

San Francisco Blue Ribbon Panel San Francisco, California

Utilization Projections and Assumptions for
St. Luke's Campus
April 28, 2009

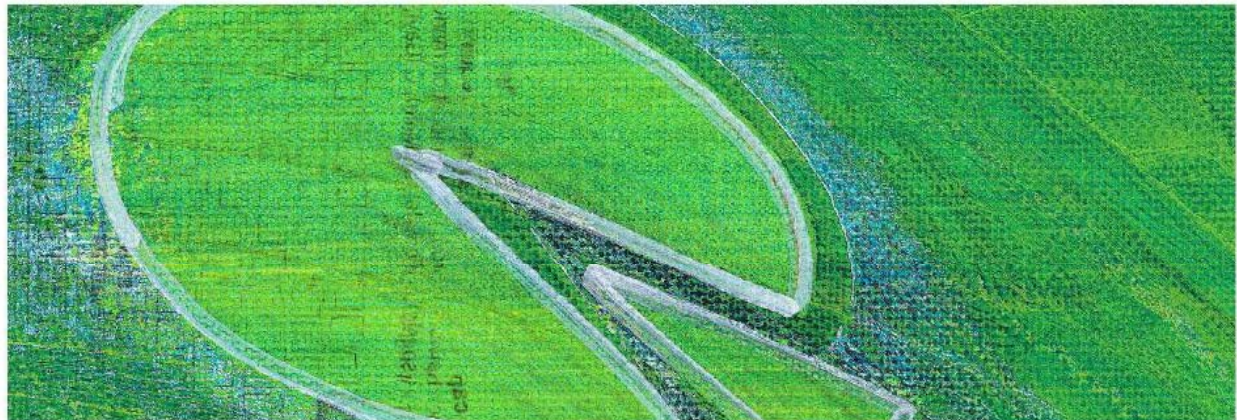


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I. Project Objectives

I. Project Objectives

Background

- St. Luke's Campus ("SLC" or the "Hospital") is one of four campuses of the California Pacific Medical Center ("CPMC"), an affiliate of Sutter Health ("Sutter"). The Hospital was founded in 1871, affiliated with Sutter in 2001, and merged with CPMC in 2007. During 2008, City of San Francisco Supervisor Michela Alioto-Pier, Public Health Director Mitch Katz, and CPMC CEO Martin Brotman, MD convened a Blue Ribbon Panel (the "Panel") of leaders in the health, business, labor, and community to develop a plan for providing healthcare services at the SLC in conjunction with CPMC's institutional plan. The Panel was chaired by Bishop Marc Andrus and Dr. Stephen Shortell, Dean of the University of California Berkeley School of Public Health.
- In support of the Panel's work, Dr. Shortell sought the assistance of an independent, objective consultant in gathering, analyzing, and providing relevant data. The Camden Group functioned as the "Data Analyst Group," and provided information to Dr. Shortell and Panel members in advance of several of the Panel meetings. In addition, The Camden Group participated in five meetings, including the Panel meetings, made a presentation on the relevant characteristics of and trends specific to the south of Market Street ("SOMA") served by SLC, and prepared utilization projections specific to the Hospital.
 - ▶ Details of The Camden Group's responsibilities can be found on the following page.

I. Project Objectives

Responsibilities of The Camden Group

- Identification, analysis, and interpretation of the implications of key trends specific to the SOMA population, demographics, rates of incidence of illness and injuries, competitor activity (non-profit and for profit), payer mix, and retail health care (e.g., Minute Clinic).
- Assessment of the impact on SOMA of regional and national trends specific to reimbursement, work force availability, regulatory activity, and the evolution of clinical technology and practice.
- Identification, analysis, and interpretation of historical SLC-specific patterns of inpatient and (pending data availability) outpatient utilization, as well as variation of utilization by day and hour of the day for selected services (e.g., Emergency Department).
- Projection of 2008-2030 inpatient and outpatient care utilization by major service line for the area served by SLC and the Hospital's portion of the total. Conversion of inpatient utilization by service line to average daily census ("ADC) by bed type. Projection of the resource requirements (e.g., operating rooms ["OR"], special procedure rooms, ED stations, major pieces of imaging equipment) needed to meet that activity level.
- Identification of the resource capacity available in the service area (e.g., beds by type, ORs, ED stations) and the ability of other providers to absorb SLC activity level if that campus reduced its scope of care or closed.
- Identification of the medical staff needs by specialty for the Hospital's service area.

II. Overview of the Utilization Projection Methodology

II. Overview of the Utilization Projection Methodology

Projection Period

- SLC volume projections were completed for 2008 through 2030.

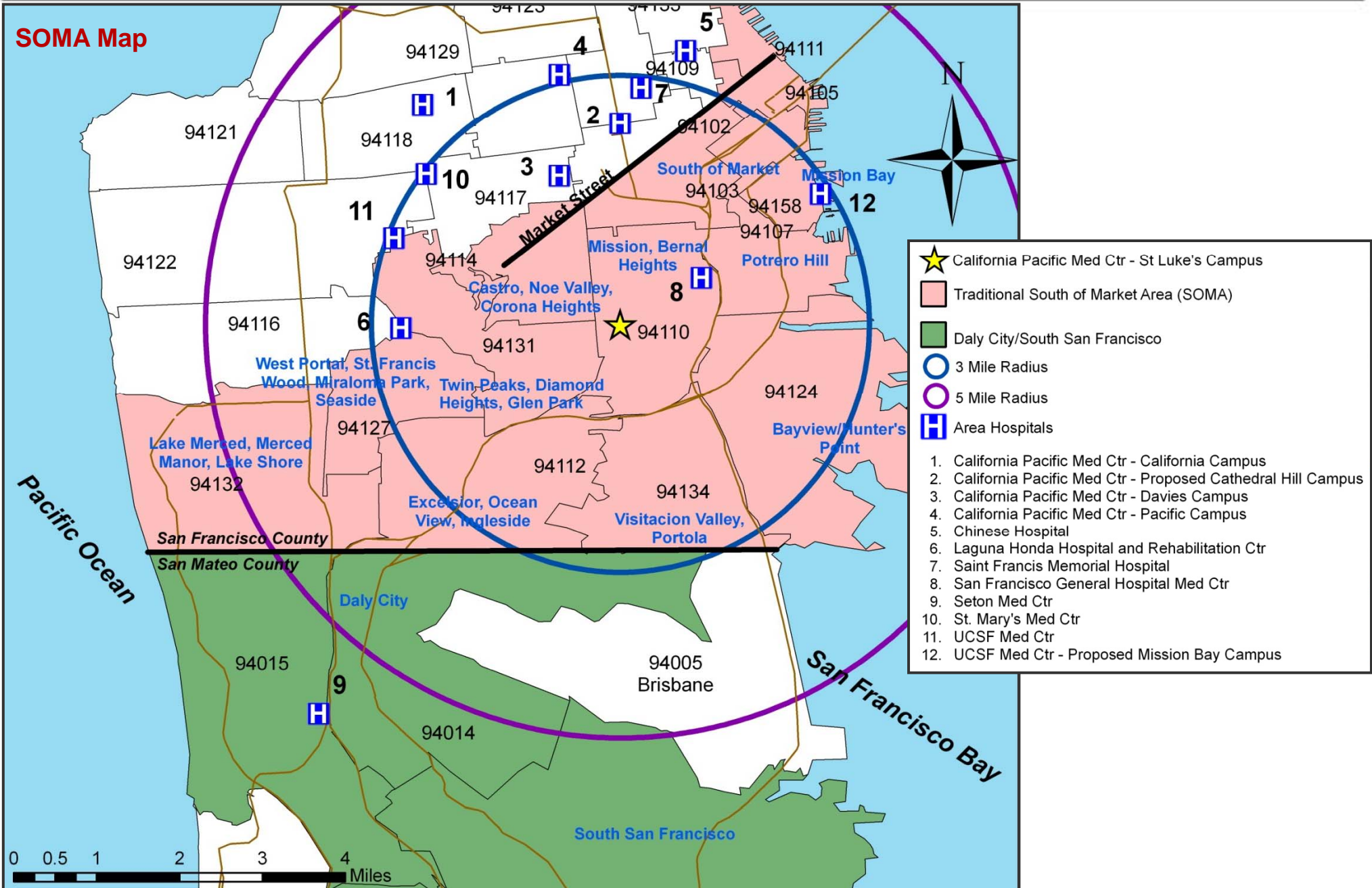
A note regarding the projections: Within the healthcare industry, it is generally accepted that historical information and current trends can provide meaningful insight into future utilization trends for the next five to 10 years. Since it is difficult to anticipate the impact of health status, the nature of medical care delivery, the structure of the healthcare system, or the form and impact of reimbursement beyond ten years, any projections for that period are less reliable. To this end, we have applied the following qualifications to our projections:

