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June 2, 2011

VIA Federal Express

Mr. Dale Galassie  
Chair  
Illinois Health Facilities and Services  
Review Board  
525 W. Jefferson  
Springfield, IL 62761

**RECEIVED**

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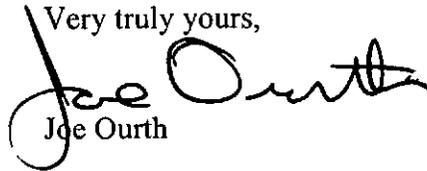
HEALTH FACILITIES &  
SERVICES REVIEW BOARD

Re: Market Assessment and Impact Study  
Mercy Crystal Lake Hospital  
Project No. 10-089

Dear Chairman Galassie:

Sherman Hospital, St. Alexius Medical Center, and Advocate Good Shepherd Hospital wish to submit the enclosed Market Assessment and Impact Study relative to the proposed Mercy Crystal Lake Hospital project. We believe the enclosed study provides detailed analytical information showing that the proposed new 128-bed hospital is not needed.

Very truly yours,



Joe Ourth

JRO:eka  
Enclosures

CHICAGO HOFFMAN ESTATES SPRINGFIELD MILWAUKEE  
FORT LAUDERDALE MIAMI TAMPA WEST PALM BEACH BOCA RATON CORAL GABLES  
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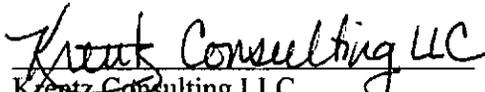
# **Market Assessment and Impact Study**

**Proposed Centegra-Huntley Hospital (Project 10-090)**

**May 24, 2011**



Krentz Consulting LLC is pleased to provide this independent *Market Assessment and Impact Study* in response to Centegra Health System's request for Certificate of Need approval (Project 10-090) to build a new hospital in Huntley in Illinois Health Planning Area A-10 (McHenry County).

  
Krentz Consulting LLC

24 May 2011  
Date



#### **About Krentz Consulting LLC**

Krentz Consulting LLC is a management consulting firm providing strategic planning services to the health care industry, including community hospitals, health systems, academic medical centers and medical schools, children's hospitals, and industry and professional associations. Krentz Consulting is nationally recognized for its strategic planning expertise, frequently serving as faculty at educational programs and writing articles for national publications.

**Susanna E. Krentz**, President of Krentz Consulting, has over twenty-nine years experience as a health care consultant and oversaw the process and reviewed all analyses for this project. As a recognized leader in strategy development for health care organizations, she has worked with numerous hospitals and health care systems across the country in the development of strategic plans, physician strategy, growth plans, resource allocation, and competitive strategy. She has a Master of Business Administration from the Booth School of Business, University of Chicago and a Bachelor of Arts from Yale University.

**Tracey L. Camp**, Senior Consultant, has 25 years of experience in health care planning and strategy and provided the analytical support for this project. Her areas of expertise include strategic planning, service line planning and demand modeling, medical staff development studies, and market research. She is expert at converting data into meaningful information to support decision making. She has a Bachelor of Arts from Northwestern University.

**Market Assessment and Impact Study**  
**Proposed Centegra-Huntley Hospital (Project 10-090)**

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Attachment 1: Drive Times to Existing Hospitals

Attachment 2: Impact on Area Hospital Volume—Detail by Geography

# **I. Executive Summary**

## Executive Summary

### Background

Centegra Health System has sought Certificate of Need approval to build a new hospital in Huntley in Illinois Health Planning Area A-10 (McHenry County). Centegra is seeking approval to add 128 beds including 100 medical/surgical, 20 obstetric, and 8 intensive care beds, citing the shortage of beds identified by the Illinois Health Facilities and Services Review Board (HFSRB).

Krentz Consulting was retained by Advocate Good Shepherd Hospital, Sherman Health, and St. Alexius Medical Center (the "Concerned Hospitals") to develop an independent *Market Assessment and Impact Study* to assess the need for a new hospital in McHenry County by reviewing the geographic access for residents, current patient migration patterns, and existing hospital utilization and capacity. As part of this analysis, we have updated the State's projection of bed need for McHenry County using more recent use rates, patient migration information, and Census 2010-based population projections. In addition, we have assessed the utilization impact and expected volume loss that the addition of a new hospital would have on existing area hospitals.

### Key Findings

#### 1. Area residents already have timely geographic access to existing hospitals.

100 percent of the population in Centegra-Huntley's proposed service area is within 30 minutes driving time of an existing hospital and 89 percent of the population is within 15 minutes driving time. There are only three ZIP codes in the Centegra-Huntley service where no existing hospital is within 15 minutes drive time of the ZIP code (Huntley, Marengo, and Union), and the combined population base in these ZIP codes represents only 11 percent of Centegra-Huntley's proposed service area.

#### 2. Applicant overstates projected population growth and hospital bed demand.

Census figures for 2010 show that McHenry County's total population is approximately 28,000 people (or 8 percent) lower than the 2010 population estimated by the Department of Commerce and Economic Opportunity (DCEO). 2015 projected population for McHenry County, updated for the lower 2010 Census base population, is expected to be approximately 31,600 lower than the DCEO's original population projection for 2015, reducing projected demand for inpatient hospital beds.

## Key Findings (Continued)

**3. There is existing hospital capacity to meet the current health care needs of McHenry County residents, only rare instances of emergency bypass, and numerous immediate care centers.**

There is capacity at several nearby hospitals with an average of 295 med/surg beds, 34 ICU beds, and 41 OB beds going unoccupied per day even while currently serving patients from Centegra-Huntley's proposed service area. Five of seven area hospitals fall below targeted occupancy levels for med/surg beds.

Area hospitals were rarely on emergency department (ED) bypass in 2010, totaling fewer than 16 hours in aggregate for the entire year and with many hospitals having zero hours on bypass.

Aside from emergency department access, McHenry County has seven immediate care centers to treat urgent, but non-life threatening conditions; six of these seven centers are located in Centegra-Huntley's proposed primary or secondary service area.

