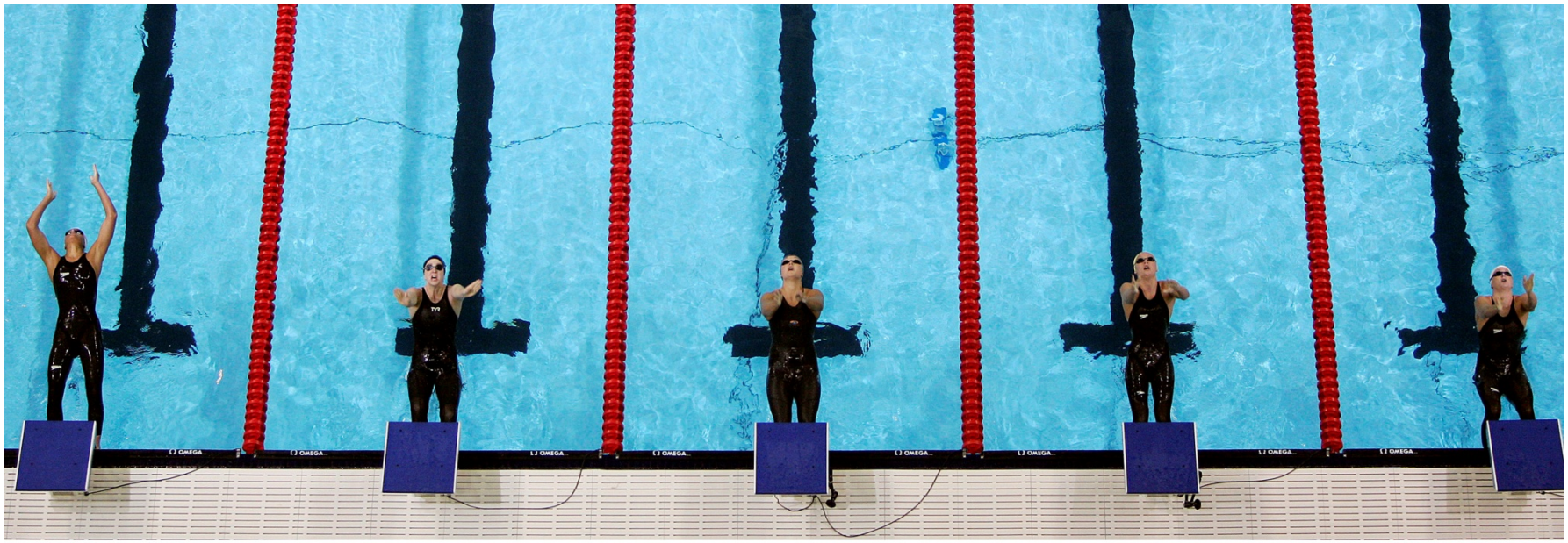


REUTERS/Jeff Haynes

MiPCT Risk Scores

May 1, 2012

THOMSON REUTERS

Agenda

- Risk Scores Introduction
- DCG Methodology Overview
- DCG Scores & MiPCT

Introduction

- Current Attribution Lists:
  - From Medicare, with Medicare-set “HCC Risk Scores”
  - From BCBSM, with BCBSM-determined risk scores
  - From Medicaid (via MDC) – no risk scores; ABAD flag included
  - From BCN – in process, will not include risk scores
- Future Attribution Lists will include DCG Risk Scoring for all Payers
  - From the Michigan Data Collaborative (MDC)
    - Complete Multi-Payer Attribution list (all Payers included on one list)
    - Will include DCG Scores for each eligible participant

DCG Methodology Overview

Diagnostic Cost Groups (DCGs) are…

- A population-based classification and risk adjustment methodology
- Developed by and licensed from Verisk Healthcare, Inc. (formerly DxCG®, Inc.)

