



The Johns Hopkins University's



**2010 ACG International
Risk Adjustment Conference**

MAY 10-12 
Tucson, Arizona
Loews Ventana Canyon

ACG Coordination Markers

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Objectives

- Present the coordination markers.
 - ❖ Conceptual Basis
 - ❖ Data Requirements
 - ❖ Their Logic
- Show empirics for these markers.
- Preliminary ideas for how to these markers might be used.
- Opportunity for you to provide feedback.



CONCEPTUAL BASIS



What Do We Mean By Coordination?

“The extent to which a patient’s principal-care physician is aware of all treatments a patient is receiving and communicates with other providers.”

Tarlov, AR, et al. JAMA. 262(7):925-940, 1989



Goals of Assessing Coordination of Care

- Provide a means to systematically assess this important but often neglected dimension of care
- To create information useful to professionals at all levels of healthcare delivery for:
 - ❖ Assessing the process of care delivery
 - ❖ Quality
 - ❖ Performance assessment
 - ❖ Profiling



Endpoint for Coordination Studies

- **Clinical Outcome**
 - ❖ Recovery from depression
 - ❖ All-cause mortality
 - ❖ Death or dependency
 - ❖ Pain; other symptoms
 - ❖ Recurrent myocardial infarction;
 - ❖ Depression severity
 - ❖ Glycated hemoglobin
 - ❖ Pain severity
- **Adherence Outcomes**
 - ❖ Remain in contact with service
 - ❖ Treatment adherence
 - ❖ Documentation of pain history
- **Other Patient Experience Outcomes**
 - ❖ Live independently
 - ❖ Become homeless
 - ❖ Unemployed
 - ❖ Cardiovascular risk factors
 - ❖ Quality of life
 - ❖ Patient satisfaction
 - ❖ Quality of life
 - ❖ Functional status
 - ❖ Aerobic capacity
- **Utilization Outcomes**
 - ❖ Hospital admissions
 - ❖ All-cause admissions
 - ❖ Heart failure admission
 - ❖ Length of stay



The Challenge

- The measurement field related to care coordination is in the early phases of its development
- Measures based on administrative data
- Not specific to a condition



DATA REQUIREMENTS



Four Markers for Coordination

Patient markers that define:

- **Majority Source of Care (MSOC):** A majority source of care (percent of outpatient visits provided)
- **Provider Count (PC):** A count of the number of unique providers
- **Specialty Count (SC):** A count of the number of specialty types (not the same as number of specialists seen.)
- **No Generalist Seen (NGS):** A marker for the **ABSENCE** of a generalist



A Number of Restrictions Are Set On What Gets Included In the Markers

- Care must be provided in an outpatient setting
- Eligible physicians must:
 - ❖ Have the opportunity to manage care for the patient (have codes for E&M visits.)
 - ❖ Come from a list of specialties that could reasonably manage overall care for that patient.



Additional Data Are Required

In addition to standard ACG input (age, gender, diagnosis codes and optionally pharmacy data), the user must also supply:

- ❖ Provider information
 - Provider ID
 - Specialty
- ❖ Way to count visits (Service Date).
- ❖ Way to Identify Outpatient Evaluation and Management



Taxonomy Specialty Codes

- Taxonomy codes are standardized provider specialties managed by National Uniform Claim Committee (NUCC) to support electronic transactions and the National Provider Identifier (NPI)
- 10 characters of the form NNNAANNNA , where first 4 characters group like specialties



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Eligible Specialties

- Allergy & Immunology
- Colon & Rectal Surgery
- Family Medicine
- Internal Medicine
- Neurological Surgery
- Neuro-musculoskeletal Medicine
- Nuclear Medicine
- Obstetrics & Gynecology
- Ophthalmology
- Oral & Maxillofacial Surgery
- Orthopedic Surgery
- Otolaryngology
- Pain Medicine
- Pediatrics
- Physical Medicine & Rehabilitation
- Plastic Surgery
- Preventive Medicine
- Psychiatry and Neurology
- Radiology
- Surgery
- Thoracic Surgery (Cardiothoracic Vascular Surgery)
- Transplant Surgery
- Urology
- Advanced Practice Midwife
- Clinical Nurse Specialist
- Nurse Practitioner
- Physician Assistant



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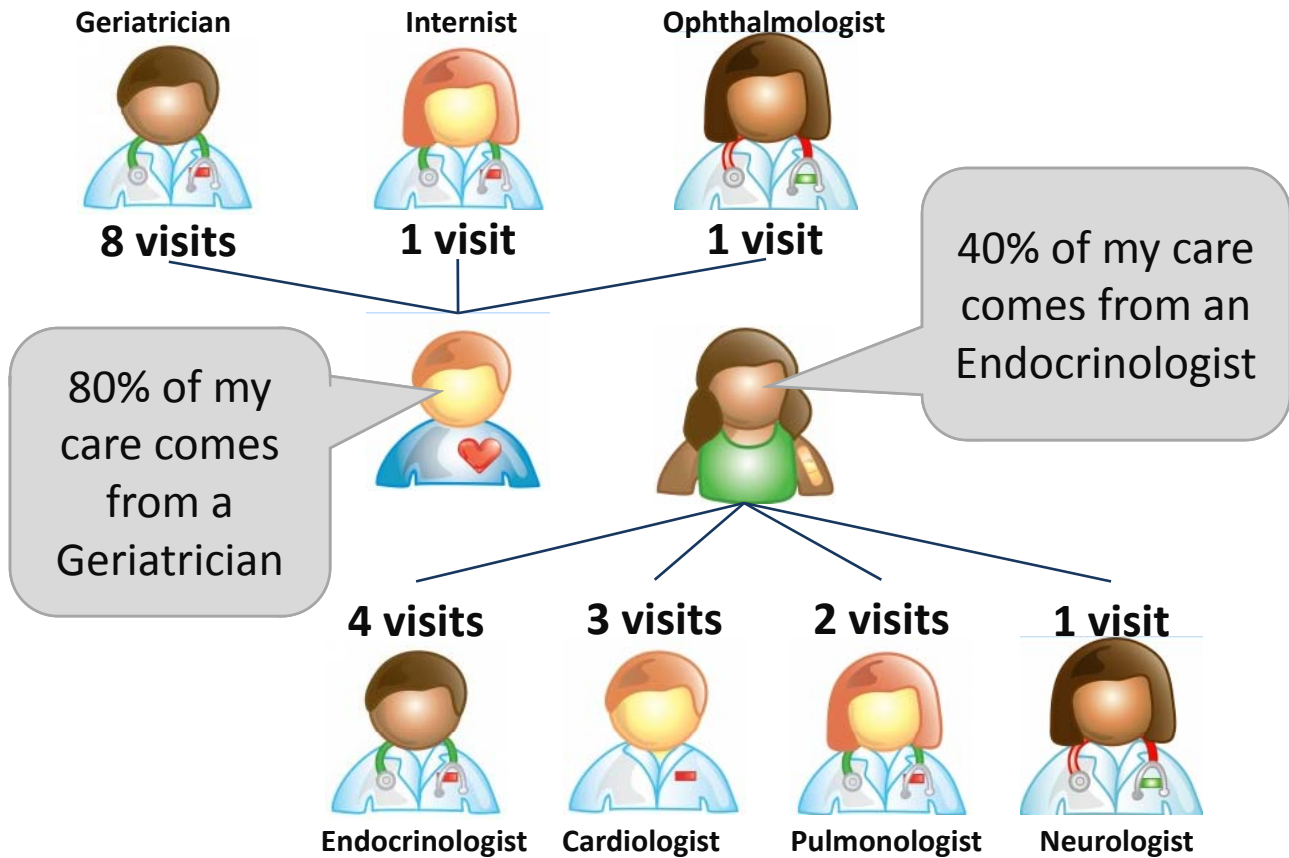
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Specialties not Eligible