Projections for 2010 – Moderate to high level of confidence
Projections for 2020 – Low level of confidence
Projections for 2030 – Highly speculative

Service Area Definition

- Volume projections were completed using south of Market Street area (“SOMA”) as the service area and accounted for in-migration from north of Market Street area (“NOMA”) and other areas beyond San Francisco City/County.
 - ▶ This service area delineation is supported by the fact that historically SOMA has essentially accounted for approximately 85 percent of SLC’s inpatients.
 - ▶ Using San Francisco City/County as a whole as the service area would have “muddied” the analysis due to the notable differences between SOMA and NOMA in demographics, utilization, payer mix, access to hospitals, etc.
- A map of SOMA and a profile of demographic data for that region can be found on the following pages.

II. Overview of the Utilization Projection Methodology



II. Overview of the Utilization Projection Methodology

SOMA Demographics

San Francisco Blue Ribbon Panel
Age, Ethnicity, and Income Profile
CY 2008-2030

South of Market Street Area (SOMA) Total

	Estimated		Projected					Growth			
	2008		2010	2015	2020	2025	2030	2010-2015	2010-2020	2010-2030	
	Number	Percent of Total	Percent of Total	Percent of Total	Percent of Total	Percent of Total	Number	CAGR	CAGR	CAGR	
Age Cohort											
00-17	136,136	23.9%	25.0%	25.5%	23.9%	20.5%	18.8%	128,561	1.1%	0.5%	-0.5%
18-44	224,923	39.5%	38.0%	34.7%	33.1%	34.9%	36.2%	247,815	-1.1%	-0.5%	0.6%
45-64	136,510	24.0%	24.4%	25.1%	26.2%	25.4%	23.1%	158,108	1.3%	1.6%	0.6%
65+	71,217	12.5%	12.6%	14.6%	16.8%	19.3%	22.0%	150,500	3.6%	3.8%	3.7%
TOTAL	568,786	100.0%	574,476	594,083	626,716	654,396	684,984	684,984	0.7%	0.9%	0.9%
Women 18-44	104,700	18.4%	17.7%	16.2%	15.4%	16.2%	16.8%	115,356	-1.1%	-0.5%	0.6%
Ethnicity											
Hispanics	127,713	22.5%	22.1%	21.6%	21.5%	21.3%	21.1%	144,641	0.3%	0.6%	0.7%
Non-Hispanics											
White	166,331	29.2%	28.7%	27.9%	27.6%	27.4%	27.1%	185,468	0.1%	0.5%	0.6%
Black	40,286	7.1%	6.7%	6.3%	6.1%	6.0%	5.8%	39,634	-0.7%	-0.1%	0.1%
American Indian	1,503	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	1,708	0.3%	0.6%	0.7%
Asian	208,364	36.6%	37.9%	39.7%	40.3%	41.0%	41.6%	285,081	1.6%	1.5%	1.4%
Pacific Islander	3,812	0.7%	0.6%	0.5%	0.5%	0.5%	0.5%	3,173	-1.8%	-0.9%	-0.5%
Other	1,911	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	2,248	0.5%	0.8%	0.8%
2 or More Races	18,864	3.3%	3.3%	3.3%	3.4%	3.4%	3.4%	23,032	0.8%	0.9%	0.9%
TOTAL	568,786	100.0%	574,476	594,083	626,716	654,396	684,984	684,984	0.7%	0.9%	0.9%
Household Income											
Households	200,754		203,625	212,677	222,911	232,294	242,052		0.9%	0.9%	0.9%
Average Household Income	\$ 95,819		\$ 97,454	\$ 101,204	\$ 106,002	\$ 110,856	\$ 116,256		0.8%	0.8%	0.9%

Sources: ABAG; Claritas, Inc.; and The Camden Group

[https://sharepoint.thecamden.com/Clients/SF Blue Ribbon Panel/Planning/Demographics/Demographic Analysis by Community_v2.xls](https://sharepoint.thecamden.com/Clients/SF%20Blue%20Ribbon%20Panel/Planning/Demographics/Demographic%20Analysis%20by%20Community_v2.xls) SOMA Total

Note: Household Income in 2005 Dollars

II. Overview of the Utilization Projection Methodology

Inpatient Projections – Overview

- Utilization projections were completed using a methodology similar to that applied in the Sutter West Bay Model completed by HealthCare Futures. Projections were completed by service line by age cohort using the following definitions:
 - ▶ Two age cohorts (00-64 and 65+)
 - Pediatric (0-17) projections were not broken out separately as a high proportion of the inpatient care for individuals in that age cohort is provided at children’s hospitals and the majority of the future demand for pediatric care is expected to be on the outpatient (primary care) side.
 - ▶ Twelve service lines (listed on a subsequent page). The service lines selected reflected the SOMA assessment (refer to page 11) as well as the recommendations of the Panel (refer to pages 18 and 19).
- Inpatient utilization projections were completed for the SOMA service area as a whole using a use rate methodology where:
 - ▶ Historical SOMA discharge use rates by age cohort, by service line, were calculated for 2004, 2005, and 2006 based on the California Office of Statewide Healthcare Planning and Development (“OSHPD”) inpatient discharge data, and were trended over the projection period.
 - Discharge use rate is defined as service area discharges per 1,000 service area population.
 - The historical SOMA discharge use rates were trended forward for 2007 through 2030.
 - In each year, the projected SOMA discharge use rates were multiplied by the projected SOMA population to determine total SOMA discharges.
- To this pool of SOMA discharges, we applied “market capture” assumptions for SLC.
 - ▶ The assumptions regarding SLC’s market capture took into account the hospitals from which SLC would attract patients (i.e., Seton Medical Center, San Francisco General Hospital (“SFGH”), Other CPMC Campuses [in aggregate], University of California San Francisco Medical Center (“UCSF”), Kaiser [in aggregate], and all other facilities).
 - ▶ The market capture rates specific to 2007 were set such that the resulting projected discharges equaled SLC’s actual experience in that year.
- An adjustment was made to account for in-migration (volume coming to SLC from outside SOMA – e.g., NOMA and outside San Francisco County).
- For each service line, the projected SLC discharges at the age cohort level were multiplied by the anticipated average length-of-stay (“ALOS”) to calculate patient days.
- For each service line, the projected patient days at the age cohort level were distributed across licensed bed types based on SLC’s historical experience.
- For each bed type, the patient-days were summed across all service lines and age cohorts.
- The patient-days were then converted to ADC.

