

Claims Mining at a Commercial Payer

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Blue Health Intelligence (BHI)

What is Blue Health Intelligence?

- **BHI is a Blue-branded initiative representing**
 - 20 Participating Plans
 - The Blue Cross and Blue Shield Association
 - Consortium Health Plans (CHP)
- **To aggregate in the largest national data warehouse**
 - Medical claims
 - Drug claims
 - Membership data
 - Provider data

Participating Plans

- Alabama
- Arkansas
- Capital
- CareFirst (DC, DE,MD)
- Excellus
- Florida
- HCSC (IL/NM/OK/TX)
- HealthNow
- Highmark Pennsylvania (W. VA)
- Idaho Blue Cross
- Independence Blue Cross
- Massachusetts
- Michigan
- Minnesota
- Nebraska
- North Carolina
- Rhode Island
- South Carolina
- Tennessee
- WellPoint (CA-Cross, CO,CT, Empire, GA,IN, KY, ME, MO,NH,NV,OH, VA,WI)

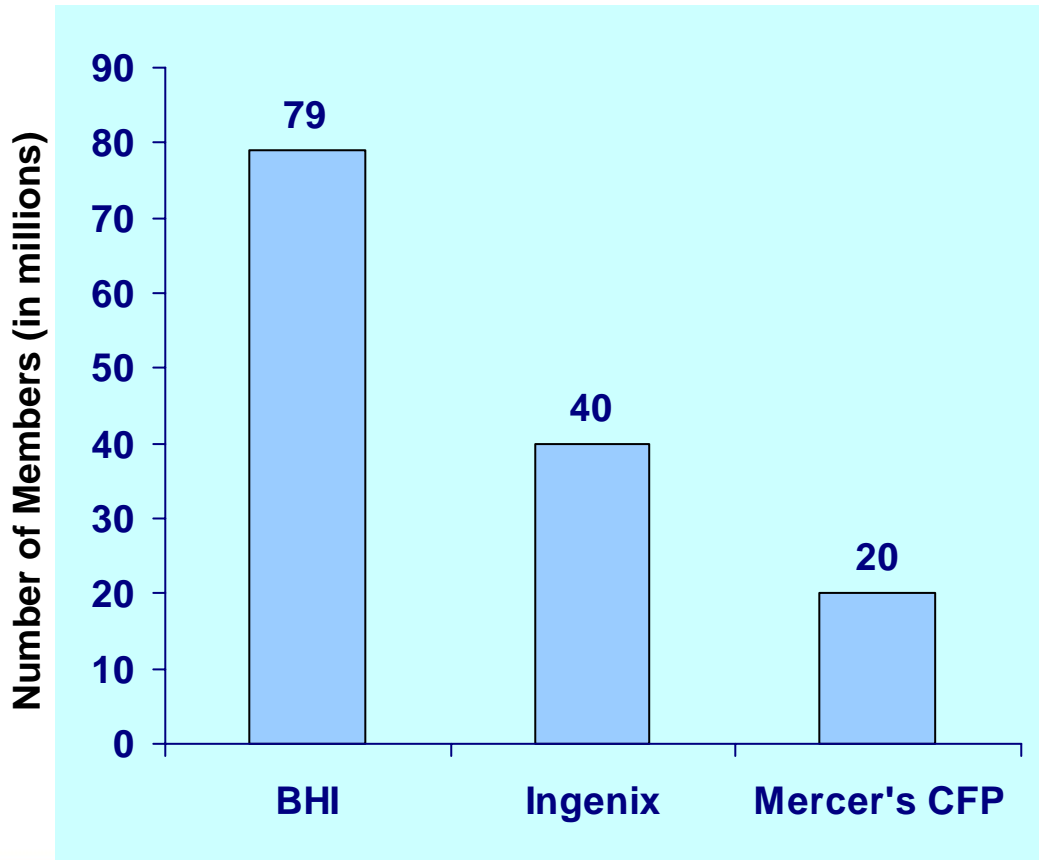
Strategic Positioning

- **BHI will support delivery of Blue Branded national programs to meet emerging market requirements**
 - Commercial members, including State employees
 - Excludes Medicare, Medicaid
 - FEP to be added by 2008
- **BHI will support an industry-leading position in health informatics that will differentiate the Blues in the marketplace**
 - Better understanding of purchaser's cost drivers
 - Transparency
 - Drug/Device safety and efficacy
 - Clinical research initiatives
 - Health policy

