



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

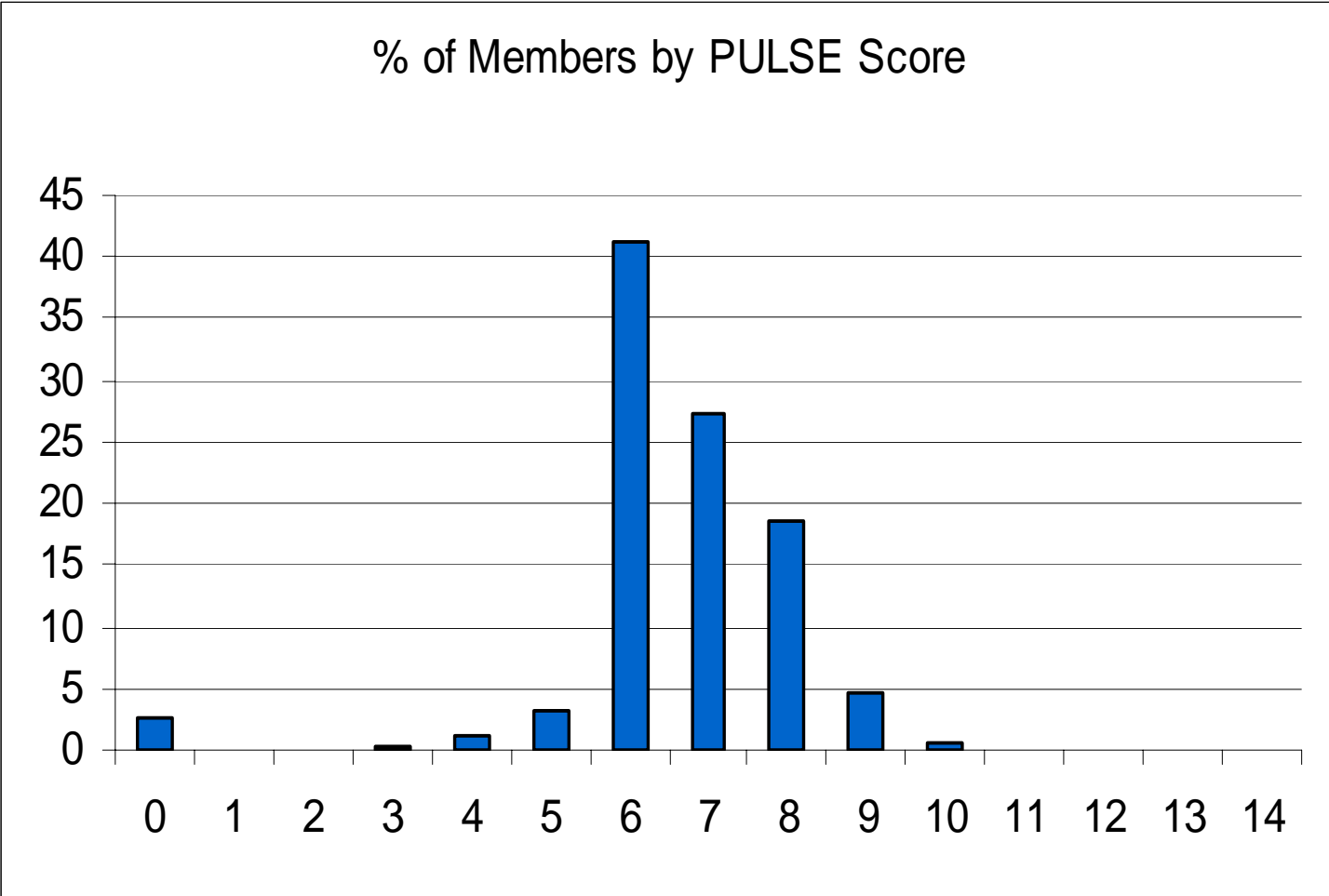


Model Development

- 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)

