

MERCER

Human Resource Consulting

A MILLIMAN GLOBAL FIRM



Milliman

Consultants and Actuaries



March 17, 2005

Study of Milwaukee Community Medical Costs (Proprietary and Confidential) Greater Milwaukee Business Foundation on Health, Inc.

Presenters: Robert Grant
David Schweihs
Clark Slipher

MMC Marsh & McLennan Companies



Notice of Confidentiality

The information contained herein is proprietary and confidential information that is legally privileged and exempt from disclosure under law. The information is intended solely for the use of the Greater Milwaukee Business Foundation on Health, Inc. You are hereby notified that any disclosure, copying, distribution or taking of any action in reliance on the contents is strictly prohibited.

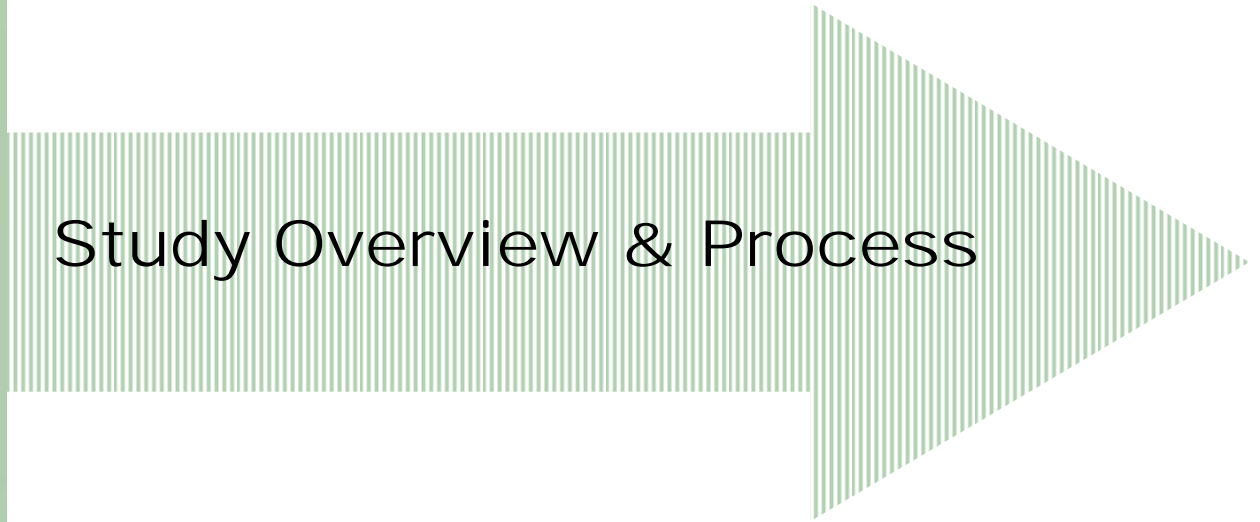


Today's Discussion

- Study Overview and Process
- Discussion of Key Findings
 - Medical Claim Cost Analysis
 - Health and Productivity Analysis
 - Episode Treatment Group Analysis
 - Facility Cost Efficiency Comparisons
- Closing Remarks



Study Overview & Process





Study Objectives

GMBFH, Inc. commissioned Mercer and Milliman to complete a study of Milwaukee Community medical costs. The primary objectives of the study are to:

- Identify actionable health conditions
- Compare provider efficiency
- Determine actions to manage costs and trends in Milwaukee



Study Process

- Collected raw claim data directly from health plan administrators. Data included employer and employee-paid dollars, excluding employee contributions
- Incurred claim data collected for 2001, 2002 and 2003 calendar years
- Ten health plan administrators provided data:
 - Aetna
 - Blue Cross Blue Shield
 - CIGNA
 - Healthscope
 - Humana
 - MedStat
 - Principal
 - QuadMed
 - United Healthcare
 - WPS
- Collected and utilized data approximately 326,000 members (i.e., employees and dependents)
- Total (medical, Rx and administrative) net payments of \$2.077 billion for 2002 and 2003
- Data contains no Medicare-eligible information
- Study group includes primarily active employees, plus a small number of pre-65 retirees
- Information obtained for both HMO and non-HMO business (35% HMO, 65% non-HMO)

g:\gmbhcn\Milwaukee Study.05\MCER Report\March 17 Study Presentation.ppt



Mercer National Survey of Employer-Sponsored Health Plans

- Largest and most comprehensive annual survey
- Established in 1986, national probability sample used since 1993
- 3,020 employers participated
- All employers with 10 or more employees are surveyed; size groups examined separately in this presentation include:
 - small employers – 10-499 employees
 - large employers – 500+ employees
 - jumbo employers – 200,000+ employees

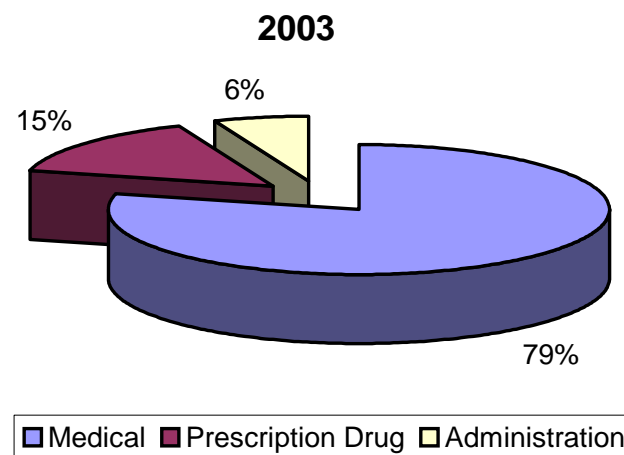
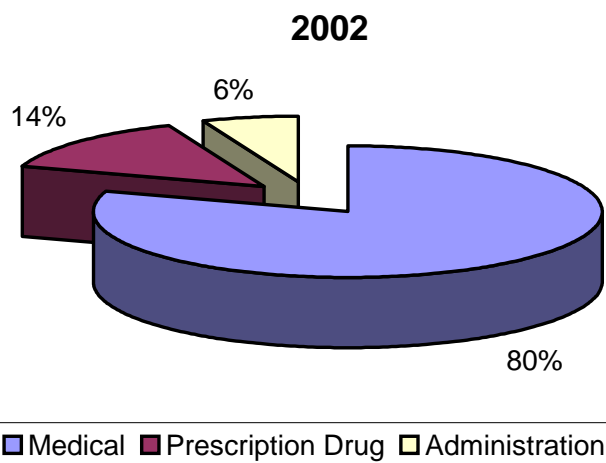
A large, stylized green arrow pointing to the right, filled with a pattern of thin, parallel green lines. The text "Medical Claim Cost Analysis" is centered within the arrow.

Medical Claim Cost Analysis



Total Per Employee Per Year (PEPY) Health Care Costs by Component

Type of Expense	2002		2003		Benchmark
	PEPY	%	PEPY	%	%
Medical	\$5,850	80%	\$6,469	79%	73%-82%
Prescription Drug	\$1,054	14%	\$1,191	15%	10%-15%
Administration	\$465	6%	\$484	6%	8%-12%
Total	\$7,370	100%	\$8,144	100%	100%

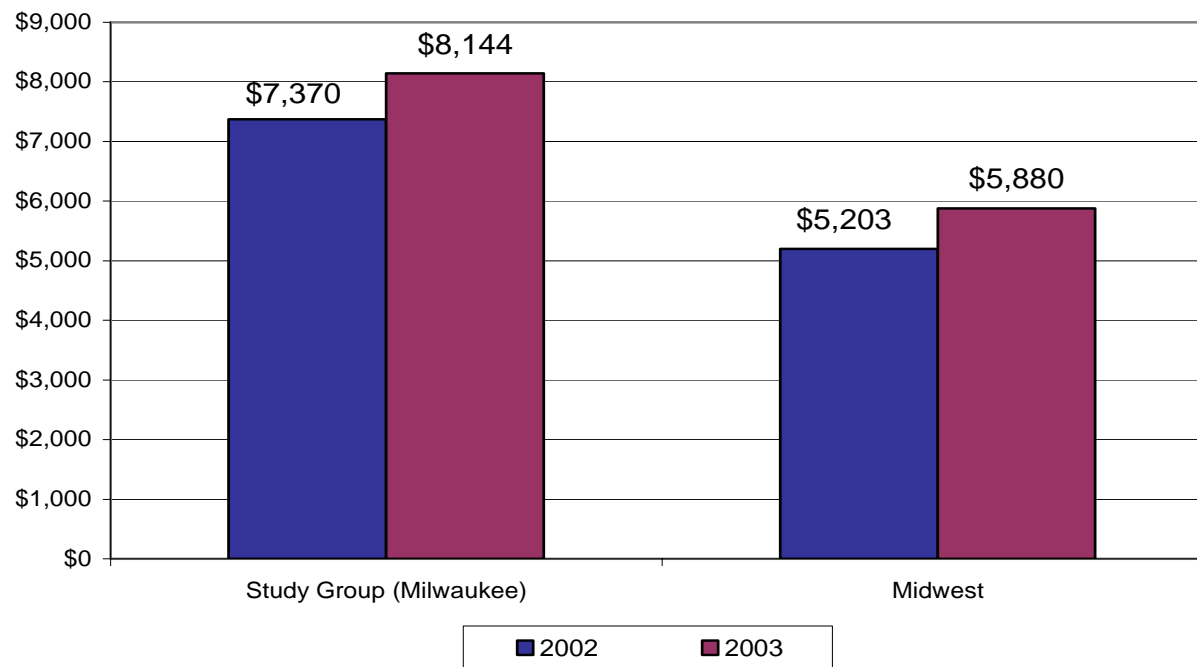


Note: Administration estimated at \$38 per employee per month (2002) based on market survey information



Comparison of PEPY Costs (Medical, Rx and Administration) to Benchmarks for Large Employers

Year	Study Group (Milwaukee)		Midwest	
	PEPY \$	Increase	PEPY \$	Increase
2002	\$7,370		\$5,203	
2003	\$8,144		\$5,880	
Increase	\$775	10.5%	\$677	13.0%



Source: Mercer National Survey of Employer-sponsored Health Plans. Benchmarks are blended based on enrollment by plan option (i.e., HMO vs. non-HMO).

g:\gmbhcn\Milwaukee Study.05\MCER Report\March 17 Study Presentation.ppt



Comparison of PEPY Costs to Midwest Benchmark

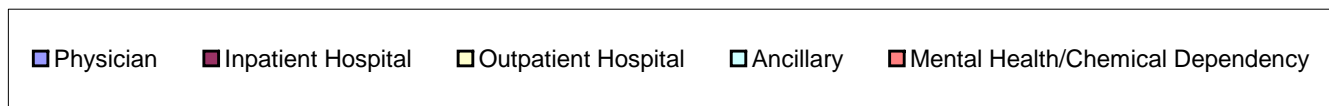
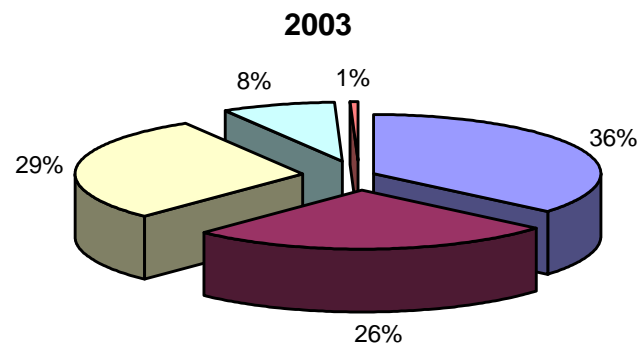
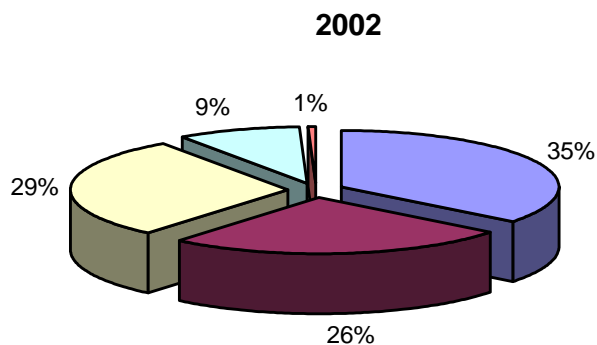
	Current Study 2003	Prior Study 2000
Total PEPY Medical Costs (Medical Rx, & Admin.)	\$8,144	\$6,298
<u>Midwest Benchmark</u>	<u>\$5,880</u>	<u>\$4,063</u>
Variance	39%	55%
 <u>Components of Variance</u>		
Enrollee Demographics	5%	11%
Plan Design	5%	6%
Claim Distribution/Severity	2%	5%
Utilization	0%	2%
Provider Charges (cost per visit)	27%	31%

Source: Mercer National Survey of Employer Sponsored Health Plans. Benchmarks are blended based on enrollment by plan option (e.g., HMO vs. non-HMO).



Total Medical PMPM Covered Costs by Type of Service

Type of Service	Midwest Benchmark	Study Group		Change
		2002	2003	
Physician	\$57 - \$66	\$80	\$91	15%
Inpatient Hospital	\$40 - \$46	\$58	\$66	15%
Outpatient Hospital	\$45 - \$50	\$66	\$74	13%
Ancillary	\$18 - \$20	\$20	\$20	0%
<u>Mental Health/Chemical Dependency</u>	<u>\$5 - \$7</u>	<u>\$1</u>	<u>\$2</u>	<u>8%</u>
Total	\$165 - \$189	\$225	\$253	13%
Age/Sex Factor	1.00	1.02	1.03	
Age/Sex Adjusted	\$165 - \$189	\$221	\$246	11%

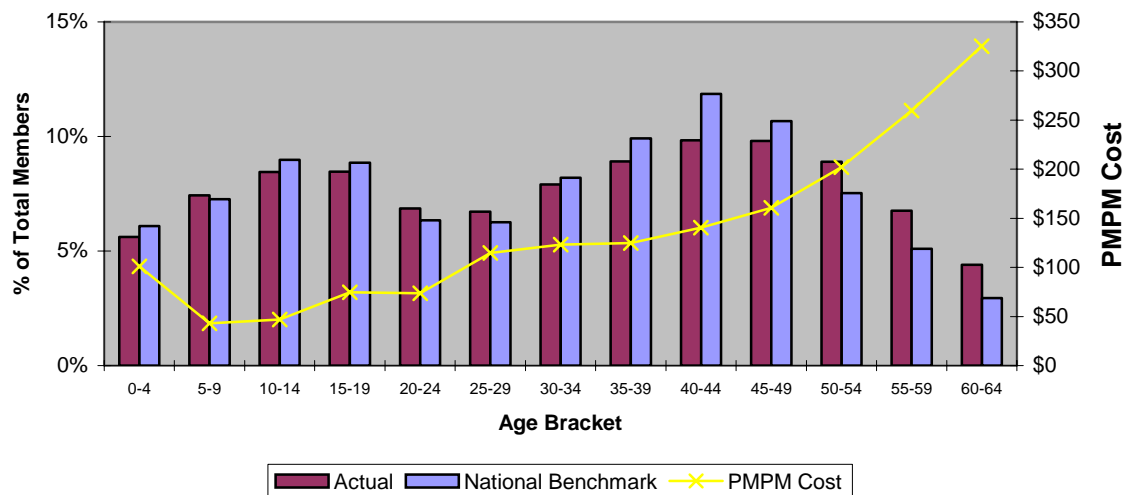




Age and Gender Demographics by Enrollees (i.e. Members)