- Ambulance Services
- Agencies
- Dental Providers
- Dermatologists
- Dietary & Nutritional Service Providers
- Facilities (Clinics, Ambulatory Health Centers, Emergency Departments, Hospitals, Assisted living facilities)
- Laboratories
- Managed Care Organizations
- Pharmacy Service Providers
- Podiatrists
- Psychologists
- Social Service Providers
- Speech, Language and Hearing Service Providers
- Suppliers of Durable Medical Equipment & Supplies
- Therapists (Physical – Respiratory)
- Technicians



THE MARKERS

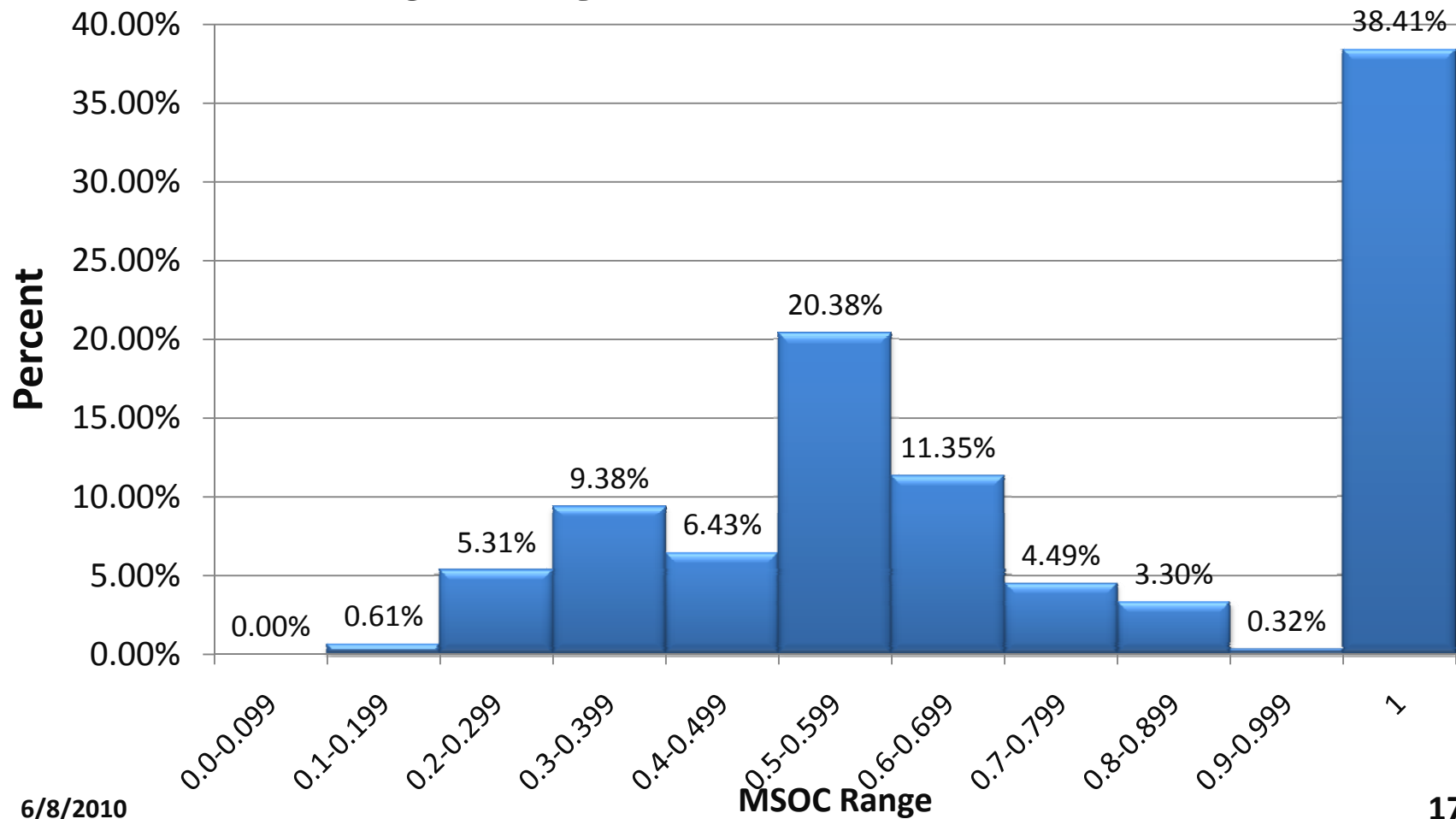


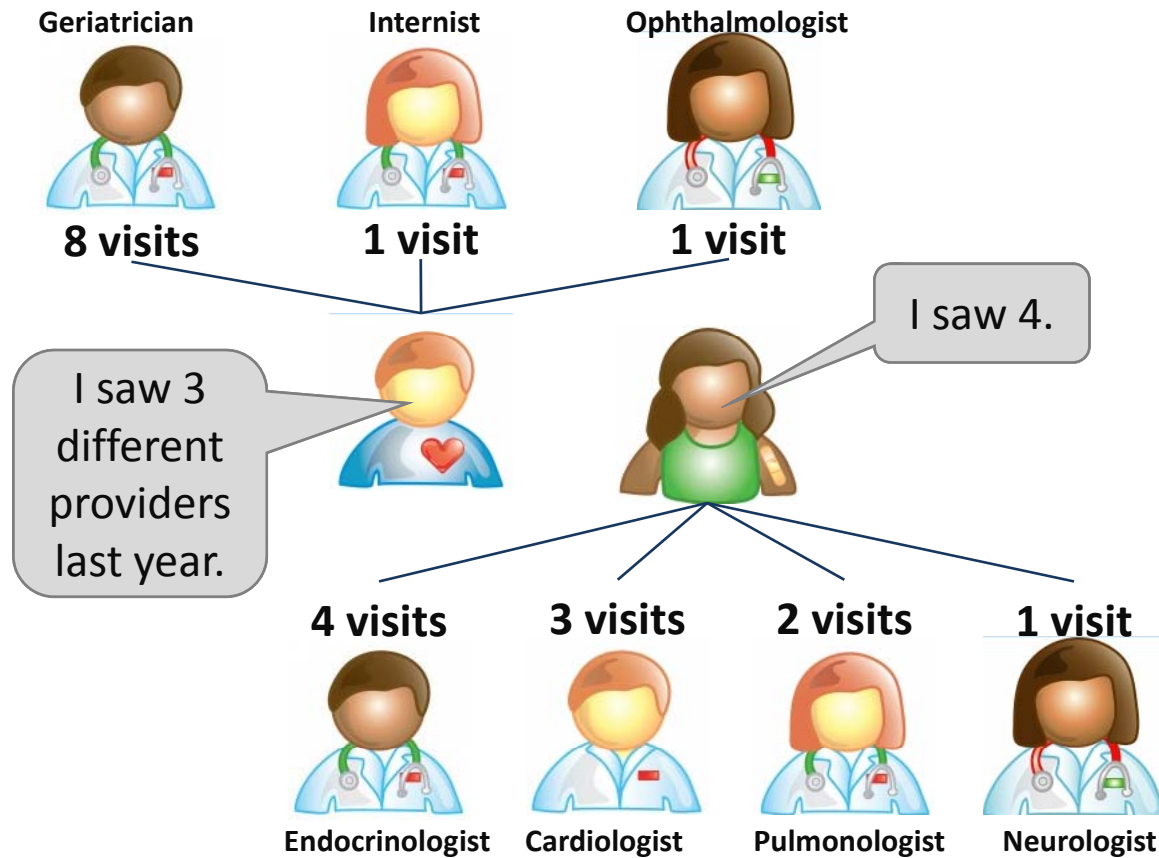
Majority Source of Care (MSOC)

The percentage of the outpatient visits provided by eligible physicians that saw the member most over the measurement period.