BHI Data Breadth

BHI will lead the industry in its scope and depth

Size of Data Warehouse



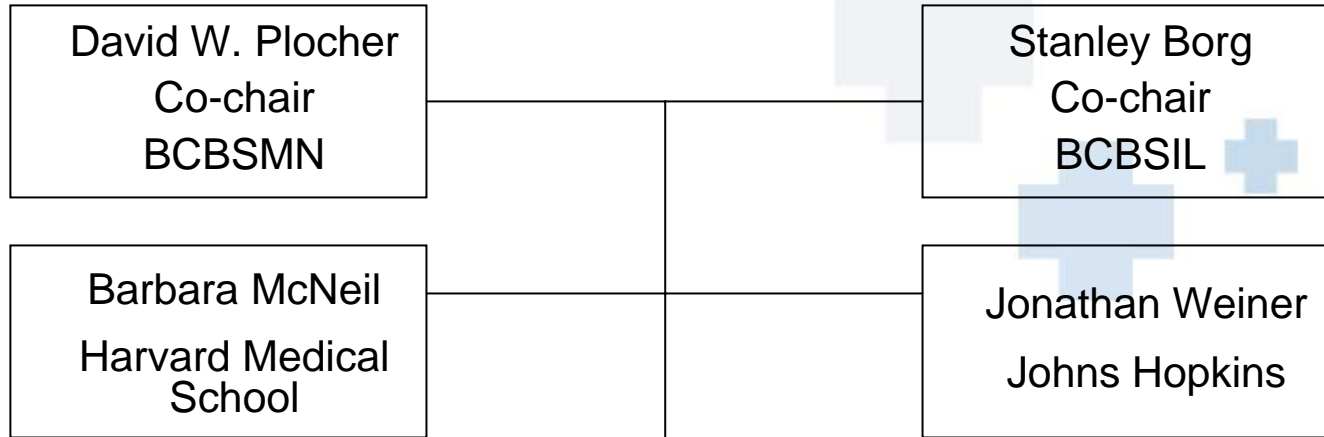
Greater size of data warehouse enables:

- Improved precision in cost and quality measures because of data density
- Greater understanding of less frequent conditions and ability to stratify
- Ability to benchmark across geographies, down to MSA level
- Sorting by broad range of network/benefit designs and industry categories, using SIC codes, unlike Mercer's CFP or original Ingenix design

BHI Business Solution

- **Flexible architecture on CSC server**
 - ViPS business rules
- **Confidentiality through privacy and security standards**
 - Data de-identified and encrypted
- **Consistent data for use by Plans' analytic tools**
 - Milliman's data integrity validation

Clinical Advisory Group



Don Bradley, BCBSNC
Huda Fadel, BCBSMI
William Kerr, BCBSFL
William Minier, BCBSNE
Joel Overbach, Excellus
Raymond Phillippi, BCBSTN
Carol Wilhoit, BCBSIL
Winston Wong, CareFirst

CDHP

Population and Utilization Profiles

Options Blue vs. Open Access CMM

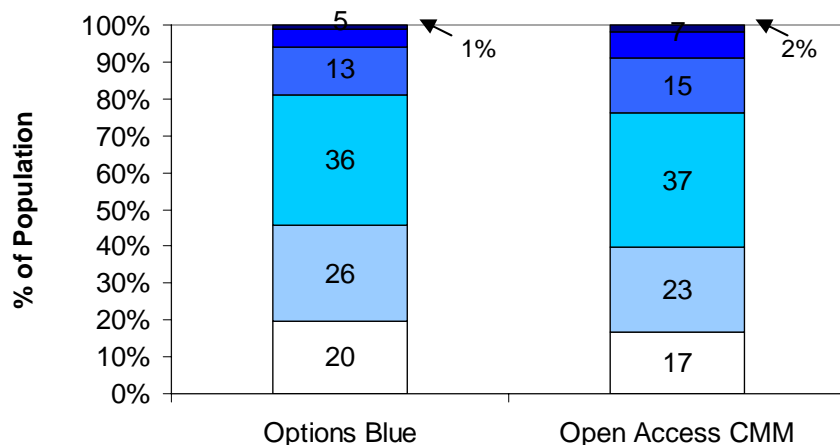
Study Population and Design

- BCBS of Minnesota 2004 enrollees
 - Age ≤ 64
 - Prescription drug benefit with BCBS
 - Options Blue or Open Access CMM
- Cross-sectional analysis
- Risk-adjusted using population morbidity as measured by Adjusted Clinical Groups
 - Based on diagnostic code profile
 - ACGs explain greater proportion of cost trend than age and gender alone
- Incurred claims with a 3-month run-out