Description	2002	2003	National Benchmark
Demographic Factor			
Male	0.95	0.96	0.93
Female	1.09	1.10	1.06
Total	1.02	1.03	1.00

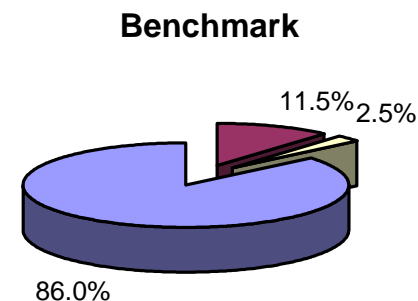
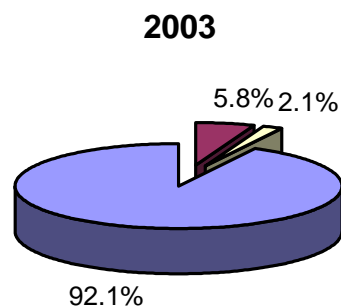
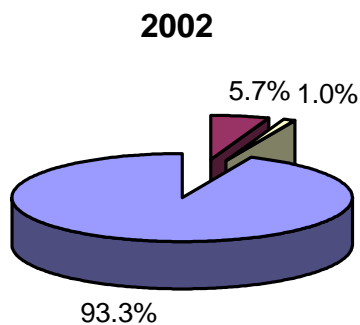
Components	2002	2003	National Benchmark
Average Age EE	42.1	42.3	40.0
Average Age Member	31.9	31.8	32.5
Average Contract Size	2.25	2.31	2.25





Analysis of Medical Expenditures (Excluding Rx)

<u>Description</u>	<u>2002</u>	<u>2003</u>	<u>Benchmark</u>
Covered Expense	\$821,519,212	\$972,147,818	
Employee Cost (plan design)	5.7%	5.8%	10% - 13%
Third Party Cost (COB)	1.0%	2.1%	2% - 3%
Net Payment	93.3%	92.1%	84% - 88%
Total	100.0%	100.0%	100%

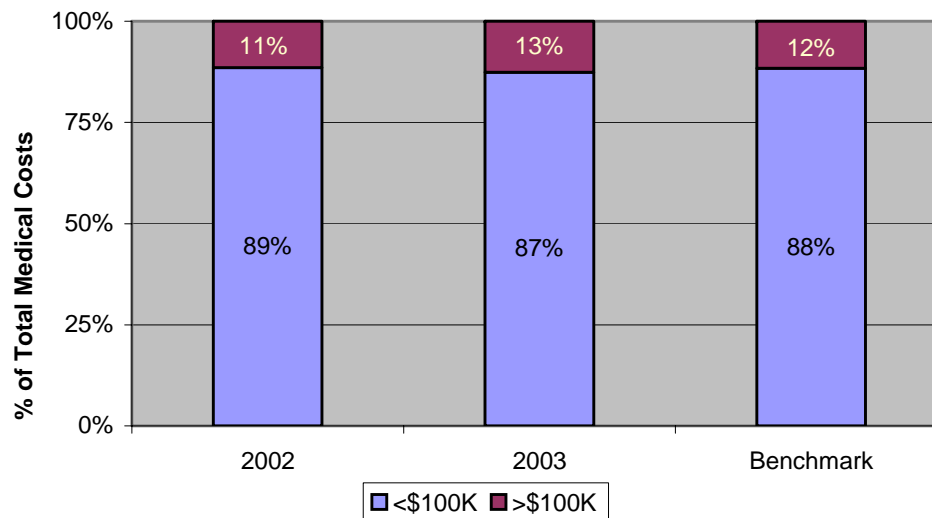


■ Employee Cost ■ COB ■ Net Payment



Claim Distribution Percent of Total Covered Claims by Cost Threshold

<u>Threshold</u>	<u>2002</u>	<u>2003</u>	<u>National Benchmark</u>
\$10K - \$20K	17%	17%	15%
\$20K - \$30K	9%	9%	8%
\$30K - \$40K	5%	5%	5%
\$40K - \$50K	4%	4%	4%
\$50K - \$60K	3%	3%	2%
\$60K - \$80K	5%	5%	4%
\$80K - \$100K	3%	3%	3%
<u>>\$100K</u>	<u>11%</u>	<u>13%</u>	<u>12%</u>
Total \$ > \$10K	57%	59%	53%
% Members > \$10K	5.7%	6.3%	3.2%





Utilization and Reimbursement

	<u>2003</u>	<u>Benchmark</u>
Utilization: Inpatient		
Admits per 1,000 members	61	60-65
Days per 1,000 members	282	225-275
Average length of stay	4.6	3.9-4.2
Reimbursement: Inpatient		
Average cost per day	\$2,863	\$1,500 - \$2,200
Average cost per admit	\$13,134	\$5,900 - \$9,300
Reimbursement: Physician		
Average cost per procedure (as a percent of Medicare)	165%	125% - 135%



Health & Productivity Analysis



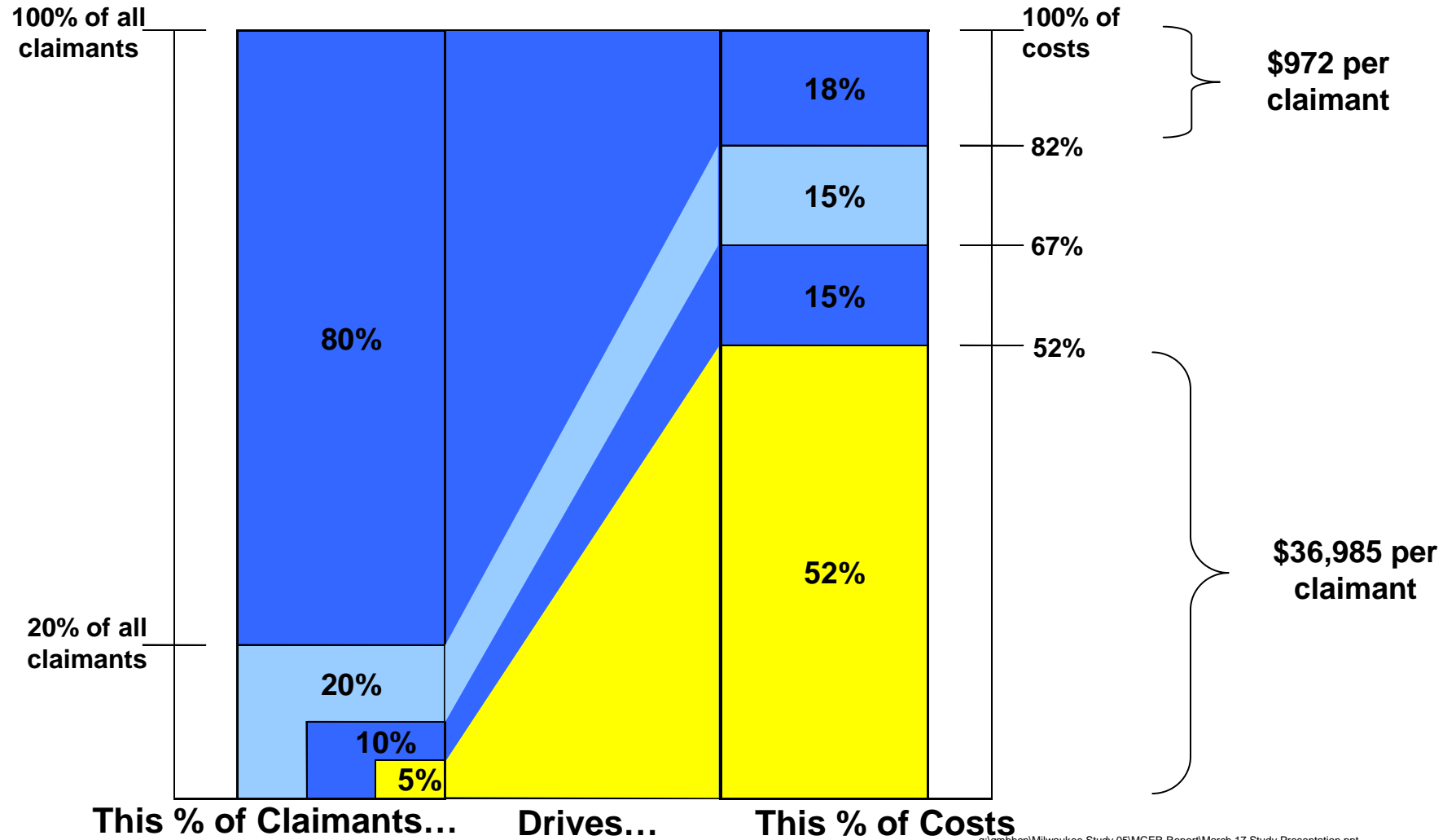
Process and Methodology Background

- Analysis covered paid medical and prescription claims incurred between January 2003 and December 2003.
- Medical and prescription claims were analyzed.
- Our norms are based on the Ingenix Employer Database for claims paid during the period of January 1, 2002 to December 31, 2002. The data is trended to represent 2003 claims data. The database has 1.3 million active employees (PPO, POS, and indemnity) with an average age of 34.



Percentage of Population Driving Your Costs Total Medical & Pharmacy

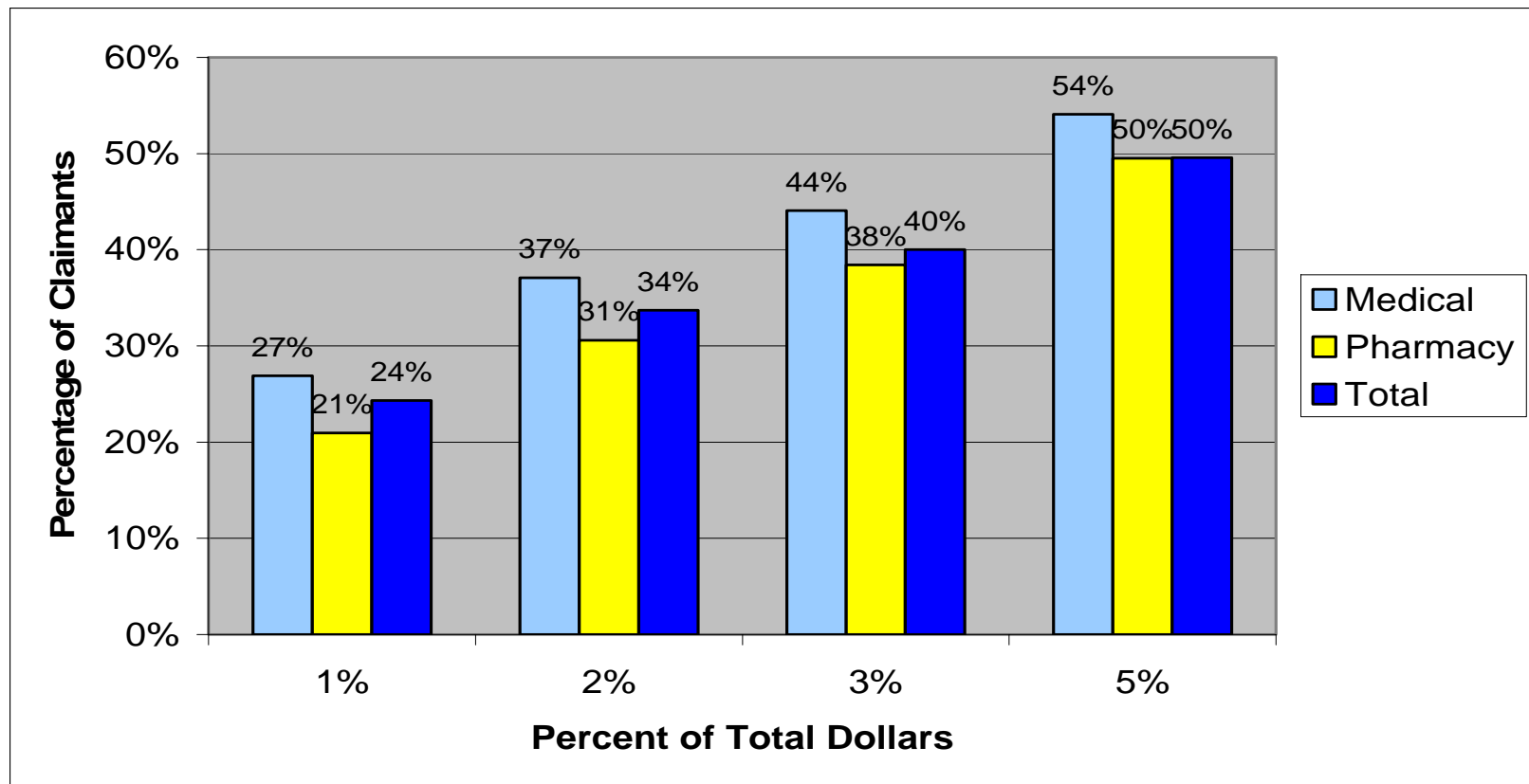
- 20% of claimants drive 82% of total costs





Percentage of Population Driving Overall Costs

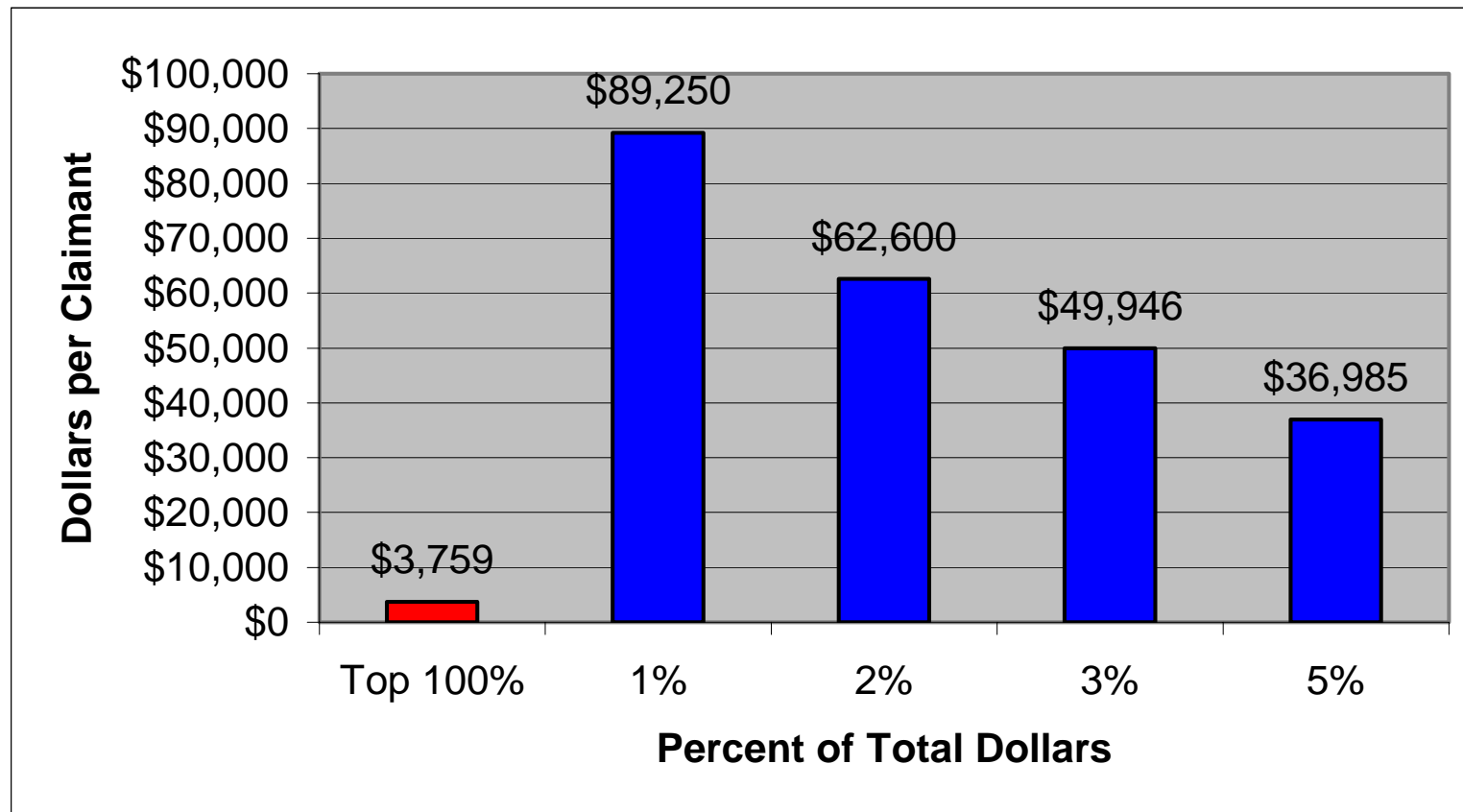
- A small percentage of the claimants spent most of the dollars – Medical, Pharmacy, and Total
- 50% of costs are driven by the top 5% of claimants