The DCG Methodology

- Wide Market Acceptance
- Independently Validated (Society of Actuaries)
- Multiple Models
  - Population Group (Commercial, Medicare, Medicaid)
  - Type of input used for prediction (NDC or Dx, prior $)
  - Model Year (concurrent or prospective)
  - Model Purpose (explanatory or payment)
  - Model Outcome (what type of costs are predicted)
- Strong Clinical Foundation
  - Diagnosis based

The DCG Methodology

- Diagnosis-based (All Encounter) models:
  - Age/gender
  - Conditions
  - Condition Interactions

- *Each contributes weight to the person's overall Relative Risk Score*
- *Hierarchies ensure that only the most predictive manifestation of a condition is considered*
- *Acute conditions carry more weight concurrently; chronic conditions affect both concurrent and future scores*

DCG Model Predictive Power

- The Predictive Power of models is typically measured by r^2
  - r^2 is a statistical measurement of how much variation in cost between individuals can be explained by the model
  - **Higher r^2 = better prediction**
  - Age/gender prediction: r^2 ~.02-.05
  - Concurrent DCG models: r^2 between .40 and .50
  - Prospective DCG models: r^2 between .10 and .25

What does the DCG methodology do?

- Predicts healthcare resource consumption based on past experience

  If we know what healthcare experience a group of members had during a year, we can predict how "expensive" they should have been during that year.

  We can also predict how "expensive" they are likely to be next year.

- Helps explain variation in healthcare resource consumption based on a population's "illness burden"

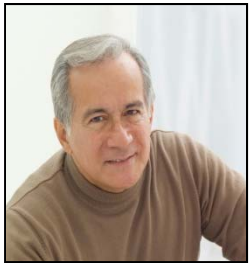
  We can explain why some groups might incur more or less cost than others based on the healthcare status of their population.

What does the DCG methodology do?

- Uses age, gender, and Diagnosis codes to predict how much higher or lower than average a patient is expected to cost – *both this year and next year*