II. Overview of the Utilization Projection Methodology

Inpatient Projections – Overview (Cont'd)

- In completing the projection, it was assumed that SLC would not serve patients requiring sub-acute or skilled nursing facility (“SNF”) care. This reflects the recommendations of the Panel (refer to page 19 and summarized below).
 - ▶ Historically, almost all of the sub-acute patients have been direct admit patients residing in areas outside SOMA, and often outside San Francisco County.
 - ▶ SLC intends to enter into transfer agreements with other SNF providers. A preliminary assessment indicates that there is SNF bed capacity available in SOMA to accommodate the volume of SNF patients SLC currently treats.
- The formulas below summarize the projection methodology utilized.

- ▶ For each age cohort and service line, we applied the following:

$$\left(\begin{array}{c} \text{SOMA} \\ \text{Population} \end{array} \right) \times \left(\begin{array}{c} \text{SOMA} \\ \text{Inpatient} \\ \text{Discharge} \\ \text{Use Rate} \end{array} \right) \times \left(\begin{array}{c} \text{SLC's} \\ \text{Projected} \\ \text{Market Share} \end{array} \right) + \left(\begin{array}{c} \text{SLC's Volume} \\ \text{due to} \\ \text{In-Migration} \end{array} \right) = \begin{array}{c} \text{SLC's Projected} \\ \text{Inpatient} \\ \text{Discharges by} \\ \text{Service Line} \end{array}$$

- ▶ Using projected inpatient discharges, we then calculated the resultant patient-days attributed to each service line, as follows:

$$\left(\begin{array}{c} \text{SLC's} \\ \text{Projected} \\ \text{Inpatient} \\ \text{Discharges} \end{array} \right) \times \left(\begin{array}{c} \text{Projected} \\ \text{ALOS} \end{array} \right) = \begin{array}{c} \text{SLC's Projected} \\ \text{Patient-Days} \end{array} - \left(\begin{array}{c} \text{Sub-acute} \\ \text{Patient-Days} \end{array} \right) = \begin{array}{c} \text{SLC Adjusted} \\ \text{Patient-Days} \end{array}$$

- ▶ Patient-day activity at the service line level was rolled-up and allocated by type of bed in which care would be delivered (e.g., medical/surgical, ICU, maternity). The patient-days by bed type were converted to average daily census by bed type:

$$\left(\begin{array}{c} \text{Patient-Days} \end{array} \right) / 365 = \begin{array}{c} \text{Average} \\ \text{Daily} \\ \text{Census} \end{array}$$

II. Overview of the Utilization Projection Methodology

Inpatient Service Lines Included in the Projections

- Projections were completed for the 12 key specialties delineated at Panel Meeting #2, held on April 16, 2008, as being the key inpatient service complement that is the best "fit" for SLC (based on their consistency with population, health status trends, relative discharges within SOMA, SLC physician complement, and the resources available at SLC). It is notable that those are the same service lines referred in Recommendation # 4 in the Panel's final report (refer to page 19).

Inpatient Services	Consistent with		Relative Discharge Volume within SOMA	Active CPMC - St. Luke's Medical Staff	Fit with CPMC - St. Luke's
	Population Trends	Health Status			
Cardiology	X	X	HIGH	3	non-interventional
Gastroenterology	X		HIGH	2	✓
General Medicine	X		HIGH	16	✓
General Surgery	X		HIGH	3	✓
Mental Health			HIGH	1	outpatient
Neonatology	X	X	HIGH	0	special care nursery *
Neurology	X		HIGH	1	✓
Obstetrics	X		HIGH	3	✓
Oncology	X		MED	1	✓
Orthopedics	X		HIGH	2	✓
Rehabilitation	X		MED	2	✓
Respiratory	X	X	HIGH	3	✓
Urology	X	X	MED	2	✓

KEY: LOW: < 1,000 discharges; MED: 1,000 to 2,000 discharges; HIGH: > 2,000 discharges

* Covered by CPMC neonatology group

Lower Volume Services Better Served at Regional Centers of Excellence

- HIV/AIDS
- Cardiovascular Surgery
- Transplants
- Vascular Surgery
- Neurosurgery
- Burn
- Trauma
- Pediatric Subspecialty

Predominately Outpatient Services Best Provided in an Ambulatory Care Setting

- Eye
- Diabetes
- Low acuity illness and injury in the ED
- Prenatal Care
- Sexually Transmitted Diseases

II. Overview of the Utilization Projection Methodology

Payer Mix

- The projected payer mix distribution was applied to the projected total Hospital discharges.
 - ▶ Payer mix categories include: Medicare, Medi-Cal, Commercial, and HMO/PPO.

Emergency Department Projections

- SLC Emergency Department (“ED”) activity was calculated based on a draw rate methodology, where the SLC draw rate is defined as total SLC ED visits per 1,000 population in SOMA.
 - ▶ Historical SLC draw rates were calculated and trended forward for 2007 through 2030.
 - ▶ The projected SLC ED draw rates were multiplied by the projected service area population to calculate total projected ED visits.
 - ▶ The proportion of ED visits was distributed into each of the five acuity levels based on historical patterns.
 - ▶ The proportion of ED visits seen on an outpatient basis was determined based on historical patterns.

Operating Room Projections

- The number of operating rooms (“ORs”) needed by SLC was calculated based on a proportional relationship of ORs to total hospital discharges.
- The proportional relationship was based on benchmarking against other hospitals deemed comparable given their size (number of beds), activity level (number of discharges), geographic location (urban), as well as our experience at The Camden Group.

Outpatient Projections

- Outpatient activity was calculated based on a draw rate methodology, where the SLC draw rate is defined as total SLC outpatient visits per 1,000 population in SOMA.
 - ▶ Historical SLC draw rates for each of three services (recurring visits, ancillary visits, and outpatient surgery) were calculated and trended forward for 2007 through 2030.
 - ▶ The projected SLC outpatient draw rates were multiplied by the projected service area population to calculate total projected outpatient visits.

