

Appendix A
Comparison of Key Factors Influencing
2003 – 2006 Commercial Hospital Payment Levels
Methodology and Assumptions

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A MILLIMAN GLOBAL FIRM

Milliman

Consultants and Actuaries

15800 Bluemound Road, Suite 400
Brookfield, WI 53005-6069

Tel +1 262-784-2250

Fax +1 262-784-0033

www.milliman.com

Comparison of Key Factors Influencing
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Methodology and Assumptions

This appendix describes the data, methods, assumptions and tools Milliman used to compare Milwaukee market average and health system specific hospital operating cost levels and cost shift burdens from governmental payers and overall levels of geographic commercial market concentration among Milwaukee area health systems from 2003 through 2006. Measuring hospital operating cost levels, impacts of commercial and governmental payments to hospitals, and market share concentrations are complicated and often controversial processes. Therefore, the descriptions in this appendix are crucial to the effective use of this hospital comparison. Milliman's comparison of Milwaukee hospital operating cost levels, cost shift burdens and market concentrations should only be considered in its entirety and only with this appendix attached.

Overview

The Greater Milwaukee Business Foundation on Health (the Foundation) commissioned Milliman to provide updated comparisons of five market factors previously identified by Milliman as contributing to higher 2003 commercial hospital inpatient payment levels in Milwaukee compared to other Midwest cities. This report provides comparisons of 2003 baseline measures for three of the five factors (hospital operating cost levels, cost shift burdens, and geographic commercial market concentration) to market and individual health system measures in 2004, 2005, and 2006.

The Foundation's goals for these comparisons are to:

- ◆ Provide overall market average and individual health system hospital operating cost and cost shift comparisons,
- ◆ Provide measures of the geographic concentration of health systems in the Milwaukee area, and
- ◆ Measure changes in each factor from 2003 to 2006.

Hospital operating cost comparisons are based on a hospital's underlying expenses incurred in providing services as reported in hospital financial statements, measured on a per-unit basis. Milliman adjusted each hospital's per-unit expenses for differences in inpatient case mix and severity, relative percentages of inpatient and outpatient business, and mix of outpatient services among all hospitals.

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Comparisons of “cost shift burdens” are based on the impact to commercial payers resulting from government payment shortfalls to Milwaukee area hospitals. “Cost shift burden” is defined as the increase in commercial insurance payment levels for hospitals necessary to offset the impact of government payments that do not fully cover operating costs and profit.

Market share concentration measurements were based on health system commercial inpatient discharge market shares of residents in each of the 78 zip codes in Milwaukee, Ozaukee, Washington, and Waukesha counties. Results of the analyses of individual zip code market shares were weighted for differences in commercial discharges among all zip codes when providing overall market comparisons among years.

Definition of Milwaukee Area Health Systems

Milliman’s analyses of hospital operating costs and cost shift burdens include all adult, general acute care hospitals operating in Milwaukee, Ozaukee, Waukesha, and Washington counties owned and operated by multi-hospital health systems.

Milliman’s analysis of Milwaukee health system geographic concentration includes all adult, general, acute care hospitals operating in Milwaukee, Ozaukee, Waukesha, and Washington counties.

Children’s Hospital and Health System and Columbia Center (Columbia Health System) are not included in the analyses or in the Milwaukee community averages because of their unique demographic and service characteristics. SynergyHealth of West Bend (Washington County) is not included in the operating cost and cost shift analyses because of its unique organizational structure as a single hospital health system. SynergyHealth is included in our analysis of geographic concentration of health systems.

Sub-acute care and non-medical / surgical specialty hospitals (e.g., behavioral health, rehabilitation, and long-term acute care) are also not included in the analysis.

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Milwaukee Area Comparisons Included Hospitals and Health Systems	
Health System	Included Hospitals
Aurora Health Care (Aurora)	Aurora Medical Center of Washington County (Hartford) Aurora Sinai Medical Center (Sinai) St. Luke’s Medical Center (including South Shore Campus) West Allis Memorial Hospital
Columbia St. Mary’s (CSM)	Columbia Hospital Orthopedic Hospital of Wisconsin St. Mary’s Hospital of Milwaukee St. Mary’s Hospital Ozaukee
Froedtert & Community Health (F&CH)	Community Memorial Hospital Froedtert Hospital
ProHealth Care (ProHealth)	Oconomowoc Memorial Hospital Waukesha Memorial Hospital
Wheaton Franciscan Healthcare (Wheaton)	Elmbrook Memorial Hospital St. Francis Hospital St. Joseph Regional Medical Center St. Michael Hospital Wisconsin Heart Hospital

Data Sources and Time Period

Milliman used hospital inpatient claims data and information included in the Wisconsin Hospital Fiscal Survey as reported by each hospital obtained from the Wisconsin Hospital Association (WHA) Information Center as the basis for each analysis.