2004 Population Enrollment Summary

Product	Member Count	Total Member Months	Average Member Months
Options Blue			
• HSA	41,017	317,946	7.75
• HRA	29,881	258,856	8.66
• VEBA	10,927	96,820	8.86
Total	81,825	673,616	8.23
Open Access CMM	931,736	8,350,664	8.96

Population Morbidity Comparison



RUB = Resource Utilization Band

RUB 0: Non-user

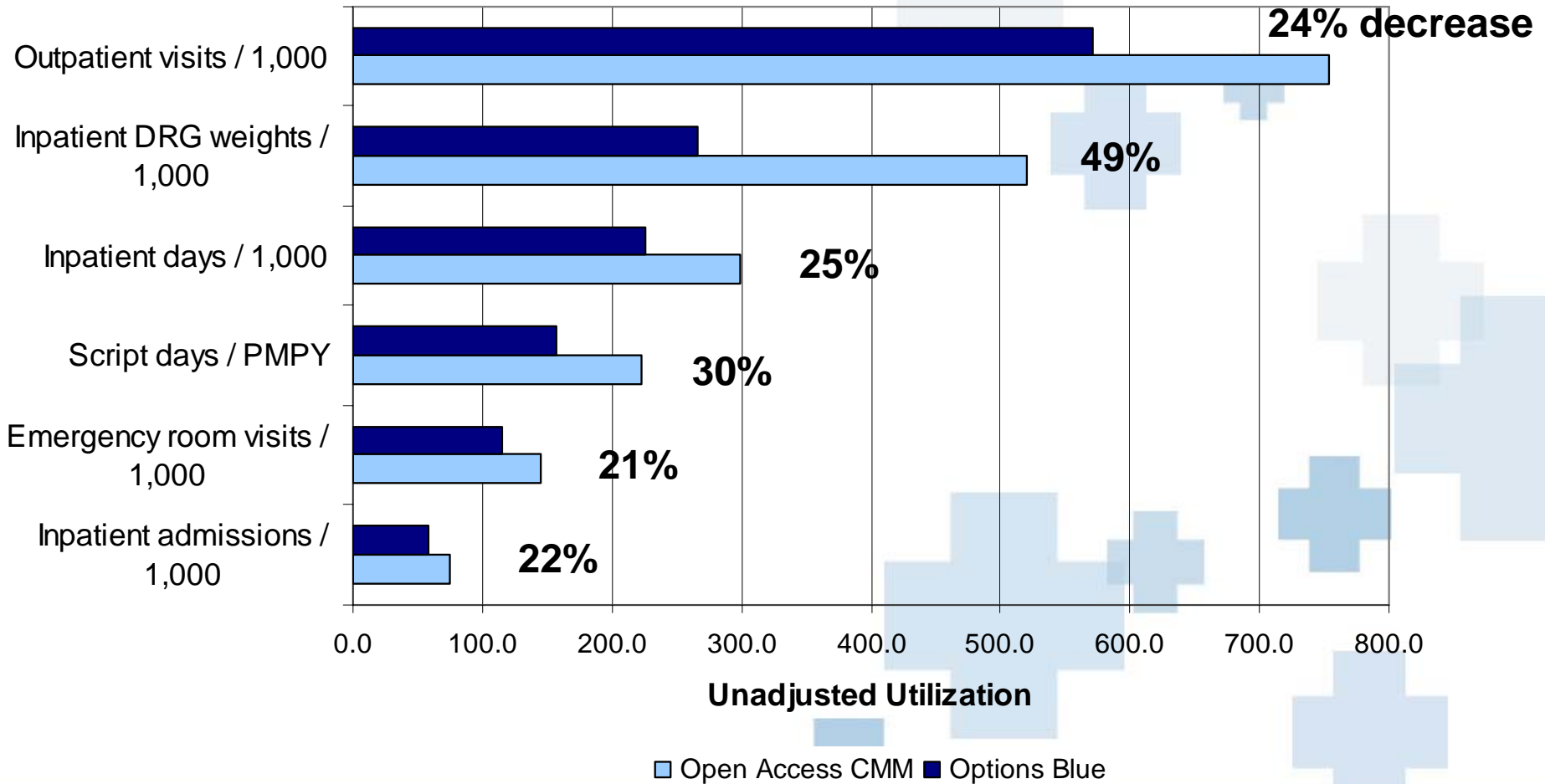
□ RUB 0 □ RUB 1 □ RUB 2 □ RUB 3 □ RUB 4 □ RUB 5