**4. Area residents are already being served by existing hospitals and a new hospital in McHenry County will have a substantial adverse impact on existing hospitals' volume and payer mix.**

The entire proposed service area of the Centegra-Huntley hospital is contained within the current service areas of existing hospitals. Any duplication of services by a new hospital would adversely impact the volumes and capacity of those existing hospitals. Sherman, Advocate Good Shepherd, and Centegra-Woodstock would be impacted most should Centegra build a new hospital in Huntley. Nearly half of Sherman's total facility discharges, 54 percent of Advocate Good Shepherd's total facility discharges, and 75 percent of Centegra-Woodstock's total facility discharges originate from Centegra-Huntley's proposed service area.

In aggregate, area hospitals (including Advocate Good Shepherd, Centegra-Woodstock, Centegra-McHenry, Provena St. Joseph, Sherman Health, and St. Alexius) are estimated to lose over 8,000 inpatient discharges from Centegra-Huntley's defined service area. Of this total, it is estimated that the two existing Centegra hospitals in McHenry County will lose 2,977 cases to the proposed Centegra-Huntley Hospital.

Because Centegra-Huntley will be geographically more proximate to the economically most attractive areas of the region, the volume that area hospitals are estimated to lose from those markets would have an adverse effect on their overall payer mix and compromise their ability to subsidize needed community and safety net services, meet debt obligations, or optimize quality. The loss of commercially-insured patients is particularly problematic for obstetric services, where the Concerned Hospitals' proportion of discharges that are Medicaid/self-pay would increase by six percent.

## Key Findings (Continued)

- 5. Even with population growth, there is not enough demand to support a new 128-bed hospital in McHenry County, and any new beds will largely shift discharges from hospitals already serving residents of the Planning Area.**

The HFSRB's most recent calculation of bed need for Planning A-10 (McHenry County) was published on March 1, 2011. The HFSRB determined demand for hospital beds using 2003-2005 use rates and migration patterns. The HFSRB also used population projections for 2015 from the DCEO that were projected using 2000 Census information. Since the HFSRB developed their bed need calculations, new information suggests that the calculated need for 83 medical/surgical beds is overstated.

The bed need formula used by HFSRB also incorporates as a significant consideration the retention of patients who currently leave the Planning Area for care (outmigration), even if the travel times to the hospitals outside the Planning Area are within 15 or 30 minutes. It is not reasonable to assume that a patient traveling just beyond the border of the Planning Area to an adjacent community is undesirable outmigration that needs to be changed.

## Key Findings (Continued)

**6. The Applicant's volume forecasts understate the impact on current planning area sister hospitals while overstating its ability to draw patients from other areas.**

Centegra has indicated that Woodstock (ZIP code 60098) and Crystal Lake (ZIP code 60012) would be part of its secondary service area, not its primary service area. The Centegra-Huntley facility will be 18 minutes driving time from the center of the Woodstock ZIP code and 22 minutes from the center of the Crystal Lake ZIP Code. Because Centegra has shelved its plans to update its Woodstock facility, it is not inconceivable that residents of these ZIP codes would choose to go to a new Centegra facility in Huntley, over an older facility at Woodstock.

On page 327 of Centegra's Certificate of Need (CON) application, the Applicant indicates that Centegra-Woodstock and Centegra-McHenry will lose 619 medical/surgical cases (or less than 10% of their current discharges from Centegra-Huntley's proposed service area) when the new Huntley facility opens. Using the assumptions shown below, the existing Centegra facilities are likely to lose nearly 2,500 discharges.

2010 <sup>1</sup> Medical/Surgical Discharges			
Centegra-Huntley Defined Service Area	Centegra-Woodstock/ Centegra-McHenry 2010 Discharges	Loss Assumption	Estimated Lost Discharges
Centegra PSA-McHenry ZIPs	3,549	50%	1,775
Centegra PSA-Kane ZIPs	46	100%	46
Centegra SSA-East	297	50%	149
Centegra SSA-North	<u>2,519</u>	20%	<u>504</u>
<b>Total Service Area</b>	<b>6,413</b>		<b>2,474</b>

On page 334 of Centegra's CON application, the Applicant forecast that by 2018, the new Huntley facility would capture 1,952 medical/surgical discharges from the four Kane County ZIP codes of its service area, or 29 percent of the 6,701 total medical/surgical market discharges they forecast for these ZIP codes in 2018. The Applicant also states that the new Huntley facility would capture 5,213 medical/surgical discharges from the McHenry County ZIP codes of its primary service area, which is 32 percent of the 16,468 total medical/surgical discharges they project for these ZIP codes in 2018. While a Centegra-Huntley facility will attract some patients from Kane County, it does not seem reasonable to assume that a new Centegra-Huntley facility would capture a nearly equivalent market share from the Kane County ZIP codes as it would from the McHenry County ZIP codes when over 80% of the population in those Kane County ZIP codes are between 7 and 16 minutes drive time to Sherman Health, a regional medical center with a new replacement facility and tertiary services.

<sup>1</sup> From COMPdata using 9 months CY 2010 discharges (and annualized using a simple annualization method); excludes discharges in obstetric, neonatal, psychiatry, substance abuse, and rehabilitation MS-DRGs.



## **II. Geographic Access**

Area Residents Already Have Timely  
Geographic Access to Existing Hospitals

## **Area Residents Already Have Timely Geographic Access to Existing Hospitals**

### **Centegra-Huntley Service Area**

Centegra defined a service area for the proposed Huntley hospital that the Applicant states largely mirrors the patient origin of its current ambulatory care facility located at the same site. A map of the proposed service area is shown in *Exhibit 1*. The proposed hospital's primary service area covers southern McHenry County in Planning Area A-10 and extends into northern Kane County in Planning Area A-11. The proposed hospital's secondary service area extends further north in McHenry County as well as east into parts of Lake and Cook County.