Majority Source of Care





Unique Provider Count (UPC)

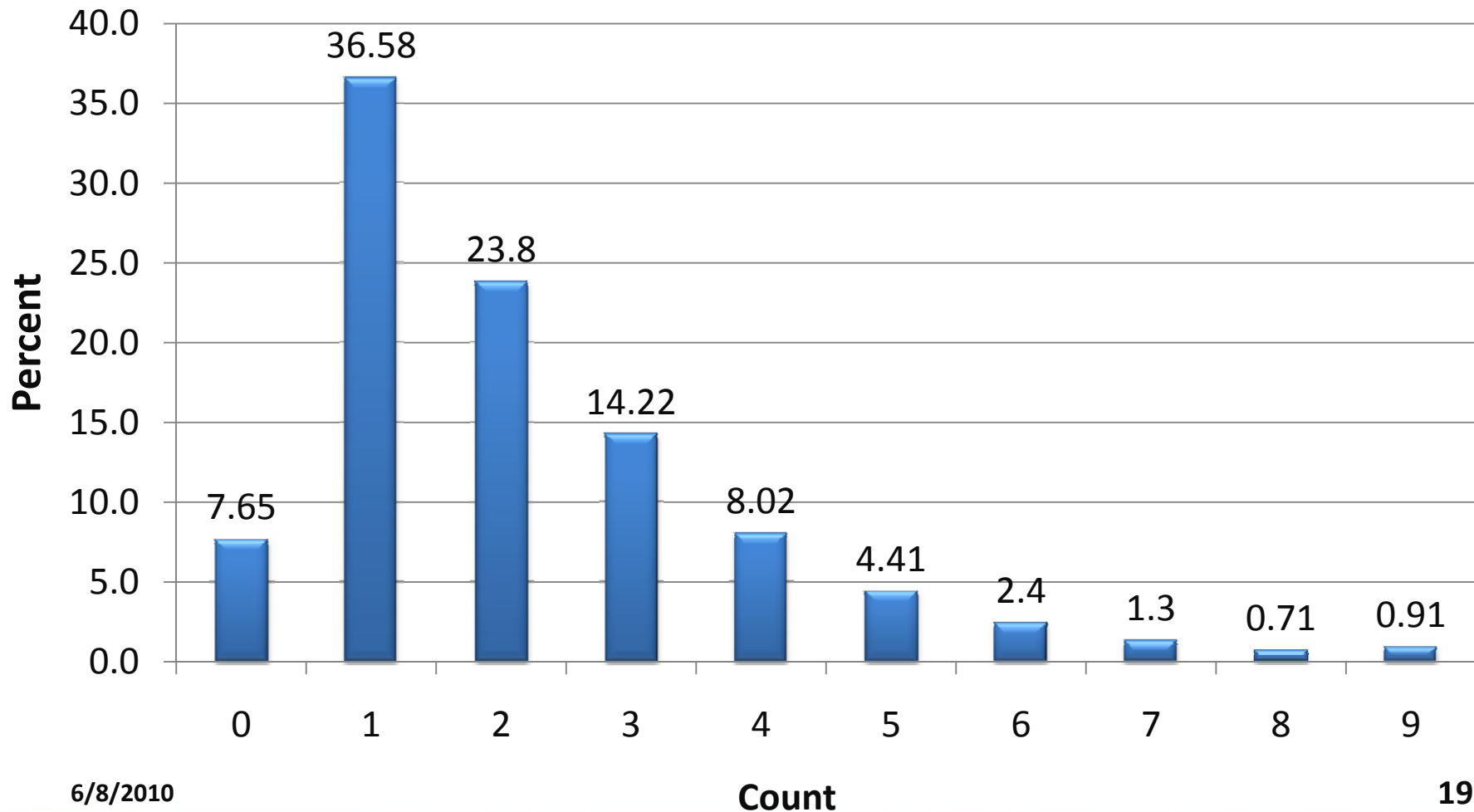
A count of the number of unique eligible providers that imparted outpatient care over the measurement period for any condition.