Percent of Claimants Driving Overall Costs Average Total Dollars per Claimant

- The average cost for the top 5% of claimants far exceeds the annual average of all claimants





Cost Drivers Top Percentage of Claimants

- The dollars spent on the top percentages represent not only **catastrophic** occurrences, but more often **chronic conditions**
- Many of these costs can be impacted by case management and disease management

Top 1% of Claimants

- 1) **Artiosclerotic cardiovascular disease**
- 2) Malignant breast cancer
- 3) **Intevertebral disc disorder**
- 4) Complication peculiar to procedures
- 5) Heart attack
- 6) **Osteoarthritis and allied disorders**
- 7) Malignant cancer of lung / trachea
- 8) Chemotherapy
- 9) **Kidney failure**
- 10) Care, rehabilitation procedure

Top 5% of Claimants

- 1) **Artiosclerotic cardiovascular disease**
- 2) **Osteoarthritis and allied disorders**
- 3) **Intevertebral disc disorder**
- 4) Malignant breast cancer
- 5) Chest pain
- 6) Complication peculiar to procedures
- 7) Heart attack
- 8) **Back pain**
- 9) **Kidney failure**
- 10) Malignant cancer of lung / trachea

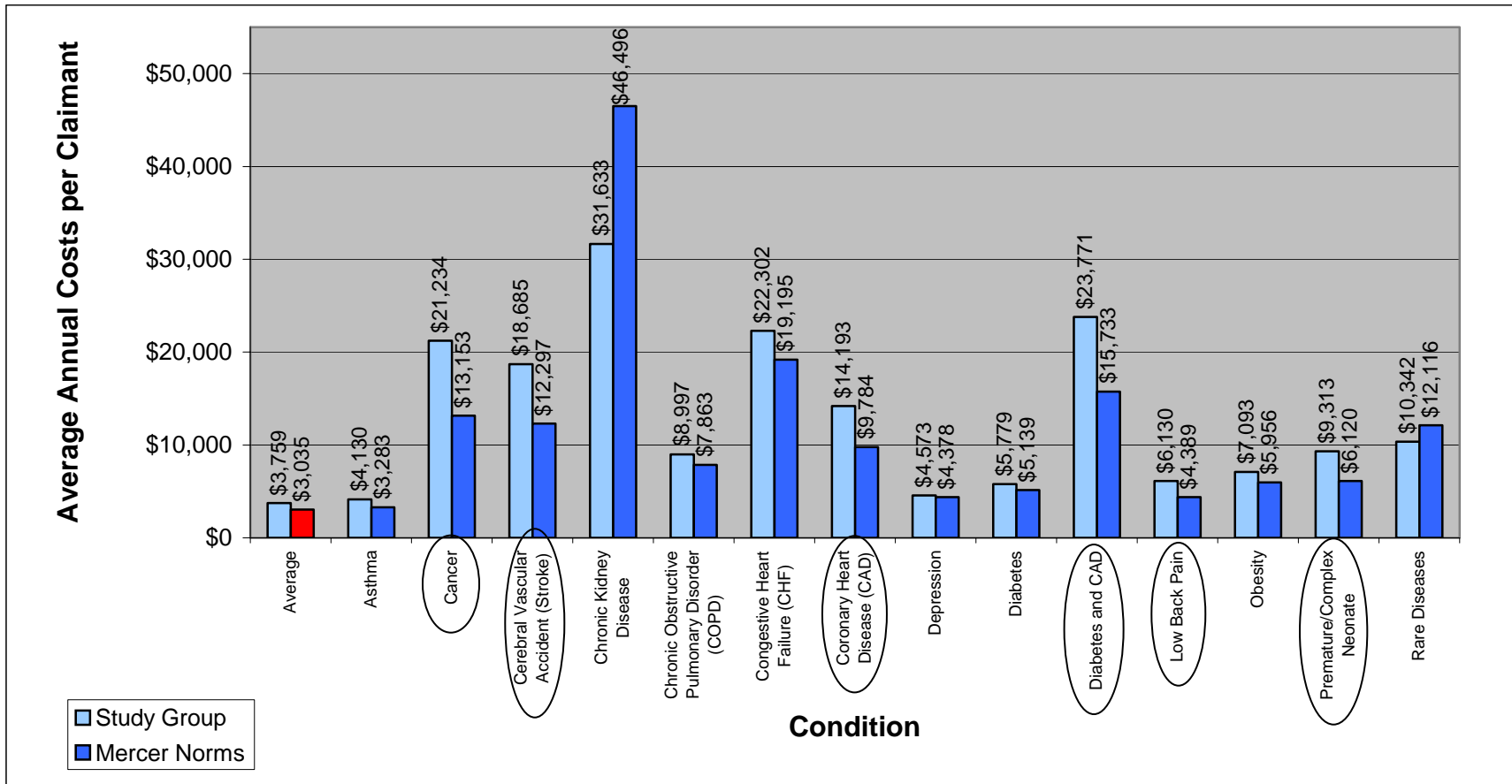
Chronic Conditions

Identifying the Cost Drivers

Condition	% of Members	Norms	Comparison to Norms
Low Back Pain	9.8%	9.3%	5.4%
Depression	3.5%	4.9%	-28.6%
Asthma	3.9%	3.4%	14.7%
Diabetes	4.0%	3.2%	25.0%
Cancer	2.3%	2.4%	-4.2%
Premature / Complex Neonate	1.6%	2.1%	-23.8%
Coronary Artery Disease (CAD)	1.8%	1.7%	5.9%
Rare Diseases	1.0%	1.0%	0%
Chronic Obstructive Pulmonary Disorder (COPD)	1.0%	0.9%	11.1%
Obesity	1.4%	1.0%	40%
Cerebral Vascular Accident (Stroke)	0.6%	0.5%	20%
Diabetes and CAD	0.5%	0.5%	0%
Congestive Heart Failure (CHF)	0.5%	0.4%	25%
Chronic Kidney Disease	0.2%	0.2%	0%

Circled conditions represent high cost or high frequency conditions that can be impacted by care management programs

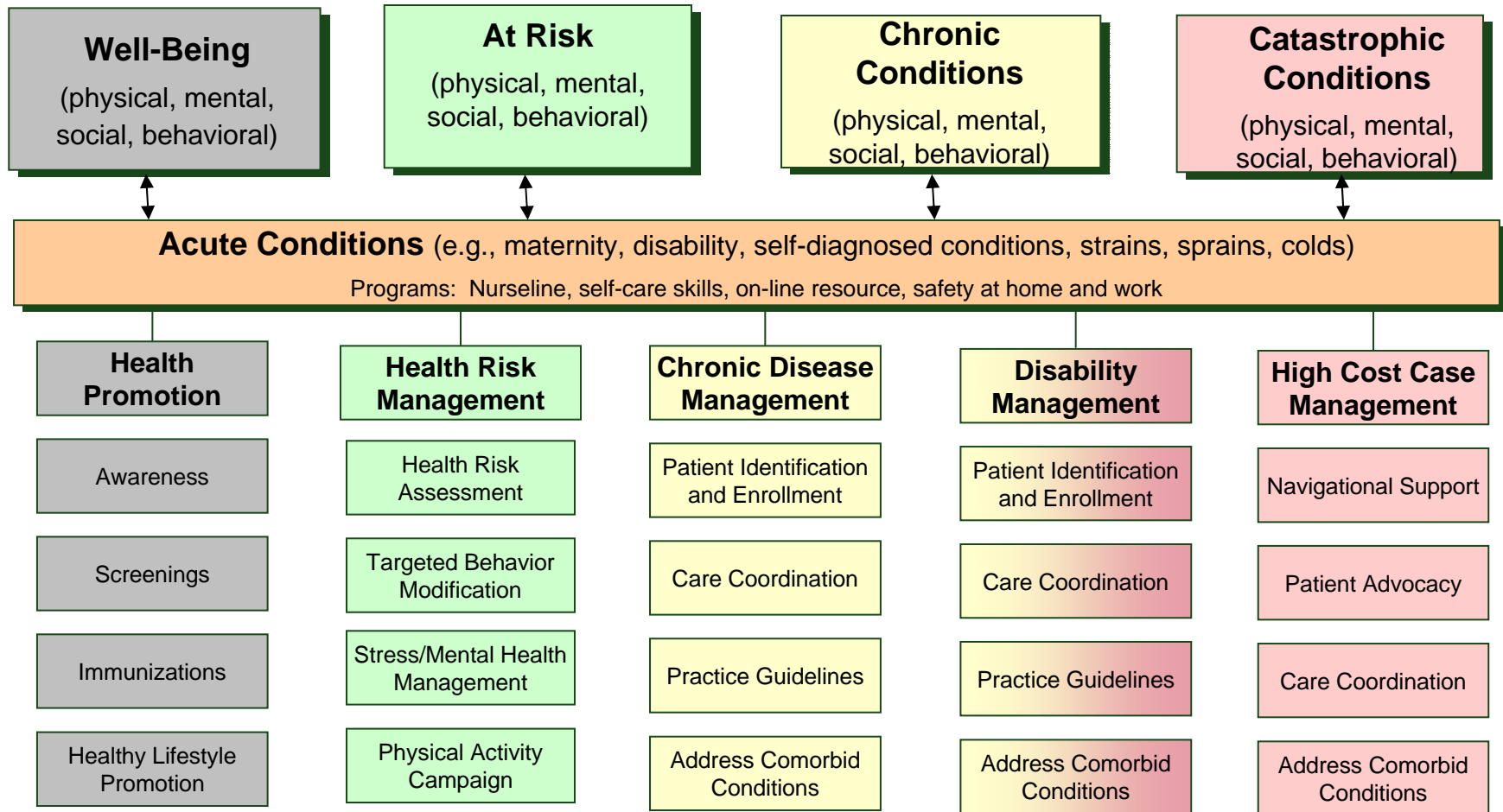
Conditions Driving Costs (Medical and prescription)



Note: Conditions that are 40% or more above the norm are circled.



Care Continuum



Alignment of Services, Communications, Measurement, and Evaluation



Episode Treatment Group Analysis



Methodology – How are Episodes Created?

Symmetry’s Episode Treatment Group (ETG) software application is used to group historical medical and pharmacy claims.

- Approximately 764 distinct episode treatment groups
- These episode treatment groups (ETGs) are “rolled up” into 22 Major Practice Categories (MPCs)
- Episodes are defined by the aggregation of claims history associated with a patient’s specific disease or condition, using the combination of ICD-9 diagnosis codes, CPT-4 procedure codes, UB-92 revenue codes, NDC pharmacy codes, and dates of service (episode specific parameters)
- An episode has a required “starting point” and ending “clean period” in order to be defined as a complete episode. Cost outliers, incomplete episodes and unassigned claims were removed for the study
- Symmetry’s software is designed to account for variances in patient demographics, the presence of co-morbidities and episodic vs. chronic health conditions



Methodology: How are the Provider Performance Scores Calculated?

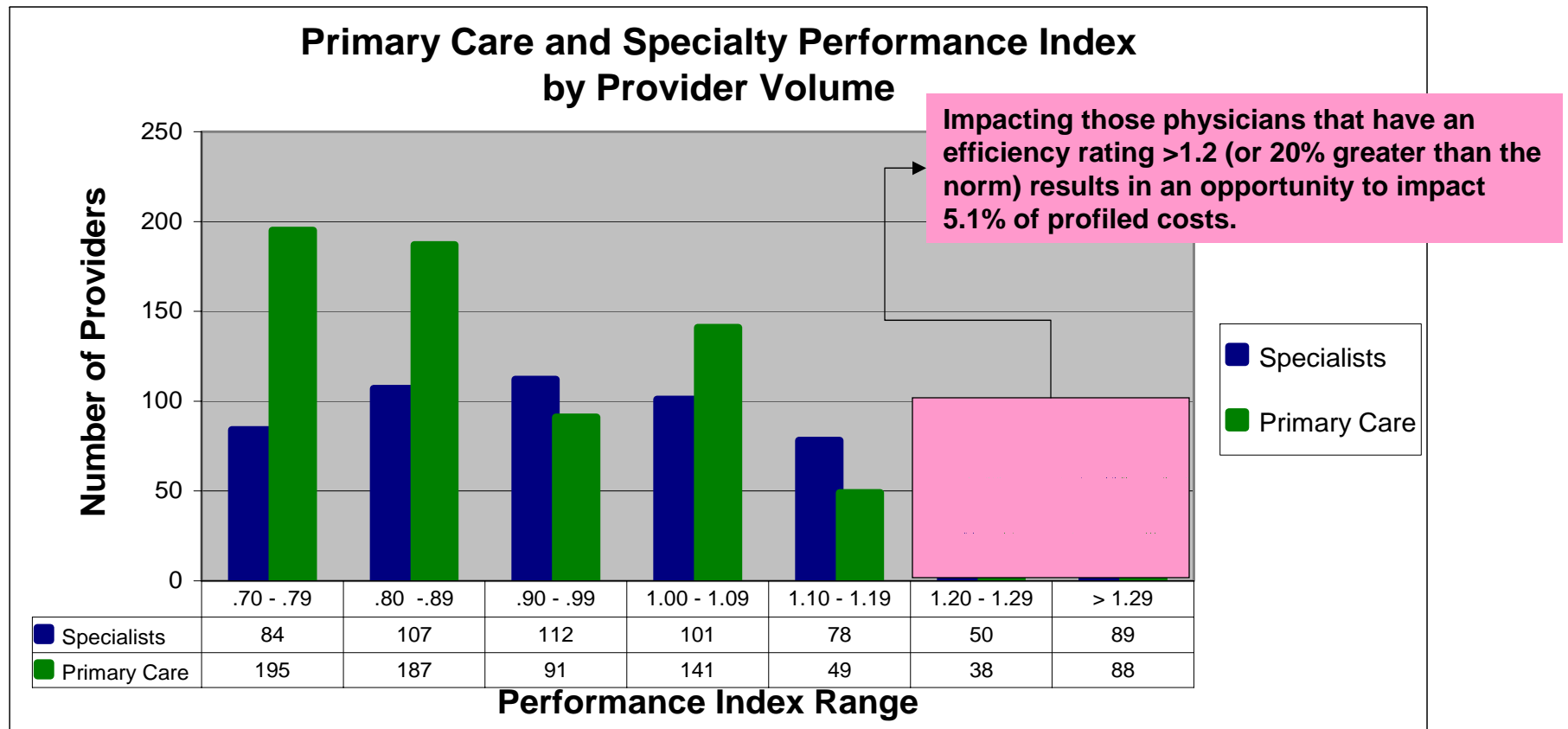
Performance indices are computed based on comparing each provider to the overall averages of like physicians. The “peer to peer” comparison and relative efficiency score is based on the following rules:

- All clinicians have an assigned provider type code
- In order to be eligible for comparison and inclusion in a peer group, the provider must have a minimum of 10 complete, non-outlier, clean episodes, for statistical significance and validity
- The bottom and top five percent of each ETG category is “trimmed” or removed when establishing normative measures
- For each provider, a performance score is computed based on actual vs. predicted episodic costs, using the weighted average of the providers actual episode cost experience, compared to the average cost of the peer group that provider belongs to, adjusted for ETG mix (the result is a performance score that is “relative” to the overall average of peer group)



Results – Provider Distribution Assessment

The following graph identifies the percentage of providers associated with specified ranges of efficiency.

