



Aetna PhilaSUG Meeting

PULSE AIM

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# Objectives

- Describe the Development of the PULSE Model
- Discuss the Deployment of the PULSE Models
- Outline how PULSE AIM has changed Case Management at Aetna



# Why Use Predictive Modeling

- Allows for better targeting of scarce resources
- Aetna's Membership is approximately 14 million members
- Which of these 14 million should be managed ?
- Develop a predictive model to help solve this problem



# Our Solution

- PULSE Model
- Predicting
- Utilization through
- Statistical
- Evaluation



# Concept of PULSE Model

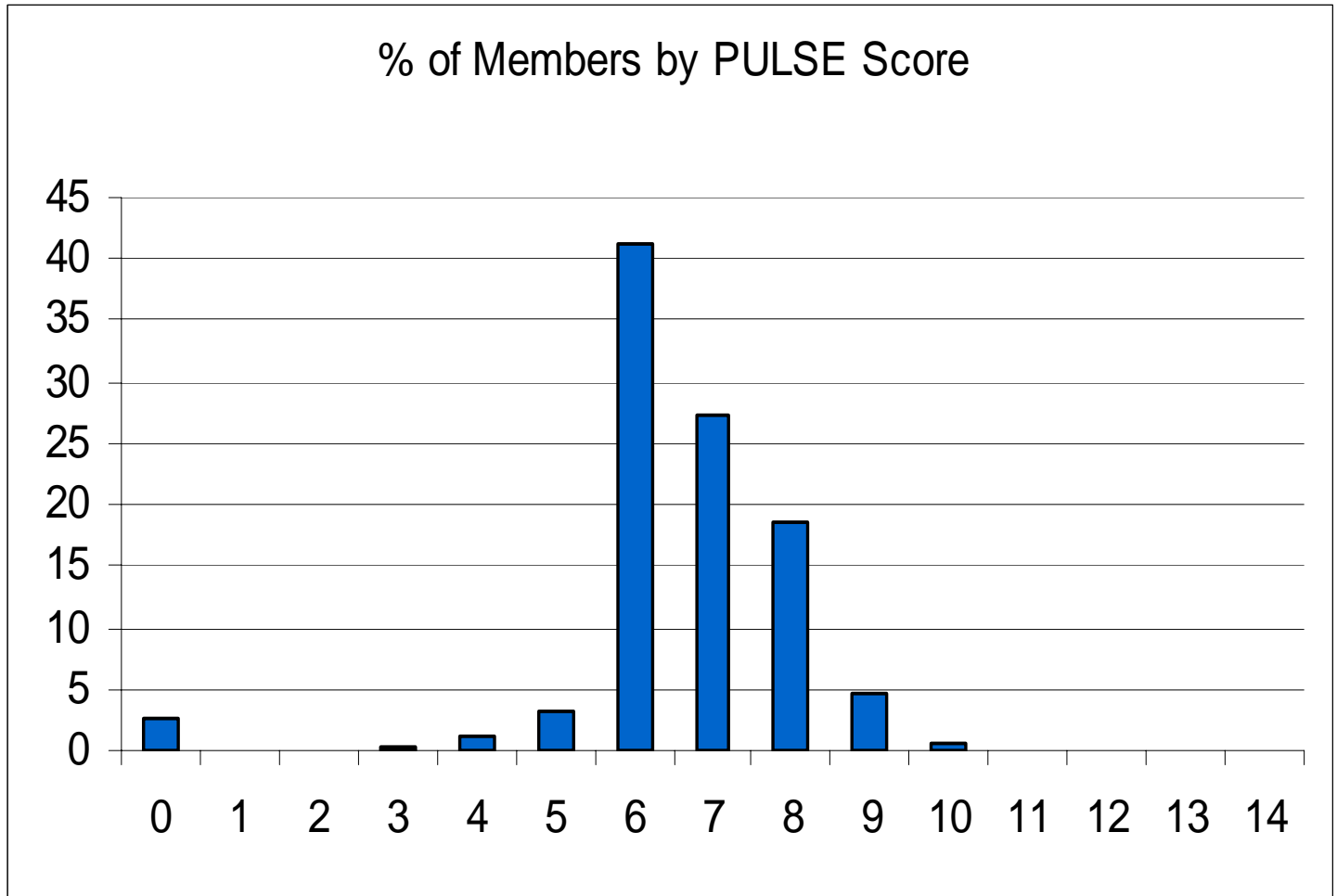
- Prospective not Retrospective
  - Attempts to predict future not describe the past
  - Uses as much information as possible from the past to make predictions
- Data Sources
  - Medical Claims
  - Pharmacy Claims
  - ERGs
  - HPD
  - HRAs
  - eTUMS