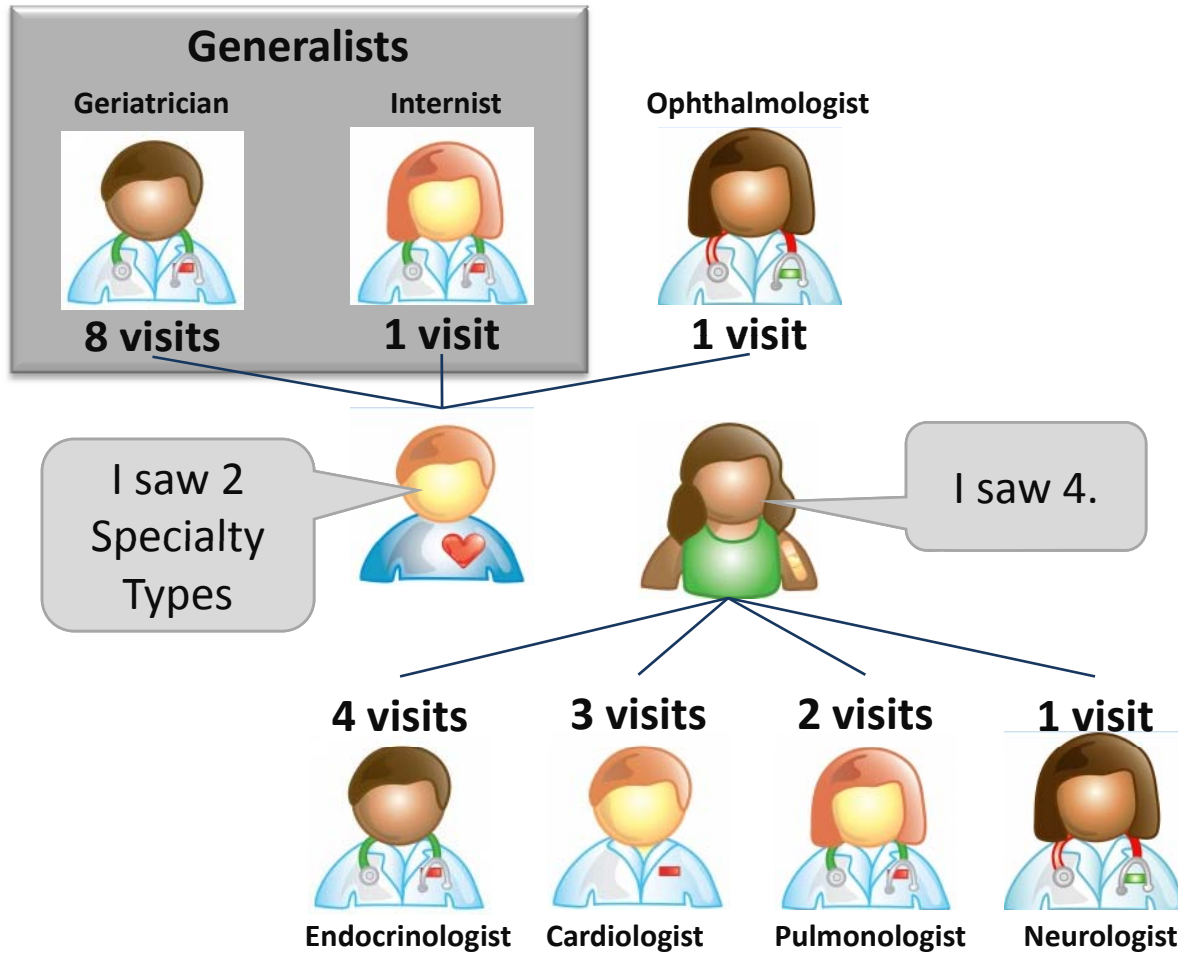


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Unique Provider Count





Specialty Count (SC)

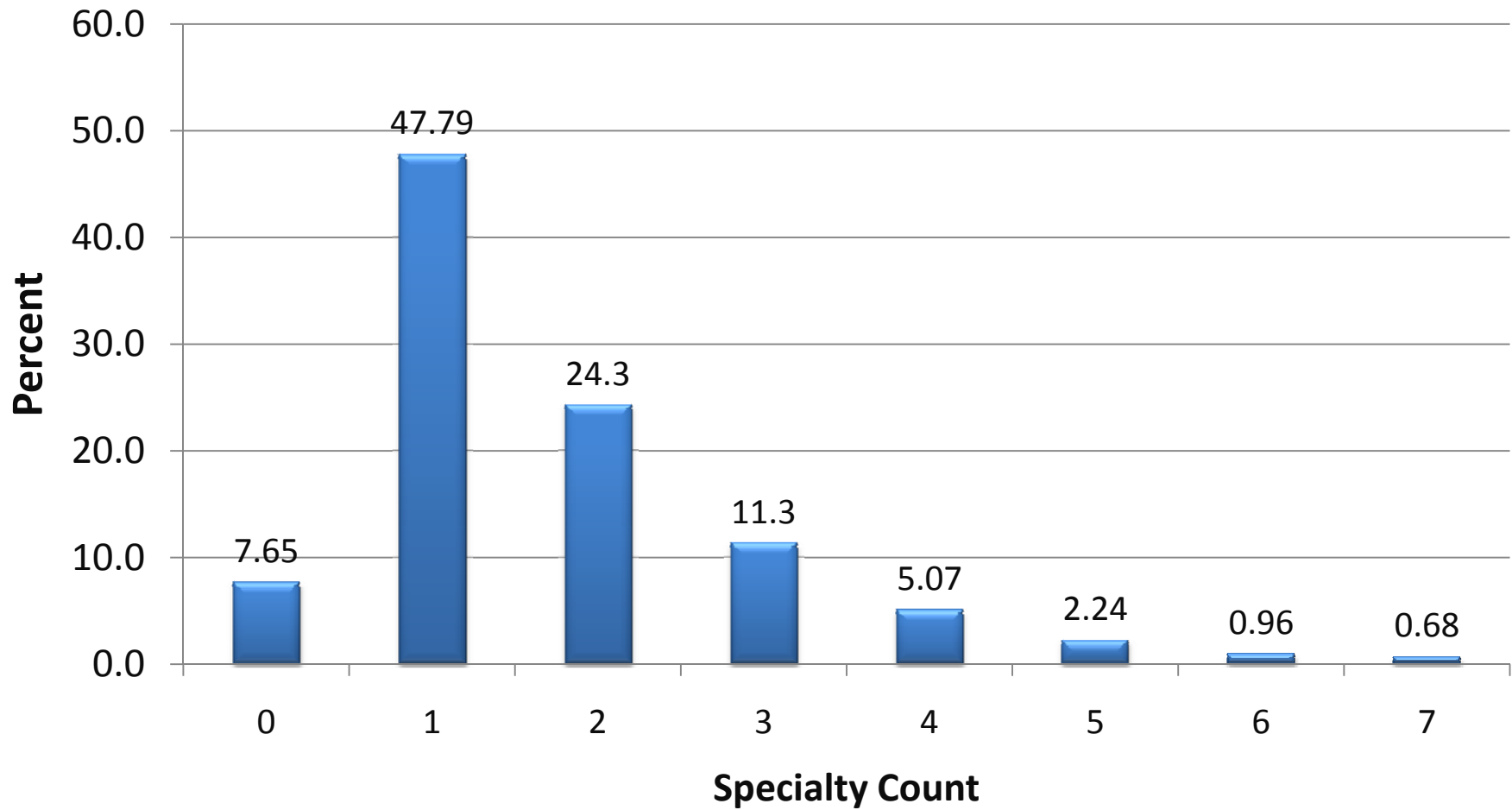
Count of the number of eligible specialty types that provided outpatient care over the measurement period for any condition.