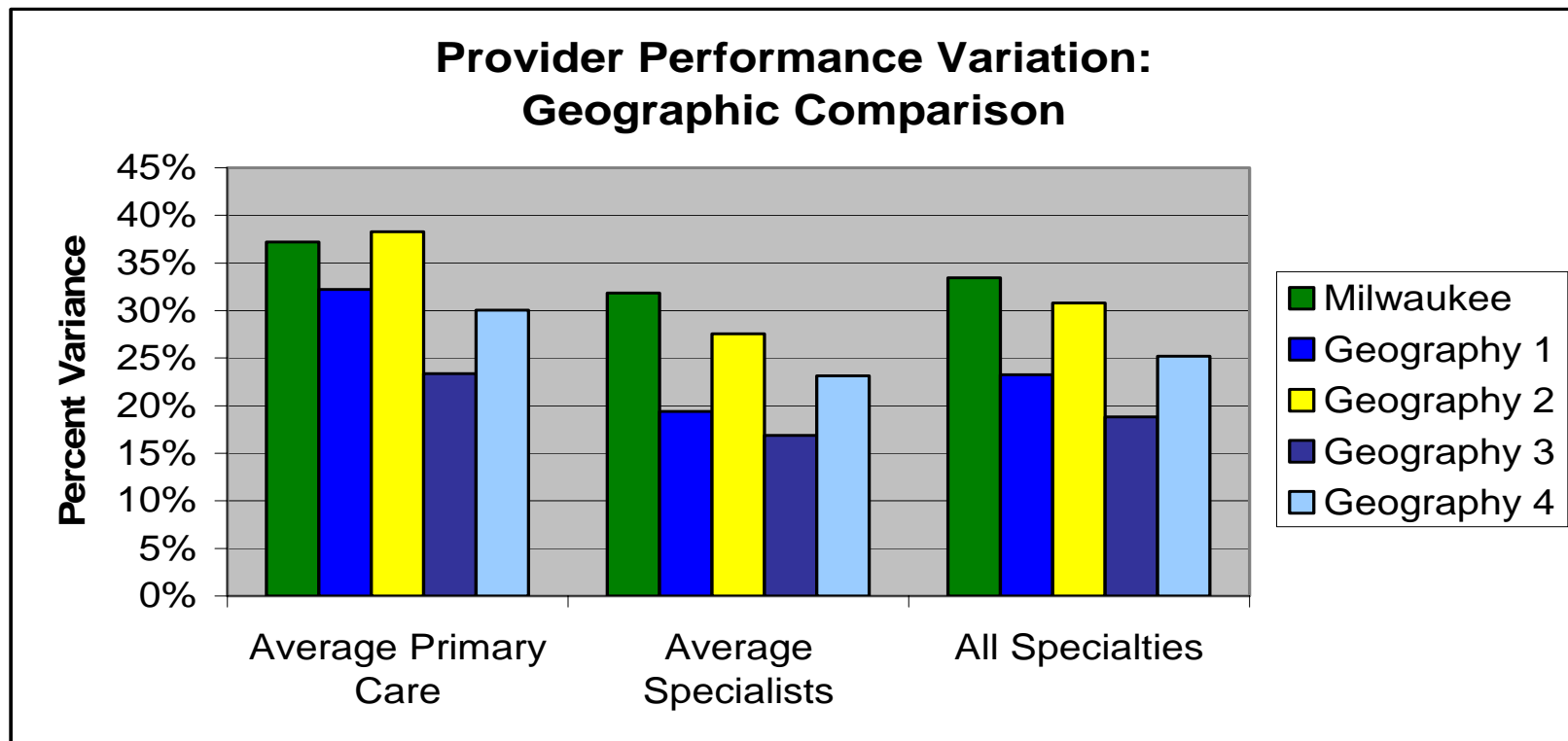


Complete / Non-Outlier Episodes Only, 10 Episode Threshold Observation



Results – Assessment of Variance vs. Other Geographies

The level of variance within a specialty compared to other geographies.....



Compared to other mid-western cities, Milwaukee’s level of “practice pattern” variance is greater overall.



Results – Assessment of Variance vs. Other Geographies

The level of variance within a specialty compared to other geographies.....

On average, Cardiology doctors' Performance Index varies 36% from the internal norm.

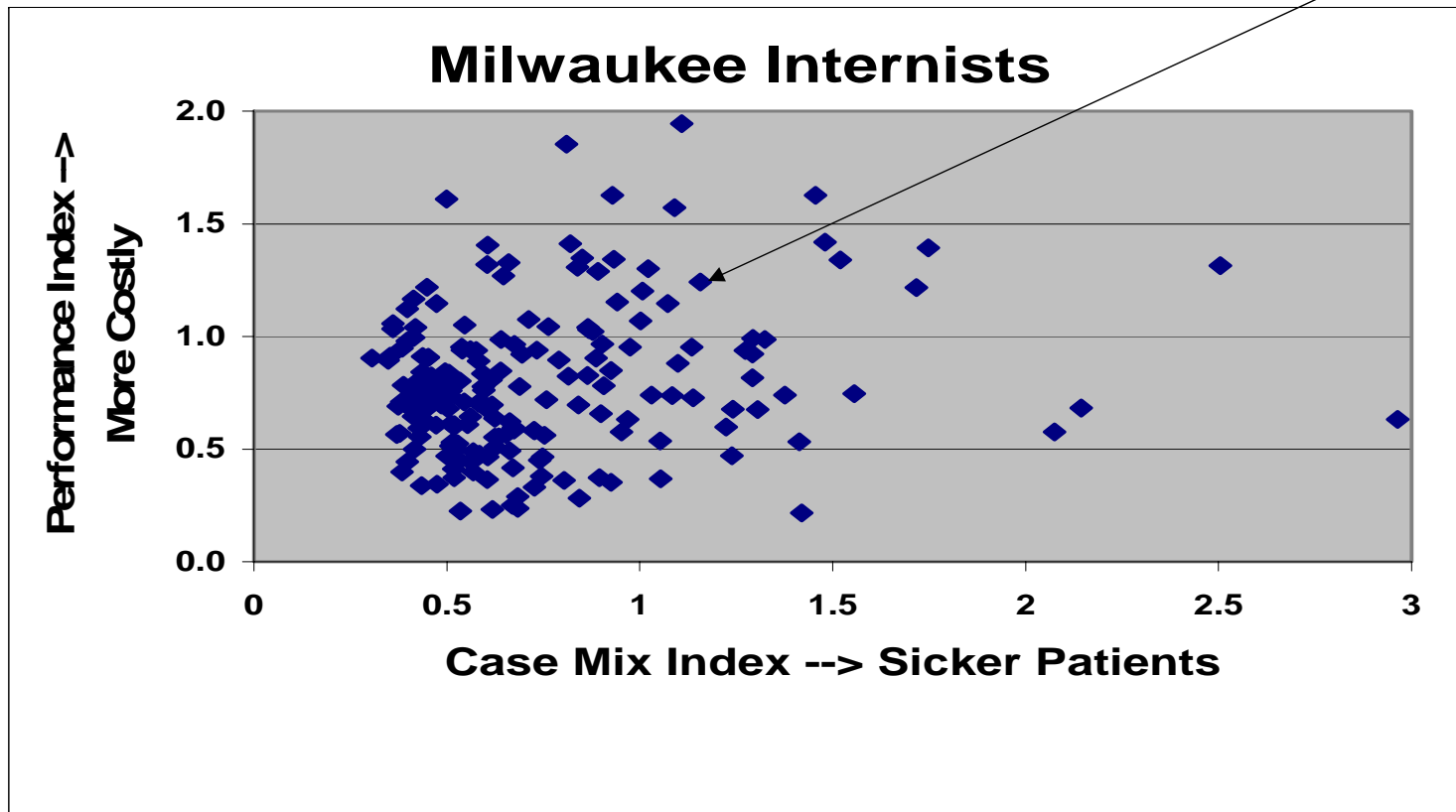
	Milwaukee	Geography 1	Geography 2	Geography 3	Geography 4
OPHTHALMOLOGY	39.5%	17.6%	25.3%	12.8%	21.7%
CARDIOLOGY	35.9%	28.8%	35.5%	19.8%	30.5%
DERMATOLOGY	29.1%	14.8%	24.3%	15.1%	14.0%
SURGERY	32.8%	24.6%	28.3%	14.6%	25.7%
OTOLARYNGOLOGY	29.0%	15.0%	28.2%	17.8%	25.4%
OBSTETRICS GYNECOLOGY	29.6%	14.7%	19.4%	25.0%	23.8%
ORTHOPEDIC SURGERY	26.9%	20.3%	31.9%	12.9%	20.9%
FAMILY PRACTICE	36.0%	23.7%	35.0%	26.0%	18.9%
INTERNAL MEDICINE	42.7%	33.3%	38.8%	24.0%	45.6%
PEDIATRICS	32.8%	39.6%	41.1%	20.1%	25.6%
AVERAGE PRIMARY CARE	37.2%	32.2%	38.3%	23.4%	30.0%
AVERAGE SPECIALISTS	31.8%	19.4%	27.6%	16.9%	23.2%
ALL SPECIALTIES	33.4%	23.2%	30.8%	18.8%	25.2%

Compared to other mid-western cities, Milwaukee's level of "practice pattern" variance is greater in most specialty types examined



Results - Provider Efficiency - Distribution Matrix Internal Medicine

With a performance index of 1.2, this physician is deemed 20% less efficient than like peers

