TECHNICAL NOTES

Evaluating Occupant Load Factors for Ambulatory Health Care Facilities

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Abstract

NFPA 101® Life Safety Code® acts as the main defining Code for life safety in all building occupancies. A fundamental use of this Code requires the application of occupant load factors as a way to determine the number of occupants for which a building or space, and the means of egress therefrom, should be designed. This factor is extremely important when determining the main means of egress from a building, and is crucial to creating the life safety requirements for any building.

Though most uses are assigned their own factor, the 100 ft^2/person (9.3 m^2/person) that defines business use is also applied to ambulatory health care (AHC) facilities.[1] This broad generalization is being called into question and has led to this research. The data collection and analysis in this report is meant to provide additional information on this topic to the Technical Committee on Health Care Occupancies of NFPA.

Background

As defined by *NFPA 101*, AHC occupancies provide medical treatment, anesthesia and other urgent care to four or more occupants who are incapable of self-preservation. AHC occupancy requirements use many of the business occupancy requirements from the *LSC* as the basis from which the AHC requirements are determined.

Business occupancies and AHC occupancies share many of the same types of spaces: offices, conference rooms, waiting spaces, and consultation rooms. However, this is where the similarity ends. AHC occupancies also have areas which are outside the scope of the business occupancy provisions, such as prep areas, operating rooms, and post-anesthesia care units. Due to these differences there has been interest in determining the appropriate occupant load factor for AHC uses, rather than relying on the occupant load factor for business uses.

Javier Cuesta, Daniel Alvear, and the GIDAI Group at the University of Cantabria researched this topic in Santander, Spain from November 2013 to February 2014; publishing a research document in March 2014 with NFPA to explain their findings. Their objective was to collect data through site surveys of different AHC facilities and evaluate the occupant loads within them. Overall, 21 health care facilities were surveyed: 18 devoted to primary care, 1 devoted to urgent care and treatment, and 2 devoted to consultation and treatment services, with a total area of approximately 1,180,343 ft^2. Their secondary focus was to design a questionnaire for AHC facilities with the objective of providing a standard way of collecting additional information about an AHC facility's means of evacuation. The priority, however, remained on data collection and determining occupant load factors.

[1] The 2015 Edition of *NFPA 101* revises this number to 150 ft^2/person for AHC occupancies but remains as 100 ft^2/person for business occupancies.

Objectives

The purpose of this research is to capture United States data in order to compare it to the data collected in Spain on this topic. Due to the differences of culture and use of facilities, the collected data from both countries must be analyzed to see if the analysis that was done previously can be universally applied. To replicate Spain's research as much as possible, data was collected through site surveys of various AHC facilities (primary care and urgent care/treatment), the information was analyzed, and occupant load factors were calculated based upon the survey results.

Methodology

To begin this process, facilities that could be surveyed were identified from client facilities as well as facilities identified by the FPRF Technical Advisory Panel for the project. Facilities considered for the research included standalone facilities and acute care (hospitals) facilities that have a wing or floor devoted to AHC, but excluded those facilities where outpatients and inpatients are treated in the same areas.

Ten facilities were initially contacted and responses were received from nine, one of which did not have separate AHC areas. The overall response was positive and helpful both with setting up the surveys and sending floor plans. Only one facility could not send detailed drawings so an average floor area and non-scaled schematic was used to find the occupancy load factor.

The final sample consisted of eight facilities: three standalone outpatient surgery centers, two outpatient surgery floors that were part of larger facilities, and three primary care facilities. This combines to be a total of 14 floors and 115,959 ft^2 evaluated. These facilities reach as far north as Pennsylvania and as far south as Virginia, and remain in the mid-Atlantic region of the USA.

Appendix A shows a snap shot of the average Occupant Load Factors found at each facility with the building AHC average and an average for each area surveyed. Appendix B shows the input data and the solutions of both types of ratios that were solved for: Patients/ Staff and Patients/ Companion. Appendix C gives a condensed version of the survey data, with averages given for the AHC floor area and people surveyed per each time slot surveyed. Appendix D is the raw survey data that includes the breakdown of how many people were in each area surveyed for each time slot, the area of each area, and whether each person acted as patient, companion, or staff.