III. Utilization Projection Assumptions

III. Utilization Projection Assumptions

1. Use Rate

- **Assumption: Overall, the 00-64 cohort will experience a decline in use rates, and the 65+ cohort will experience a slight increase in use rates. Specific trends vary by service line.**
 - ▶ The use rate assumptions applied in the Sutter West Bay Model were considered as a starting point. They were modified to reflect historical SOMA use rate trends, information reported by sources such as The Advisory Board and Sg2, and our experience at The Camden Group.
 - Among the 00-64 cohort, the use rate trends applied to the projections prepared by The Camden Group reflect a more gradual rate of decline over time than that observed in the Sutter West Bay Model. The decline in inpatient use rates is indicative of the shift in the provision of services to the outpatient setting. As such, it is consistent with trends in clinical care evolution and the proposals for healthcare reform.
 - The use rate trends applied to the projections prepared by The Camden Group for the 65+ cohort generally fall into the range consistent with SOMA historical activity and that used in the Sutter West Bay Model. Here too, the use rate trends are consistent with broader environmental trends.

2. Market Share

- **Assumption: Kaiser will be the dominant force in the market during the projection period. Its future market share by service line will follow patterns consistent with historical experience, but the rate of change will be reduced over time.**
 - ▶ Changes in market share (growth or decline, depending on the specific service line) were projected to continue through 2017. After this, market share level was held constant at 2017 levels through 2030.
 - ▶ The tempering of Kaiser's market share growth over time is a reflection of the assumption that Kaiser's growth strategy is focused on other geographies, as opposed to SOMA.
 - ▶ Kaiser's market share gains were projected to occur equally at the expense of all other hospitals other than SFGH. This reflects the assumption that Kaiser will not target the primarily Medi-Cal population served at SFGH.
 - ▶ Kaiser will not experience any capacity constraints for inpatient care.

III. Utilization Projection Assumptions

2. Market Share (continued)

- **Assumption: SLC will have a focus on senior health. This will impact market share of the selected clinical service lines; market share for a senior health Center of Excellence (“COE”) will not be separately projected.**
 - ▶ A COE is defined as a clinical service that has a strong reputation, superior outcomes, high volumes, holds a market leader position, utilizes the latest technology and equipment, draws from outside of the facility's service area, has a “star” physician or group, and sets the standard for care in service area.
 - ▶ Based on the typical complement of services in a senior health COE (e.g., dedicated inpatient units caring for the elderly, preventive care, services at senior centers, end of life care, home care, etc.), it is expected that a program of this type would enhance coordination of and access to care for seniors and indirectly affect inpatient volume. Therefore, our model embedded the impact of a SLC senior health COE in the trended market share figures for the 12 service lines provided by SLC, rather than create senior health as its own standalone service line.
 - It is of note that senior health services are not technically definable as a diagnosis-related group (DRG)-based service line. Thus, it is not possible to establish historical use rates or market share.
 - ▶ COEs specific to tertiary services such as cardiovascular, oncology, orthopedics, neurosciences, will remain at other CPMC campuses and other providers.
 - We anticipated that a senior health COE at SLC would have minimal impact on SLC’s inpatient market share within the tertiary service lines. (e.g., cardiac surgery, cancer, neuroscience, orthopedics).

- **Assumption: SLC will establish a medical foundation (in place by 2010) and the foundation will have a managed care strategy. This will facilitate physician recruitment and volume redirection and result in the capture of market share across its 12 service lines.**
 - ▶ While the medical foundation is a critical piece of the overall SLC strategy, it was assumed that the foundation model will not be unique to SLC, and that all entities in the market will have a physician employment model of some sort.
 - Overall market share gain due to SLC’s physician strategy will be limited, and impact only the 65+ age cohort as an outcome of SLC’s focus on senior health services.
 - SLC's market share gains will be captured from all other entities in the market, with most of that coming from CPMC. The assumption is that it will be easier to redirect volume from within CPMC than to redirect volume from outside CPMC.
 - The market share gains are anticipated to be reflected primarily as gains in Medicare and Commercial patients.

- **Assumption: SLC will not have a residency program.**
 - ▶ This is based on discussion with SLC management.

III. Utilization Projection Assumptions

2. Market Share (continued)

- **Assumption:** Since there are several hospital replacement/new construction projects anticipated during the projection period, and given that none of the new facilities are anticipated to open significantly earlier than another, it was assumed that none of the new facilities will have a significant market share advantage over another (i.e., there will be no relative changes to market share as a result of new facilities). However, UCSF-Mission Bay, with its proximity to SLC and SFGH and its provision of services to Medi-Cal enrollees, is expected to have a negative impact on those two hospitals. The loss in market share at SLC and SFGH will mainly be in OB and oncology.
 - ▶ SFGH, Seton, and UCSF will all be undergoing rebuilding/building activities during the projection period, with all new facilities anticipated to come on line around the same time (2014).
 - ▶ While there may be periods during the construction projects when individual hospitals will be closed and volume rerouted, given the fluid nature of such plans, it was not possible to quantify their impact on SLC.

3. In-migration

- **Assumption:** In-migration was held flat as a proportion of total discharges based on SLC's 2006 experience.
 - ▶ Shifts in in-migration are prompted by factors such as changes in: the scope of clinical services, referral networks, exclusive contracts, unique services, unique competitive distinctions, and others.
 - ▶ None of the above are anticipated to be applicable to SLC.

4. Average Length-of-Stay

- **Assumption:** ALOS was projected to decrease over time, with the magnitude of the decrease varying among the age cohorts and service lines.
 - ▶ ALOS by service line applied was based on those in the Sutter West Bay Model, which generally indicate declining lengths-of-stay through the projection period as clinical care evolves over time.

III. Utilization Projection Assumptions

Payer Mix

- **Assumption: The proportion of Medicare discharges will increase over time as a function of the aging population. Furthermore, SLC's establishment of a medical foundation will increase the proportion of Medicare and commercial (HMO/PPO) patients, which will result in a corresponding decrease in the proportion of Medi-Cal patients. The proportion of self-pay patients will stay constant over the projection period.**
 - ▶ The medical foundation will expand the size of the SLC medical staff and increase the ease of access to care for Medicare and commercial patients currently leaving SOMA. The impact will be greatest during 2010-2012. In addition, it is assumed that the Hospital will be proactive in referral network development as well as other business development initiatives. Given the competitive environment, however, the increases in the proportions of Medicare and commercial patients will be modest.
 - Increase in the proportion of Medicare patients will be: 1.0 percent annually in 2010-2012 (due to the expansion of physicians) and 0.3 percent annually thereafter (in conjunction with aging of the population)
 - Increase in the proportion of HMO/PPO patients will be: 0.5 percent annually in 2010-2012 (due to the expansion of physicians), 0.3 percent in 2013, 0.1 percent in 2014, and no change thereafter.

Emergency Department Projections

- **Assumption: The total ED volume is anticipated to trend with population growth. SLC's urgent care center ("UCC"), expected to open in 2009, will decrease the proportion of lower acuity visits (Levels 1 and 2). As a result, there will be shift toward a higher proportion of moderate to severe acuity visits (Levels 3 through 5).**
 - ▶ In general, ED use patterns trend with population growth.
 - ▶ ED use can also be heavily influenced by the availability of primary care physicians in the market:
 - Lower acuity visits generally represent those that can be treated in a non-ED setting. Higher proportions of lower acuity visits in an ED suggest limited access to primary care physicians or other outpatient care settings in the market.
 - The assumption is that with the establishment of the UCC in 2009, that entity will serve a subset of the outpatient Level 1 and 2 visits historically seen in the ED. However, the UCC will have no impact on the volume of Level 3, 4, and 5 visits.