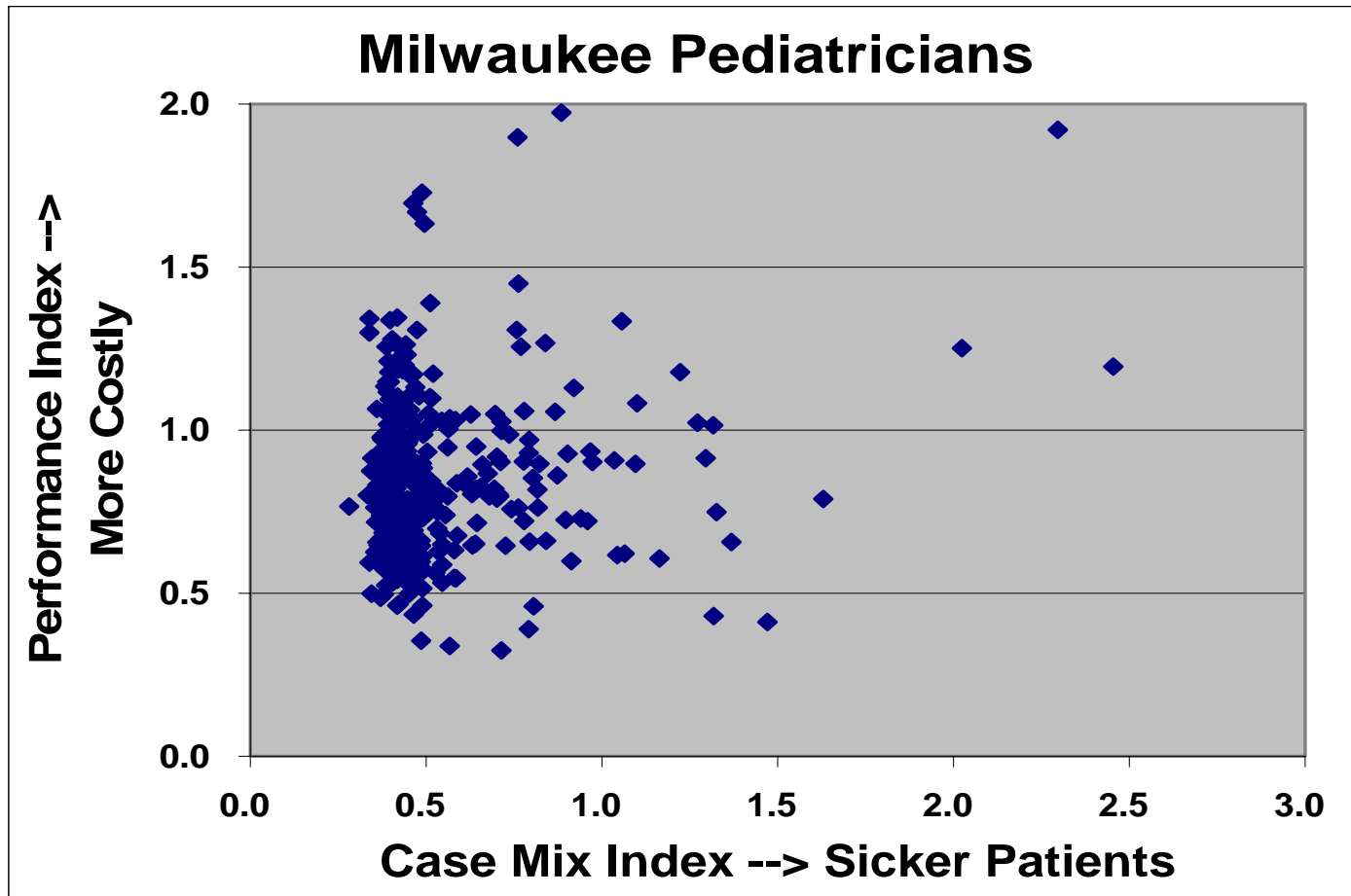


Complete / Non-Outlier Episodes Only

g:\mhbcr\Milwaukee Study.05\MCER Report\March 17 Study Presentation.ppt



Results - Provider Efficiency - Distribution Matrix Pediatrics

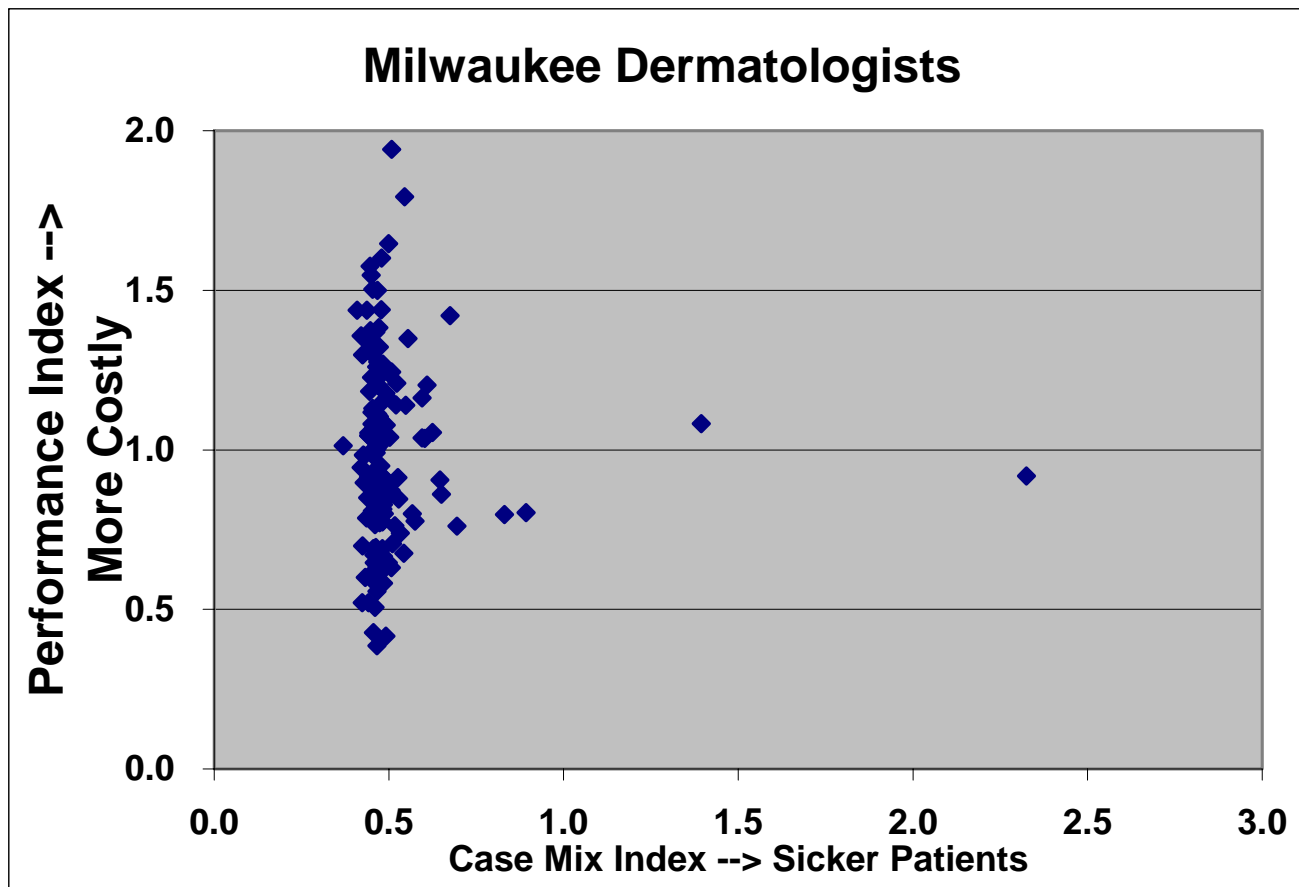


Complete / Non-Outlier Episodes Only

g:\gmbhcn\Milwaukee Study.05\MCER Report\March 17 Study Presentation.ppt



Results - Provider Efficiency - Distribution Matrix Dermatology

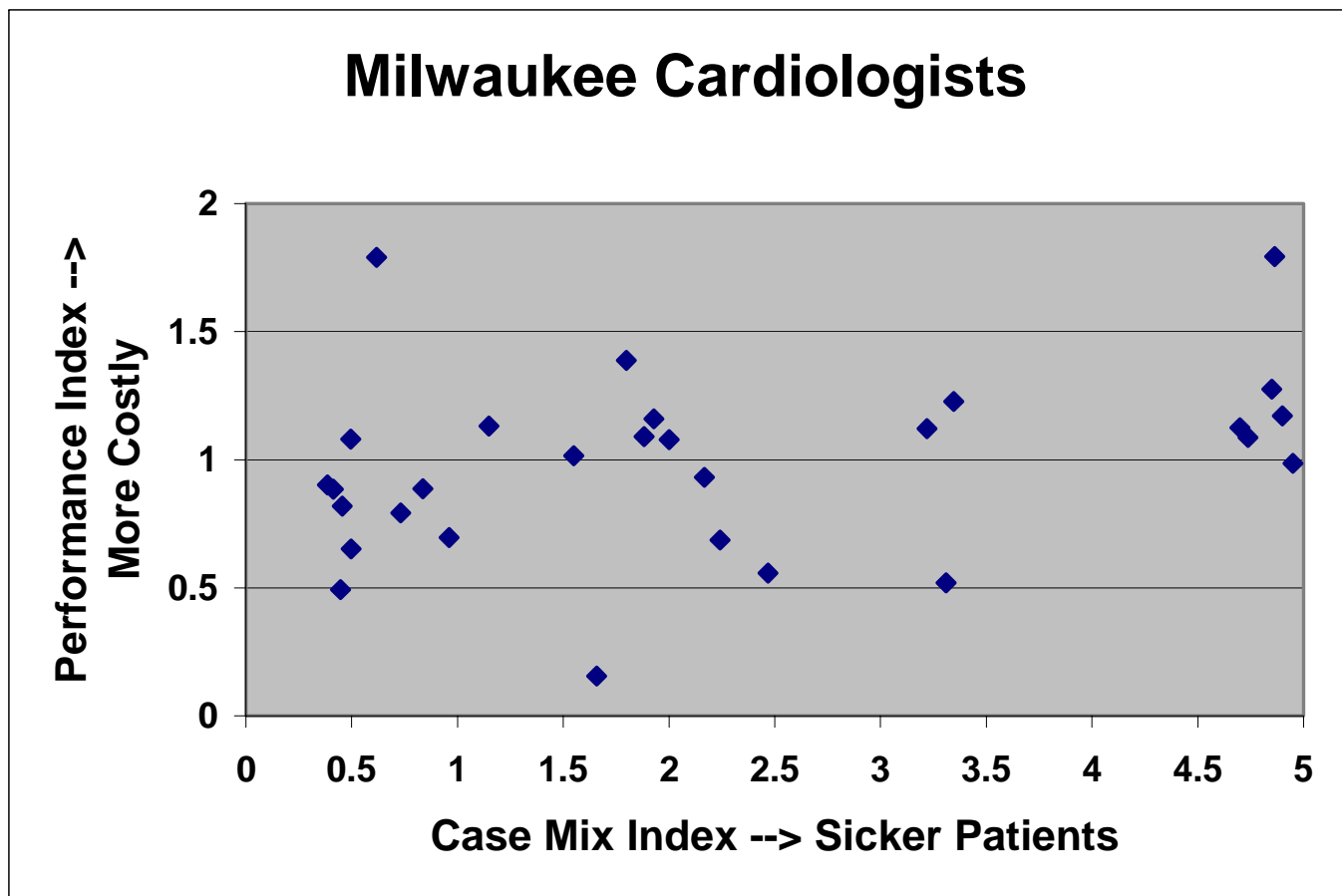


Complete / Non-Outlier Episodes Only

g:\gmbhcn\Milwaukee Study.05\MCER Report\March 17 Study Presentation.ppt



Results - Provider Efficiency - Distribution Matrix Cardiology

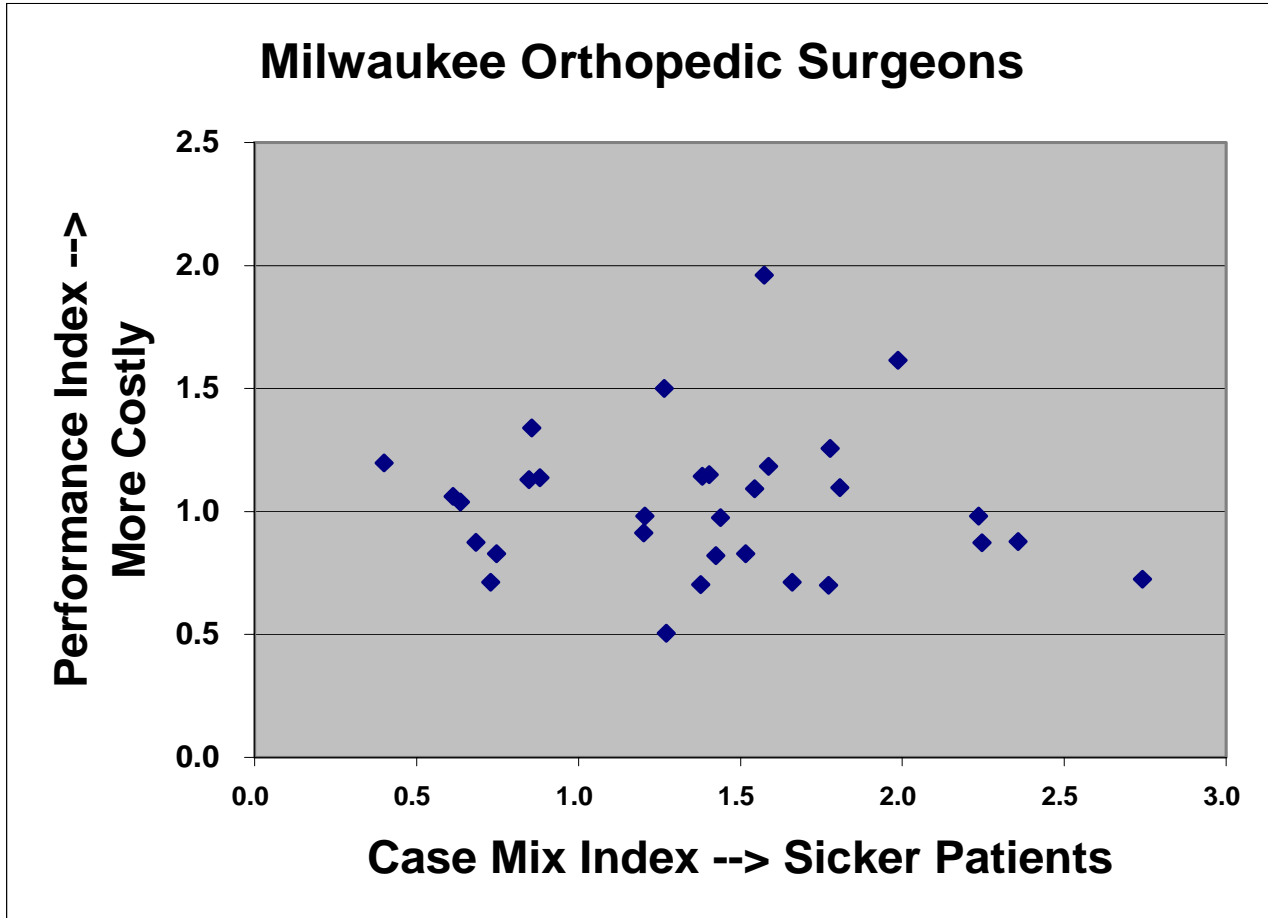


Complete / Non-Outlier Episodes Only

g:\gmbhcn\Milwaukee Study.05\MCER Report\March 17 Study Presentation.ppt



Results - Provider Efficiency - Distribution Matrix Orthopedics

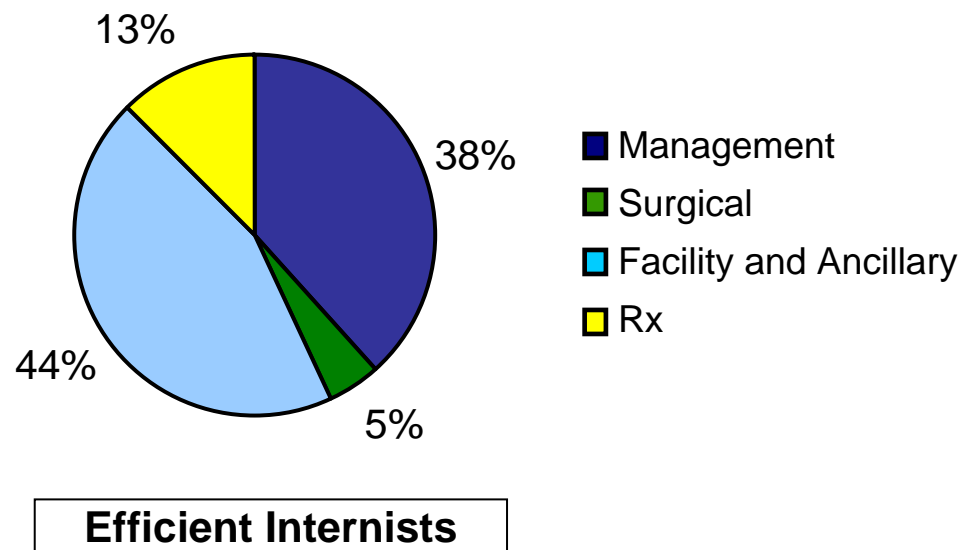


Complete / Non-Outlier Episodes Only

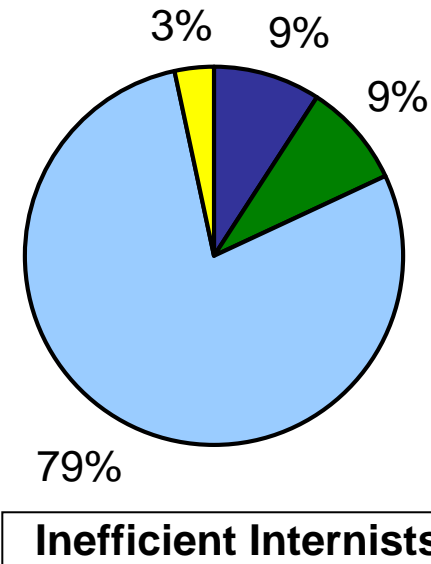
g:\gmbhcn\Milwaukee Study.05\MCER Report\March 17 Study Presentation.ppt



Results: Type of Service Distribution



- Management
- Surgical
- Facility and Ancillary
- Rx



Efficient internists “spend” a larger portion of resources on management and pharmacy compared to inefficient internists.

Note: Professional services equals management plus surgery services

g:\gmbhcn\Milwaukee Study.05\MCER Report\March 17 Study Presentation.ppt



Results: Type of Service Distribution

Assessing the distribution of costs will allow for a meaningful examination of provider variance.