Once the facilities began to be identified, the tables used in Spain were reorganized for use with the USA collection of data. The same basic information was taken, but the forms focused less on extra life safety aspects of the facility so as to keep the main focus on finding the real life occupant load factors. Occupants were split into categories of staff, companion, and patient and were counted about every half hour for the duration of the surveys (between 3 and 4 hours).

For each survey the contact was asked when their highest patient loads were and the surveys were planned to correspond with those days and times. This "prime time" was often about the same for each facility, beginning around 7 am and dropping off around 12 pm, though the day of the week varied. Despite this coordination, the staff at some of the facilities advised us that the patient loads were light for the survey day.

Prior to conducting the occupant load counts, a walkthrough of the facility was performed. The walk through provided a background of the facility, identified the uses of each area, and introduced the researcher to the staff. After this, the number of occupants in the common areas that were being surveyed was counted, every half hour, for 3 to 4 hours. The common areas that were surveyed in each facility are labeled in Appendix D in their respective tables.

The provided building layouts were used to determine the gross floor areas for each of the spaces in which the occupants were counted. To do this the NFPA definition of gross floor area was used to include "the inside perimeter of the outside walls of the building under consideration with no deduction for hallways, stairs, closets, thickness of interior walls, columns, elevator and building service shafts, or other features". Though the definition was followed in general, the spaces in the building that were not surveyed, and in which the occupants were not counted, were not included in the floor area.

Results

To begin the data analysis, each facility was given an ID number from 1-8. This number (i.e. Facility 1) is the name by which that facility is referenced for the rest of the document. General data and detailed data are shown for each individual facility in Appendices C & D respectively. The general data includes total area surveyed and average number of occupants, split into patients, staff, and companions for each time stamp surveyed. The detailed survey goes more in-depth to each time stamp with how the occupants and gross area were split up into different uses, such as patient care, waiting rooms, PACU etc. These tables only include gathered survey data i.e. number of occupants, usage and gross area of each space.

For some of the facilities, it was pertinent to separate patients into two categories, capable and incapable, within their general data tables in Appendix C. These categories show the division of patients who are capable of self-evacuation and those who are not. This division was only made for urgent care facilities where the recovery and PACU areas could be surveyed; all patients within these areas were considered incapable of self-evacuation. The primary care facilities did not allow non-patient access to the areas where patients could clearly be stated either capable or incapable so they are listed solely as patients.

Appendix A uses the gross area and the counted occupants within each facility to find an average occupancy load factor for each area that was surveyed. These values are averages of the half-hourly counts that were taken in the field. From all of the areas surveyed, 17% were less than 100 ft^2/person and 83% were greater than 100 ft^2/person. These individual areas are then averaged to find a total occupancy load factor for each facility.

It is important to note that there is one significant outlier, Facility 4, which had an extremely low concentration of occupants. This facility is a standalone emergency department, where patients have to be transferred to an acute care hospital for inpatient treatment. They have a large gross area so the facility can be used as an emergency preparedness facility in the case of a disaster (i.e. they are prepared for a large influx of patients though everyday occupant loads have small concentrations of people).

All of the facilities occupant load factors were averaged to obtain the overall occupant load factor. This was done two ways. Figure 1 shows the average of all of the surveyed facilities with the standard deviation (S.D.). Figure 2 excludes Facility 4 in its average and S.D. due its extremely low concentration of occupants and outlier effects on the average. Figure 3 shows the overall occupant load factors found in Spain's research. By comparing Figure 2 to Figure 3, it can be seen that US and Spain's values are close together, both showing less concentration of occupants than what is required in the present *LSC*.

USA	ft^2/pers	m^2/pers
Mean	701	66.3
S.D.	1244	115.2

Figure 1: USA overall occupant load factor including all facilities.

USA	ft^2/pers	m^2/pers
Mean	264	25.9
S.D.	163	16.8

Figure 2: USA overall occupant load factor excluding outlier.

SPAIN	ft^2/pers	m^2/pers
Mean	267	24.8
S.D.	172	16.0

Figure 3: Spain overall occupant load factor.