As shown in *Exhibit 2*, 100 percent of the population in Centegra-Huntley's proposed service area is within 30 minutes driving time of an existing hospital and 89 percent of the population is within 15 minutes driving time. There are only three ZIP codes in the Centegra-Huntley service area where no existing hospital is within 15 minutes drive time of the ZIP code (Huntley, Marengo, and Union), and the combined population base in these ZIP codes (40,381) represents only 11 percent of Centegra-Huntley's proposed service area. *Only Huntley will have a sizeable time savings to a new Centegra-Huntley facility; the other two ZIP codes will still be greater than 15 minutes from the proposed location and would only reduce the travel time from existing hospitals by one minute for Marengo and no more than four minutes for Union.*

A drive time analysis for each ZIP code in Centegra-Huntley's service area is presented in *Attachment 1* and shows that all ZIP codes of the proposed service area are within the State's standard of 30 minutes driving time to existing hospitals.



**Exhibit 2**  
**2010 Estimated Population by Drive Time**  
**Proposed Centegra-Huntley Service Area**

For ZIP Codes in Centegra-Huntley's Proposed Service Area	2010 Estimated Population		
	Drive Time within 30 Mins of Existing Hospitals	Drive Time within 15 Mins of Existing Hospitals	Total Population in Geography
Primary Service Area	237,016	196,635	237,016
Secondary Service Area	<u>125,368</u>	<u>125,368</u>	<u>125,368</u>
<b>TOTAL SERVICE AREA</b>	<b>362,384</b>	<b>322,033</b>	<b>362,384</b>
Primary Service Area	100%	83%	
Secondary Service Area	100%	100%	
<b>TOTAL SERVICE AREA</b>	<b>100%</b>	<b>89%</b>	

Source: Nielsen Claritas. Estimate for 2010 population. Does not reflect the most recent Census 2010 population because Census population by ZIP code is not yet available.

**III. Population Projections**  
Applicant Overstates Projected Population  
Growth and Hospital Bed Demand

## **Applicant Overstates Projected Population Growth and Hospital Bed Demand**

Population projections for 2010 to 2015 are shown in *Exhibit 3* for McHenry County. The 2010 total population for McHenry is based on actual 2010 Census information. Census 2010 data are not yet available by gender and age cohort. The total Census 2010 population for McHenry County (308,760) was distributed by gender and age cohort using the gender and age distributions estimated for 2010 by the DCEO, the HFSRB's preferred source for population estimates and projections. 2015 projections were made by applying DCEO's average annual growth rates for 2010-2015 by age cohort and gender to actual 2010 Census population for McHenry County.

- ▶ Census figures for 2010 show that McHenry County's total population is approximately 28,000 people (or 8 percent) lower than the 2010 population estimated by the DCEO. 2015 projected population for McHenry County, updated for the lower 2010 Census base population, is expected to be approximately 31,600 lower than the DCEO's original population projection for 2015, reducing projected demand for inpatient hospital beds.
- ▶ Since Census population was not yet available at the time of Centegra's CON filing, the Applicant overstates projected hospital demand.

**Exhibit 3**  
**Updated Population Projections for McHenry County, 2010-2015**

	DCEO Population Projections - Existing			DCEO Population Projections - Updated with 2010 Census		
	DCEO Estimated 2010	DCEO 2015 Projection	Avg Annual Growth Rate: 2010-2015	2010 Updated Census <sup>1</sup>	2015 Projection Updated <sup>2</sup>	Change: 2010-2015
<b>TOTAL POPULATION</b>	337,034	377,315	2.3%	308,760	345,662	36,902
<b>Distribution by Age Cohort:</b>						
0-14	22.7%	21.4%	1.1%	70,031	73,991	3,960
15-44	42.2%	41.7%	2.1%	130,219	144,144	13,925
45-64	26.1%	26.3%	2.4%	80,649	90,953	10,304
65-74	5.4%	6.7%	6.7%	16,778	23,214	6,437
75+	<u>3.6%</u>	<u>3.9%</u>	3.8%	<u>11,083</u>	<u>13,359</u>	<u>2,276</u>
<b>TOTAL</b>	100.0%	100.0%	2.3%	308,760	345,662	36,902
% 65+	9.0%	10.6%				
<b>FEMALE POPULATION</b>	167,812	188,161	2.3%	153,734	172,376	18,642
<b>Distribution by Age Cohort:</b>						
0-14	22.0%	20.8%	1.1%	33,884	35,829	1,945
15-44	41.6%	41.0%	2.0%	63,945	70,607	6,662
45-64	25.9%	26.0%	2.4%	39,794	44,889	5,095
65-74	5.9%	7.2%	6.7%	9,015	12,491	3,477
75+	<u>4.6%</u>	<u>5.0%</u>	3.8%	<u>7,096</u>	<u>8,559</u>	<u>1,463</u>
<b>TOTAL</b>	100.0%	100.0%	2.3%	153,734	172,376	18,642
% Females 15-44	41.6%	41.0%		41.6%	41.0%	

<sup>1</sup> Census 2010 data are not yet available by gender and age cohort. The total Census 2010 population for McHenry County (308,760) was distributed by gender and age cohort using the gender and age distributions estimated for 2010 by the Department of Commerce and Economic Opportunity (DCEO).

<sup>2</sup> 2015 projections were made by applying DCEO's average annual growth rates for 2010-2015 by age cohort and gender to 2010 Census county total population. Sources: Department of Commerce and Economic Opportunity population projections for 2010 and 2015, downloaded March 2011, [http://www.commerce.state.il.us/dceo/Bureaus/Facts\\_Figures/Population\\_Projections](http://www.commerce.state.il.us/dceo/Bureaus/Facts_Figures/Population_Projections). US Census Bureau website for Census 2010 total population.

## **IV. Existing Hospital Capacity and Access**

There is Existing Hospital Capacity to Meet the Current Health Care Needs of McHenry County Residents, Only Rare Instances of Emergency Bypass, and Numerous Immediate Care Centers

## There is Existing Hospital Capacity to Meet the Current Health Care Needs of McHenry County Residents

Exhibit 4 shows that there is capacity at several nearby hospitals with an average of 295 med/surg beds, 34 ICU beds, and 41 OB beds going unoccupied per day even while currently serving patients from Centegra-Huntley's proposed service area. Five of seven area hospitals fall below targeted occupancy levels for med/surg beds.