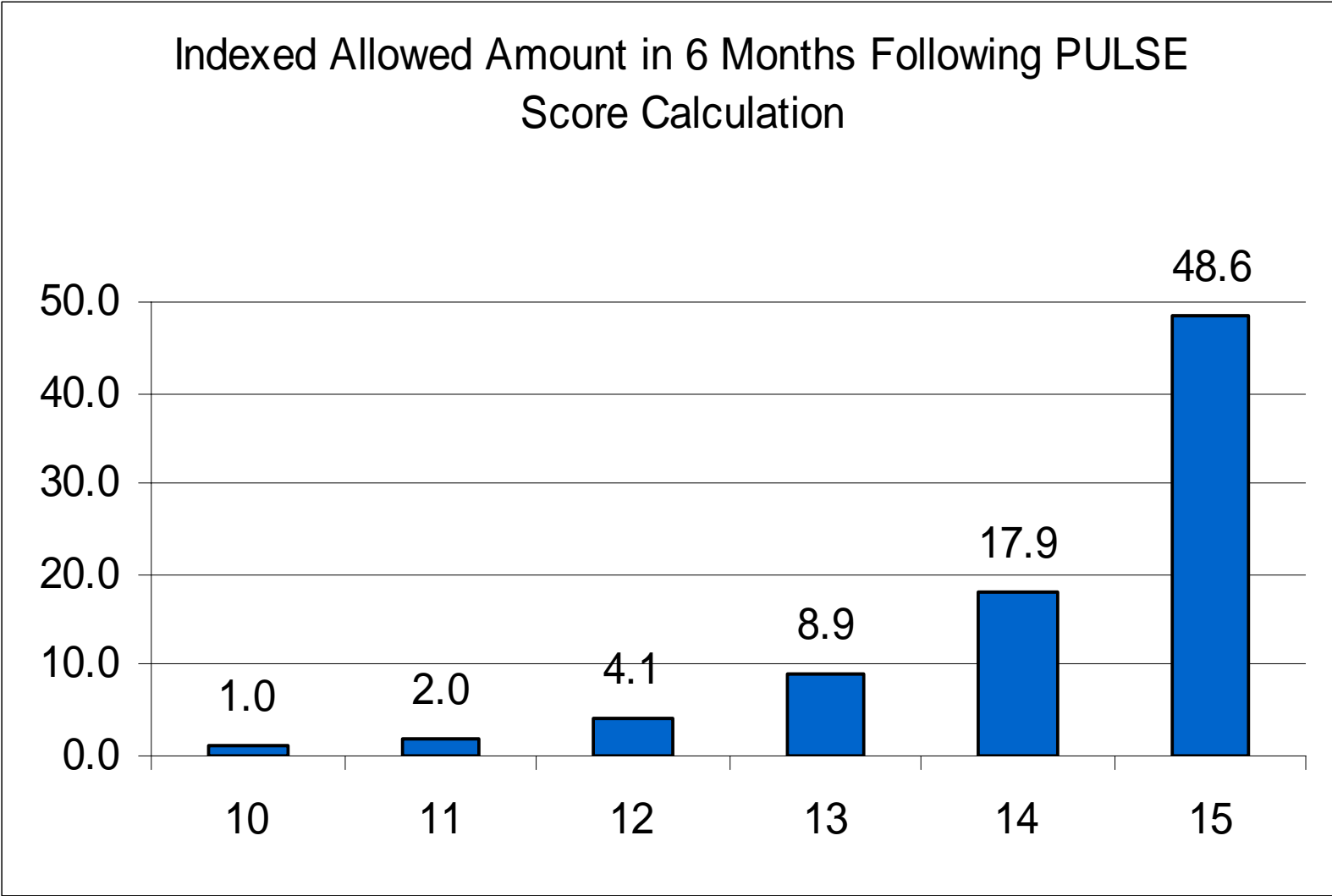


Distribution of Members





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 Go

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PULSE AIM Menu

Click on line of business to select members.

- [Commercial](#)
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Main Site Navigation

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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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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
Julia Henderson	3	12.635	44	F	ME435839019	HPOS	00136	MANHATTAN	IN		05/09/2003
Donald Gonzales	2	12.580	59	M	ME199672340	HPOS	00136	MANHATTAN	IN	Dr. Porter	04/28/2003
Kayla White	2	12.463	52	F	ME016057785	HMO	00136	MANHATTAN	IN	Dr. Diaz	05/14/2003
Keith Perry	2	12.302	60	M	ME383583762	HMO	00136	MANHATTAN	IN	Dr. McDonald	06/02/2003
Rebecca Clark	2	12.142	53	F	ME357404524	OC	02805	MANHATTAN	IN		05/21/2003
Sarah Brown	2	12.110	46	F	ME946467724	HPOS	00136	MANHATTAN	IN	Dr. Gordon	05/21/2003
Caleb Bryant	2	12.073	57	M	ME093255439	HMO	00134	Northern New Jersey	LA	Dr. Cruz	03/18/2003
Trevor Barnes	3	12.031	53	M	ME737180216	HPOS	00134	Northern New Jersey	LA		05/20/2003
Shannon Peterson	2	11.951	43	F	ME315159400	HMO	00136	MANHATTAN	IN		05/29/2003
George Coleman	2	11.939	66	M	ME385654548	OC	02772	NORTH TEXAS	CT		05/30/2003
Richard Adams	2	11.849	79	M	ME794062339	OC	02805	LONG ISLAND	IN		05/13/2003
Joshua Jones	2	11.845	50	M	ME123897266	HMO	00106	MAINE	ND	Dr. Tucker	03/26/2003
Cynthia Long	2	11.807	66	F	ME849783879	HMO	00134	Northern New Jersey	LA	Dr. Cruz	05/02/2003
Sarah Brown	2	11.765	62	F	ME071434043	HPOS	00136	MANHATTAN	IN		.
Laura Allen	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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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

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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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