- Options Blue had 3% more members in low morbidity groups (RUB 0 and RUB1) than did Open Access CMM
- Options Blue had fewer members in high morbidity groups, RUB 4 (2% fewer) and RUB 5 (1% fewer)

Overall, Options Blue population was 8% healthier than Open Access CMM

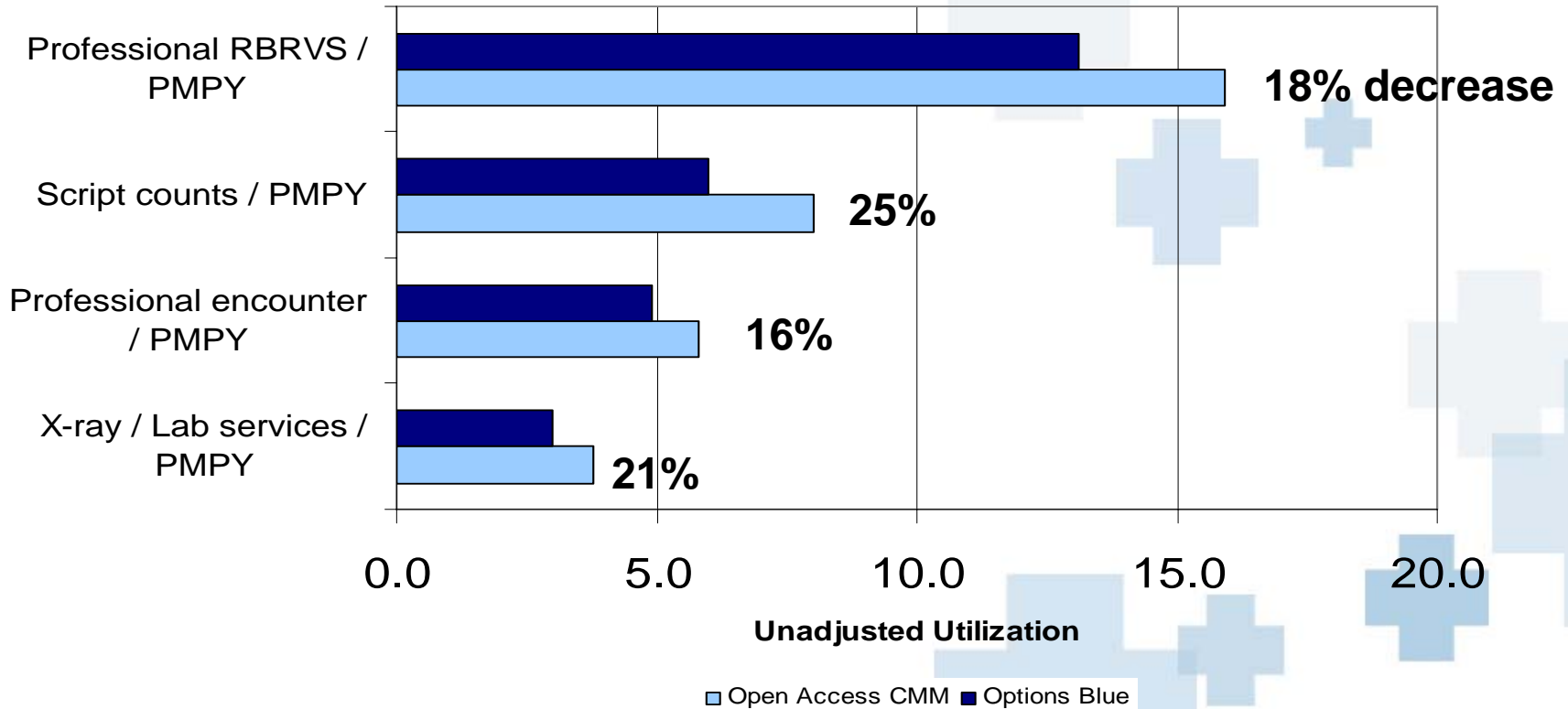
Unadjusted Utilization

Options Blue vs. Open Access CMM



Unadjusted Utilization (cont'd)