# Model Development

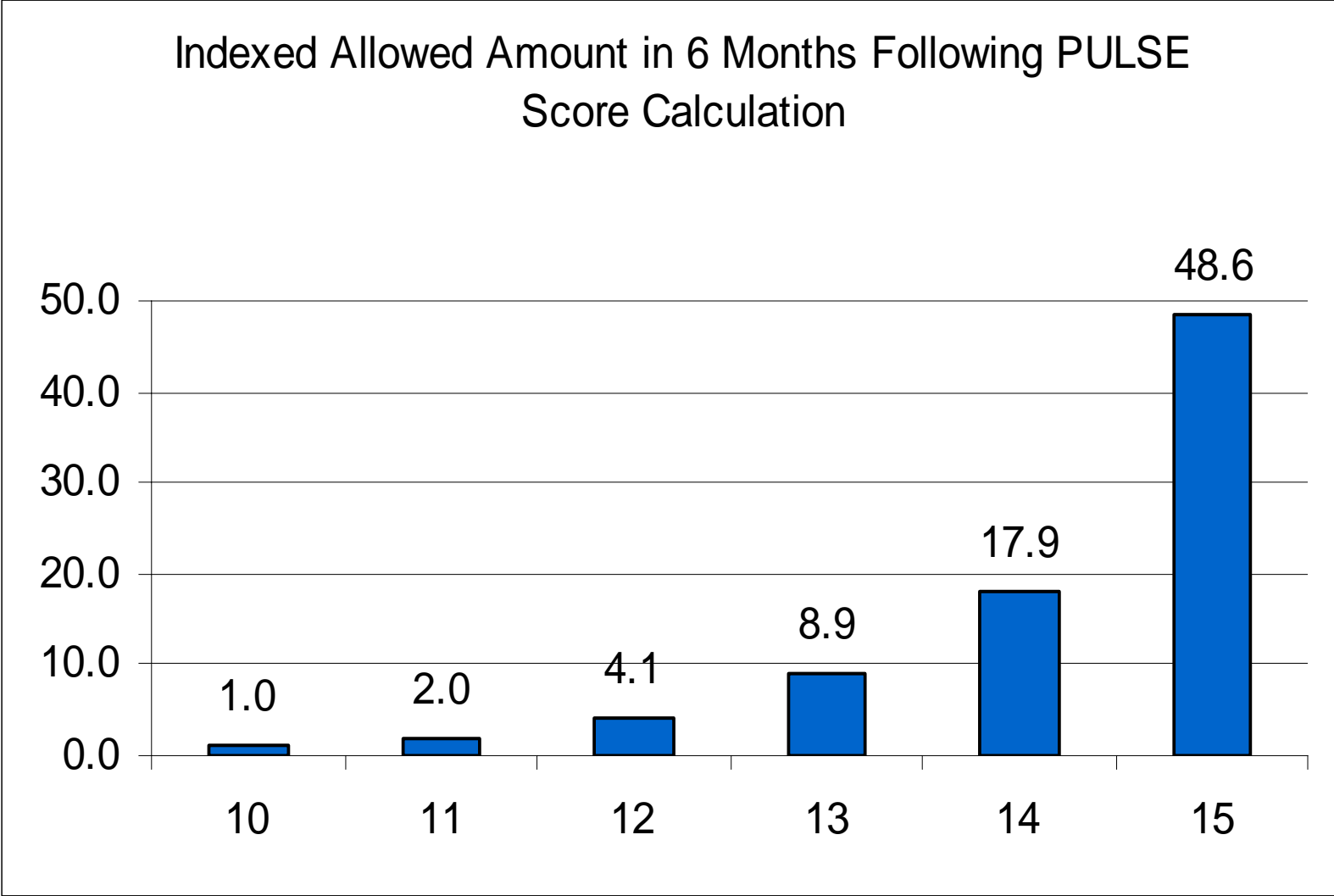
- Used Proc Reg in SAS Stat and Decision Trees in Enterprise Miner to develop model
- Current PULSE Model has an R-Square of 0.364
- Symmetry Prospective ERGs R-Square of 0.25 (from Symmetry Web Site)