Additional comparison was done to find the ratios of patients-to-staff and companions-to-patients for each facility at each time stamp. These values are shown in Appendix B. The number of patients per staff member was found using Formula 1, dividing the number of patients by the number of active staff.

$$\text{Ratio}_{\text{Patients/ Staff}} = \frac{N_{\text{Patients}}}{N_{\text{Staff}}} \quad (1)$$

Formula 2 was used to find the companion-to-patient ratio by dividing the total number of companions by the total number of patients.

$$\text{Ratio}_{\text{Companion/ Patient}} = \frac{N_{\text{Companions}}}{N_{\text{Patients}}} \quad (2)$$

The overall mean and standard deviation were found for both of the ratios and are shown in Figure 4. To the right of Figure 4 is Figure 5 showing Spain's average ratios from their data.

$\text{Ratio}_{\text{Companion/Patient}}$		$\text{Ratio}_{\text{Patient / Staff}}$	
Mean	S.D.	Mean	S.D.
0.98	0.73	0.78	0.52

Figure 4: USA statistical ratio results.

$\text{Ratio}_{\text{Companion/ Patient}}$		$\text{Ratio}_{\text{Patient / Staff}}$	
Mean	S.D.	Mean	S.D.
0.44	0.27	1.21	0.71

Figure 5: Spain statistical ratio results.

Conclusion

Through these surveys, a theme is starting to emerge. Though these spaces are large, the most varying factors are the companions that patients bring with them. For most of these AHC facilities, the number of patients is regulated by some kind of appointment. Facilities plan their number of patients and they plan how many people will be working for them, but they cannot plan for companions. The companions add in the unknown and are hard to predict because of the personal nature of being a companion. Finding a consistent companion-to-patient ratio may help to better predict these numbers for real AHC usage.

In analyzing the surveyed facilities, 88% showed occupant load factors that were larger than 100 ft^2/ person (9.3 m^2/ person). This seems to support the trend Spain's research points to: normal use of AHC facilities provides more space per person i.e. less concentration of occupants than currently required.

Appendix A: Average Occupant Load Factor for all Facilities

Facility	Average Occupant Load Factor	
	ft^2/ pers	**m^2/pers**
Facility 1[A]	145	13.5
Waiting Room	*241*	*22.4*
Prep	*112*	*10.4*
PACU	*207*	*19.3*
Nurse Room	*20*	*1.9*
Facility 2[A]	156	14.5
Waiting Room	*99*	*9.2*
Prep	*159*	*14.8*
PACU	*233*	*21.6*
Offices	*131*	*12.2*
Facility 3*	214	19.9
Waiting Room	*296*	*27.5*
Front Desk	*313*	*29.1*
Back Desk	*69*	*6.4*
Prep	*174*	*16.2*
PACU	*220*	*20.4*
Facility 4*	3756	349.0
Waiting Room	*6312*	*586.4*
Front Desk	*448*	*41.7*
Back Desk	*4150*	*385.6*
Patient Rooms	*4113*	*382.2*
Facility 5*	401	46.7
Facility 6[P]	350	33.2
Floor 1	*162*	*15.0*
Floor 2	*263*	*28.3*
Floor 3	*527*	*48.9*
Floor 4	*505*	*47.0*
Floor 5	*304*	*28.2*
Floor 6	*339*	*31.5*
Facility 7[P]	518	48.2
Waiting Room	*241*	*22.4*
Patient Care	*795*	*73.9*
Facility 8[P]	65	6.0
Pharmacy	*40*	*3.7*
Floor 1	*50*	*4.7*
Floor 2	*104*	*9.7*