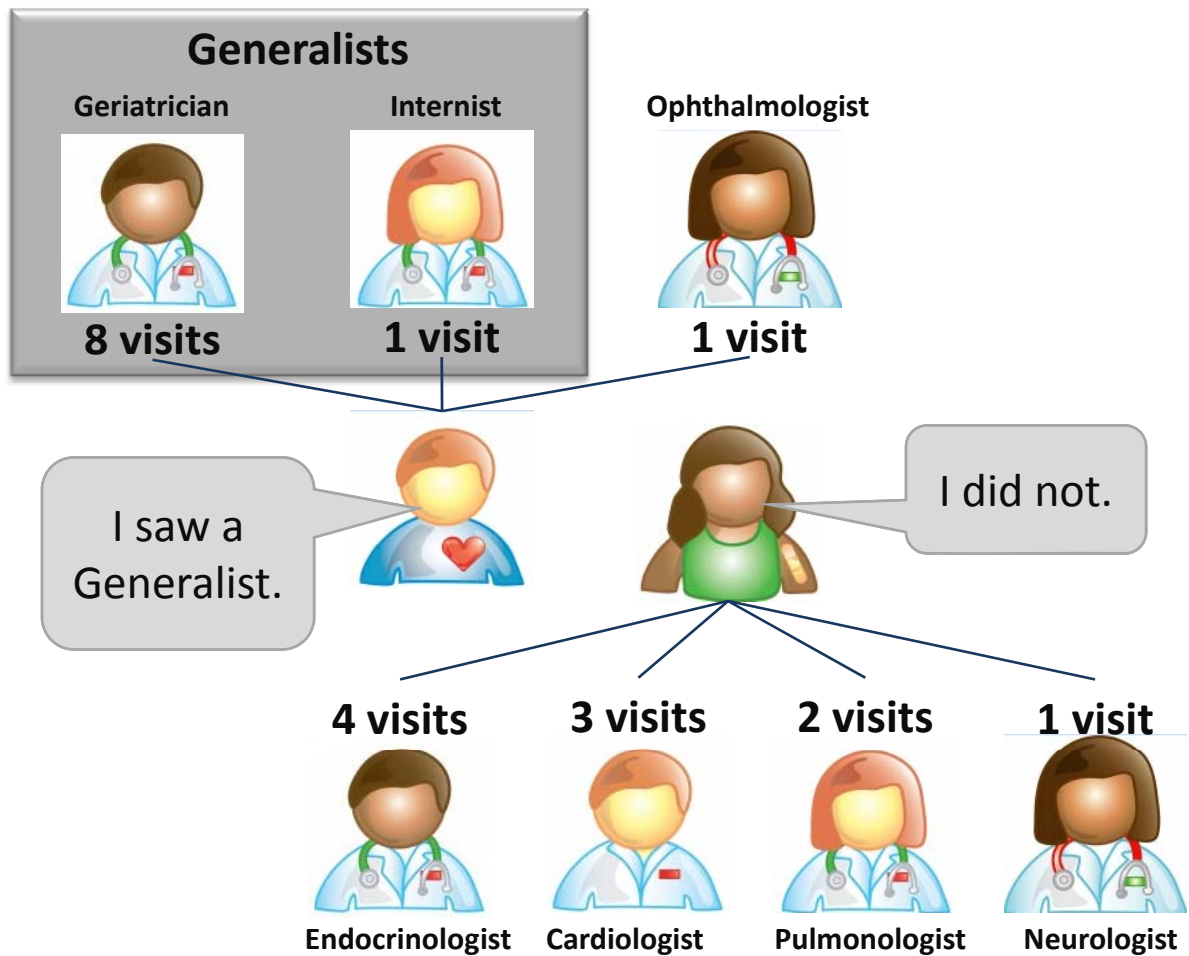


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Specialty Count





No Generalist Seen (NGS)

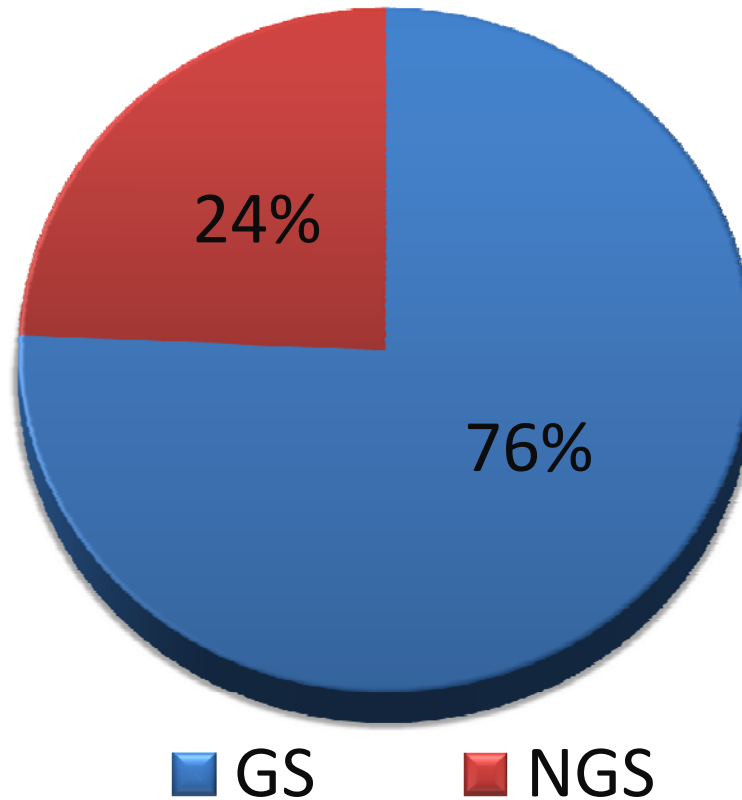
No generalist has provided outpatient care over the measurement period.



Generalist Specialties

- Family Medicine
- Internal Medicine
- Geriatricians
- Pediatricians
- Preventive Medicine
- Nurse Practitioners
- Obstetrics and Gynecology

No Generalist Seen vs. Generalist Seen





PRACTICAL APPLICATIONS

Patients at Risk for Poor Coordination

Report Options

Filters

Select a previously saved filter to load it into the filter editor below

Saved Filters: (Select a Filter) [v] Delete Filter

Choose filters to limit the data that is used to build your report

Filters define the source data to include in your analysis. If you don't add any filters, all source data will be included in the analysis. See the help for more information.

All of the following conditions are true (All—And, Any—Or, None—Not)

Chronic Condition Count	Greater Than Or Equal To	4	and		Delete
Unique Provider Count	Greater Than Or Equal To	5	and		Delete
Majority Source of Care Percent	Less than	30	and		Delete
No Generalist Seen	Equals 1,2,..,n	Y	and		Delete

Add Criteria Add Any/All/None

Clear Filter Save Filter

OK Cancel

Patient at Risk for Poor Coordination

Age	40	Gender	F
PCP Id	300*99196821	Product	
Resource Utilization Band	4	Local Weight	3.29

Model

DxRx- PM - total cost- lenient dx -> total cost
DxRx- PM - rx cost- lenient dx -> rx cost

Prior Costs

Total Cost	\$ 11,547
Rx Cost	\$ 5,461

Predictive Values

Probability High Total Cost	0.49
Predicted Total Cost Range	\$20,000-\$25,000
Probability High Rx Cost	0.84
Predicted Rx Cost Range	\$3,000-\$5,000
High Risk Unexpected Pharmacy	N

Coordination of Care

Chronic Condition Count	5
# Unique Providers Seen	9
# Specialty Types Seen	7
No Generalist Seen	Y
% Visits Provided By Majority Source of Care	23
Frailty Flag	N

Utilization

Outpatient Visits	32
ER Visits	1
Inpatient Admissions	0
Major Procedure Performed	N
Dialysis Service	Y
Nursing Service	N

Likelihood of Hospitalization

Hospital Dominant Count	2
Probability Hospital Admission (6 mos)	0.10
Probability Hospital Admission (12 mos)	0.23
Probability ICU/CCU Admission	0.04
Probability Injury-related Admission	0.02
Probability Long-term Admission (12+ days)	0.02

Patients at Risk for High Utilization

Report Options

Filters

Select a previously saved filter to load it into the filter editor below

Saved Filters (Select a Filter) [Dropdown] [Delete Filter]

Choose filters to limit the data that is used to build your report

Filters define the source data to include in your analysis. If you don't add any filters, all source data will be included in the analysis. See the help for more information.

