risk Model Change** (Blending with new 2014 HCC Model)
- **Plan Specific Coding Trend**
- **Population Changes**
- **Convert back to a “Payment” Risk score-** by adjusting for the each 2013 and 2014 HCC year FFS Normalization and 2014 Coding Pattern factors



# Projecting Risk Scores (Alternative Methodology)

## Sample Calculation (2014 Bid Example)

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### 2014 MA Risk Score Development Illustration

Risk Score Element	March 2013	March 2013
	Risk Scores from MMR 2013 Model	Risk Scores from MMR 2014 Model
A Starting Data	1.0376	1.0376
B Covert to Raw - remove normalization	1.0280	1.0280
C Covert to Raw - remove Coding Pattern Adjustment	0.9659	0.9659
D Plan Specific Coding Trend	1.0200	1.0200
E Starting Data Adjustments (i x ii x iii below)	1.0160	1.0160
i) Transition from lagged to non-lagged diagnosis data	1.0180	1.0180
ii) Incomplete reporting of diagnosis data	1.0250	1.0250
iii) Seasonality	0.9737	0.9737
F Other Plan Specific Data Adjustment (Population)	1.0000	1.0000
G Risk Model Adjustment (i x ii / iii below)	n/a	1.0058
i) Raw 2014 HPMS Posted Data	n/a	1.0900
ii) Missing diagnosis adjustment	n/a	1.0150 *
iii) Raw 2013 HPMS Posted Data	n/a	1.1000
H Raw Risk Score	1.1444	1.1510
I MA Coding Pattern Adjustment	0.9509	0.9509
J Normalization Factor (must calibrate to denominator year; divide)	1.0410	1.0260
K Frailty Factor	0.0000	0.0000
L Interim Risk Score (H x I / J + K)	1.0454	1.0668
M Weight	25%	75%
N Final Weighted Risk Score		<b>1.0614</b>

\* The 2014 HCC Model includes diagnoses previously not used and if the plan sponsor filtered diagnoses to the fewer required diagnoses in previous years, then additional completion of the risk score published by CMS will be necessary

# Risk Score Projection Coding Trends: Retrospective Initiatives

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Use vendors or internal resources to identify “suspected opportunities” for missed diagnosis codes (i.e. look back at the diagnoses that you already have and see if anything seems to be missing). For example, if a member has been a diabetic for the last 5 years, but no diagnosis for diabetes is in the current year claims, then check the medical record for evidence of diabetes.

- Usually involves an on-site visit to the physician’s office to check the medical record for recorded diagnoses that were not submitted on the claim form. Process gets easier as electronic medical records evolve.
- Sample timeframe: For the 2013 revenue year which is based on 2012 diagnoses, on-site visits usually occur during the second half of 2013 so that diagnoses can be submitted by the third and final sweep on 1/31/14.
- **Critical to consider these initiatives when projecting risk scores.**

# Risk Score Projection Coding Trends: Prospective Initiatives

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Often utilizes vendors to send a physician or nurse to a member's home to perform a Health Risk Assessment to identify potentially undiagnosed conditions. Usually uses a predictive algorithm to identify likely candidates.

- An actual claim is created and since it is a face-to-face visit between a health practitioner and the member, any identified diagnoses can be used for risk adjustment.
- Sample timeframe: For the 2013 revenue year which is based on 2012 diagnoses, a health practitioner would have needed to visit someone in their home during 2012 for it to impact 2013 revenue.
- **Critical to consider these initiatives when projecting risk scores.**