*Free standing urgent/ treatment AHC Facility

[P] Primary Care AHC Facility

[A] Urgent/ treatment AHC floor or wing within larger acute care hospital

Appendix B: Ratios for each facility at each time stamp surveyed

B.1: Companion per Patient Ratio

Facility	Time	$N_{Total\text{-}Companions}$	$N_{Total\text{-}Patients}$	Ratio $_{Companion/Patient}$
Facility 1	9:15	7	4	1.75
	9:45	12	4	3.00
	10:15	12	9	1.33
	10:45	9	9	1.00
	11:15	7	9	0.78
	11:45	6	6	1.00
	12:30	7	9	0.78
	13:00	6	7	0.86
Facility 4	9:30	1	5	0.20
	10:00	3	5	0.60
	10:30	0	2	0.00
	11:00	0	3	0.00
	11:30	2	7	0.29
	12:00	1	3	0.33
Facility 2	8:30	17	15	1.13
	9:00	23	17	1.35
	9:30	18	18	1.00
	10:00	14	17	0.82
	10:30	16	13	1.23
	11:00	13	9	1.44
	11:45	11	11	1.00
Facility 3	9:15	8	8	1.00
	9:45	7	7	1.00
	10:15	6	3	2.00
	10:45	9	4	2.25
	11:15	5	5	1.00
	11:45	8	3	2.67
Facility 5	8:00	3	3	1.00
	8:30	3	3	1.00
	9:00	2	2	1.00
	9:30	2	2	1.00
	10:00	5	2	2.50
	10:30	4	2	2.00
	11:00	2	1	2.00
	11:30	3	1	3.00
	12:00	5	3	1.67
Facility 6	8:00	30	102	0.29
	8:30	35	103	0.34
	9:00	51	102	0.50
	9:30	57	119	0.48
	10:00	57	120	0.48

Facility	Time	$N_{Total\text{-}Companions}$	$N_{Total\text{-}Patients}$	Ratio $_{Companion/Patient}$
	10:30	84	128	0.66
Facility 7	8:00	4	8	0.50
	8:30	2	12	0.17
	9:00	2	11	0.18
	9:30	9	13	0.69
	10:00	10	15	0.67
	10:30	11	14	0.79
	11:00	2	11	0.18
Facility 8	9:00	16	44	0.36
	9:30	23	34	0.68
	10:00	20	44	0.45
	10:30	23	43	0.53
	11:00	23	40	0.58
	11:30	20	40	0.50

B.2: Patients per Staff Ratio

Facility	Time	$N_{Patients\text{-}Waiting}$	$N_{Active\text{-}Staff}$	Ratio $_{Patients/Staff}$
Facility 1	9:15	4	19	0.2
	9:45	4	14	0.3
	10:15	9	26	0.4
	10:45	9	21	0.4
	11:15	9	23	0.4
	11:45	6	16	0.2
	12:30	9	20	0.3
	13:00	7	18	0.2
Facility 4	9:30	5	8	0.6
	10:00	5	4	1.3
	10:30	2	5	0.4
	11:00	3	3	1.0
	11:30	7	7	1.0
	12:00	3	8	0.4
Facility 2	8:30	15	23	0.7
	9:00	17	21	0.8
	9:30	18	24	0.8
	10:00	17	25	0.7
	10:30	13	20	0.6
	11:00	9	23	0.4
	11:45	11	23	0.5
Facility 3	9:15	8	12	0.7
	9:45	7	10	0.7
	10:15	3	7	0.4
	10:45	4	10	0.4
	11:15	5	8	0.6

Facility	Time	$N_{Patients\text{-}Waiting}$	$N_{Active\text{-}Staff}$	Ratio $_{Patients\ /Staff}$
	11:45	3	11	0.3
Facility 5	8:00	3	6	0.5
	8:30	3	8	0.4
	9:00	2	7	0.3
	9:30	2	8	0.3
	10:00	2	3	0.7
	10:30	2	6	0.3
	11:00	1	3	0.3
	11:30	1	3	0.3
	12:00	3	4	0.8
Facility 6	8:00	102	50	2.0
	8:30	103	52	2.0
	9:00	102	50	2.0
	9:30	119	69	1.7
	10:00	120	63	1.9
	10:30	128	61	2.1
Facility 7	8:00	8	19	0.4
	8:30	12	16	0.8
	9:00	11	13	0.9
	9:30	13	12	1.1
	10:00	15	15	1.0
	10:30	14	14	1.0
	11:00	11	14	0.8
Facility 8	9:00	44	31	1.4
	9:30	34	39	0.9
	10:00	44	42	1.1
	10:30	43	37	1.1
	11:00	40	38	1.1
	11:30	40	34	1.2