[All] of the following conditions are true (All=And, Any=Or, None=Not)

Chronic Condition Count	Less Than Or Equal To	1	and	[]	Delete
Unique Provider Count	Greater Than Or Equal To	5	and	[]	Delete
Majority Source of Care Percent	Less Than Or Equal To	30	and	[]	Delete

[Add Criteria] [Add Any/All/None]

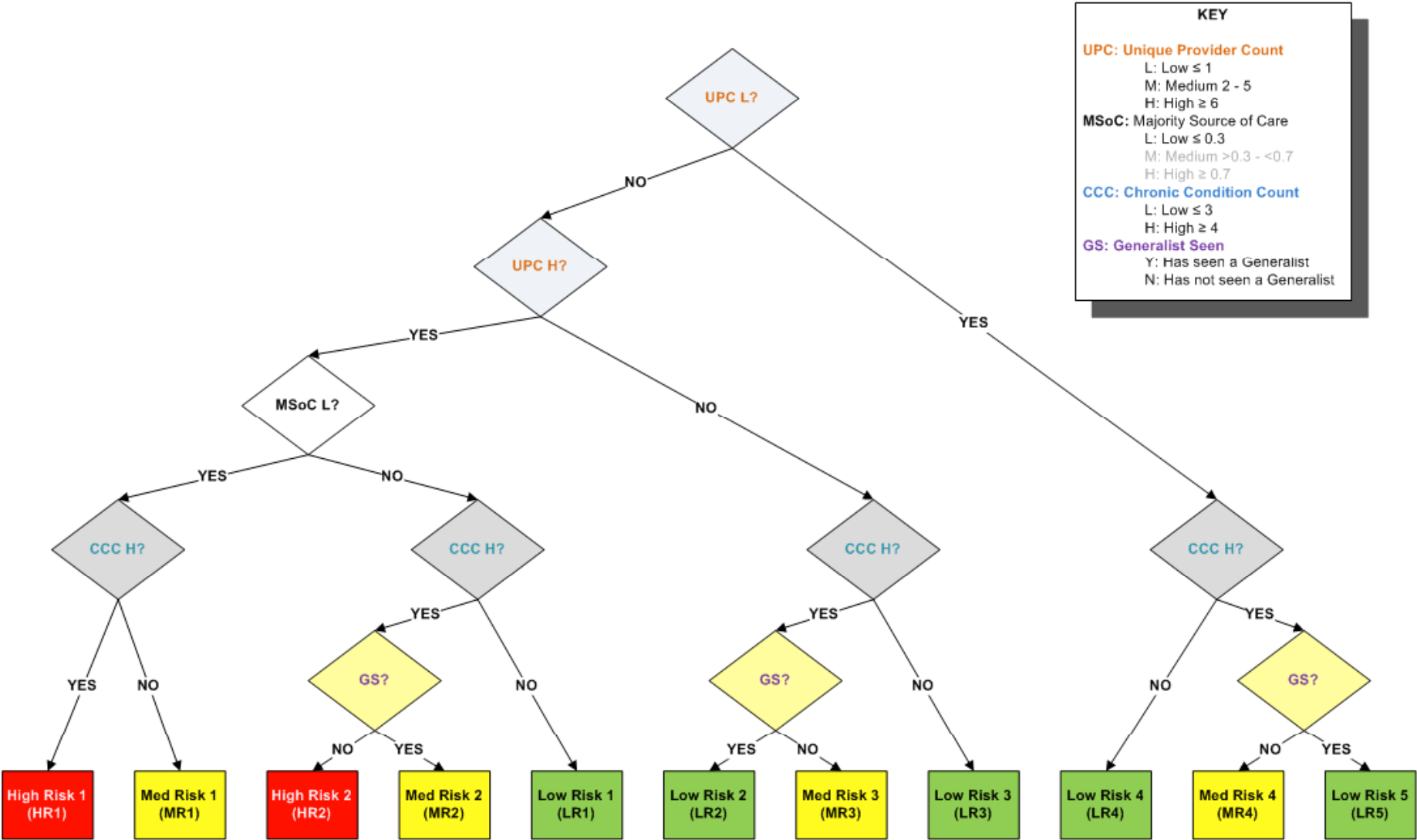
[Clear Filter] [Save Filter]

[OK] [Cancel]

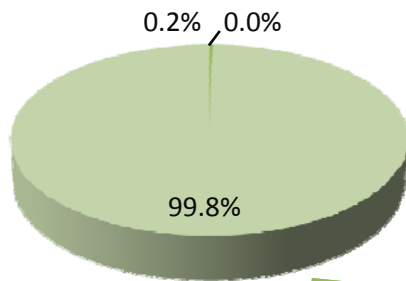
Patient at Risk for High Utilization

Age	37	Gender	F
PCP Id	300*99198543	Product	
Resource Utilization Band	3	Local Weight	1.45
Model		Prior Costs	
DxRx- PM - total cost - lenient dx -> total cost		Total Cost	\$ 5,973
DxRx- PM - rx cost - lenient dx -> rx cost		Rx Cost	\$ 687
Predictive Values		Coordination of Care	
Probability High Total Cost	0.07	Chronic Condition Count	0
Predicted Total Cost Range	\$3,000-\$5,000	# Unique Providers Seen	14
Probability High Rx Cost	0.01	# Specialty Types Seen	4
Predicted Rx Cost Range	\$250-\$500	No Generalist Seen	Y
High Risk Unexpected Pharmacy	N	% Visits Provided By Majority Source of Care	24
		Frailty Flag	N
Utilization		Likelihood of Hospitalization	
Outpatient Visits	17	Hospital Dominant Count	0
ER Visits	2	Probability Hospital Admission (6 mos)	0.04
Inpatient Admissions	0	Probability Hospital Admission (12 mos)	0.08
Major Procedure Performed	N	Probability ICU/CCU Admission	0.01
Dialysis Service	N	Probability Injury-related Admission	0.01
Nursing Service	N	Probability Long-term Admission (12+ days)	0.00

Proposed Coordination Branching Algorithm For Generating Combined Coordination Markers (CCMs)