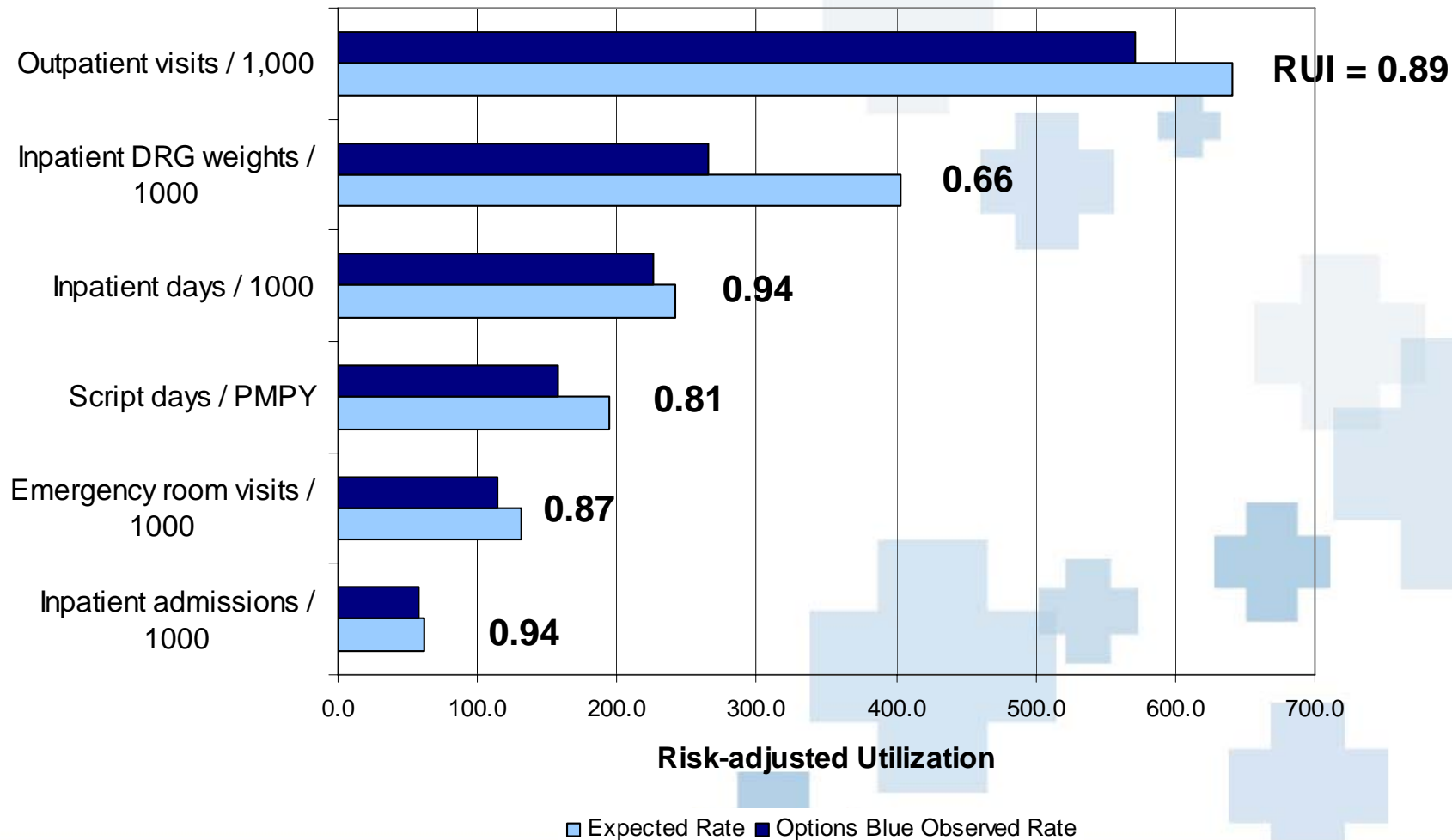
Options Blue vs. Open Access CMM



Unadjusted utilization in Options Blue is 27% lower than Open Access CMM

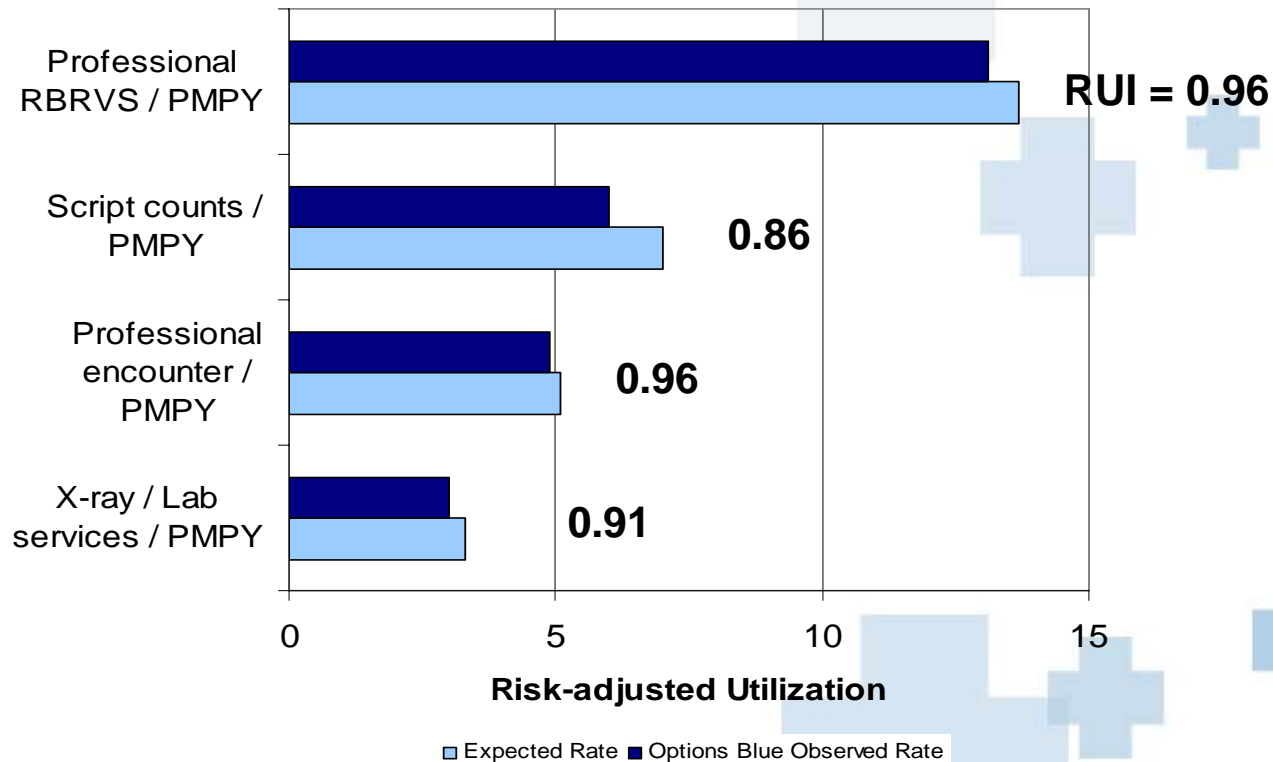
Options Blue Risk-adjusted Utilization

Observed vs. Expected, and Risk-adjusted Utilization Index (RUI)



Options Blue Risk-adjusted Utilization (cont'd)

Observed vs. Expected, and RUI



After adjustment for morbidity, Options Blue utilization is 14% lower than reference population Open Access CMM.

What drives these differences in utilization?