# Distribution of Members





# PULSE Accuracy





# Delivery of the PULSE Score

- Originally delivered via mainframe file and spreadsheets to Case Managers
- PULSE Model with a specific subset of members – PULSE AIM
  - Actionable
  - Impactable
  - Members

# PULSE AIM

PULSE Action-able Identified Members (AIM) DEMO - Microsoft Internet Explorer provided by Aetna

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Address [https://aetinfo.dev.aetna.com/reports/pulse\\_aim/secure/aim\\_comm\\_demo.asp](https://aetinfo.dev.aetna.com/reports/pulse_aim/secure/aim_comm_demo.asp) Go

**Aetna**  
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Wednesday June 15, 2005

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**PULSE AIM Menu**

Click on line of business to select members.

- [Commercial](#)
- [Medicare](#)
- [Home](#)
- [How to Use](#)
- [Link to eTUMS](#)
- [Confidentiality](#)

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**Main Site Navigation**

- [AetInfo Home](#)
- [Reports](#)

Home Page > Reports > Pulse AIM > : PULSE AIM Commercial

## PULSE AIM (Demo) - Commercial Report Selection Screen

This screen enables you to select members with high (>= 10) PULSE Scores and high action-ability characteristics. Your selections from this screen generate a list of the top 15 members meeting the PULSE AIM criteria. To activate selection values you must select a Selection Method (#1) by clicking on one of the radio buttons. Results are sorted by 1) members with 2 or more action flags, 2) descending PULSE score, 3) members with 1 action flag.

**Make a selection from each numbered step, then hit Continue:**

[Continue](#)

**1. Selection Method:**

- Region:
- PM office:
- HMO/QPOS Service Area:
- Local Markets:
- Plan Sponsor:
- Member ID:

**Selection Values:**  
(activate by clicking a Selection Method to the left)

\*\*\* Select a Region \*\*\*

\*\*\* Select a PM Office \*\*\*

\*\*\* Select Service Area(s) \*\*\*

- AR01 - Arkansas - HMO
- AR02 - Northern Arkansas
- AZ01 - Arizona

\*\*\* Select Local Market(s) \*\*\*

- 000010 - Northern New Jersey
- 000020 - Southern NJ/Delaware
- 000025 - Southern NJ/DE All Other

Group Code  Control Number

Enter Member ID

2. Select Member Status (see screen)

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Start PULSE Action-able I... 8:46 AM

# Member Selection

**PULSE Action-able Impactable Members (AIM) - Microsoft Internet Explorer provided by Aetna**

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Address <https://aetninfodev.aetna.com/sasweb/scripts/broker.exe>

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**PULSE AIM Menu** → Commercial Medicare Home How To Use Link to eTUMS Confidentiality

Home Page > Reports > Pulse aim > Commercial : Assignment Page

**Congratulations! 1 Members Have been Reviewed based on the following selection criteria**

Your selection criteria below returned **4,355** member records.

Selection Type: Region  
 Selection Values: MA  
 Report Type: Standard PULSE AIM

States: ALL  
 Inc. Dedicated Units?: N  
 Products: ALL

Experience Period: -  
 Last Refreshed:

Member Name	Action Flag Count	PULSE Score	Age	Gender	Member ID	Product	Ntwk Srv Area	Local Mrkt	Member State	PCP Name	Discharged from CM
<a href="#">Julia Henderson</a>	3	12.635	44	F	ME435839019	HPOS	00136	MANHATTAN	IN		05/09/2003
<a href="#">Donald Gonzales</a>	2	12.580	59	M	ME199672340	HPOS	00136	MANHATTAN	IN	Dr. Porter	04/28/2003
<a href="#">Kayla White</a>	2	12.463	52	F	ME016057785	HMO	00136	MANHATTAN	IN	Dr. Diaz	05/14/2003
<a href="#">Keith Perry</a>	2	12.302	60	M	ME383583762	HMO	00136	MANHATTAN	IN	Dr. McDonald	06/02/2003
<a href="#">Rebecca Clark</a>	2	12.142	53	F	ME357404524	OC	02805	MANHATTAN	IN		05/21/2003
<a href="#">Sarah Brown</a>	2	12.110	46	F	ME946467724	HPOS	00136	MANHATTAN	IN	Dr. Gordon	05/21/2003
<a href="#">Caleb Bryant</a>	2	12.073	57	M	ME093255439	HMO	00134	Northern New Jersey	LA	Dr. Cruz	03/18/2003
<a href="#">Trevor Barnes</a>	3	12.031	53	M	ME737180216	HPOS	00134	Northern New Jersey	LA		05/20/2003
<a href="#">Shannon Peterson</a>	2	11.951	43	F	ME315159400	HMO	00136	MANHATTAN	IN		05/29/2003
<a href="#">George Coleman</a>	2	11.939	66	M	ME385654548	OC	02772	NORTH TEXAS	CT		05/30/2003
<a href="#">Richard Adams</a>	2	11.849	79	M	ME794062339	OC	02805	LONG ISLAND	IN		05/13/2003
<a href="#">Joshua Jones</a>	2	11.845	50	M	ME123897266	HMO	00106	MAINE	ND	Dr. Tucker	03/26/2003
<a href="#">Cynthia Long</a>	2	11.807	66	F	ME849783879	HMO	00134	Northern New Jersey	LA	Dr. Cruz	05/02/2003
<a href="#">Sarah Brown</a>	2	11.765	62	F	ME071434043	HPOS	00136	MANHATTAN	IN		.
<a href="#">Laura Allen</a>	2	11.756	14	F	ME424658415	HMO	00134	Northern New Jersey	LA	Dr. Cruz	05/20/2003

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# Member Summary

**PULSE Action-able Impactable Members (AIM) - Microsoft Internet Explorer provided by Aetna**

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Address <https://aetinfodev.aetna.com/sasweb/scripts/broker.exe> Go

**Diagnosis Summary** ▲top (click here for detail Medical Claims)

Diagnosis Group	Diagnosis	Place of Service	Most Recent Dx
Angina/Chest Pain	Other And Unspecified Angina P	Outpatient	05/05/2004
Back Pain/Degenerative Disorders	Thoracic Or Lumbosacral Neurit	Outpatient	03/26/2004
Dyspnea/Respiratory Failure	Other Diseases Of Lung, Not El	Outpatient	07/03/2004
Dyspnea/Respiratory Failure	Other Dyspnea And Respiratory	Outpatient	07/03/2004
Dyspnea/Respiratory Failure	Shortness Of Breath	Outpatient	06/26/2004
Dyspnea/Respiratory Failure	Interstitial Emphysema	Outpatient	04/27/2004
Lung Cancer	Malignant Neoplasm Of Bronchus	Outpatient	08/28/2004
Mechanical Joint Disorders	Pain In Joint Pelvic Region/th	Outpatient	03/26/2004
Metastatic Cancer	Secondary Malignant Neoplasm O	Inpatient	04/17/2004
Pneumonia	Pneumonia, Organism Unspecifie	Outpatient	04/27/2004
Pneumothorax	Other Spontaneous Pneumothorax	Inpatient	05/16/2004
Pneumothorax	Traumatic Pneumothorax, Closed	Inpatient	05/05/2004
Pulmonary Infection - Other	Unspecified Pleural Effusion	Outpatient	06/26/2004
Respiratory Disorders - Other	Postinflammatory Pulmonary Fib	Inpatient	04/17/2004
Unspecified Causes of Morbidity	Pre-operative Cardiovascular E	Inpatient	05/05/2004
Valvular Disease	Tricuspid Valve Disorders, Spe	Inpatient	04/16/2004