27 year old male
•Appendicitis
•URI

Above Avg $ this year
Below Avg $ next year

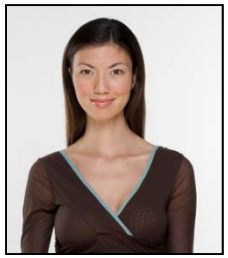


65 year old male
•Diabetes
•Peptic Ulcer
•Hypertension

Above Avg $ this year
Above Avg $ next year

58 year old female
•URI
•Progressive Angina
•Hypertension, minimal

Above Avg $ this year
Above Avg $ next year

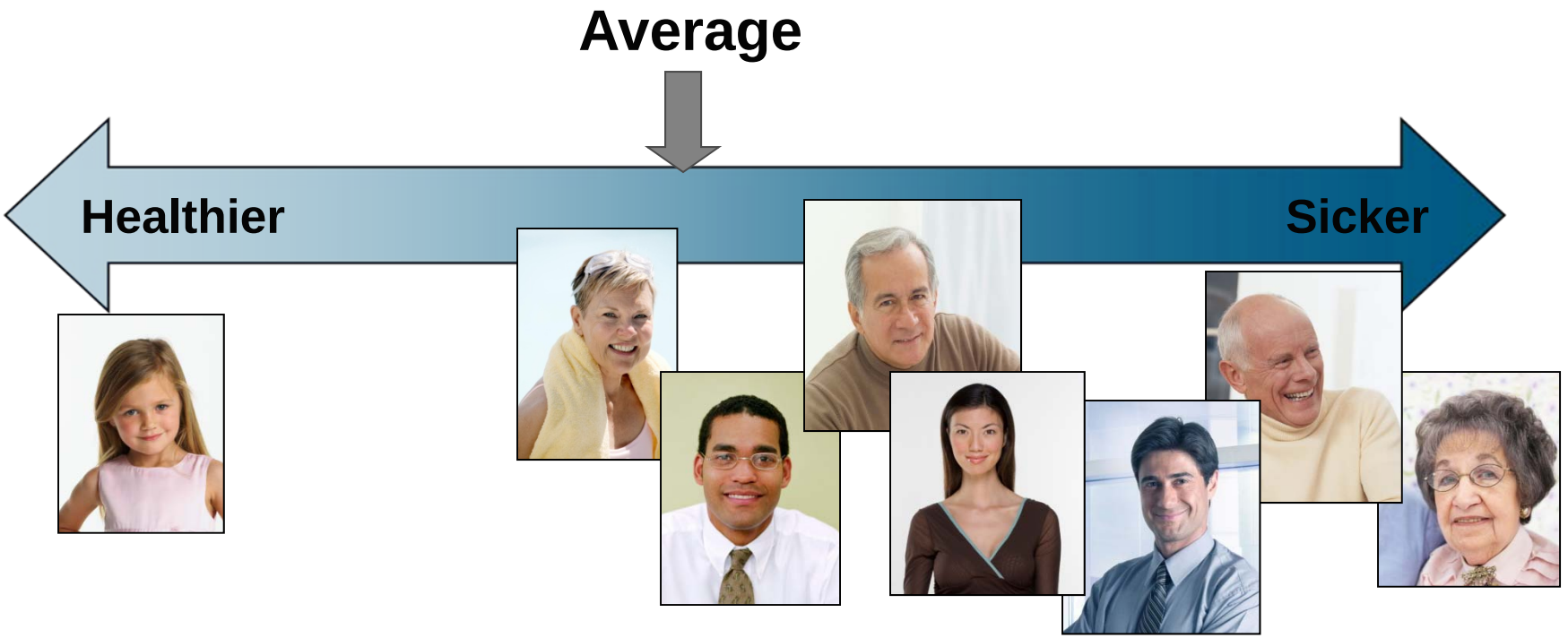


32 year old female
•Pregnancy
•Gestational Diabetes

Above Avg $ this year
Below Avg $ next year

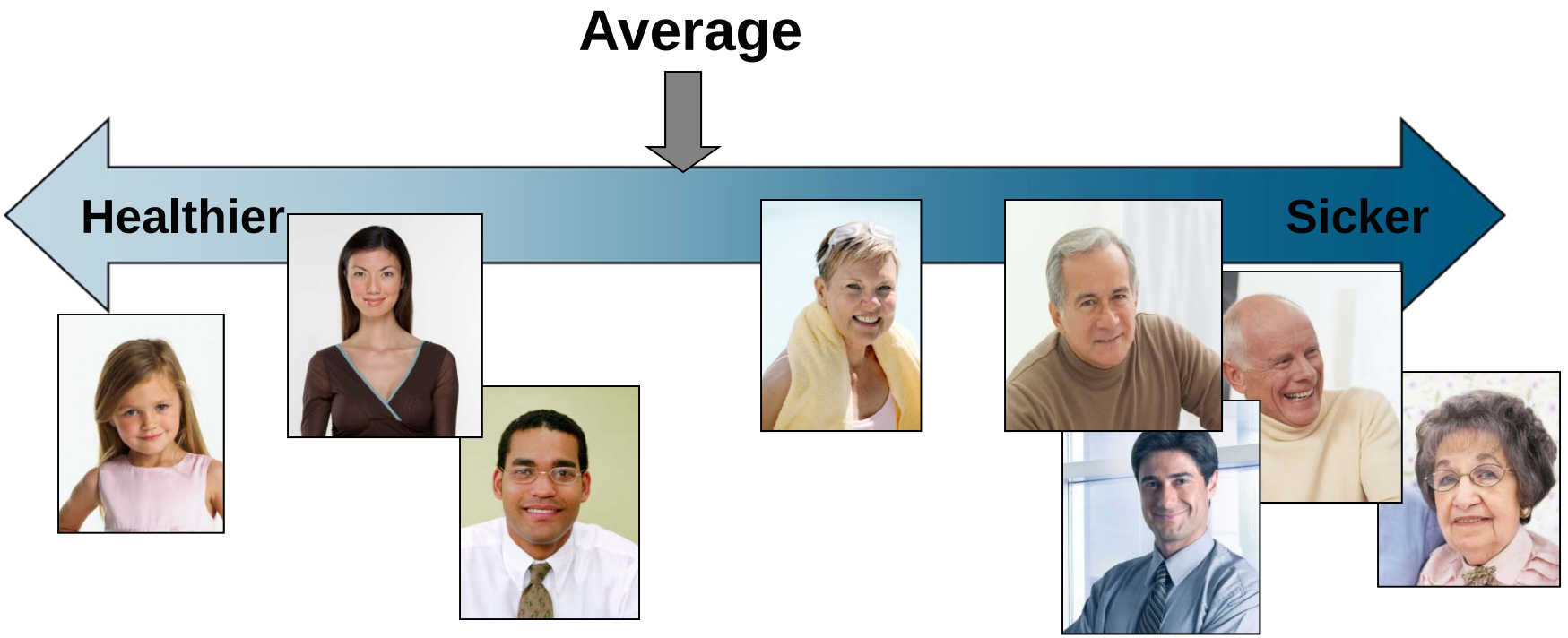
What does the DCG methodology do?