The hospital operating cost and cost shift burden comparisons are based on data from each health system’s fiscal year as reported to WHA. Milwaukee Area health systems have different fiscal years ending from June 30 through December 31 of each year. Milliman does not believe the differences in health system fiscal years are likely to have a material impact on our comparisons. Individual hospital system information included in the comparisons was developed from summaries of the respective individual hospital Fiscal Survey reports. These summaries may differ from other publicly available financial information from each hospital system due to exclusion of non-hospital subsidiaries or accounting treatment of intercompany revenues and expenses. Hospital service and payer mix, reimbursement levels (i.e., discounts), operating costs and profit levels may change

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over time. The results of this comparison may be different if the analysis was performed on more recent data.

Fiscal year 2006 operating expenses reported for St. Michael Hospital were adjusted to remove estimated additional depreciation costs resulting from Wheaton's decision to close the hospital in late 2006. This adjustment was made to improve comparability of Wheaton operating cost and cost shift burden estimates to other area health systems. These adjustments may not include all one-time operating costs related to closure of the facility.

The measures of geographic market share concentration among health systems are based on commercial inpatient discharge data for residents of Milwaukee, Ozaukee, Washington and Waukesha counties admitted to Included Hospitals or St. Joseph Hospital (Synergy) from January 1 through December 31 of each measurement year. Newborn infants and their mothers were counted as single discharges for the purpose of this analysis.

Milliman excluded inpatient psychiatric, rehabilitation, and transfer patients from each hospital's data. Estimated costs of the excluded patients were removed from each hospital's total expenses based on each hospital's overall cost to charge ratio.

Hospital Services Form The Basis of Comparison

The hospital operating cost, cost shift, and market share comparisons are based solely on hospital services, payments, costs, and profits. The comparisons do not include operating costs, cost shift burdens, or market shares related to types of health care services such as physicians, home health agencies, pharmacies, and other providers that are not included in each health system's hospital financial statements as reported to WHA.

The reader of this report should consider all elements of health care costs before drawing conclusions from this report.

Quality Comparisons

Milliman's analysis did not include any comparisons of quality or outcomes information because such data was outside the scope of the comparisons. Quality information is a critical component of provider evaluation and should be considered when evaluating hospital performance.

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Hospital Operating Cost Comparisons

Per-unit hospital operating cost levels were calculated for each health system by dividing total hospital operating costs (net of other operating revenues) by each health system's total adjusted equivalent discharges. Adjusted equivalent discharges are a standardized unit of measuring each hospital's combined inpatient and outpatient activity adjusting for differences in inpatient case-mix and severity, outpatient service mix, and relative mix of inpatient and outpatient business mix among hospitals.

Milliman compared changes in Milwaukee average hospital operating cost levels to estimated changes in national average hospital costs using the Centers for Medicare and Medicaid Services' Hospital Market Basket Index and the United States Bureau of Labor Statistics Hospital Producer Price Index for each year.

Cost Shift Burden Estimates

Milwaukee area hospital cost shift burdens are calculated for Medicare, Wisconsin Medicaid, and Milwaukee County General Assistance (GAMP) patient activity at each hospital.

Cost shift burdens related to patients covered by other governmental payers such as CHAMPUS or non-Wisconsin Medicaid and patients receiving charity care are not reported separately in the comparisons due to the relatively immaterial impact of these patients on overall cost shift burden levels.

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Payment shortfalls related to “bad debts” as determined by each hospital are included in the operating expenses of each hospital system.

Medicare, Medicaid and GAMP Cost Shift Burden Estimates by payer were developed using Wisconsin Hospital Fiscal Survey data for each hospital summarized to provide the information presented in the market and hospital system comparisons. The payer specific cost shift burdens for each health system were estimated by comparing total reimbursement from each government payer to the sum of the net operating cost and hospital profit for each payer on a combined basis for all system hospitals. Hospital net operating costs and profits were allocated among payers based on each payer’s proportion of gross patient revenues (billed charges). Total hospital operating expenses were reduced by non-payer sources of revenue (other operating revenue) and adjusted for non-operating gains or losses to calculate the net operating costs used to develop the cost shift burden estimates for each health system.