Outpatient Projections

- **Assumption: Demand for outpatient services is anticipated to trend with population growth.**
 - ▶ In general, outpatient use patterns trend with population growth.

III. Utilization Projection Assumptions

Overall Observations

- Our assumptions reflect relatively small gains in market share as a result of the establishment of a medical foundation at SLC. Furthermore, there are only moderate changes anticipated to use rate, small changes to ALOS, and no changes to in-migration during the projection period.
- Given this, the major driver of the inpatient projections is the growth of the age 65+ population cohort, which is expected to be in excess of 3.5 percent per year (with some variances throughout the projection period). This is compared to the relatively slow rate of growth of the age 00-64 population cohort, which is anticipated to increase at 0.2 percent per year for most of the projection period.

The methodology and the assumptions used in the utilization projections reflect the following final recommendations formulated by the Blue Ribbon Panel:

- Recommendation # 1: SLC should be fully integrated into the broad mission, strategies and operations of the CPMC system
 - ▶ The “Market Analysis Presentation” made to the Blue Ribbon Panel by The Camden Group on April 16, 2008 highlighted the projected patient pool size and patient migration patterns by major clinical service line for the residents of SOMA. The data demonstrated, and through the discussion of the Panel members there was agreement that SOMA residents requiring tertiary care (e.g., HIV/AIDS, cardiovascular surgery, transplants, vascular surgery, neurosurgery, burn, trauma and pediatric subspecialty care) would be likely to achieve better outcomes if they were cared for at one of the other local CPMC facilities where clinicians specialized in those services, and with a high degree of experience and skill, would provide the treatment.
 - ▶ Thus, the assumptions associated with SLC utilization projections reflect general acute care services and not those tertiary services.
- Recommendation # 2: The BRP recommends building a new acute care, community hospital on SLC
 - ▶ The assumptions associated with SLC utilization projections reflect an acute care entity and population and payer mix consistent with the current Hospital location and its service area

III. Utilization Projection Assumptions

Overall Observations (Continued)

- Recommendation # 4: The services that should be provided at SLC are those that meet the greatest need of the surrounding community. We recommend that the services should include, but not be limited to: Center of Excellence in gynecology and low-intervention obstetrics, medical/surgical services, emergency department, intensive care unit, urgent care, pediatrics, Center of Excellence in senior health, and skilled nursing beds. (See note on slide 22)
 - ▶ The inpatient utilization projections were prepared at a service line level reflecting the preceding list. Specifically, the following service lines were incorporated: medical cardiology, gastroenterology, general medicine, general surgery, neonatal ICU, medical neurology, obstetrics, oncology, orthopedics, rehabilitation, respiratory, and urology. An “All other” group was also utilized for other non-tertiary care services. In addition, projections were prepared for the Emergency Department, operating room and outpatient care (inclusive of urgent care).
 - ▶ With the guidance of the Panel, the utilization projection assumptions anticipate that the Center of Excellence of senior health will be devoted to diagnostic and treatment services for medical services (e.g., cardiology, orthopedics) and general surgery but not include tertiary care services.
 - ▶ It was determined that patients requiring skilled nursing care would be directly admitted and/or transferred to existing facilities within and adjacent to SOMA. Thus while the activity level for skilled nursing is included in the utilization projections it is anticipated that those patients would be placed at other locations and that the Hospital would not include skilled nursing beds
- Recommendation # 9: Given the identification of issues and needs that may include but also extend beyond SLC’s service area, the BRP recommends the CPMC board engage in problem solving with the community to resolve these needs. These include in particular: the provision of beds for in-patient psychiatric patients, sub-acute regional patients, and the distribution of primary care providers.
 - ▶ Detailed analysis completed by the Management Team of SLC specific to the historical source of sub-acute patients revealed that a high proportion were transferred in from outside the SOMA service area. The utilization projection assumptions reflect SLC serving the residents of SOMA and their health care needs. Therefore sub-acute patients were excluded from the projections for the Hospital with the recognition that efforts would be made to find other community-based providers for that level of care.

IV. Utilization Projections

IV. Utilization Projections: All Services

Elements from the Market Analysis Data Book – April 9, 2008

As noted on page 3, The Camden Group's role included serving as the Data Analyst Group for the Blue Ribbon Panel. In this role we collected, analyzed, and interpreted a wide variety of relevant data. This data was assembled in a data book that was shared with Blue Ribbon Panel members. The data book was segmented into sections, which are outlined below.

■ Community profiles for:

- ▶ Bayview/Hunter's Point
- ▶ Castro, Noe Valley, Corona Heights
- ▶ Daly City
- ▶ Excelsior, Ocean View, Ingleside
- ▶ Lake Merced, Merced Manor, Lake Shore
- ▶ Mission, Bernal Heights
- ▶ Potrero Hill
- ▶ South of Market
- ▶ South San Francisco
- ▶ Twin Peaks, Diamond Heights, Glen Park
- ▶ Visitacion Valley, Portola
- ▶ West Portal, St. Francis Wood, Miraloma Park, Seaside
- ▶ Mission Bay

■ Hospital profiles for:

- ▶ CPMC – SLC
- ▶ CPMC – California, Davies, and Pacific Campuses
- ▶ San Francisco General Hospital
- ▶ Seton Medical Center
- ▶ Chinese Hospital
- ▶ St. Francis Memorial Hospital
- ▶ St. Mary's Medical Center
- ▶ UCSF Medical Center – Parnassus and Mount Zion Campuses

■ Included in each community profile were:

- ▶ Demographics
- ▶ Inpatient market share
- ▶ Inpatient market share by service line
- ▶ Inpatient service line market share point gain/loss by hospital
- ▶ Inpatient market share by payer
- ▶ Payer distribution by service line
- ▶ Physician inventory by specialty
- ▶ Distance and cost of transportation to another hospital
- ▶ Ancillary services and map
- ▶ Incidence of disease and injury

■ Included in each hospital profile were:

- ▶ Patient origin
- ▶ Licensed and staffed beds
- ▶ Discharges by bed type
- ▶ Occupancy by bed type
- ▶ Operating room and emergency department statistics

IV. Utilization Projections: All Services

Discharges by Service Line and Payer

The following pages (pages 22-27) summarize the utilization projections for SLC. Utilization projections were projected for years 2010, 2020, and 2030.