**Pharmacy Summary** ▲top (click here for detail Rx Claims)

Drug Class	Drug Name	Last Date of Dispense
Anabolic Steroids	OXANDRIN TAB 2.5MG	06/03/2004
Antiasthmatics - Anticholinergics	SPIRIVA CAP HANDIHLR	08/31/2004
Beta Blockers Non-Selective	SOTALOL HCL TAB 80MG	08/13/2004
Fluoroquinolones	LEVAQUIN TAB 750MG	06/24/2004
HMG CoA Reductase Inhibitors	ZOCOR TAB 20MG	08/12/2004
Ketolides	KETEK TAB 400MG	08/12/2004
Proton Pump Inhibitors	PREVACID CAP 30MG DR	08/12/2004
Steroid Inhalants	PULMICORT SUS 0.5MG/2	07/06/2004
Sympathomimetics	ALBUTEROL NEB 0.083%	08/24/2004
Sympathomimetics	COMBIVENT AER	07/31/2004
Sympathomimetics	DUONEB SOL	06/27/2004

**Specialty Pharmacy Network Summary** ▲top

Self Injectable Drug/Procedure	Non-SPN Pharmacy Provider	Last Date of Dispense/Procedure
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# Member Detail

PULSE Action-able Impactable Members (AIM) - Microsoft Internet Explorer provided by Aetna

Address: https://aetinfodev.aetna.com/sasweb/scripts/broker.exe

**Medical Claim Detail** (click column header to sort by specific column)

Date of Claim	Place of Service	Provider	Specialty of Provider	Primary Diagnosis	Procedure	Paid Amount of Claim	Copy	Par
08/28/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Established Patient Offi 2	\$30	\$30	Y
08/28/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Breathing Capacity Test8	\$28	\$0	Y
07/30/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Established Patient Offi 2	\$36	\$30	Y
07/23/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Contrast Cat Scan Of Chest	\$619	\$0	Y
07/23/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Contrast Cat Scan Of Chest	\$246	\$0	Y
07/16/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Comprehensive Metabolic Panel	\$48	\$0	Y
07/16/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Automat Hemogram-Compleat Dif	\$27	\$0	Y
07/16/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Collection Of Venous Blood	\$14	\$0	Y
07/10/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Established Patient Offi 2	\$30	\$30	Y
07/03/2004	O	Dr. Daily	Unknown Code	Other Diseases Of Lung, Not El	Xray Exam Chest Two Views	\$79	\$0	N
07/03/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Established Patient Offi 2	\$70	\$0	N
07/03/2004	O	Dr. Daily		Other Dyspnea And Respiratory	Xray Exam Chest Two Views	\$36	\$0	Y
07/02/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Established Patient Offi 2	\$36	\$30	Y
06/26/2004	O	Dr. Daily	Unknown Code	Unspecified Pleural Effusion	Xray Exam Chest Two Views	\$79	\$0	N
06/26/2004	O	Dr. Daily		Shortness Of Breath	Xray Exam Chest Two Views	\$36	\$0	Y
06/26/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Established Patient Offi 2	\$30	\$30	Y
06/02/2004	O	Dr. Daily	Unknown Code	Unspecified Pleural Effusion	Xray Exam Chest Two Views	\$79	\$0	N
06/02/2004	O	Dr. Daily		Other Diseases Of Lung, Not El	Xray Exam Chest Two Views	\$36	\$0	Y
06/02/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Established Patient Offi 2	\$30	\$30	Y
05/27/2004	O	Dr. Daily	Unknown Code	Unspecified Pleural Effusion	Xray Exam Chest Two Views	\$63	\$0	N
05/27/2004	O	Dr. Daily		Unspecified Pleural Effusion	Xray Exam Chest Two Views	\$36	\$0	Y
05/27/2004	O	Dr. Daily		Malignant Neoplasm Of Bronchus	Established Patient Offi 2	\$30	\$30	Y
05/16/2004	I	Dr. Daily		Other Spontaneous Pneumothorax	X-Ray Exam Chest Single View	\$24	\$0	Y
05/15/2004	I	Dr. Daily		Other Spontaneous Pneumothorax	X-Ray Exam Chest Single View	\$24	\$0	Y
05/14/2004	I	Dr. Daily		Other Spontaneous Pneumothorax	X-Ray Exam Chest Single View	\$24	\$0	Y
05/13/2004	I	Dr. Daily		Other Spontaneous Pneumothorax	X-Ray Exam Chest Single View	\$24	\$0	Y

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# PULSE AIM Usage