- Describes each individual's predicted total cost relative to the "average" patient, both this year…



What does the DCG methodology do?

…and next year



Value Provided by DCGs

- **Fair comparison** of population groups by adjusting for differences in underlying risk
- **Identification of high-risk patients** in order to better intervene and manage risk
- **Monitoring trends** in illness burden of a population of patients

How DCGs are Assigned

- Eligibility and claims data gathered for a particular 12 month period
- The appropriate DCG model is selected and run for each individual
- Within the selected model, every Diagnosis is categorized into a predictive grouping category
  - Hierarchical Condition Categories (HCC) is used by the All Encounter models

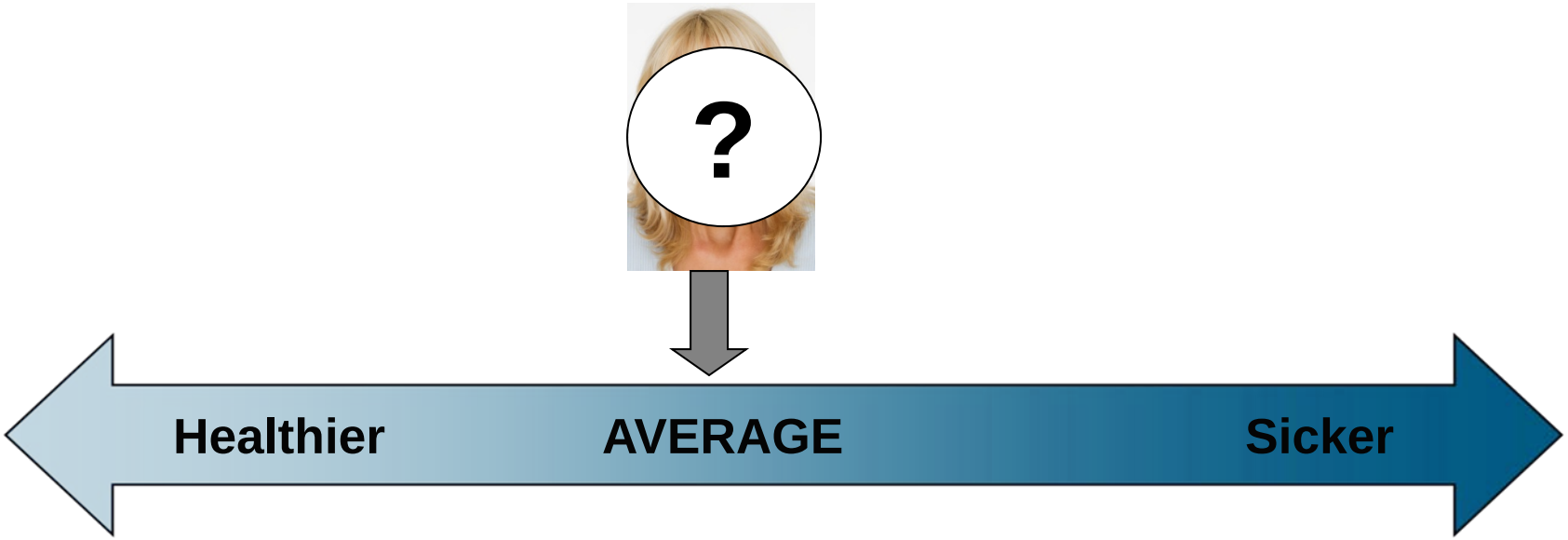
How DCGs are Assigned

- These categories, along with the age/gender, are used to predict resource expenditure for an individual
  - Cost weights are assigned to each person:
    1. for each HCC assigned
    2. based on age/gender
    3. based on the *interaction* between certain disease conditions
  - All models use the same categorization scheme, but the cost weights differ
  - The cost weights are summed to produce the final predictive output in the form of a “relative risk score”

DCG Output: Relative Risk Score

- About Relative Risk Scores (cont'd.)