**Exhibit 4**  
**Capacity of Nearest Hospitals**  
**Serving Centegra-Huntley's Proposed Service Area**

Falls below targeted  
occupancy level

Nearest Hospitals	Adjusted Authorized CON Beds 12/31/09*	Target Occupancy Based on Bed Size 77 Ill. Adm Code 1100	2009 Occupancy	Unoccupied Beds (on average per day)
<b>Med/Surg (adult and pediatrics)</b>				
Centegra-McHenry	129	85%	78.6%	28
Centegra-Woodstock	60	80%	89.9%	6
Mercy-Harvard	17	80%	26.8%	12
<b>Planning Area A-10</b>	<b>206</b>		<b>77.6%</b>	<b>46</b>
Sherman Health	197	85%	47.9%	103
Advocate Good Shepherd	127	85%	80.3%	25
St. Alexius	274	90%	60.1%	109
Provena St. Joseph	99	80%	87.6%	12
<b>TOTAL Med/Surg</b>	<b>903</b>		<b>67.3%</b>	<b>295</b>
<b>ICU</b>				
Centegra-McHenry	18	60%	95.1%	1
Centegra-Woodstock	12	60%	79.3%	2
Mercy-Harvard	3	60%	10.5%	3
<b>Planning Area A-10</b>	<b>33</b>		<b>81.7%</b>	<b>6</b>
Sherman Health	30	60%	44.3%	17
Advocate Good Shepherd	18	60%	101.1%	0
St. Alexius	29	60%	72.0%	8
Provena St. Joseph	15	60%	76.9%	3
<b>TOTAL ICU</b>	<b>125</b>		<b>72.7%</b>	<b>34</b>
<b>OB</b>				
Centegra-McHenry	19	75%	42.7%	11
Centegra-Woodstock	14	75%	61.3%	5
Mercy-Harvard	0	-	-	-
<b>Planning Area A-10</b>	<b>33</b>		<b>50.6%</b>	<b>16</b>
Sherman Health	28	78%	56.4%	12
Advocate Good Shepherd	24	75%	52.2%	11
St. Alexius	28	78%	91.4%	2
Provena St. Joseph	0	-	-	-
<b>TOTAL OB</b>	<b>113</b>		<b>63.9%</b>	<b>41</b>

\*Adjusted beds at Centegra-Woodstock to reflect the abandonment of their CON project which reduces their med/surg bed count by 14 and their OB bed count by 6. Source: 2009 Annual Hospital Questionnaires, IDPH.

## There Are Only Rare Instances of Emergency Bypass

*Exhibit 5* shows that area hospitals were rarely on ED bypass in 2010, totaling fewer than 16 hours in aggregate for the entire year and with many hospitals having zero hours on bypass. This low ED bypass rate is an indicator that there are sufficient available beds to meet current health care needs. It is important to note that when hospitals go on bypass, it is only for non life-threatening conditions; trauma patients will always be treated. In addition, a hospital may go on bypass not because an inpatient bed is unavailable, but simply because certain diagnostic equipment is temporarily inoperable in the emergency department.

**Exhibit 5  
Hours on ED Bypass in 2010 – Nearby Hospitals**

Nearby Hospitals	Hours on ED Bypass in 2010
Advocate Good Shepherd	1.98
Centegra-McHenry	0.00
Centegra-Woodstock	0.00
Northwest Community Hospital	0.00
Provena St. Joseph	0.00
Sherman	5.67
St. Alexis	<u>8.07</u>
<b>Total</b>	<b>15.72</b>
Average per hospital	2.25

Source: IDPH Hospital Health Alert Network.

## There Are Numerous Immediate Care Centers

Aside from emergency department access, McHenry County has a substantial number of immediate care centers to treat urgent, but non-life threatening conditions. The immediate care centers located in McHenry County are shown in *Exhibit 6*. Six of these seven centers are located in Centegra-Huntley's proposed primary or secondary service area.

**Exhibit 6  
Immediate Care Centers Located in McHenry County**

- Advocate Good Shepherd Outpatient Center – Crystal Lake\*
- Centegra Immediate Care – Crystal Lake\*
- Centegra Immediate Care – Huntley\*
- Mercy McHenry Medical Center – McHenry
- Mercy Woodstock Medical Center – Woodstock\*
- Provena Acute Care – Lake in the Hills\*
- Sherman Immediate Care – Algonquin\*

\*Located in Centegra-Huntley's proposed primary or secondary service area.

## **V. Current Patient Migration Patterns and Impact on Existing Hospitals**

Area Residents are Already Being Served by Existing Hospitals, and A New Hospital in McHenry County Will Have a Substantial Adverse Impact on Existing Hospitals' Volume and Payer Mix

## Area Residents Are Already Being Served by Existing Hospitals

*Exhibit 7* shows the number of inpatients currently being treated at existing area hospitals and the portion of these patients who reside in Centegra-Huntley's proposed service area. Sherman, Advocate Good Shepherd, and Centegra-Woodstock would be impacted most should Centegra build a new hospital in Huntley. Sherman currently treats the most inpatients from this market (6,803), which represents nearly half of its total facility discharges. Advocate Good Shepherd currently treats 6,141 inpatients from this market, representing 54 percent of its total facility discharges. As a smaller facility, Centegra-Woodstock treats fewer inpatients from this market (4,978), but this represents 75 percent of its total facility discharges.