Included are:

- Discharges by service line and payer
- Average daily census (“ADC”) by service line and age cohort
- ADC by bed type
- ED visits by level of acuity
- OR and outpatient demand

**St. Luke's Campus
Discharges by Service Line and Payer
CY 2007 and Projected CY 2010, 2020, and 2030**

	Year			
	2007	2010	2020	2030
Discharges by Service Line				
Cardiology-Medical	511	494	585	698
Gastroenterology	303	298	368	476
General Medicine	527	508	604	751
General Surgery	308	303	324	349
Neonatal ICU	389	326	345	391
Neurology-Medical	171	150	159	180
Obstetrics	1,301	1,328	1,359	1,393
Oncology	113	116	139	168
Orthopedics	202	207	304	469
Rehabilitation	174	183	258	354
Respiratory	571	601	912	1,495
Urology	183	191	291	455
All Other	572	537	611	721
Total	5,325	5,242	6,260	7,898
Payer Distribution				
Medicare	29.6%	31.2%	35.6%	38.6%
Medi-Cal	58.8%	56.2%	48.2%	43.2%
HMO/PPO	8.9%	9.9%	13.5%	15.5%
Self Pay	2.7%	2.7%	2.7%	2.7%

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Source: St. Luke's Campus, The Camden Group, OSHPD Inpatient Discharge Database

IV. Utilization Projections: All Services

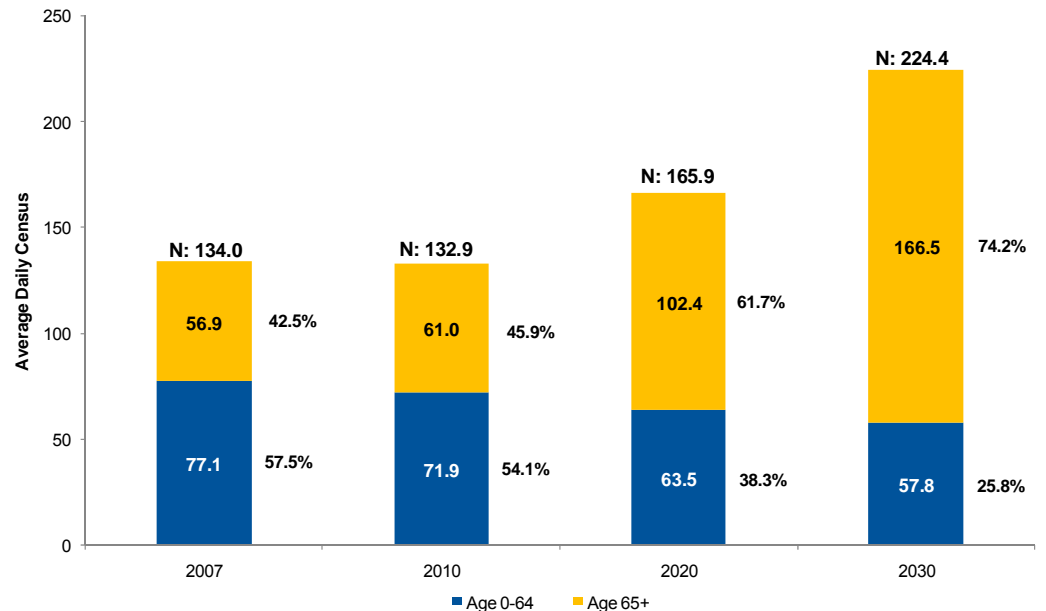
ADC by Service Line and Age Cohort

St. Luke's Campus
Average Daily Census by Service Line
CY 2007 and Projected CY 2010, 2020, and 2030

Specialty	Year			
	2007	2010	2020	2030
Cardiology-Medical	5.9	5.7	6.8	8.2
Gastroenterology	3.3	3.3	4.0	5.2
General Medicine	8.5	8.2	9.5	11.5
General Surgery	7.8	7.6	8.3	9.2
Neonatal ICU	3.2	2.7	2.8	3.2
Neurology-Medical	14.3	12.4	11.0	10.7
Obstetrics	9.2	9.5	9.9	10.3
Oncology	5.5	5.5	6.0	6.8
Orthopedics	4.8	4.8	6.8	10.0
Rehabilitation	12.8	13.2	16.3	20.0
Respiratory	46.7	48.5	69.9	110.2
Urology	2.3	2.4	3.8	6.0
All Other	9.7	9.2	10.8	13.0
Total	134.0	132.9	165.9	224.4

[https://sharepoint.thecamden.com/Clients/SFBlueRibbonPanel/Planning/Projections/\[BRP Projection Model_v6.xlsx\] Tables and Chrt from ROLLUP UD](https://sharepoint.thecamden.com/Clients/SFBlueRibbonPanel/Planning/Projections/[BRP Projection Model_v6.xlsx] Tables and Chrt from ROLLUP UD)

St. Luke's Campus
Average Daily Census by Age Cohort
CY 2007 and Projected CY 2010, 2020, and 2030



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Source: St. Luke's Campus, The Camden Group, OSHPD Inpatient Discharge Database

- As noted on page 10, In completing the projection, it was assumed that SLC would not serve patients requiring sub-acute or skilled nursing facility (“SNF”) care. This reflects the recommendations of the Panel.
 - Historically, almost all of the sub-acute patients have been direct admit patients residing in areas outside SOMA, and often outside San Francisco County.
 - SLC intends to enter into transfer agreements with other SNF providers. A preliminary assessment indicates that there is SNF bed capacity available in SOMA to accommodate the volume of SNF patients SLC currently treats.

IV. Utilization Projections: Acute Care Only

Acute Care Projections versus Non-acute Care Projections

Due to reduced reimbursement rates and increased regulatory requirements the financial viability of providing skilled nursing, psychiatric and sub-acute care services has become increasingly difficult. Generally, when those services are provided in an existing acute care hospital setting the cost structure is increased and the financial performance of the services further erodes. For these reasons, in recent years many acute care hospitals in California and other states have opted to close those services or relocate them to lower cost settings.