Appendix C: General Survey Tables

C.1: Facility 1

Building General Information								
Annapolis, MD								
Facility Hourly Values								
Time	**9:15**	**9:45**	**10:15**	**10:45**	**11:15**	**11:45**	**12:30**	**13:00**
Gross Floor Area (ft^2)	5897	5897	5897	5897	5897	5897	5897	5897
Number of Staff	19	14	26	21	23	16	20	18
Number of Visitors (companions)	7	12	12	9	7	6	7	6
Number of Patients	4	4	9	9	9	6	9	7
Number of Capable Patients	0	0	1	0	0	1	0	0
Number of Incapable Patients	4	4	8	9	9	5	9	7

C.2: Facility 2

Building General Information							
York, PA							
Facility Hourly Values							
Time	**8:30**	**9:00**	**9:30**	**10:00**	**10:30**	**11:00**	**11:30**
Gross Floor Area (ft^2)	8134	8134	8134	8134	8134	8134	8134
Number of Staff	23	21	24	25	20	23	23
Number of Visitors (companions)	17	23	18	14	16	13	11
Number of Patients	15	17	18	17	13	9	11
Number of Capable Patients	1	3	3	3	1	2	1

Number of Incapable Patients	14	14	15	14	12	7	10

C.3: Facility 3

Building General Information						
Gettysburg, PA						
Facility Hourly Values						
Time	**9:15**	**9:45**	**10:15**	**10:45**	**11:15**	**11:45**
Gross Floor Area (ft^2)	3557	3557	3557	3557	3557	3557
Number of Staff	12	10	7	10	8	11
Number of Visitors (companions)	8	7	6	9	5	8
Number of Patients	8	7	3	4	5	3
Number of Capable Patients	2	1	0	1	1	0
Number of Incapable Patients	6	6	3	3	4	3

C.4: Facility 4

Building General Information						
Gettysburg, PA						
Facility Hourly Values						
Time	**9:30**	**10:00**	**10:30**	**11:00**	**11:30**	**12:00**
Gross Floor Area (ft^2)	36,425	36,425	36,425	36,425	36,425	36,425
Number of Staff	8	4	5	3	7	8
Number of Visitors (companions)	1	3	0	0	2	1
Number of Patients	5	5	2	3	7	3

Number of Capable Patients	1	0	1	1	1	0
Number of Incapable Patients	4	5	1	2	6	3

C.5: Facility 5

Building General Information									
Bel Air, MD									
Facility Hourly Values									
Time	**8:00**	**8:30**	**9:00**	**9:30**	**10:00**	**10:30**	**11:00**	**11:30**	**12:00**
Gross Floor Area (ft^2)	5000	5000	5000	5000	5000	5000	5000	5000	5000
Number of Staff	6	8	7	8	3	6	3	3	4
Number of Visitors (companions)	3	3	2	2	5	4	2	3	5
Number of Patients	3	3	2	2	2	2	1	1	3

C.6: Facility 6

Building General Information						
Bethesda, MD						
Facility Hourly Values						
Time	**8:00**	**8:30**	**9:00**	**9:30**	**10:00**	**10:30**
Gross Floor Area (ft^2)	32,796	32,796	32,796	32,796	32,796	32,796
Number of Staff	50	52	50	69	63	61
Number of Visitors (companions)	30	35	51	57	57	84
Number of Patients	102	103	102	119	120	128

C.7: Facility 7

Building General Information							
Fort Belvoire, MD							
Facility Hourly Values							
Time	**8:00**	**8:30**	**9:00**	**9:30**	**10:00**	**10:30**	**11:00**
Gross Floor Area (ft^2)	17,532	17,532	17,532	17,532	17,532	17,532	17,532
Number of Staff	19	16	13	12	15	14	14
Number of Visitors (companions)	4	2	2	9	10	11	2
Number of Patients	8	12	11	13	15	14	11

C.8: Facility 8

Building General Information						
Fort Meade, MD						
Facility Hourly Values						
Time	**9:00**	**9:30**	**10:00**	**10:30**	**11:00**	**11:30**
Gross Floor Area (ft^2)	6618	6618	6618	6618	6618	6618
Number of Staff	31	39	42	37	38	34
Number of Visitors (companions)	16	23	20	23	23	20
Number of Patients	44	34	44	43	40	40