**Exhibit 7**  
**Inpatient Patient Origin for Existing Area Hospitals, Annualized 9 Months CY 2010**  
**Centegra-Huntley Proposed Service Area**

Discharges by Where Patients Reside			
Existing Hospital	Centegra Total Service Area	All Other Areas	FACILITY TOTAL
Sherman	6,803	8,181	14,984
Advocate Good Shepherd	6,141	5,196	11,336
Centegra-Woodstock	4,978	1,654	6,632
Centegra-McHenry	2,588	7,485	10,073
St. Alexius	2,070	16,267	18,337
Provena St. Joseph	<u>1,294</u>	<u>3,770</u>	<u>5,065</u>
<b>TOTAL</b>	<b>23,873</b>	<b>42,553</b>	<b>66,426</b>

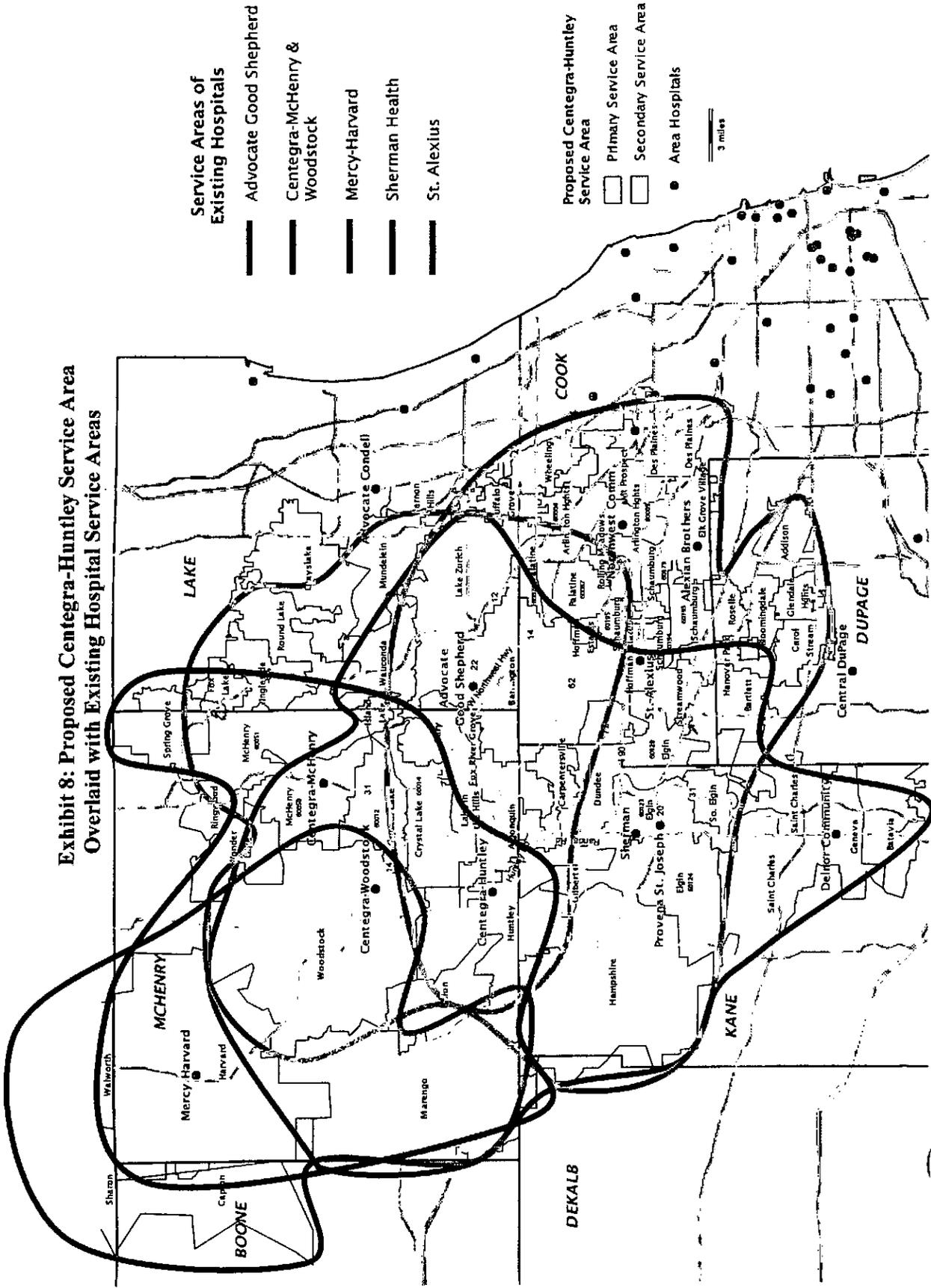
Percentage of Discharges by Where Patients Reside			
Existing Hospital	Centegra Total Service Area	All Other Areas	FACILITY TOTAL
Sherman	45.4%	54.6%	100.0%
Advocate Good Shepherd	54.2%	45.8%	100.0%
Centegra-Woodstock	75.1%	24.9%	100.0%
Centegra-McHenry	25.7%	74.3%	100.0%
St. Alexius	11.3%	88.7%	100.0%
Provena St. Joseph	25.6%	74.4%	100.0%
<b>TOTAL</b>	<b>35.9%</b>	<b>64.1%</b>	<b>100.0%</b>

Source: Illinois COMPdata. Data represent a simple annualization of 9 months CY 2010 data. Discharges exclude normal newborns in MS-DRG 795, psychiatry, substance abuse, and rehabilitation (psychiatry, substance abuse, and rehabilitation are not included in Applicant's proposed bed complement).

## **Service Areas of Existing Hospitals**

As shown in the map in *Exhibit 8*, the entire proposed service area of the Centegra-Huntley hospital is contained within the current service areas of the existing hospitals. Any duplication of services by a new hospital would adversely impact the volumes and capacity of those existing hospitals.

**Exhibit 8: Proposed Centegra-Huntley Service Area  
Overlaid with Existing Hospital Service Areas**



Service area definitions for Advocate Good Shepherd, Sherman Health, and St. Alexius were provided by those hospitals; service area definitions for Centegra-McHenry & Woodstock and Mercy Harvard were imputed from COMData by Krentz Consulting to comprise 75% of their inpatient origin (ex. normal newborns) during the first 9 mos of 2010.