- Hypothesis is that benefit design affects utilization
 - Explored this by controlling for health status, age, and gender
- Other possible drivers
 - Socio-economic status (SES)
 - Education
 - Income
 - Urban vs. rural

Summary of Population SES Options Blue vs. Open Access CMM

- Options Blue population has slightly higher SES than that of Open Access CMM
 - Higher levels of education
 - Higher income
 - More home ownership
 - Higher home values
 - More urban than rural

Enrollee SES*

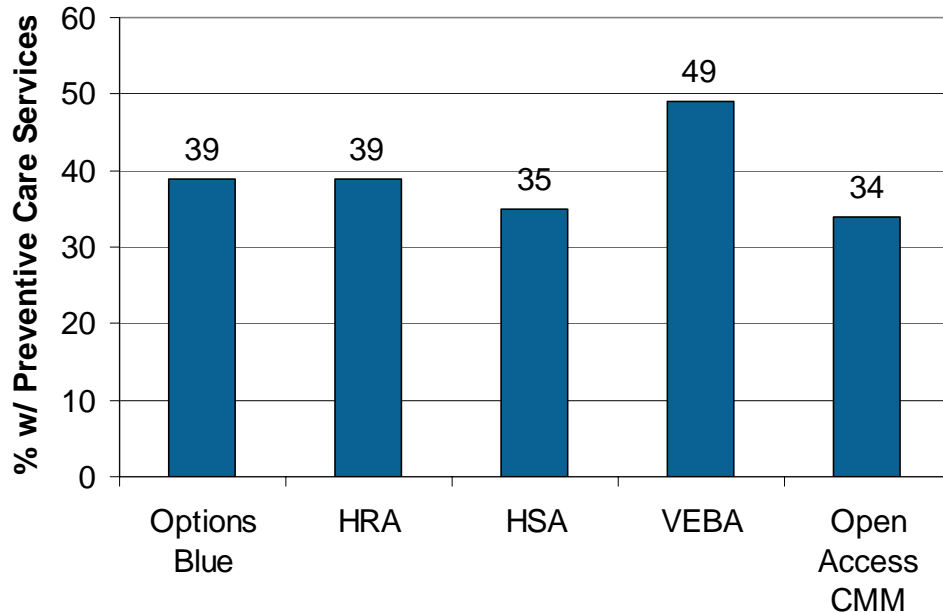
Open Access CMM vs. Options Blue

	Open Access	Options Blue	% Diff
<i>Education</i>			
Percent 25 and up with less than 9 yrs education	5.7%	5.4%	-4.2%
Percent 25 and up with HS diploma	87.3%	88.1%	0.8%
<i>Housing & Income</i>			
Median Household Income	\$48,949	\$52,417	6.6%
Median Value of Owner Occupied Housing	\$115,822	\$126,714	8.6%
Median Gross Rent	\$536	\$559	4.0%
Median Monthly Mortgage	\$980	\$1,038	5.6%
Percent Owner Occupied	91.7%	92.5%	0.9%
<i>Geography</i>			
Minnesota address	88.7%	95.9%	7.5%
Minnesota & border county address	92.8%	97.6%	4.9%
7 County metro area address	33.3%	36.6%	9.0%

*Some variables imputed from geographic characteristics

Do Options Blue Enrollees Forgo Preventive Care?*

Options Blue vs. Open Access CMM



*Defined by ADG31 via the ACG system

- Does not control for differences in preventive benefits.
- Suggests that Options Blue members are not forgoing preventive services