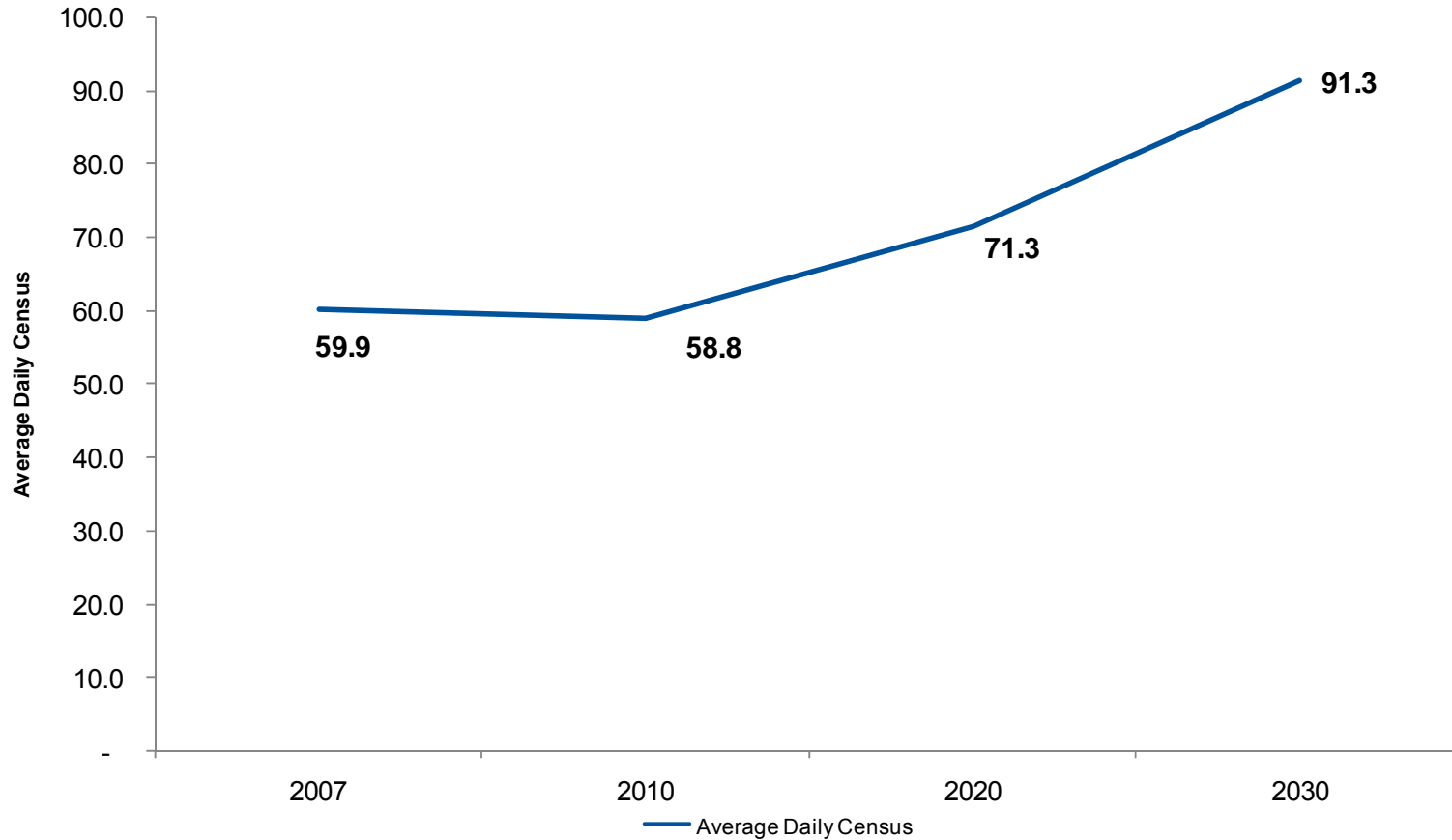
The cost of materials (steel, copper, etc.) and the stringent seismic and other rules OSHPD has set for construction of new patient bed towers or replacement hospitals in California places a heavy economic burden on all clinical services. Under these circumstances, the viability of skilled nursing, psychiatric, and sub-acute care services in a new acute setting is further reduced. Consequently, few new hospitals include these services. Given these points, the Panel anticipated that inclusion of skilled nursing, psychiatric and sub-acute care services in the proposed SLC project would significantly increase the total project cost, and likely reduce the overall financial performance of the hospital, potentially making it difficult for the enterprise to secure financing for the project.

For the reasons noted above, the Panel guided The Camden Group to refine the utilization projections provided on the preceding pages to focus on acute care services only. Consequently, the figures provided on the following pages represent acute care services only. This is consistent with the fact that there are other providers in the community that have capacity available to serve the skilled nursing and psychiatric patients. It is also consistent with enabling SLC to devote the full measure of its resources to acute care and ambulatory care, thereby increasing access to those services by community residents.

IV. Utilization Projections: Acute Care Only

ADC

**St. Luke's Campus
Projected Average Daily Census
CY 2007 and Projected CY 2010, 2020, and 2030**



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IV. Utilization Projections: Acute Care Only

ADC by Bed Type

**St. Luke's Campus
ADC by Bed Type
CY 2007 and Projected CY 2010, 2020, and 2030**

Bed Type	Year			
	2007	2010	2020	2030
ICU	6.6	6.6	8.5	11.7
Tele/MS	14.4	14.3	19.4	27.0
Med/Surg	25.1	24.5	29.7	38.2
Mat/Pedi/Gyn	8.4	8.4	8.5	8.7
L&D Antepartum	2.3	2.4	2.5	2.6
Nursery	3.1	2.6	2.7	3.1
Total	59.9	58.8	71.3	91.3

[https://sharepoint.thecamden.com/Clients/SFBlueRibbonPanel/Planning/Projections/\[BRP Projection Model_v6.xlsx\]Tablesand Chrt](https://sharepoint.thecamden.com/Clients/SFBlueRibbonPanel/Planning/Projections/[BRP%20Projection%20Model_v6.xlsx]TablesandChrt)
from ROLLUP UD

Source: St. Luke's Campus, The Camden Group, OSHPD Inpatient Discharge Database

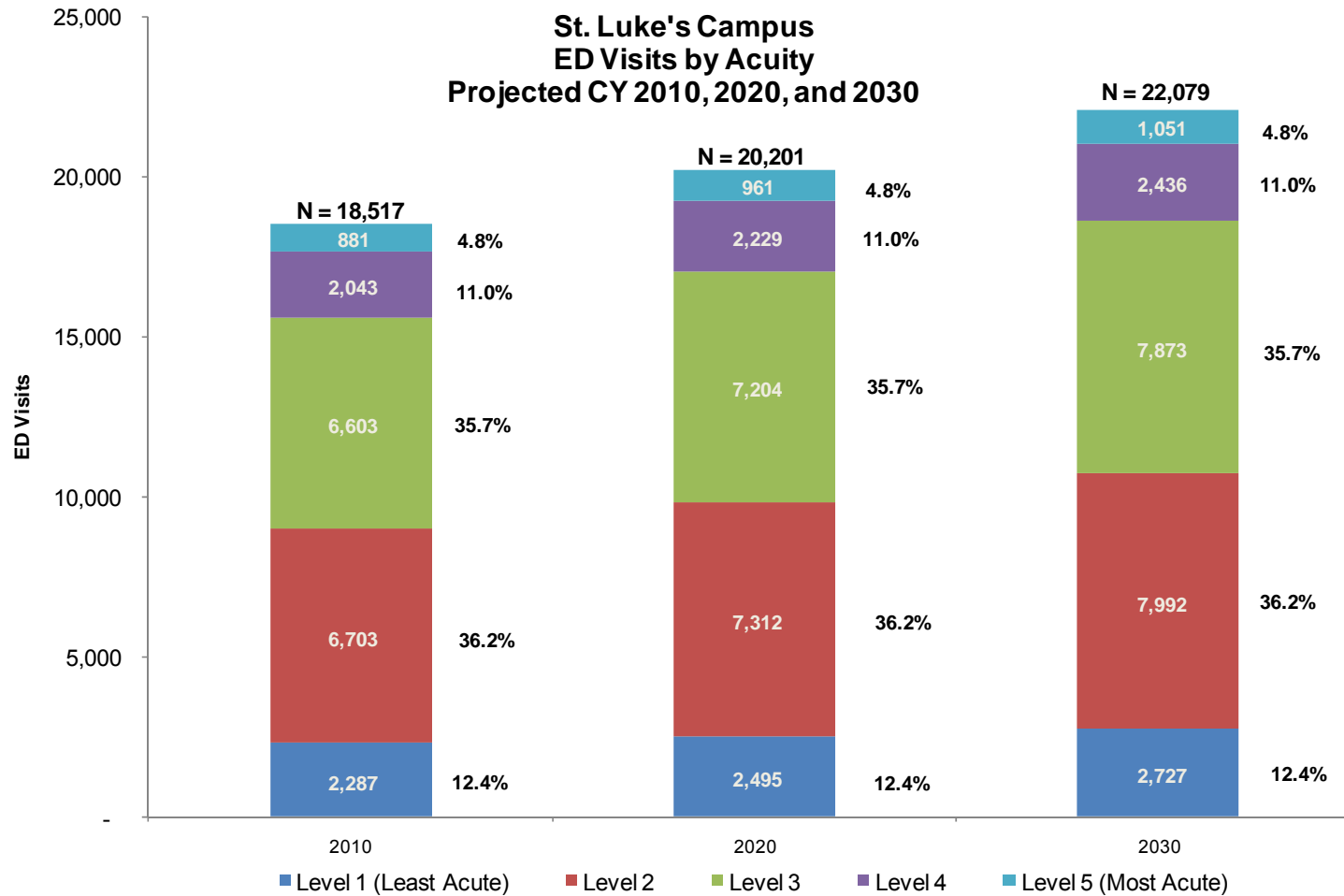
High Confidence

Low Confidence

Highly Speculative

IV. Utilization Projections: Acute Care Only

ED Demand



ED Station Need:	10	11	12
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Note: The acuity distribution shown here assumes that SLC implements an urgent care center in 2009 and that a portion of patients historically seen in the ED as Level 1 or 2 visits receive care at the urgent care center as well as through an expanded primary care network and chronic disease management. After this one-time change, there are no further changes to acuity distribution during the projection period.