## **A New Hospital in McHenry County Will Have a Substantial Adverse Impact on Existing Hospitals' Volume**

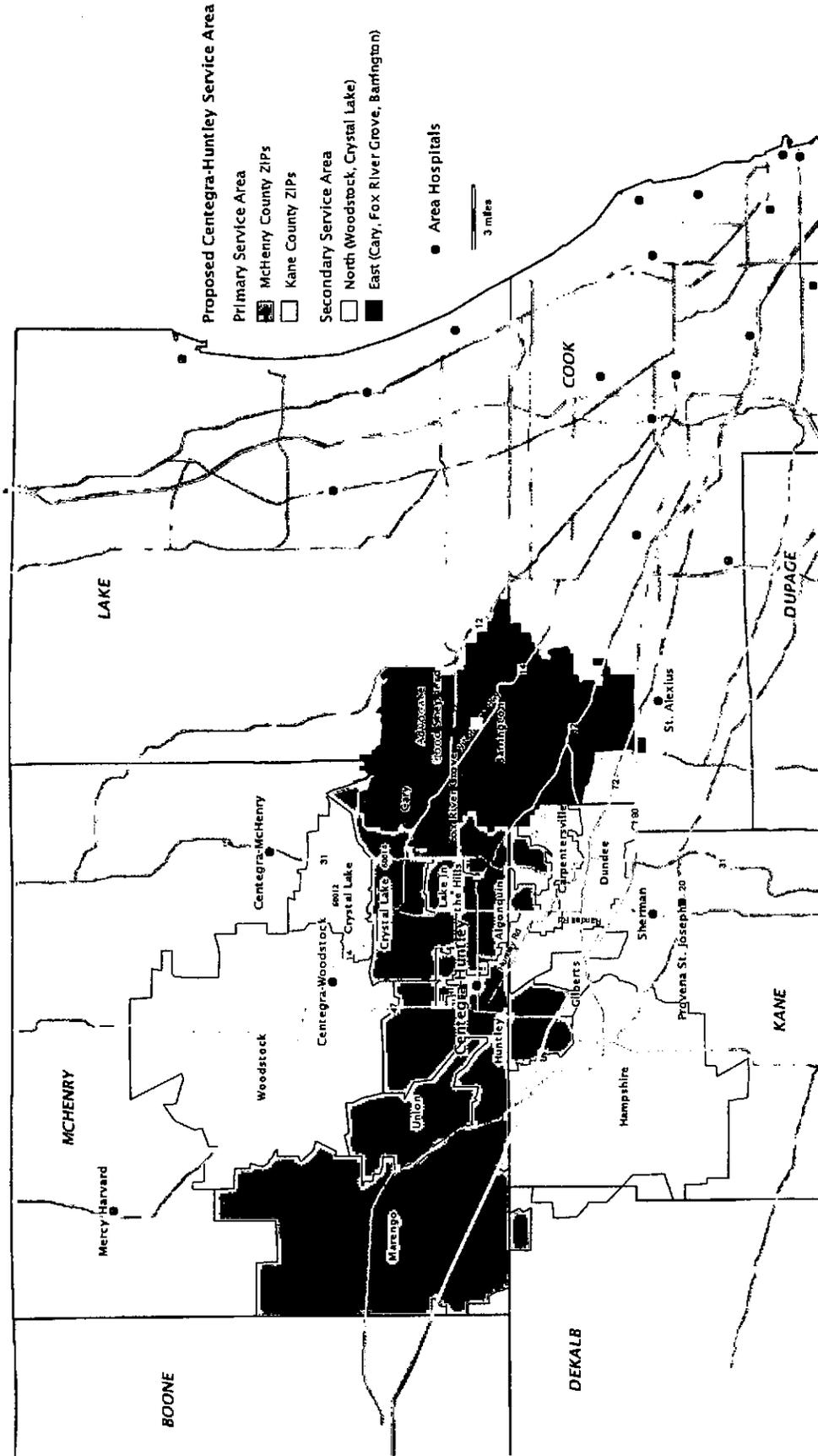
Krentz Consulting modeled the impact that the proposed Centegra-Huntley hospital would have on the utilization of existing hospitals. We completed a detailed impact analysis for Advocate Good Shepherd Hospital, Sherman Health, and St. Alexius Medical Center (the "Concerned Hospitals") by service line and level of acuity. The methodology and assumptions used in the impact analysis are described below.

### **Volume Impact Methodology for Concerned Hospitals**

1. Centegra-Huntley's proposed primary and secondary service area was segmented into meaningful sub-geographies with which to judge current and expected patient migration patterns (see *Exhibit 9* for map of sub-geographies).
2. Discharges for inpatients residing in the sub-geographies were grouped into service lines and levels of acuity. The source of the discharge information was obtained by COMPdata for discharges occurring in the first nine months of calendar year 2010 and annualized using a simple annualization method.
3. Service line definitions and levels of acuity were defined by Krentz Consulting using the Centers for Medicare and Medicaid Services' MS-DRGs.
4. For each sub-geography, assumptions of volume loss were made by service line and level of acuity for each of the Concerned Hospitals.
  - It was assumed that the Concerned Hospitals would lose a higher proportion of their lower acuity cases, but a lower proportion of their highest acuity cases.
  - Centegra-Huntley will not offer cardiac catheterization, cardiac angioplasty/stent, or open heart surgery services; it was assumed that none of the existing hospitals would lose that volume.

The utilization impact was also modeled for "Other Area Hospitals" (Centegra-Woodstock, Centegra-McHenry, and Provena St. Joseph) by applying overall assumptions of volume loss by sub-geography for medical, surgical, OB, and neonatal services.

**Exhibit 9**  
**Centegra-Huntley Proposed Service Area**  
**Submarkets Defined for Impact Analysis**



McHenry PSA=60014,60102,60142,60152,60156,60180  
 Kane PSA=60110,60118,60136,60140  
 North SSA=60012,60098  
 East SSA=60010,60013,60021

McHenry PSA=60014,60102,60142,60152,60156,60180  
 Kane PSA=60110,60118,60136,60140

## Estimated Volume Impact on Area Hospitals

*Exhibit 10* shows the estimated volume impact of a new Centegra-Huntley hospital on the Concerned Hospitals' current discharges from Centegra-Huntley's defined service area<sup>1</sup>. In aggregate, area hospitals are estimated to lose over 8,000 inpatient discharges from Centegra-Huntley's defined service area.