CARDIOLOGY	Mgmt	Surg	Fac & Anc	Rx
PI > 1.0	9.3%	5.5%	76.7%	8.5%
PI < 1.0	22.9%	10.6%	50.9%	15.7%

ORTHOPEDIC SURGERY	Mgmt	Surg	Fac & Anc	Rx
PI > 1.0	11.2%	12.5%	71.1%	5.2%
PI < 1.0	21.2%	17.3%	45.4%	16.2%

INTERNAL MEDICINE	Mgmt	Surg	Fac & Anc	Rx
PI > 1.0	9.1%	8.8%	78.9%	3.2%
PI < 1.0	38.2%	4.9%	44.3%	12.6%

In the specialties shown above, the efficient providers spend a greater portion of the episode dollars on management of the case and prescription drugs whereas inefficient providers spend more on facility and ancillary (inpatient and outpatient).

Note: Professional services equals management plus surgery services



Inpatient Hospital Cost Efficiency Comparisons



Hospital Inpatient Cost Efficiency

- Goal: Compare payer costs among Milwaukee acute care hospitals and systems

- Series of comparisons and adjustments
 - Billed charges
 - Case mix and severity
 - Discounts (allowed charges)
 - Utilization efficiency (potentially unnecessary care)
 - Business mix

- All results stated as % of Milwaukee average (=100%)
 - If hospital is 110%, then measure is 10% above Milwaukee average



Hospital and Hospital Systems

System	Hospital
Aurora	Aurora Sinai St. Luke's West Allis Aurora Medical Center Hartford
Columbia St. Mary's	Columbia St. Mary's Milwaukee St. Mary's Ozaukee
Covenant	Elmbrook St. Francis St. Joseph St. Michael
Froedtert/Community Memorial	Community Memorial Froedtert Memorial
ProHealth	Oconomowoc Memorial Waukesha Memorial
SynergyHealth	St. Joseph West Bend

- Synergy Health/St. Joseph of West Bend in individual hospital comparison but not system comparison
- Children's hospital excluded



Hospital Inpatient Cost Efficiency Information Sources

- Publicly available data
 - Wisconsin Discharge Public Use Data from the Bureau of Health Information (BHI) Data
 - Wisconsin Hospital Fiscal Surveys from BHI
 - Medicare cost reports from CMS

- Health plan claim data provided to the Foundation

- Milliman research



Hospital Inpatient Cost Efficiency What 's Included (and Not Included)

- “Cost” is hospital reimbursement
 - Not hospitals’ expenses for providing services
- Comparison includes:
 - Milwaukee area only
 - 2003 data
 - Inpatient admissions only
 - Commercial business only
- Comparison does not include:
 - Quality or outcomes
 - Changes since 2003
 - Outpatient services
 - Physician or other non-hospital services/supplies
 - No adjustments for difference in hospital profitability

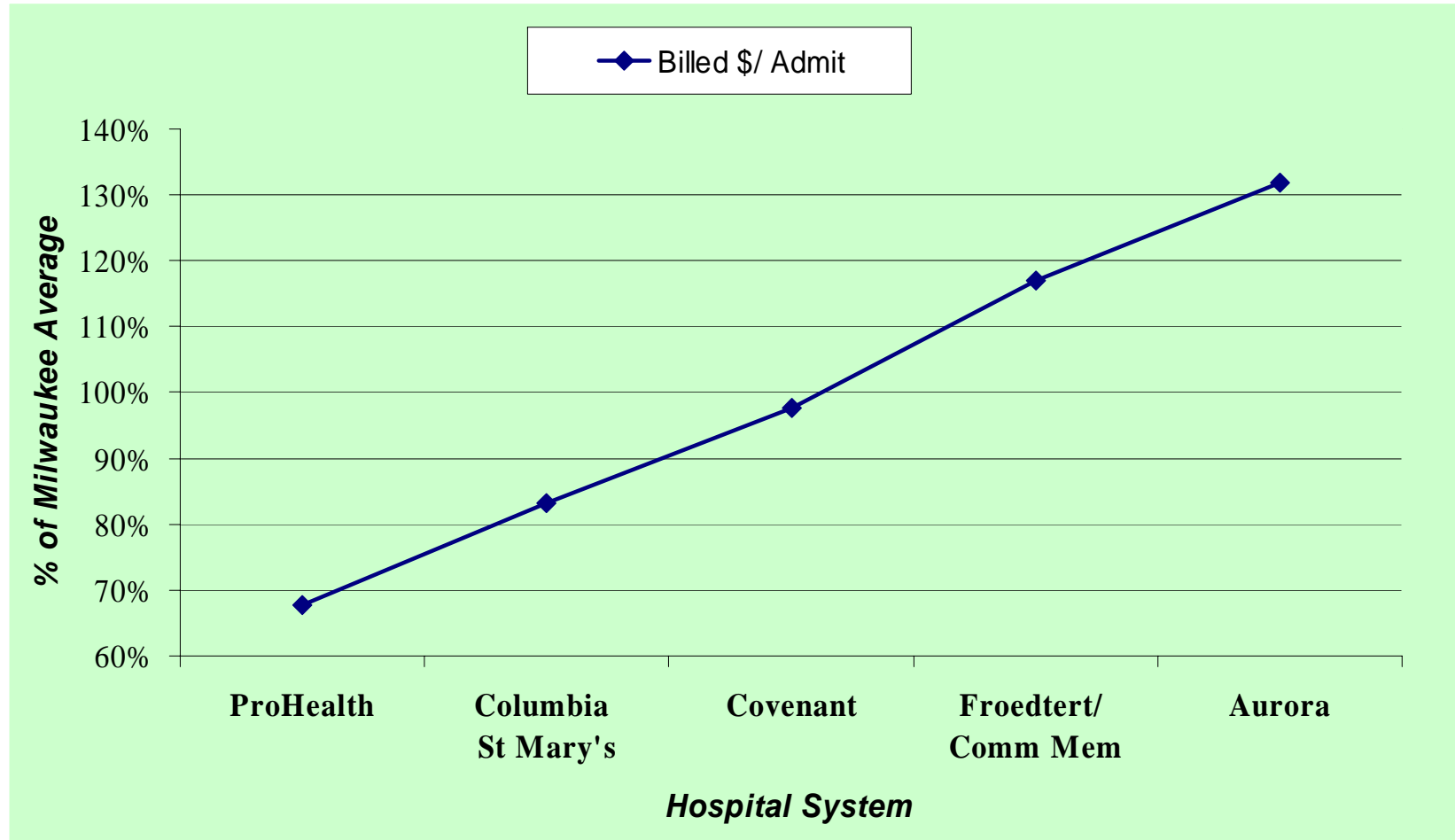


Hospital Inpatient Cost Efficiency Billed Charge per Admission

- Unadjusted
- Each hospital has a unique charge level, mix of patients, severity, utilization and business mix
- Common comparison basis
- Significant range of results from lowest to highest cost



Hospital Inpatient Cost Efficiency 2003 Billed Charge per Admit





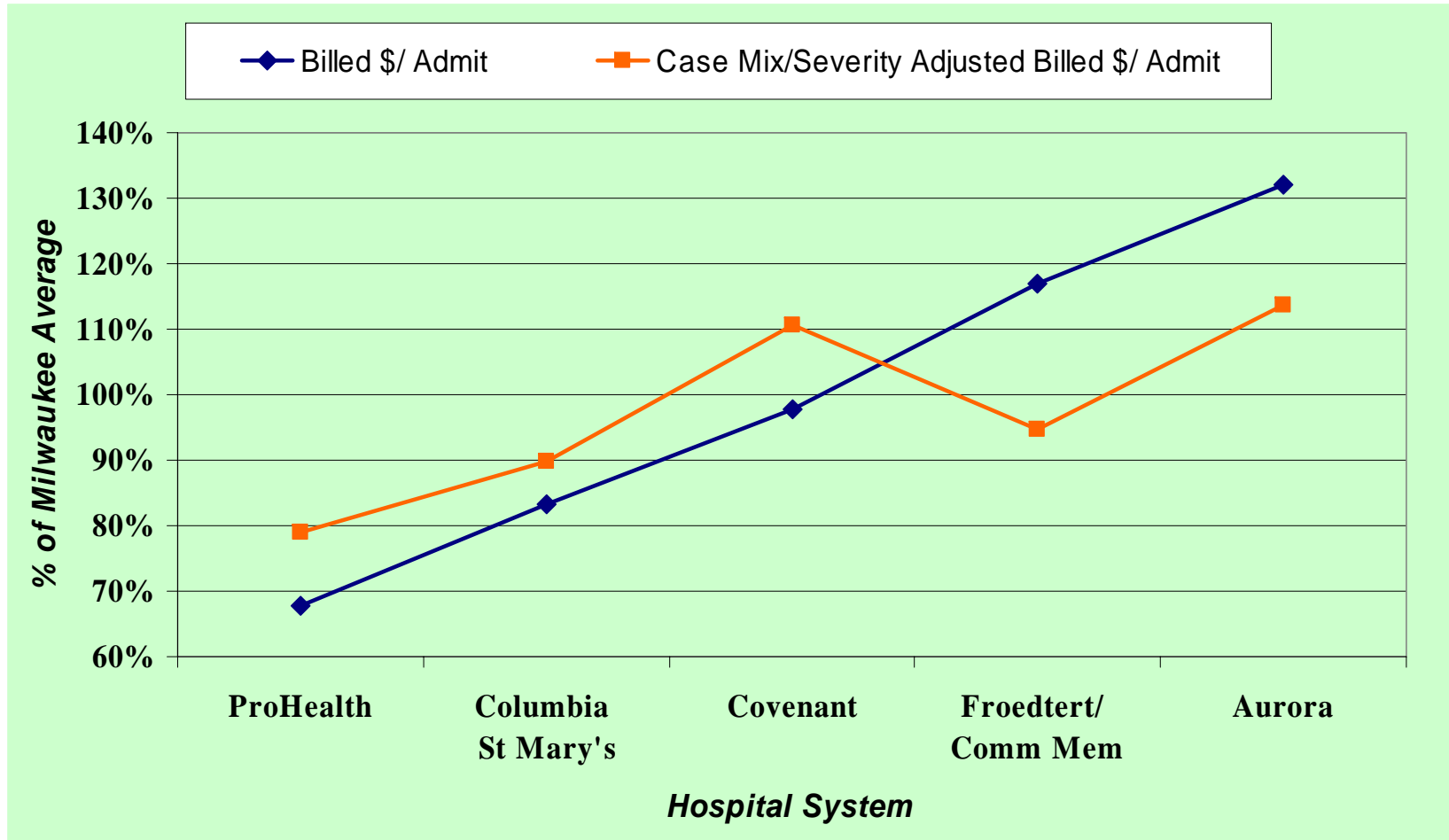
Hospital Inpatient Cost Efficiency Case Mix/Severity Adjustment

- Each hospital adjusted to have Milwaukee community mix of:
 - Diagnoses (case mix)
 - Severity of services

- Community average substituted for a diagnosis or service not reported for a hospital



Hospital Inpatient Cost Efficiency 2003 Case Mix/Severity Adjusted (Billed)



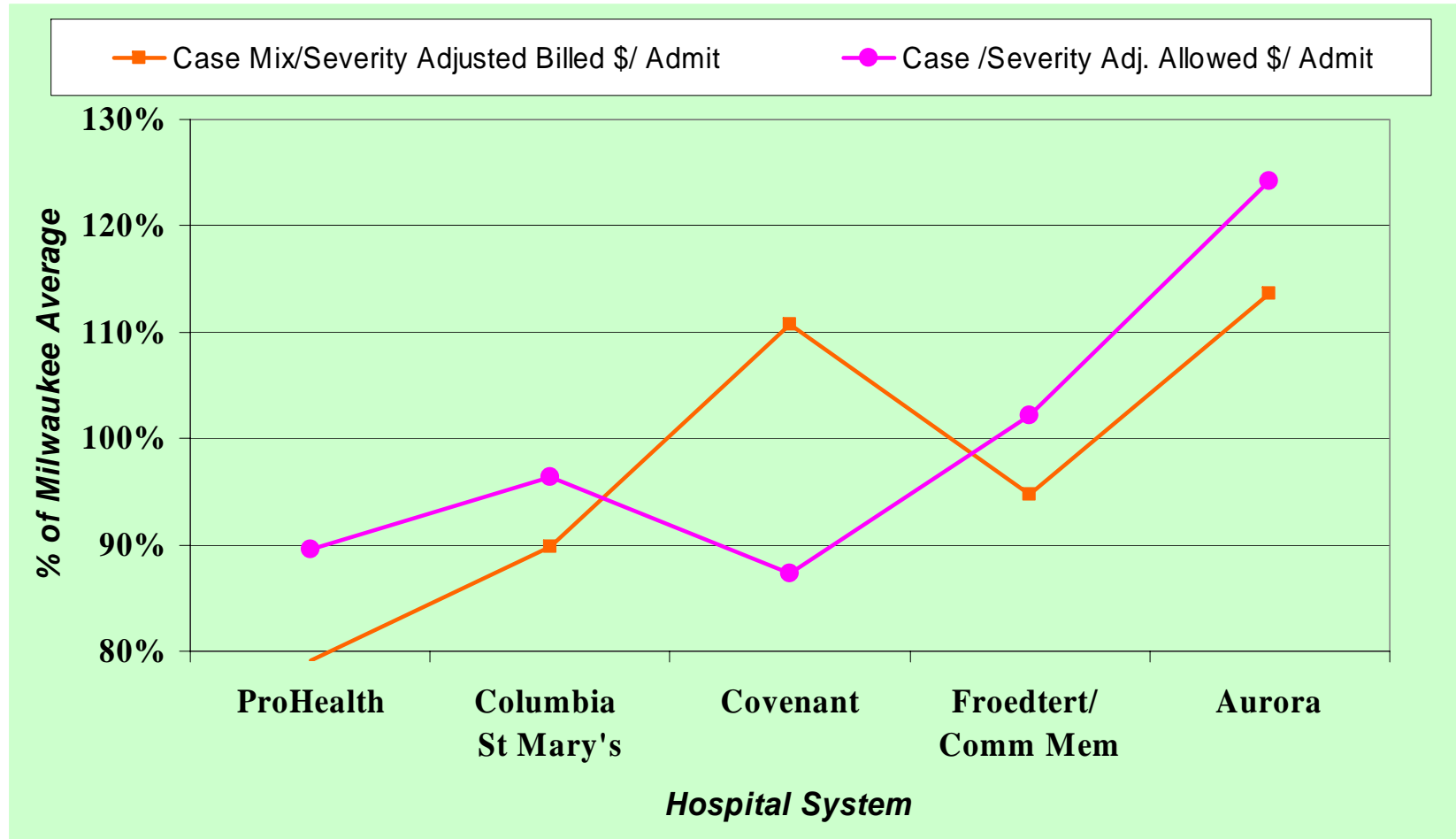


Hospital Inpatient Cost Efficiency Allowed Charge Adjustment

- Reflects negotiated health plan discounts for commercial business
- Applied to case mix/severity adjusted billed charges
- Discounts may change with time



Hospital Inpatient Cost Efficiency 2003 Case Mix/Severity Adjusted (Allowed)