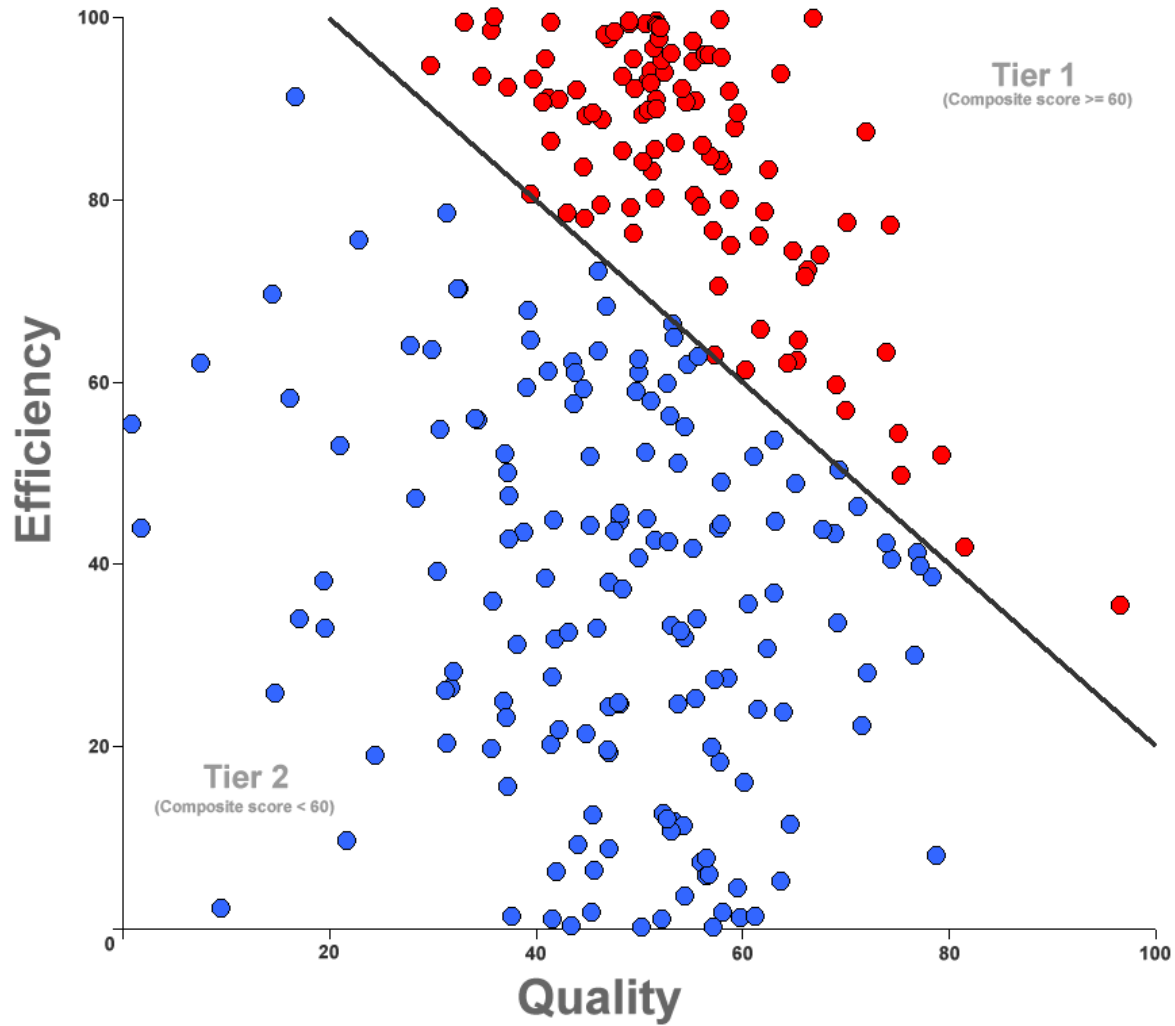
BCBSM Multi-Level Networks

Tiered Clinics

Methodology

- Using quality and cost information
 - 32 quality indicators applied to 17 specialties
 - Episode Treatment Groups as a measure of cost
 - Establish physician attribution
 - Define the ETG subset for calculation/minimum volumes/outliers
 - Incorporate risk adjustment methodology
 - Weigh cost and quality equally
- Other specialties for whom robust quality measures do not exist will be placed in levels based on risk-adjusted cost only

Overall



Appendix A - Specialties to be Tiered Based on Both Cost and Quality

- Primary Care
 - Family practice
 - Internal medicine
 - General practice
 - Pediatrics
 - Obstetrics/gynecology
- Medical / Surgical Specialties
 - Dermatology
 - Cardiology
 - General surgery
 - Orthopedics
- Medical / Surgical Specialties
 - Geriatrics
 - Oncology / hematology
 - Otolaryngology
 - Pulmonology
 - Rheumatology
 - Allergy & immunology
 - Preventive medicine
 - Ophthalmology
- Multi-specialty

Appendix B - Specialties to be Tiered on Cost Only

- Endocrinology
- Gastroenterology
- Nephrology
- Neurosurgery
- Neurology
- Plastic Surgery
- Podiatry
- Urology

Angina