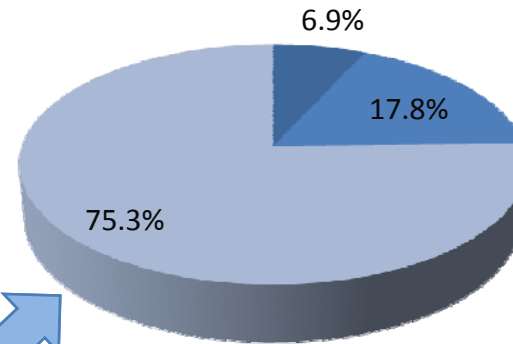


**Poor Coordination Risk
Among Low Resource Use**



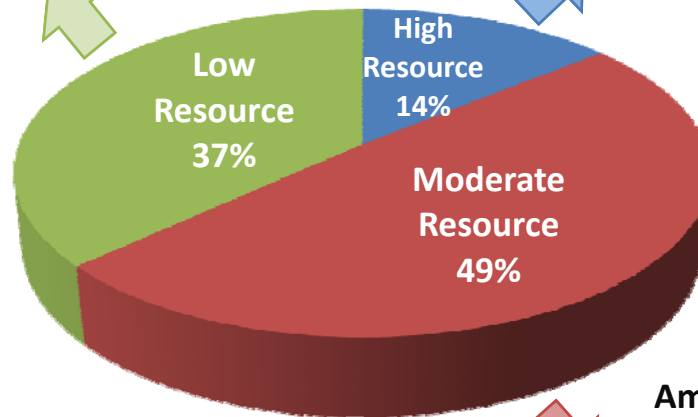
- High Risk
- Moderate Risk
- Low Risk

**Poor Coordination Risk
Among High Resource Use**

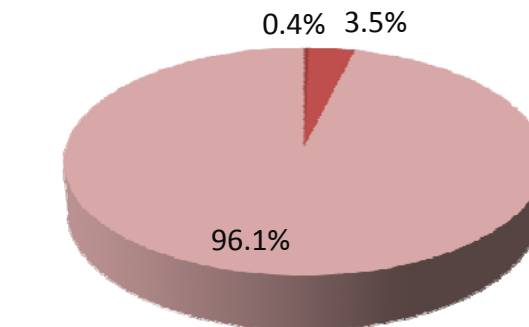


- High Risk
- Moderate Risk
- Low Risk

**Distribution of
Resource Use**

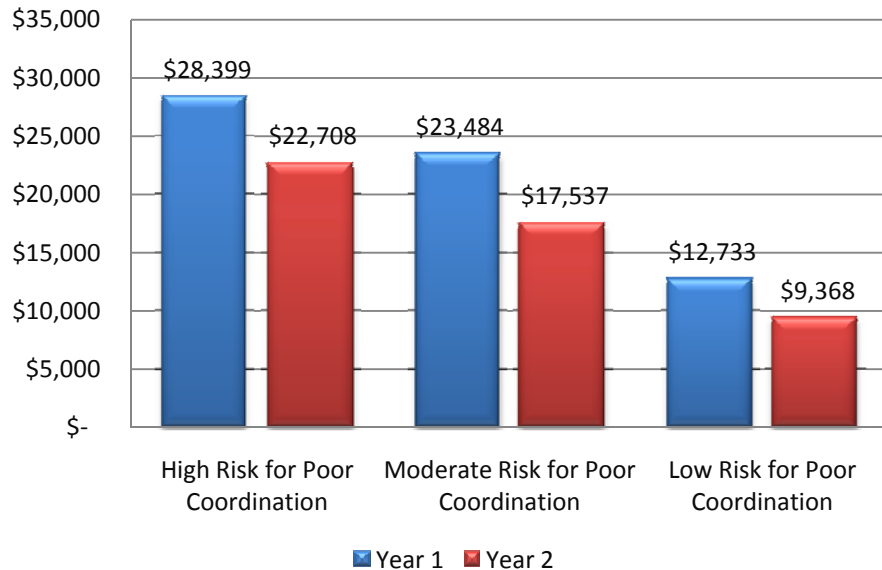


**Poor Coordination Risk
Among Moderate Resource Use**

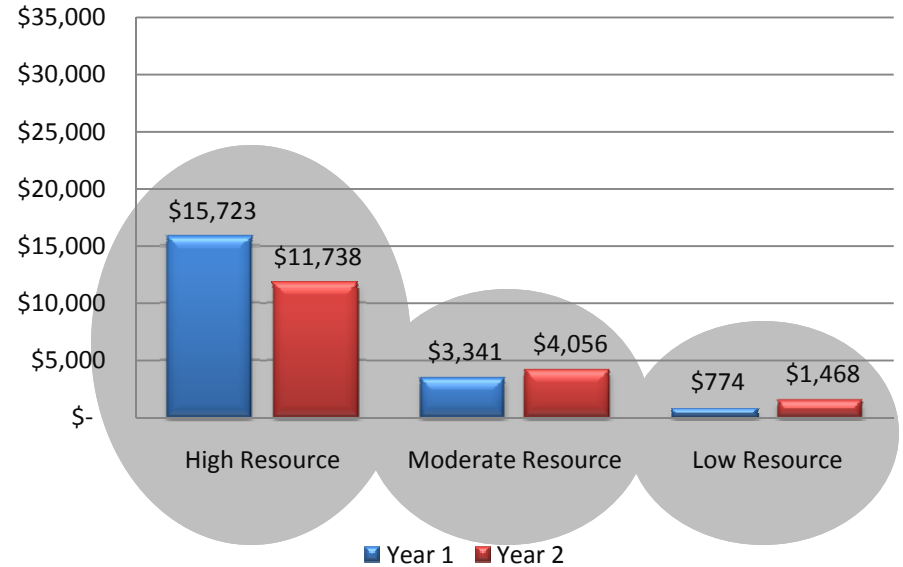


- High Risk
- Moderate Risk
- Low Risk

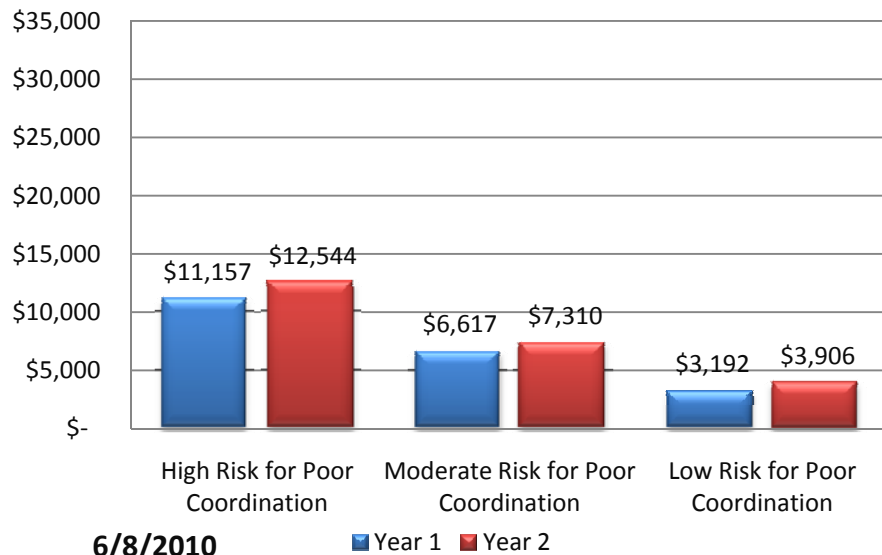
Mean Expenditure in the High Resource Group