- ▶ Among Concerned Hospitals, Sherman Health is estimated to lose over 2,000 discharges or 30 percent of its volume originating from Centegra-Huntley's defined service area. Advocate Good Shepherd is estimated to lose over 1,600 discharges or 27 percent of its volume from this market, and St. Alexius is estimated to lose over 800 discharges or 42 percent of its volume from this market.
- ▶ Other Area Hospitals (Centegra-Woodstock, Centegra-McHenry, and Provena St. Joseph) are estimated to lose over 3,400 discharges or 39 percent of their volume originating from Centegra-Huntley's defined service area.

**Exhibit 10**  
**Impact of Centegra-Huntley Hospital on Area Hospital Volume**

Total Market Discharges (2010 annualized)	Total Current Area Hospital Discharges (2010 annualized)					Potential Loss of Area Hospital Discharges (2010)					
	Advocate Good Shepherd	Sherman Health	St. Alexius	Total Current Concerned Hospital Discharges	Other Area Hospitals (Centegra-Woodstock, Centegra-McHenry, Provena St. Joseph)	Advocate Good Shepherd	Sherman Health	St. Alexius	Total Current Concerned Hospital Discharges	Other Area Hospitals (Centegra-Woodstock, Centegra-McHenry, Provena St. Joseph)	
<i>Centegra Total Service Area</i>											
Medical/Surgical	25,232	4,925	5,154	1,612	11,692	7,722	1,140	1,558	640	3,338	2,985
OB	4,310	1,024	1,205	364	2,592	1,008	433	350	186	969	410
Neonatal	<u>1,316</u>	<u>209</u>	<u>493</u>	<u>94</u>	<u>796</u>	<u>233</u>	<u>87</u>	<u>138</u>	<u>46</u>	<u>271</u>	<u>95</u>
<b>TOTAL</b>	<b>30,858</b>	<b>6,158</b>	<b>6,852</b>	<b>2,070</b>	<b>15,080</b>	<b>8,963</b>	<b>1,660</b>	<b>2,046</b>	<b>872</b>	<b>4,578</b>	<b>3,490</b>
Overall % Loss							27%	30%	42%	30%	39%

Notes: Medical/surgical volume would include care delivered in the ICU. Volume excludes normal newborns in MS-DRG 795.

Additional detail by sub-geography is presented in *Attachment 2*.

<sup>1</sup> Source of volume from COMPdata for discharges and patient days occurring in the first nine months of calendar year 2010 and annualized using a simple annualization method.

## A New Hospital in McHenry County Will Have a Substantial Adverse Impact on Existing Hospitals' Payer Mix

Because Centegra-Huntley will be geographically more proximate to the economically most attractive areas of the region, the volume that the Concerned Hospitals are estimated to lose from those markets would have an adverse effect on their overall payer mix and compromise their ability to subsidize needed community services. *Exhibit 11* shows that a new Centegra-Huntley facility would capture a high percentage of commercial patients, reducing the Concerned Hospitals' percentage of volume that is commercially insured and increasing their proportion of Medicaid/self-pay patients. This loss of commercially-insured patients is particularly problematic for obstetric services, where the Concerned Hospitals' proportion of discharges that are Medicaid/self-pay would increase by six percent.

**Exhibit 11**  
**Impact of Losing Volume to Centegra-Huntley on Payer Mix of Concerned Hospitals**

<u>Payer</u>	<u>Concerned Hospitals 2010 Total Actual Payer Mix of Discharges</u>	<u>Centegra-Huntley's Payer Mix of Estimated Volume Shifted from Concerned Hospitals</u>
<b>Medical/Surgical Discharges</b>		
Commercial/HMO	38.6%	45.5%
Medicare	47.8%	43.6%
Medicaid/Self-Pay/Other	<u>13.6%</u>	<u>10.9%</u>
<b>TOTAL</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Obstetric Discharges</b>		
Commercial/HMO	57.5%	77.2%
Medicare	0.3%	0.1%
Medicaid/Self-Pay/Other	<u>42.2%</u>	<u>22.7%</u>
<b>TOTAL</b>	<b>100.0%</b>	<b>100.0%</b>

Source: COMPdata, 9 months calendar year 2010 data for all inpatient discharges excluding all neonatal, psychiatry/substance abuse, and rehabilitation patients.

## **VI. Updated Bed Need in Planning Area**

Even with Population Growth, there is Not Enough Demand to Support a New 128-Bed Hospital in McHenry County, and Any New Beds will Largely Shift Discharges from Hospitals Already Serving the Residents of the Planning Area

## **Even with Population Growth, there is Not Enough Demand to Support a New 128-Bed Hospital in McHenry County**

The HFSRB's most recent calculation of bed need for Planning A-10 (McHenry County) was published on March 1, 2011. The HFSRB determined demand for hospital beds using 2003-2005 use rates and migration patterns. The HFSRB also used population projections for 2015 from the DCEO that were projected using 2000 Census information. Since the HFSRB developed their bed need calculations, new information suggests that the calculated need for 83 medical/surgical beds is overstated:

- The actual 2010 census for McHenry County is 8% lower than the estimate for 2010 in the bed need calculations. Since the 2010 population is lower than expected, it is reasonable to assume that the projections for 2015 are overstated by at least a similar amount.

## **Any New Beds will Largely Shift Discharges from Hospitals Already Serving the Residents of the Service Area**

The bed need formula used by HFSRB also incorporates as a significant consideration the retention of patients who currently leave the Planning Area for care (outmigration), even if the travel times to the hospitals outside the Planning Area are within 15 or 30 minutes. It is not reasonable to assume that a patient traveling just beyond the border of the Planning Area to an adjacent community is undesirable outmigration that needs to be changed.