Geographic Market Concentration Comparisons

The analysis of health system geographic market concentration was based on health system market share calculations using commercial discharge data from residents of each zip code in Milwaukee, Ozaukee, Washington, and Waukesha counties (78 total zip codes) to Included Hospitals or St. Joseph’s Hospital (Synergy). The analysis was limited to commercial data in order to better illustrate market characteristics and changes impacting commercial insurance and self funded health plans.

Milliman measured changes in the overall geographic market concentration of health systems in the Milwaukee area by comparing measures of “predominant” health system market shares across all study zip codes. The predominant health system was defined as the health system with the highest commercial inpatient discharge market share within each zip code. Overall measures of Milwaukee area geographic market concentration were developed by summarizing total commercial inpatient hospital discharge volumes from each zip code based on the “predominant” health system market share within the zip code.

“Predominant” health system market share measures for each zip code are included in Table 1 of this appendix.

Uses of Information

Milliman encourages the business, provider, and government communities to use this information to collaborate on quality and cost improvement initiatives. We did not create this information for, and we ask that it not be used in, hospital-specific public relations efforts or for general media purposes. We also ask that this information be reviewed and used in its entirety. Market comparisons using only one measure or even a limited number of measures can be misleading. An informed comparison of health care market characteristics should also incorporate other information, particularly additional quality measures, not included in this report. This information is designed for use by the business community and health care providers, not individual consumers of health care services.

Data Reliance

Milliman relied, without audit, on public data sources. To the extent this information is not accurate; the results of Milliman's analyses may not be accurate.

For Further Information

Please contact Keith Kieffer, CPA, RPh, in the Milwaukee office of Milliman (Phone: (262) 784-2250, email: keith.kieffer@milliman.com) with questions and comments about the hospital cost shift burden comparisons in this report.

Table 1

Milwaukee Area Inpatient
Health System Commercial Market Share Concentration
Waukesha County

Predominant Health System Key

A - Aurora	P - ProHealth
C - Columbia St. Mary's	S - SynergyHealth
F - Froedert & Community Health	W - Wheaton

Zipcode		Commercial Discharges				Predominant Health System Market Share				Predominant Health System			
City	Zip	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006
WAUKESHA	53188	1,838	1,816	1,948	2,018	75.8%	75.5%	75.7%	78.2%	P	P	P	P
WAUKESHA	53186	1,857	1,701	1,829	1,985	67.7%	68.1%	70.9%	73.6%	P	P	P	P
OCONOMOWOC	53066	1,518	1,612	1,764	1,882	79.8%	81.4%	80.4%	78.5%	P	P	P	P
MENOMONEE FALLS	53051	1,995	1,769	1,516	1,751	68.2%	66.1%	66.1%	65.4%	F	F	F	F
NEW BERLIN	53151	1,541	1,459	1,505	1,484	35.6%	33.3%	33.0%	37.5%	A	A	A	A
WAUKESHA	53189	1,213	1,303	1,354	1,463	66.8%	69.1%	68.5%	72.6%	P	P	P	P
MUSKEGO	53150	1,100	1,136	1,192	1,292	36.3%	34.9%	34.4%	38.2%	A	P	P	A
PEWAUKEE	53072	1,183	1,194	1,133	1,165	53.1%	52.8%	54.2%	58.5%	P	P	P	P
MUKWONAGO	53149	911	878	988	1,020	69.3%	67.3%	71.7%	70.8%	P	P	P	P
HARTLAND	53029	931	893	962	1,010	60.9%	63.3%	67.5%	62.9%	P	P	P	P
SUSSEX	53089	885	985	903	960	45.6%	48.3%	43.0%	44.6%	F	F	F	F
BROOKFIELD	53005	855	852	834	884	50.2%	50.7%	51.3%	42.9%	W	W	W	W
BROOKFIELD	53045	914	911	801	880	54.2%	53.9%	51.2%	43.1%	W	W	W	W
DOUSMAN	53118	331	337	342	408	78.2%	79.5%	78.9%	78.2%	P	P	P	P
NEW BERLIN	53146	376	401	338	320	31.6%	30.9%	36.4%	33.4%	P	P	P	P
DELAFIELD	53018	276	347	331	344	69.2%	68.0%	71.9%	66.9%	P	P	P	P
EAGLE	53119	292	275	310	302	71.9%	74.5%	75.2%	73.8%	P	P	P	P
ELM GROVE	53122	234	285	244	211	41.9%	49.8%	43.4%	44.1%	W	W	W	W
BIG BEND	53103	179	179	215	201	59.8%	62.0%	59.5%	59.7%	P	P	P	P
NASHOTAH	53058	182	167	193	161	65.9%	65.9%	75.1%	75.2%	P	P	P	P
WALES	53183	164	137	112	152	76.8%	70.8%	82.1%	73.7%	P	P	P	P
NORTH PRAIRIE	53153	112	123	109	118	77.7%	82.1%	78.9%	76.3%	P	P	P	P
BUTLER	53007	104	86	75	97	43.3%	50.0%	48.0%	51.5%	W	F	F	F
LANNON	53046	13	39	42	65	69.2%	76.9%	76.2%	73.8%	F	F	F	F