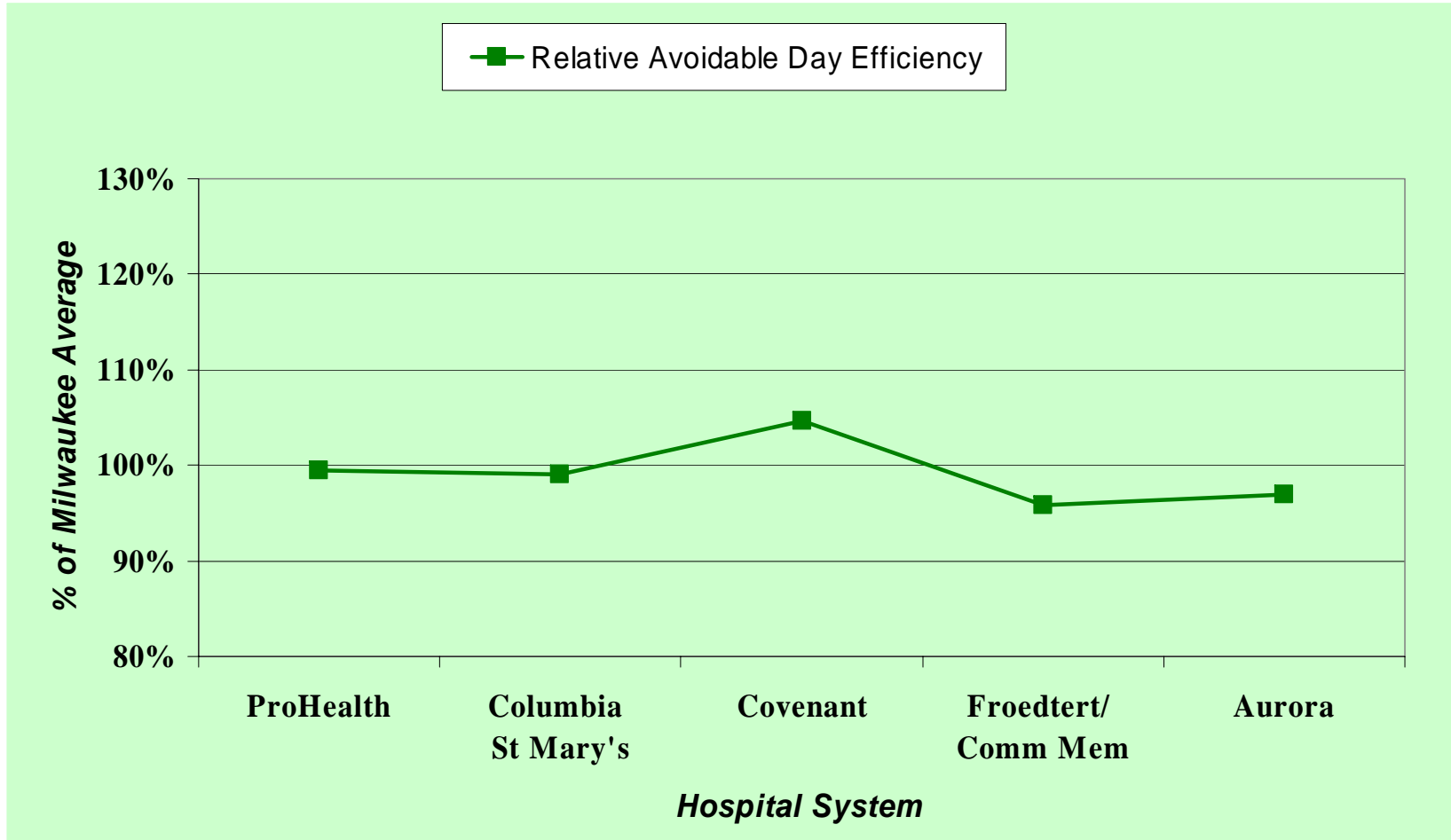


Hospital Inpatient Cost Efficiency Utilization Efficiency Adjustment

- Adjust to reflect number of potentially avoidable inpatient days
- Assumes more avoidable hospital days = higher overall payer costs
 - e.g.: Efficiency Index of 105% = 5% more potentially avoidable days than Milwaukee average
- Source is Milliman Hospital Efficiency Index™
 - Statistical model
 - Measures each hospital vs. national best practice at diagnosis level
 - Severity adjusted
 - No hospital anywhere is perfect for every diagnosis
- No evidence that Milwaukee average has higher potentially avoidable days than national average

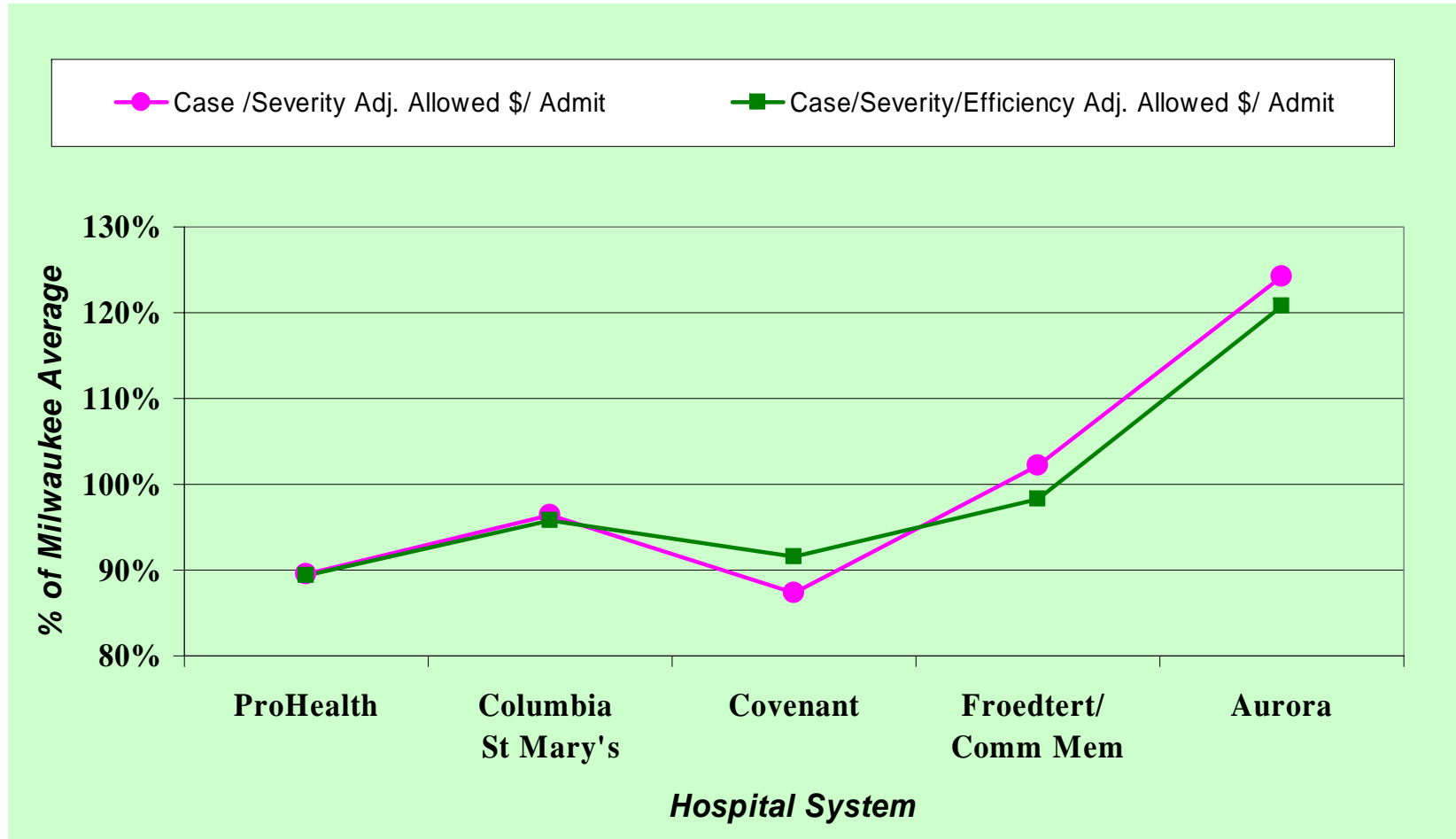


Hospital Inpatient Cost Efficiency 2003 Relative Avoidable Day Efficiency





Hospital Inpatient Cost Efficiency 2003 Case Mix/Severity & Efficiency Adjusted (Allowed)





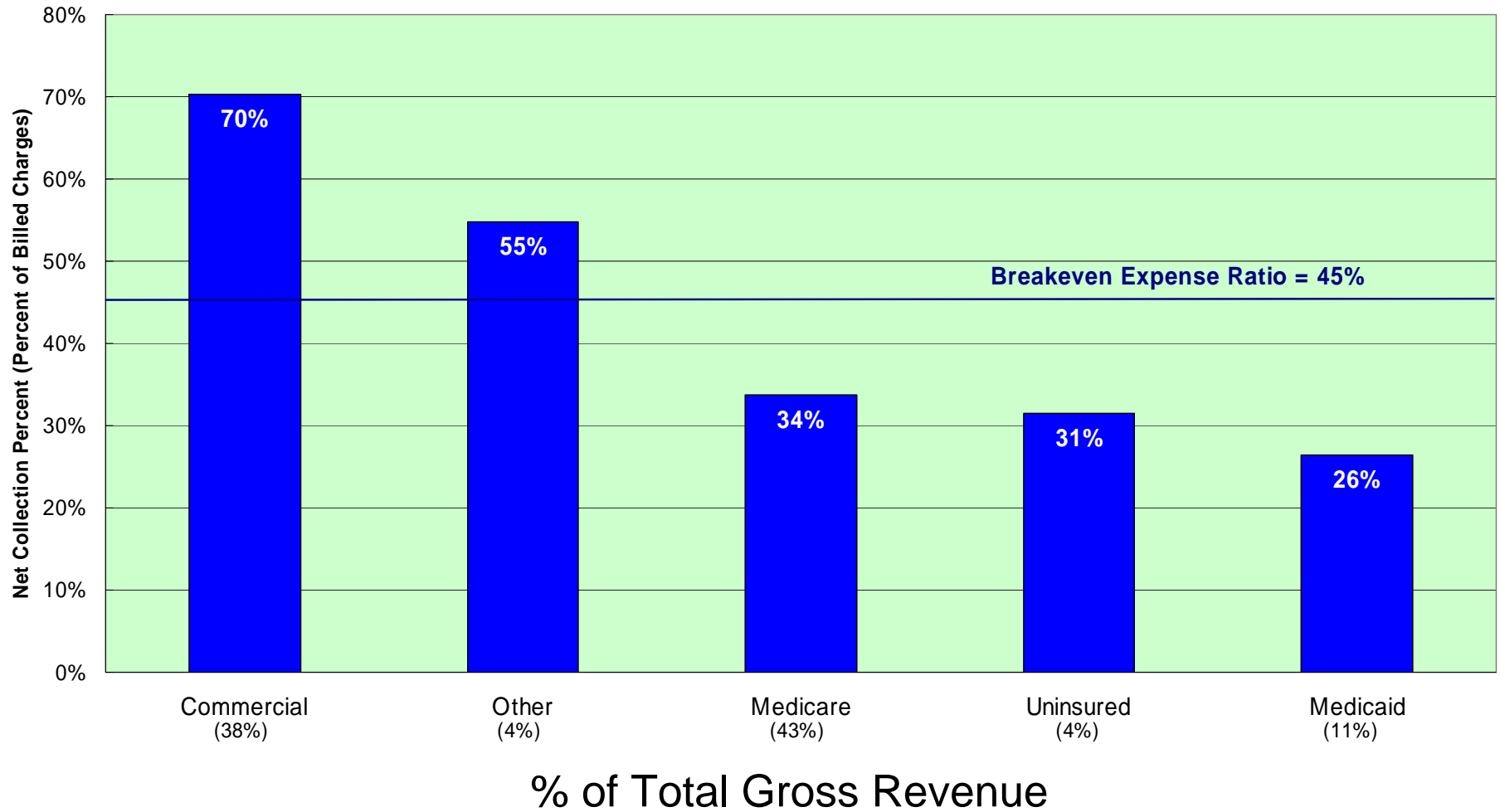
Hospital Inpatient Cost Efficiency Cost Shifting Index

- Low reimbursement for Medicare, Medicaid and uninsured causes higher commercial rates
- Cost shift Index = theoretic adjustment to commercial rates if community business mix
 - e.g., Cost shift index of 105% = Rates could be reduced 5% if community mix
- Adjusted each hospital to Milwaukee average mix of:
 - Commercial
 - Medicare
 - Medicaid
 - Uninsured (Charity care, private pay, bad debt)
 - Other (Workers comp)
- Significant different business mix among Milwaukee hospitals
- Did not evaluate if Milwaukee reimbursement levels differ from national averages
- Did not adjust for profitability of hospitals