# Attachments

## Attachment 1

### Driving Times (Minutes) Proposed Centegra-Huntley Service Area

Drive Time ≤ 15 Mins

Drive Time 15-30 Mins

	2010 Estimated Population	Sherman Hospital	Advocate Good Shepherd	Centegra- Woodstock	Centegra- McHenry	St. Alexius	Provena St. Joe
<b>Primary Service Area</b>							
60014 Crystal Lake	51,100	19.6	18.4	11.5	17.3	32.2	26.5
60110 Carpentersville	40,768	15.0	23.0	32.2	28.8	18.4	20.7
60102 Algonquin	34,875	15.0	24.2	26.5	25.3	27.6	20.7
60156 Lake in the Hills	30,066	15.0	21.9	20.7	20.7	32.2	21.9
60142 Huntley	25,824	17.3	33.4	19.6	32.2	32.2	23.0
60118 Dundee	18,930	6.9	27.6	31.1	29.9	16.1	12.7
60140 Hampshire	14,226	16.1	42.6	28.8	41.4	32.2	15.0
60152 Marengo	13,072	31.1	46.0	25.3	40.3	46.0	36.8
60136 Gilberts	6,670	6.9	33.4	32.2	32.2	24.2	13.8
60180 Union	1,485	27.6	43.7	21.9	36.8	42.6	33.4
<b>Secondary Service Area</b>							
60010 Barrington	44,088	28.8	8.1	33.4	29.9	16.1	34.5
60098 Woodstock	33,657	31.1	35.7	6.9	18.4	47.2	38.0
60013 Cary	30,084	26.5	10.4	23.0	18.4	29.9	32.2
60012 Crystal Lake	11,265	27.6	23.0	11.5	9.2	38.0	33.4
60021 Fox River Grove	6,274	29.9	4.6	26.5	21.9	25.3	36.8

Source of 2010 population: Nielsen Claritas, does not reflect recent Census 2010 data. Source of drive times: MapQuest. Per HFSRB rules, travel time from each hospital location to the geographic center of each ZIP code has been calculated using MapQuest's drive time multiplied by 1.15. Ambulance transport times would be faster.

## Attachment 2

### Impact of Centegra-Huntley Hospital on Area Hospital Volume

Total Market Discharges (2010 annualized)	Total Current Area Hospital Discharges (2010 annualized)					Potential Loss of Area Hospital Discharges (2010)					
	Advocate Good Shepherd	Sherman Health	St. Alexius	Total Current Concerned Hospital Discharges	Other Area Hospitals (Centegra-Woodstock, Centegra-McHenry, Provena St. Joseph)	Advocate Good Shepherd	Sherman Health	St. Alexius	Total Current Concerned Hospital Discharges	Other Area Hospitals (Centegra-Woodstock, Centegra-McHenry, Provena St. Joseph)	
<b>Centegra PSA-McHenry ZIPs</b>											
Medical/Surgical	11,803	1,584	2,678	623	4,885	4,244	731	1,211	298	2,240	2,122
OB	1,773	475	354	119	948	528	286	213	72	571	264
Neonatal	499	91	131	35	257	123	55	79	21	155	62
<b>TOTAL</b>	<b>14,075</b>	<b>2,150</b>	<b>3,163</b>	<b>777</b>	<b>6,090</b>	<b>4,895</b>	<b>1,072</b>	<b>1,503</b>	<b>391</b>	<b>2,966</b>	<b>2,447</b>
Overall % Loss							50%	48%	50%	49%	50%
<b>Centegra PSA-Kane ZIPs</b>											
Medical/Surgical	4,732	147	2,313	568	3,028	650	67	298	250	615	198
OB	1,373	99	814	202	1,115	25	49	122	101	272	25
Neonatal	519	21	346	45	413	5	11	52	22	85	5
<b>TOTAL</b>	<b>6,623</b>	<b>267</b>	<b>3,474</b>	<b>816</b>	<b>4,556</b>	<b>681</b>	<b>127</b>	<b>472</b>	<b>373</b>	<b>972</b>	<b>228</b>
Overall % Loss							47%	14%	46%	21%	34%
<b>Centegra SSA-East</b>											
Medical/Surgical	5,258	2,976	83	380	3,439	305	246	14	73	333	156
OB	646	345	20	36	401	95	34	5	9	48	48
Neonatal	166	74	7	13	94	25	7	1	3	11	13
<b>TOTAL</b>	<b>6,070</b>	<b>3,395</b>	<b>110</b>	<b>429</b>	<b>3,933</b>	<b>425</b>	<b>287</b>	<b>20</b>	<b>85</b>	<b>392</b>	<b>217</b>
Overall % Loss							8%	18%	20%	10%	51%
<b>Centegra SSA-North</b>											
Medical/Surgical	3,439	218	80	41	340	2,524	96	35	19	150	509
OB	519	106	16	7	128	360	64	10	4	78	72
Neonatal	132	23	9	0	32	79	14	5	0	20	16
<b>TOTAL</b>	<b>4,090</b>	<b>346</b>	<b>106</b>	<b>48</b>	<b>500</b>	<b>2,963</b>	<b>174</b>	<b>51</b>	<b>23</b>	<b>248</b>	<b>597</b>
Overall % Loss							50%	48%	48%	50%	20%
<b>Centegra Total Service Area</b>											
Medical/Surgical	25,232	4,925	5,154	1,612	11,692	7,722	1,140	1,558	640	3,338	2,985
OB	4,310	1,024	1,205	364	2,592	1,008	433	350	186	969	410
Neonatal	1,316	209	493	94	796	233	87	138	46	271	95
<b>TOTAL</b>	<b>30,858</b>	<b>6,158</b>	<b>6,852</b>	<b>2,070</b>	<b>15,080</b>	<b>8,963</b>	<b>1,660</b>	<b>2,046</b>	<b>872</b>	<b>4,578</b>	<b>3,490</b>
Overall % Loss							27%	30%	42%	30%	39%

Notes: Medical/surgical volume would include care delivered in the ICU. Volume excludes normal newborns in MS-DRG 795.