

**Market Demand Analysis for an
Outpatient Surgical Clinic in Irvine, Kentucky:**

Prepared for Marcum and Wallace Memorial Hospital

Prepared By:

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Introduction

Marcum and Wallace Memorial Hospital (MWMH) has undertaken a feasibility analysis to determine the market potential for a new stand alone outpatient surgical clinic. The surgical clinic would be operated as an outpatient department through Marcum and Wallace Memorial Hospital and would be located in Irvine, Kentucky. The surgical facility may possibly serve a different or expanded market area than the hospital serves today. MWMH would like to estimate the demand for outpatient surgical services in the Irvine vicinity and determine the feasibility of integrating an outpatient surgical clinic within its current line of medical services. The objective of this study is to estimate the demand for surgical care services in an outpatient clinic.

This market demand analysis is divided into two sections. The first section determines the market area and estimates the market area population base for MWMH. The second section details the computation of the expected patient volume in terms of annual patient visits for the outpatient surgical facility. National, regional and state utilization rates project the level of outpatient usage by a population base in a particular geographic region.

Study Methodology

The study methodology proceeded in three steps to complete the two sections of the analysis: 1) MWMH market area was estimated, 2) MWMH market area population base was computed, 3) The number of annual expected visits were calculated. The market area is the geographical region from which a health care facility draws its patients. MWMH market area was defined by using regional science techniques and Geographic Information Systems (GIS) technology (see Appendix 1; MWMH Market Area Map). The analysis is based on the ability of a household or individual to travel along major transportation routes to gain access to a health care facility. It should be noted that there are many factors that determine where a person or household will seek medical care. These may include physician referral patterns, physician or hospital reputation, distance and ease of travel, previous experiences, level of education and income and insurance coverage among others. It is difficult to quantify or objectively assess some of these factors. This analysis was primarily conducted using distance factors and hospital in-patient origin data.

MWMH market area was based on the 2000 census data that was obtained from the US Census Bureau. County census tracts and census tract populations were used to estimate MWMH market area population. In cases where the entire census tract was not located in the market area, a percentage estimate of the census tract was applied to the total census tract population to determine the market area population.

Utilization rates are ratios that describe the number of patient visits per X number (100, 1000 or 10,000) of people per year. It can be interpreted as Y number of visits that can be expected per X number of people. Utilization rates were multiplied by market area to determine the expected number of annual visits within the market area. This number allows health care facilities to project the expected annual number of visits in a new population base. National and regional utilization rates were obtained from the Centers for Disease Control and the state utilization rates were provided by the Kentucky Department of Public Health.

Results

Marcum and Wallace Memorial Hospital market area was estimated to include all or part of eighteen (18) census tracts within a nine (9) county region. Table 1 shows the counties, census tracts, and census tract populations included in MWMH market area. The third column of Table 1 details the percentage of each census tract that is expected to fall within the market area. The fourth column of Table 1 indicates the total population in each county census tract and the total market area population that would be served by MWMH.

Table 1

County/ Census Tract (CT)	CT Population	% CT Population	Market area Population
Estill 9801	1456	100%	1456
Estill 9802	6400	100%	6400
Estill 9803	5538	100%	5538
Estill 9804	1913	100%	1913
Powell 9701	6885	50%	3443
Powell 9702	6352	75%	4764
Wolfe 9902	3963	50%	1982
Lee 9501	4521	100%	4521
Lee 9502	1606	100%	1606
Lee 9503	1789	100%	1789
Jackson 9601	5384	100%	5384
Jackson 9602	2851	50%	1426
Owsley 9901	3093	50%	1547
Owsley 9902	1765	50%	883
Breathitt 9802	2638	20%	528
Clark 204	3008	25%	752
Madison 110	5550	25%	1388
Madison 111	5662	10%	566
Total Market Area			45,883

National and regional utilization rates are multiplied by the market area population figures to determine the total annual outpatient visits. The national outpatient department (OPD) utilization rate of 31.1 per 100 people and regional OPD utilization rate of 26.5 per 100 people represent usage rates for all types of OPD clinics. These utilization rates provide a high and low range of annual utilization of all OPD services. According to the 1999 National Hospital and Ambulatory Medical Care Survey, surgical visits accounted for twelve percent (12%) of the total OPD visits by clinic type. General medicine had the highest visit distribution rate of 61.5% with pediatric services at 11.4%, obstetrics and gynecology at 8.2% and all other clinic types at 6.9%. The surgical distribution rate of 12% was applied to the total OPD visits in Table 2 to provide a high and low range for annual surgical visits for each county census tract and total market area. Table 2 details the expected number of annual visits for all OPD and surgical services for MWMH market area.

Table 2

County / Census Tract (CT)	Market area population [per 100 people]	High range of total OPD visits per year	Low range of total OPD visits per year	Estimated annual surgical visits	
				High range	Low range
Estill 9801	14.56	453	386	54	46
Estill 9802	64.00	1990	1696	239	204
Estill 9803	55.38	1722	1468	207	176
Estill 9804	19.13	595	507	71	61
Powell 9701	34.43	1071	912	129	109
Powell 9702	47.64	1481	1262	178	151
Wolfe 9902	19.82	616	525	74	63
Lee 9501	45.21	1406	1198	169	144
Lee 9502	16.06	499	426	59	51
Lee 9503	17.89	556	474	67	57
Jackson 9601	53.84	1674	1427	200	171
Jackson 9602	14.26	443	378	53	45
Owsley 9901	15.47	481	409	58	49
Owsley 9902	8.83	275	234	33	28
Breathitt 9802	5.28	164	140	20	17
Clark 204	7.52	234	199	28	24
Madison 110	13.88	432	368	52	44
Madison 111	5.66	176	150	21	18
Total Market Area	458.83	14268	12159	1712	1459

Table 3 illustrates the expected annual number of surgical visits based on the type of surgical procedure. The percent distribution of surgical procedures data was provided by the Kentucky Department of Public health. These percentages represent Kentucky's annual surgical utilization rates. The total high and low estimated annual surgical visits from Table 2 were multiplied by the percent distribution figures in Table 3 to determine the expected annual surgical visits by procedure type in columns three and four.

Table 3

Type of surgical procedures	Percent distribution of visits by surgical procedures	High range of surgical visits per year	Low range of surgical visits per year
Endoscopic	24%	410	350
Orthopedic	12%	205	175
Urologic	7%	120	102
Gynecological	9%	154	131
Ophthalmological	10%	171	146
ENT	9%	154	131
Plastic	3%	51	44
All other	26%	444	379
	100%	1709	1457

Conclusion

The goal of this feasibility study was to briefly demonstrate how an outpatient surgical clinic could be potentially beneficial to Marcum and Wallace Memorial Hospital and provide pertinent information to enable MWMH to make an informed decision before an action plan is taken. This information is necessary in determining the future potential of an outpatient clinic in a chosen area. The objective of the study was to provide a market demand analysis for an outpatient surgical clinic within MWMH market area.

This analysis estimates the market area that covers a nine county region and describes the potential demand for an outpatient surgical clinic that would be located in Irvine, Kentucky. This study illustrates the expected population that would be served by MWMH and details the expected annual number of surgical visits based on the type of surgical procedures.

The University of Kentucky Department of Agricultural Economics and the Kentucky Rural Hospital Flexibility Program conducted this market demand analysis under the Kentucky Rural Health Works Program for Marcum and Wallace Memorial Hospital. This analysis does not account for the fixed and operating costs necessary to open and operate a new outpatient facility in Estill County. Therefore, further information will be required to determine the financial costs and benefits of operating such a facility.

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