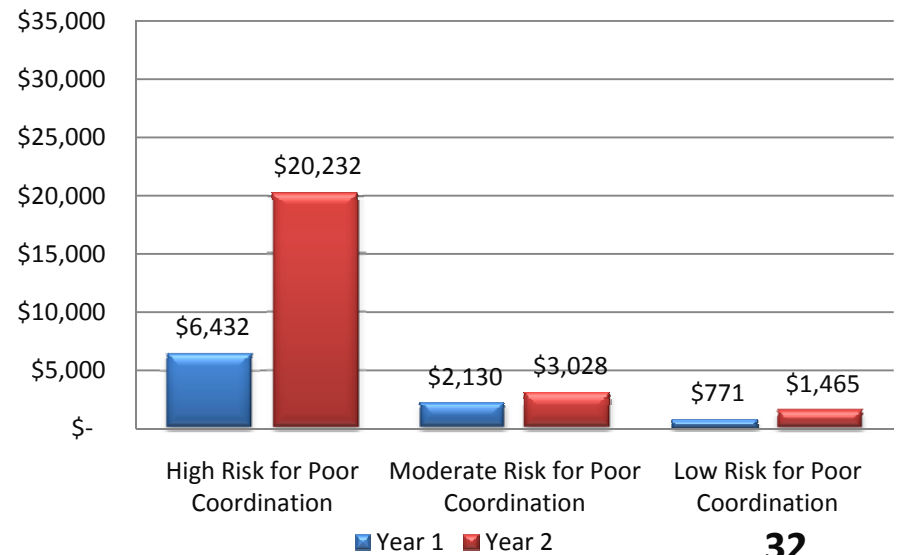
Mean Expenditure by Resource Band



Mean Expenditure in the Moderate Resource Group

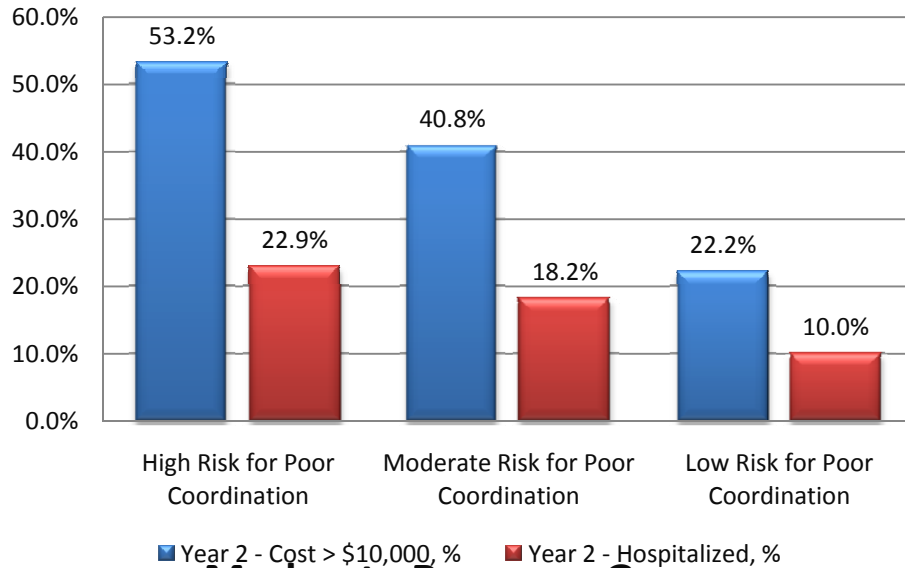


Mean Expenditure in the Low Resource Group

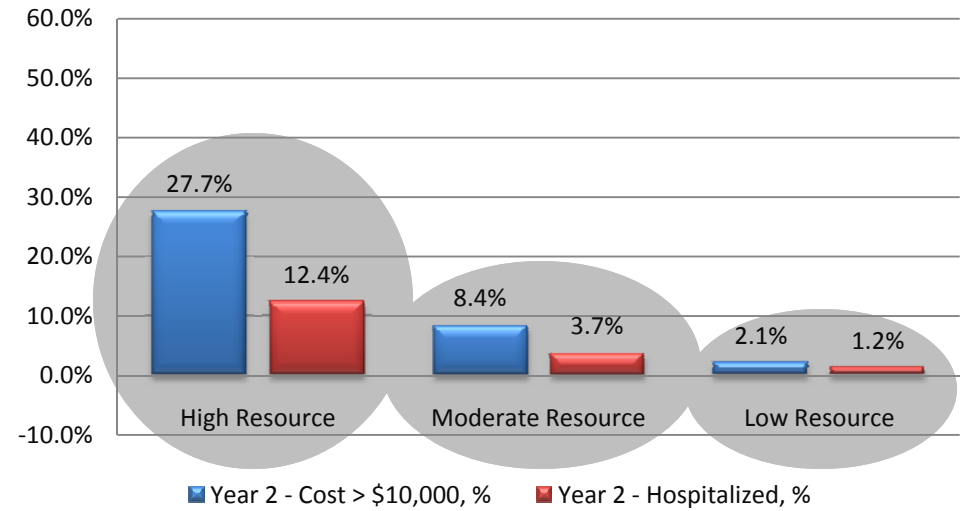


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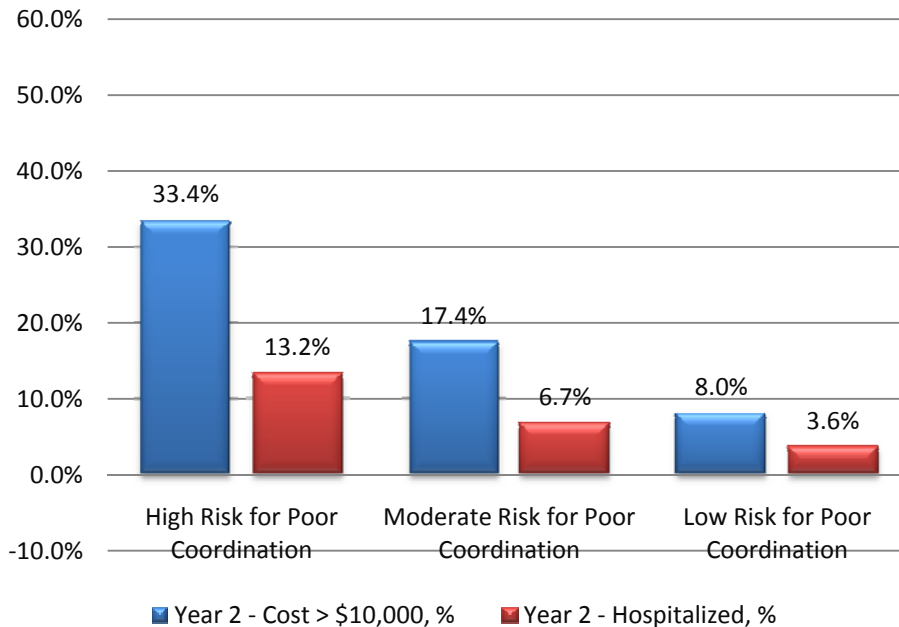
High Resource Group



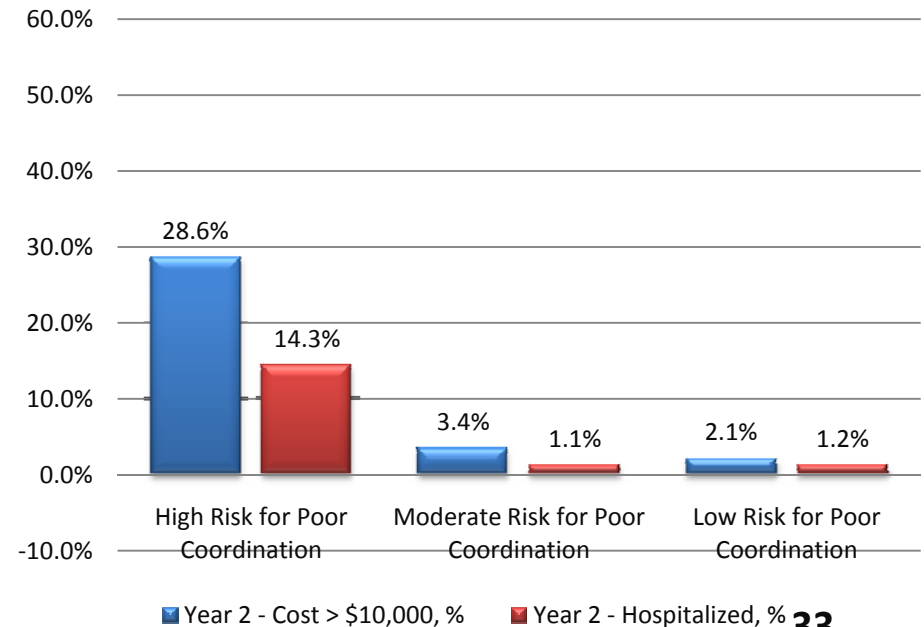
% > \$10,000 and % Hospitalized in Year 2 by Resource Band



Moderate Resource Group



Low Resource Group





FEEDBACK



THANKS!