IV. Utilization Projections: Acute Care Only

OR and Outpatient Demand

St. Luke's Campus
Operating Room Need
CY 2007 and Projected CY 2010, 2020, and 2030

	Year			
	2007	2010	2020	2030
Operating Rooms	6	6	7	8

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from ROLLUP UD

High Confidence Low Confidence Highly Speculative

St. Luke's Campus
Outpatient Activity by Visits/Procedures
Projected CY 2010, 2020, and 2030

Outpatient Activity	Year		
	2010	2020	2030
Recurring Visits	5,108	5,572	6,090
Ancillary Visits	66,430	72,470	79,208
OP Surgery Procedures	2,045	2,231	2,439
ED Visits	15,872	17,315	18,925
Total	89,454	97,589	106,662

[https://sharepoint.thecamden.com/Clients/SFBlueRibbonPanel/Planning/Projections/\[EDandOPProjectionModel_v3.xlsx\]OutpatientActivity](https://sharepoint.thecamden.com/Clients/SFBlueRibbonPanel/Planning/Projections/[EDandOPProjectionModel_v3.xlsx]OutpatientActivity)

High Confidence Low Confidence Highly Speculative

IV. Utilization Projections

Sensitivity of the Projections

The utilization projection assumptions and resulting figures are objective and reflect characteristics and trends specific to the SOMA market. Among the multiple variables incorporated in the utilization projection model, the four that most significantly “drive” future volume are: the continuum of care to be provided (services), population trends, per capita rate of use of services (use rate), and market share.

As stated in the assumptions most healthcare professionals consider objective and rigorous projections with a three to five year horizon (e.g., through 2013) to have a moderate to high level of confidence. Projections over a ten year horizon (e.g., through 2018) are generally considered to have a low level of confidence. Projections that extend beyond ten years (e.g., 2020 or 2030) are considered highly speculative. Given this point, we believe that the projections of an acute care average daily census of 58.8 in 2010 to have a high level of confidence.

While a significant effort was employed to ground the utilization assumptions on detailed market data, as long as there are opportunities for the internal or external environment to evolve one cannot state with certainty that the projected utilization is assured or that it represents a maximum or minimum level. However, it is possible to identify the degree to which the projections are sensitive to changes in the variables that drive the projections.

Of the four variables listed above, the one that would have the largest potential impact on volume (thus producing the largest impact on the ADC) is expanding or contracting the continuum of services provided at SLC. At this time, given the CPMC System regional strategy, it appears that SLC will have a general acute care and ambulatory care role, other CPMC campuses will provide tertiary care, and other community providers will be the destination for skilled nursing and sub-acute care. Thus, it appears unlikely that there will be a change in the continuum over the initial three to five years of the projection period.

The variable with the second highest potential impact on future volume is patient pool or population size. The total population (all ages) of the SOMA area is projected to have a slow compound annual growth rate through 2015 (0.7 percent annually). While the rate of growth of the population most likely to use the Hospital was higher among the older age cohorts that are most likely to use inpatient care (1.3 percent annually for those ages 45-64 and 3.6 percent for those ages 65+) those population groups are relatively small in size. Hence, the growth will not result in a significant number of new residents and thus patients. These growth rates are reflected in the assumptions that drive the utilization projections. Given the high density of population already in SOMA and the cost of living, it is not expected that the population of the region would be measurably higher than the figures already incorporated in the projections. Conversely, a prolonged economic downturn could result in a decline in the SOMA population base.

The future trend in the third variable, use rates, is the composite outcome of multiple trends including but not limited to:

- Health status of the population (incidence of illness and injury)
- Clinical technology and practice trends and their impact on the location of care (inpatient vs. ambulatory, hospital campus-based vs. community-based) and the duration of care (average length of stay, number of visits)
- Reimbursement trends and their impact on the type of diagnostic and therapeutic care used, the location and the duration of care

IV. Utilization Projections

Sensitivity of the Projections (Continued)

At this time, there are no factors which suggest a significant pending change in the incidence of illness and injury in the SOMA market. Together, the clinical technology and practice trends and the reimbursement trends tend to signal that care is continuing to shift to the outpatient setting and that inpatient care has a stable to declining length-of-stay. The proposed components of President Obama's Healthcare reform initiatives suggest a growing orientation to reducing unnecessary utilization, reducing readmissions, and moving care to lower cost settings. The State of Massachusetts has implemented measures that resemble President Obama's universal coverage plans. Preliminary results from their experience indicate that while demand for primary care services increase it does not translate to a corresponding increase in inpatient services. Collectively these trends imply that it is less likely for future use rates and inpatient utilization to be higher than those generated in the projection model.

Market share, the fourth variable, is generally most influenced by shifts in medical community practice patterns, a change in the competitive environment (entrance/exit of a provider, strengthening/weakening of a competitor), or changes in contracting (e.g., Kaiser gaining/losing market position). The utilization projection assumptions already reflect the assumption that CPMC and SLC form a medical foundation and that physician support for and utilization of the Hospital measurably increases. In the absence of unforeseen additional large scale changes in these elements, the year over year change in SLC's market share is unlikely to increase significantly.

Collectively, the preceding points signal that the projected utilization for SLC during the initial three to five years is reasonable and that in the absence of a significant unanticipated change in any of the four variables the average daily census and thus the required size of the hospital is unlikely to be measurably higher than that projected.

Appendix A

Sources of Information

Appendix A

Sources of Information

Sources of Information

Association of Bay Area Governments ("ABAG")
City and County of San Francisco, Department of Public Health
Claritas, Inc.
CPMC - St. Luke's Campus
Health Matters in San Francisco
The Lewin Group, Market Assessment and Benchmarking Project for the City
and County of San Francisco Department of Public Health Report, December 10, 2007
Medical Associations (e.g., Medical Board of California, San Francisco Medical Society, AMA)
Metropolitan Transportation Commission, 511 SF Bay Area Transit
Office of Statewide Health Planning and Development ("OSHPD")
Local outpatient service sites
San Francisco General Hospital Administration
San Francisco Hospital websites

- The Camden Group used data sets with the highest levels of integrity and those generally accepted as the definitive sources for the specific types of information sought.
- Data sources were reviewed with the Panel chairs, and were deemed to be the best available sources of current information.