  …but who is considered average?



  - The population *from which the model was derived by Verisk Healthcare, Inc.* is the average to which all individuals are initially compared

DCG Output: Relative Risk Score

- More About Relative Risk Scores
  - Every individual with appropriate eligibility and age/gender is assigned a risk score - *even people with no claims data receive a (minimal) risk score* based on age and gender
  - Depending on the model *outcome* that was specified, the risk score either represents medical risk alone, or includes pharmacy risk

DCG Scores & MiPCT

DCG Models

- Models vary based on:
  - Population Group (Commercial, Medicare, Medicaid)
  - Type of input used for prediction (NDC or Dx, prior $)
  - Model Year (concurrent or prospective)
  - Model Purpose (explanatory or payment)
  - Model Outcome (what type of costs are predicted)

DCG Models for MiPCT

- # 2 - Medicare All-Encounter Explanation Med Only, Year 1
- # 3 - Medicare All-Encounter Payment Med Only, Year 2
- # 18 - Commercial All-Encounter Explanation Med+Rx, Year 1
- # 26 - Commercial All-Encounter Explanation Med+Rx, Year 2
- # 76 - Medicaid MC All-Encounter Explanation Med+Rx Year 1
- # 77 - Medicaid MC All-Encounter Explanation Med+Rx Year 2

Year 1 = Concurrent score

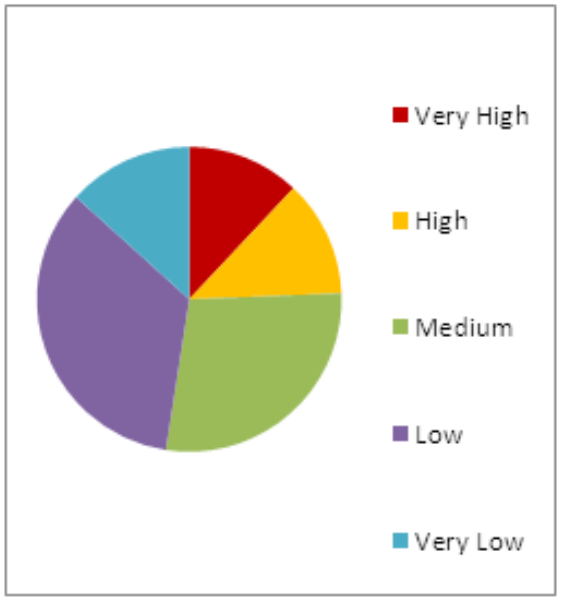
Year 2 = Prospective score

DCG Assignment for MiPCT

- DCG scores will be assigned to participants quarterly based on the most recent twelve months of incurred data
- Study participants will be assigned initial DCG scores based on the plan type they are in at the end of the twelve month period (commercial, Medicare or Medicaid)
- As part of the MiPCT reporting, normalized risk scores will be created in order to compare participants across plan types

Dashboard - Example

Population Risk



Risk Strata	# of Patients	Avg Risk Score (Concurrent)	Standard Cost PMPM
Very High	149,034	500.6	$1,523
High	153,548	348.4	$845
Medium	348,854	255.4	$400
Low	425,158	108.5	$155
Very Low	165,358	50.2	$90
Overall	**1,241,952**	**$130**	**$325**