Table 1

Milwaukee Area Inpatient
Health System Commercial Market Share Concentration
Milwaukee County

Predominant Health System Key	
A - Aurora	P - ProHealth
C - Columbia St. Mary's	S - SynergyHealth
F - Froedert & Community Health	W - Wheaton

Zipcode		Commercial Discharges				Predominant Health System Market Share				Predominant Health System			
City	Zip	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006
MILWAUKEE	53215	2,447	2,178	1,827	1,900	40.7%	36.5%	44.7%	44.5%	W	A	A	A
MILWAUKEE	53221	1,875	1,806	1,723	1,644	50.1%	48.8%	54.5%	58.9%	A	A	A	A
MILWAUKEE	53209	2,184	2,029	1,653	1,660	46.5%	42.3%	41.6%	48.1%	W	W	C	C
MILWAUKEE	53219	1,753	1,749	1,650	1,655	46.1%	48.7%	53.2%	59.0%	A	A	A	A
OAK CREEK	53154	1,671	1,666	1,571	1,772	50.0%	48.1%	53.6%	63.4%	A	A	A	A
MILWAUKEE	53214	1,753	1,760	1,560	1,648	39.3%	37.7%	41.8%	47.2%	A	A	A	A
MILWAUKEE	53207	1,861	1,753	1,534	1,809	42.3%	40.5%	46.5%	48.8%	A	A	A	A
FRANKLIN	53132	1,493	1,472	1,520	1,558	55.1%	51.9%	55.2%	63.5%	A	A	A	A
MILWAUKEE	53218	2,000	1,901	1,396	1,496	52.0%	47.9%	39.7%	34.2%	W	W	W	W
MILWAUKEE	53220	1,346	1,375	1,250	1,299	50.4%	49.2%	55.7%	66.5%	A	A	A	A
MILWAUKEE	53213	1,361	1,223	1,194	1,146	40.1%	41.3%	40.5%	30.1%	W	W	W	W
MILWAUKEE	53222	1,365	1,289	1,142	1,314	53.3%	46.9%	45.9%	37.1%	W	W	W	W
MILWAUKEE	53223	1,340	1,195	1,141	1,274	37.2%	36.9%	36.7%	45.5%	W	W	C	C
MILWAUKEE	53216	1,689	1,427	1,107	1,223	53.0%	52.0%	45.9%	35.1%	W	W	W	W
MILWAUKEE	53225	1,376	1,256	1,077	1,052	44.7%	43.2%	36.4%	34.5%	W	W	W	W
MILWAUKEE	53227	1,094	1,141	1,060	1,147	46.9%	48.4%	47.7%	57.1%	A	A	A	A
MILWAUKEE	53217	1,332	1,149	1,059	1,241	63.1%	62.1%	63.4%	63.6%	C	C	C	C
MILWAUKEE	53208	1,319	1,250	967	1,068	44.3%	41.4%	28.3%	28.6%	W	W	W	A
SOUTH MILWAUKEE	53172	1,083	976	931	990	48.9%	52.0%	53.7%	63.7%	A	A	A	A
MILWAUKEE	53211	1,068	986	906	1,089	68.2%	63.3%	68.0%	65.3%	C	C	C	C
MILWAUKEE	53212	1,136	912	879	1,060	43.4%	46.9%	57.6%	68.1%	C	C	C	C
MILWAUKEE	53204	1,195	1,136	871	899	40.7%	39.5%	33.2%	36.5%	W	W	C	C
MILWAUKEE	53210	1,318	1,199	844	967	56.8%	51.0%	42.4%	37.5%	W	W	W	W
MILWAUKEE	53226	885	904	806	894	44.5%	45.9%	40.2%	40.3%	W	W	W	W
CUDAHY	53110	944	984	782	890	47.0%	46.6%	54.6%	61.3%	A	A	A	A
MILWAUKEE	53224	940	899	753	801	38.0%	39.8%	30.9%	33.1%	W	W	F	F
MILWAUKEE	53206	1,115	1,067	685	741	49.3%	48.8%	45.5%	47.2%	W	W	C	C
MILWAUKEE	53228	683	713	629	719	50.8%	48.2%	57.6%	55.2%	A	A	A	A
GREENDALE	53129	676	658	603	556	47.6%	53.0%	56.6%	64.0%	A	A	A	A
MILWAUKEE	53202	640	585	542	552	58.6%	55.7%	62.9%	62.1%	C	C	C	C
MILWAUKEE	53235	404	379	377	411	45.5%	44.3%	52.5%	54.3%	A	A	A	A
HALES CORNERS	53130	353	342	355	347	48.4%	43.6%	51.0%	56.8%	A	A	A	A
MILWAUKEE	53205	329	328	218	233	39.5%	32.0%	35.3%	38.2%	W	W	C	C
MILWAUKEE	53233	258	246	196	181	33.7%	37.4%	43.9%	41.4%	W	A	A	A
MILWAUKEE	53201	29	9	18	10	41.4%	22.2%	33.3%	40.0%	C	A	C	F