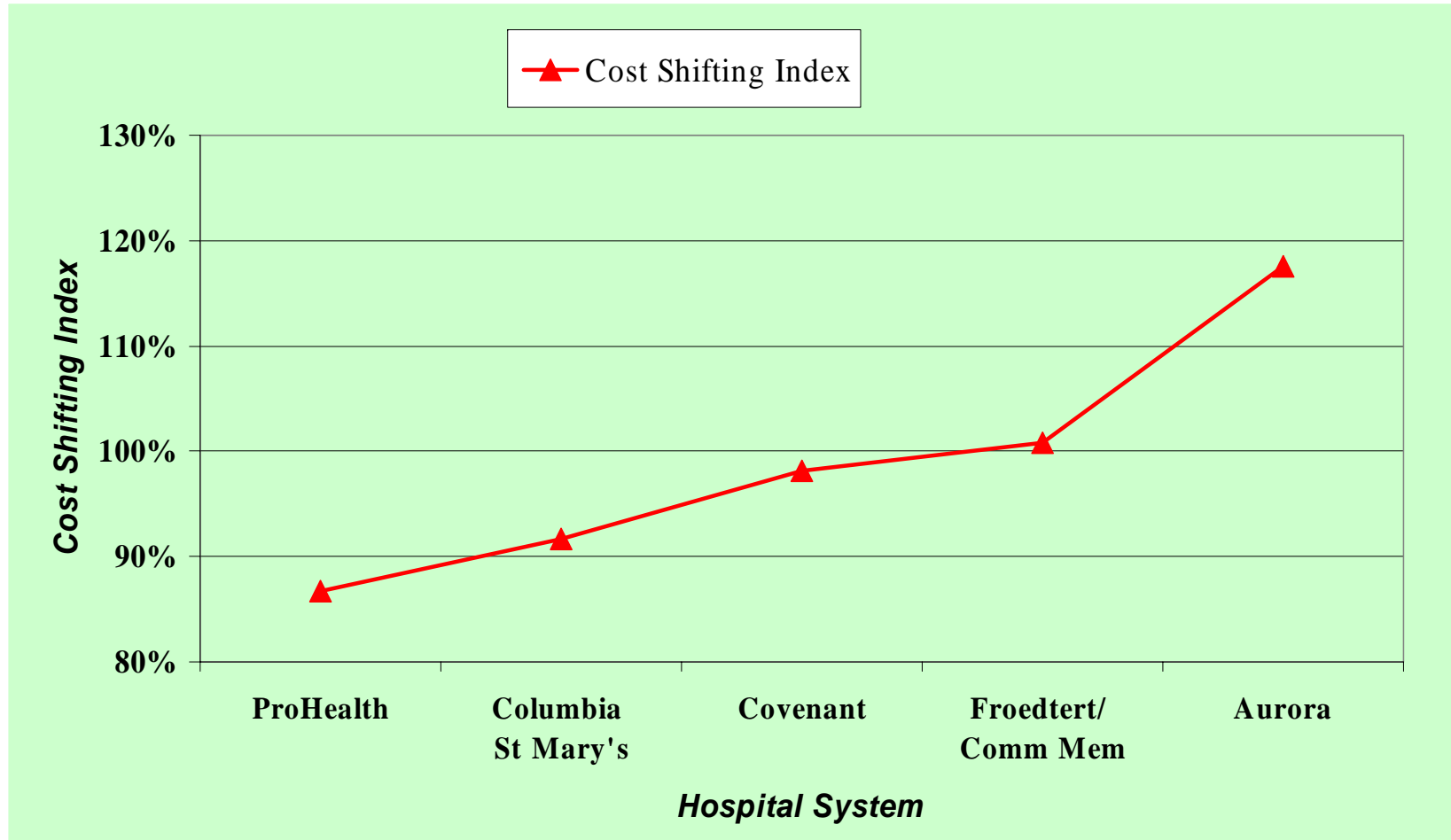
Hospital Inpatient Cost Efficiency

Milwaukee Average Net Collection % by Payer - 2003



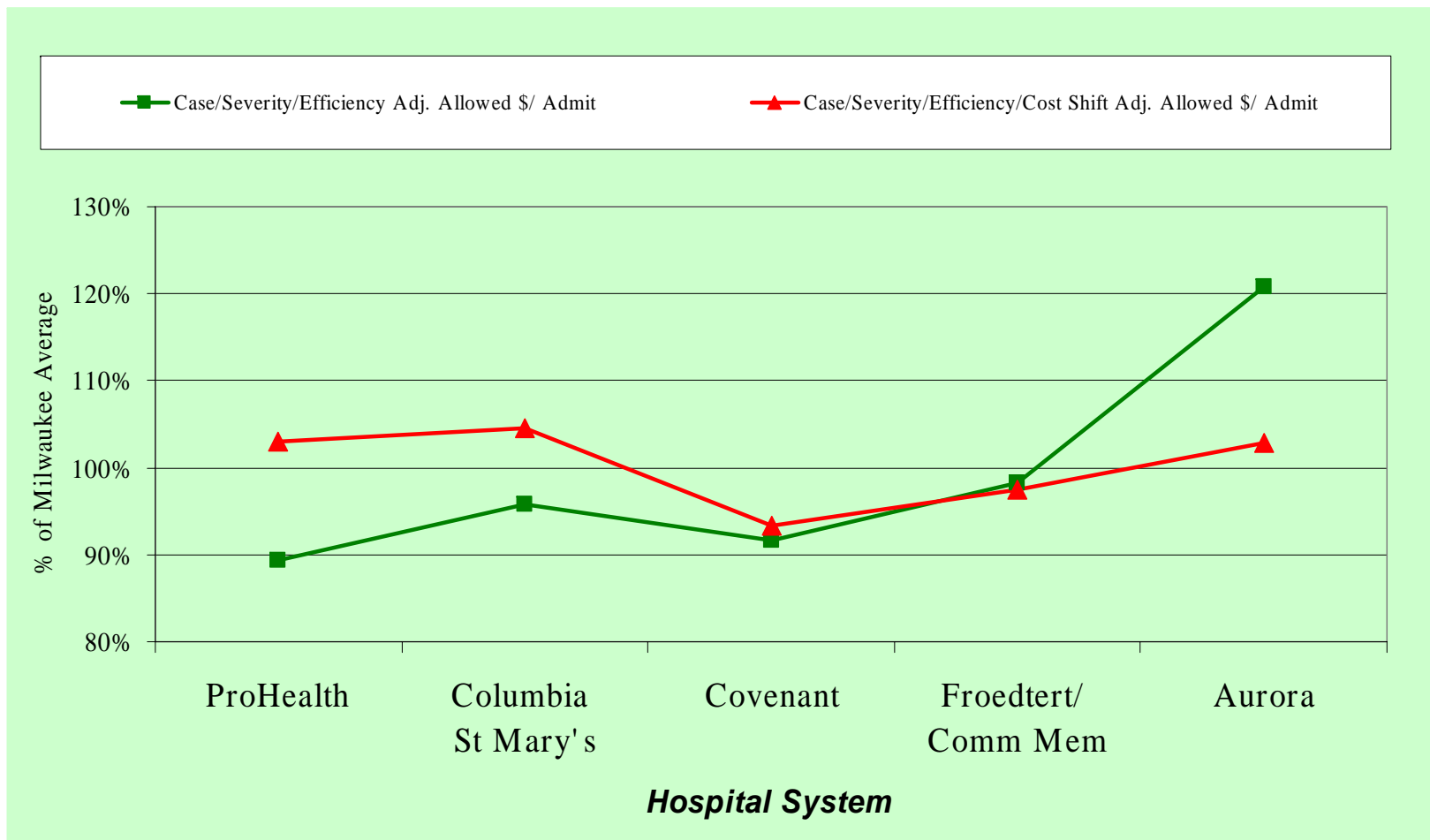


Hospital Inpatient Cost Efficiency 2003 Cost Shifting Index



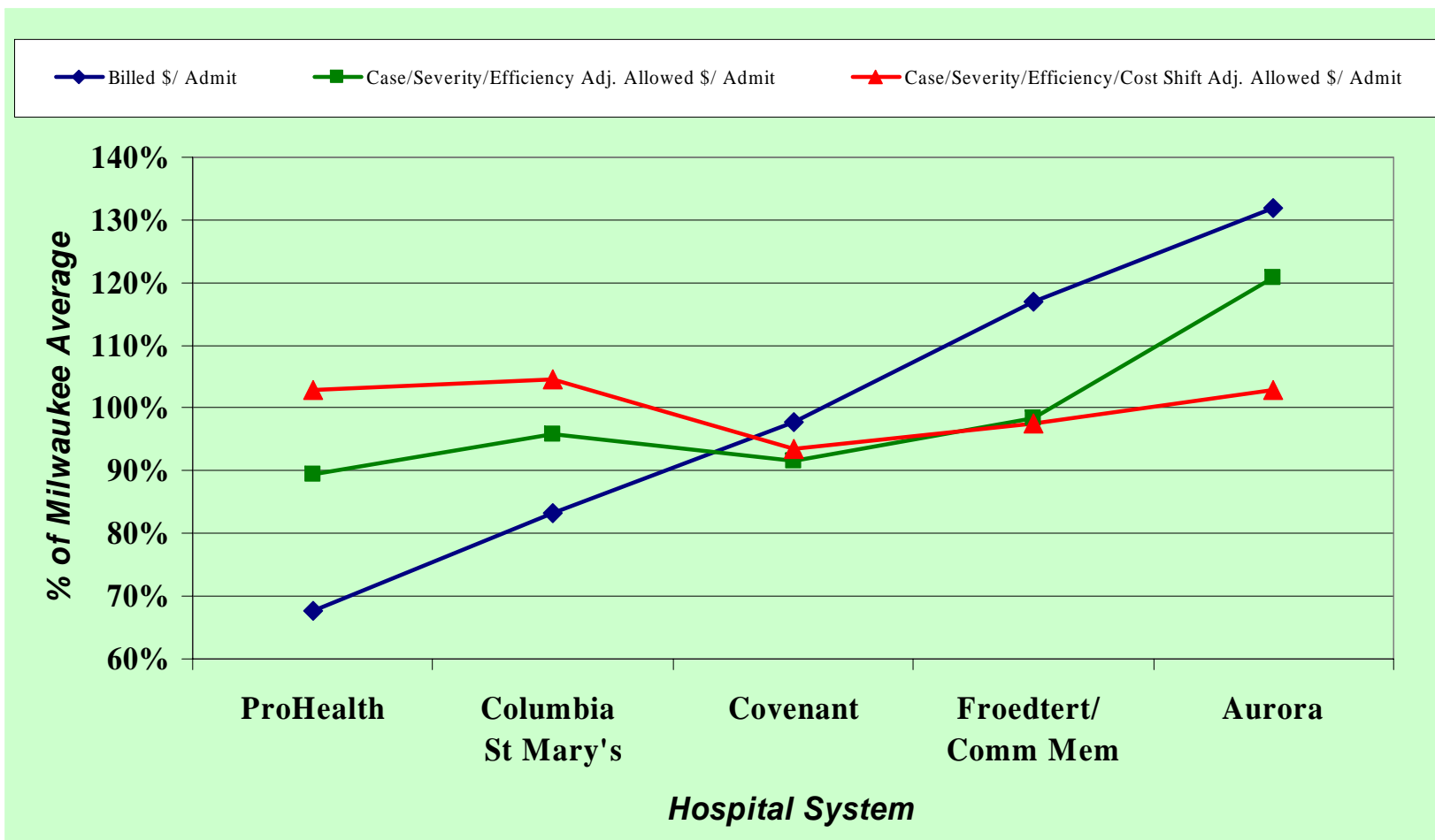


Hospital Inpatient Cost Efficiency 2003 Case Mix, Severity, Efficiency and Cost Shift Adjusted (Allowed)



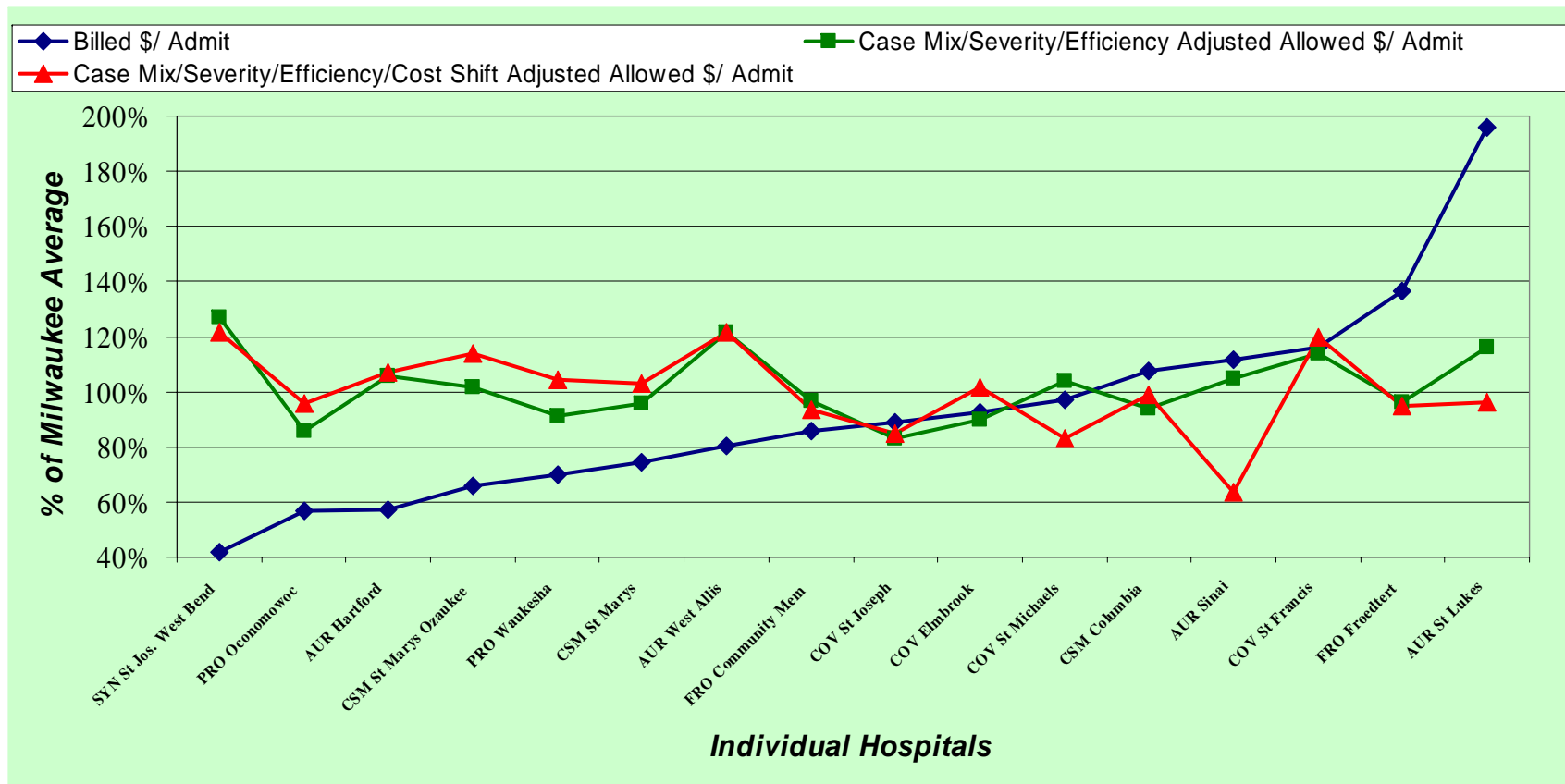


Hospital Inpatient Cost Efficiency 2003 Case Mix, Severity, Efficiency and Cost Shift Adjusted (Allowed) (With Billed \$/Admit Displayed)





Hospital Inpatient 2003 Case Mix, Severity, Efficiency and Cost Shift Adjusted (Allowed) – by Individual Hospital





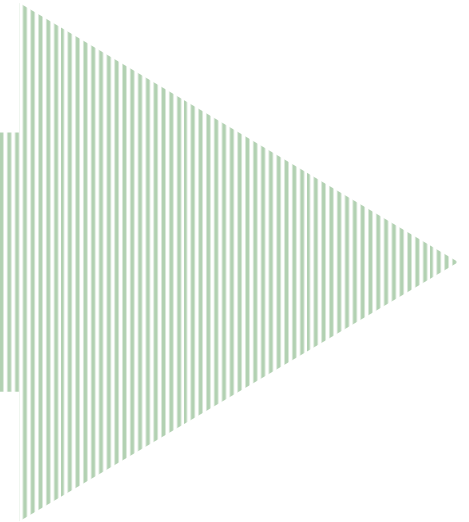
Hospital Inpatient Cost Efficiency

Key Messages

- Unadjusted billed charges may provide misleading comparisons
- Case mix and severity adjustments tend to narrow the range of hospital costs
- Mix of government and uninsured mix of business within Milwaukee:
 - Helps explain some cost differences
 - Community issue worthy of more discussion
- Other comparisons are important:
 - Outcomes and quality
 - Outpatient services
 - Changes since 2003
- Report appendix includes important info: methods, data, assumptions and caveats



Closing Remarks





Closing Remarks

- Milwaukee's healthcare costs continue to be higher than other Midwestern metropolitan areas and a concerted effort is needed to correct this.
- Government health care programs need to pay their fair share.
- The disparity in the indigent/charity care and Medicaid cost shift burden must be addressed.
- A public-private voluntary centralized repository of health care data including cost, quality/outcomes and patient satisfaction measures must be supported.
- We must address preventable health issues negatively affecting our community.
- Options for greater cooperation for more effective and efficient care should be explored by the provider community.

- Meeting materials and reports available at: www.gmbfh.org