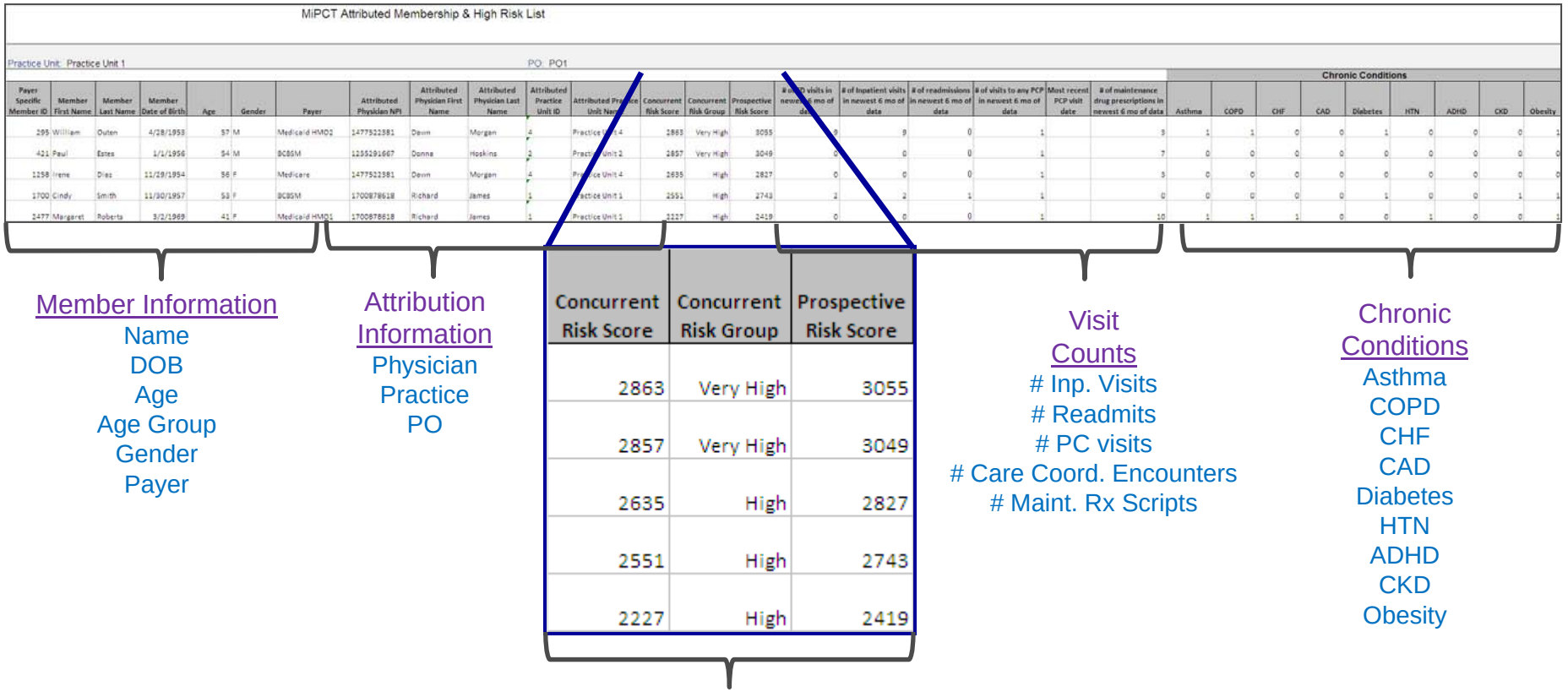
Risk Score Categories

Information by Category

 # Patients
Avg Risk Scores
Standard Cost (PMPM)

MiPCT Report Example

MiPCT Multi-Payer Attributed Membership & High Risk List



Member Information
Name
DOB
Age
Age Group
Gender
Payer

Attribution Information
Physician
Practice
PO

Concurrent Risk Score	Concurrent Risk Group	Prospective Risk Score
2863	Very High	3055
2857	Very High	3049
2635	High	2827
2551	High	2743
2227	High	2419

Risk Scores
Concurrent Risk Score
Concurrent Risk Group
Prospective Risk Score

Visit Counts
Inp. Visits
Readmits
PC visits
Care Coord. Encounters
Maint. Rx Scripts

Chronic Conditions
Asthma
COPD
CHF
CAD
Diabetes
HTN
ADHD
CKD
Obesity

Conclusions

- Use the Multi-Payer Attribution List :
  - Identify potential High Risk patients
  - Identify patients with ER or inpatient utilization, and/or chronic conditions
  - Meet with Care Team to determine if identified patients would benefit from care management interventions
- Diagnosis coding is important in determining the DCG scores used in this project
- Risk scores are only one predictor of patient risk

Questions?