Table 1

Milwaukee Area Inpatient
Health System Commercial Market Share Concentration
Ozaukee County

Predominant Health System Key	
A - Aurora	P - ProHealth
C - Columbia St. Mary's	S - SynergyHealth
F - Froedert & Community Health	W - Wheaton

Zipcode		Commercial Discharges				Predominant Health System Market Share				Predominant Health System			
City	Zip	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006
THIENSVILLE	53092	852	886	813	864	69.0%	67.3%	66.7%	70.9%	C	C	C	C
CEDARBURG	53012	737	749	766	723	75.7%	71.7%	70.4%	74.0%	C	C	C	C
GRAFTON	53024	756	648	671	787	79.8%	78.1%	76.8%	78.9%	C	C	C	C
PORT WASHINGTON	53074	542	506	565	627	86.0%	82.6%	85.3%	82.3%	C	C	C	C
SAUKVILLE	53080	281	273	254	258	79.4%	74.0%	79.5%	74.4%	C	C	C	C
FREDONIA	53021	226	214	230	276	70.4%	68.2%	77.8%	67.0%	C	C	C	C
MEQUON	53097	173	180	207	211	67.6%	68.9%	71.5%	67.3%	C	C	C	C
BELGIUM	53004	140	151	146	149	83.6%	77.5%	61.6%	85.2%	C	C	C	C

Table 1

Milwaukee Area Inpatient
Health System Commercial Market Share Concentration
Washington County

Predominant Health System Key	
A - Aurora	P - ProHealth
C - Columbia St. Mary's	S - SynergyHealth
F - Froedert & Community Health	W - Wheaton

A - Aurora	P - ProHealth
C - Columbia St. Mary's	S - SynergyHealth
F - Froedert & Community Health	W - Wheaton

Zipcode		Commercial Discharges				Predominant Health System Market Share				Predominant Health System			
City	Zip	2003	2004	2005	2006	2003	2004	2005	2006	2003	2004	2005	2006
WEST BEND	53095	1,274	1,195	1,226	1,346	49.1%	47.4%	47.6%	21.8%	S	S	S	A
HARTFORD	53027	1,092	1,107	1,193	1,189	44.3%	44.9%	46.3%	43.8%	A	A	A	A
WEST BEND	53090	242	928	990	1,062	52.1%	51.1%	44.8%	17.0%	S	S	S	F
GERMANTOWN	53022	1,009	955	917	999	63.9%	62.3%	63.4%	65.3%	F	F	F	F
JACKSON	53037	442	491	408	572	35.3%	33.0%	31.1%	32.2%	F	F	F	F
KEWASKUM	53040	301	317	365	435	63.1%	59.0%	52.6%	21.8%	S	S	S	A
SLINGER	53086	331	336	351	467	39.0%	42.0%	37.9%	40.3%	A	A	A	A
HUBERTUS	53033	275	259	264	241	69.1%	61.4%	66.3%	63.5%	F	F	F	F
COLGATE	53017	245	241	231	255	62.0%	63.1%	60.6%	64.3%	F	F	F	F
RICHFIELD	53076	163	146	201	173	66.9%	57.5%	73.6%	63.6%	F	F	F	F
ALLENTON	53002	135	109	111	115	47.4%	45.0%	41.4%	30.4%	S	S	S	A