Appendix D: Detailed Survey Data

D.1: Facility 1

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	OLF	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Waiting Room	9:15	0	7	3	10	2000	200	18.6
Prep		1	0	7	8	1165	146	13.5
PACU		3	0	9	12	2592	216	20.1
Nurse Room		0	0	0	0	140	0	0
Waiting Room	9:45	0	12	3	15	2000	133	12.4
Prep		1	0	5	6	1165	194	18.0
PACU		3	0	6	9	2592	288	26.8
Nurse Room		0	0	0	0	140	0	0
Waiting Room	10:15	1	8	3	12	2000	167	15.5
Prep		3	0	9	12	1165	97	9.0
PACU		5	4	14	23	2592	113	10.5
Nurse Room		0	0	0	0	140	0	0
Waiting Room	10:45	0	5	2	7	2000	286	26.5
Prep		4	0	7	11	1165	106	9.9
PACU		5	4	12	21	2592	123	11.5
Nurse Room		0	0	0	0	140	0	0
Waiting Room	11:15	0	3	2	5	2000	400	37.2
Prep		7	2	8	17	1165	69	6.4
PACU		2	2	12	16	2592	162	15.1
Nurse Room		0	0	1	1	140	140	13.0
Waiting Room	11:45	1	5	2	8	2000	250	23.2
Prep		4	0	7	11	1165	106	9.8
PACU		1	1	7	9	2592	288	26.8
Nurse Room		0	0	0	0	140	0	0
Waiting Room	12:30	0	6	2	8	2000	250	23.2
Prep		6	1	11	18	1165	65	6.0
PACU		3	0	7	10	2592	259	24.1
Nurse Room		0	0	0	0	140	0	0
Waiting Room	1:00	0	6	4	10	2000	200	18.6

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	OLF	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Prep		4	0	3	7	1165	166	15.5
PACU		3	0	11	14	2592	185	17.2
Nurse Room		0	0	0	0	140	0	0

D.2: Facility 2

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	OLF	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Waiting Room	8:30	1	10	5	16	1591	99	9.2
Pre-Op		7	3	8	18	1938	108	10.0
PACU		7	4	6	17	4019	236	21.9
Offices		0	0	4	4	587	147	13.7
Waiting Room	9:00	3	17	3	23	1591	69	6.4
Pre-Op		8	1	8	17	1938	114	10.6
Recovery		6	5	7	18	4019	223	20.7
Offices		0	0	3	3	587	196	18.2
Waiting Room	9:30	2	8	5	15	1591	106	9.9
Pre-Op		8	4	7	19	1938	102	9.5
PACU		8	6	6	20	4019	201	18.7
Offices		0	0	6	6	587	98	9.1
Waiting Room	10:00	3	9	4	16	1591	99	9.2
Pre-Op		7	3	8	18	1938	108	10.0
PACU		7	2	8	17	4019	236	21.9
Offices		0	0	5	5	587	117	10.6
Waiting Room	10:30	1	9	5	15	1591	106	9.9
Pre-Op		4	3	5	12	1938	162	15.1
PACU		8	4	7	19	4019	212	19.7
Offices		0	0	3	3	587	196	18.2
Waiting Room	11:00	2	9	6	17	1591	94	8.7
Pre-Op		2	2	3	7	1938	277	25.7
PACU		5	2	7	14	4019	287	26.7
Offices		0	0	7	7	587	84	7.8
Waiting Room	11:45	1	9	3	13	1591	122	11.3

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	OLF	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Pre-Op		2	0	6	8	1938	242	22.5
PACU		8	2	7	17	4019	236	21.9
Offices		0	0	7	7	587	84	7.8

D.3: Facility 3

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	OLF	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Waiting Room	9:15	2	4	0	6	862	144	13.3
Front Desk		0	0	2	2	453	226	21.0
Back Desk		0	0	4	4	178	45	4.1
Pre-Op		3	3	1	7	912	130	12.1
PACU		3	1	5	9	1152	128	11.9
Waiting Room	9:45	1	2	1	4	862	216	20.0
Front Desk		0	0	1	1	453	453	42.1
Back Desk		0	0	2	2	178	89	8.3
Pre-Op		3	3	3	9	912	101	9.4
PACU		3	2	3	8	1152	144	13.4
Waiting Room	10:15	0	3	0	3	862	287	26.7
Front Desk		0	0	1	1	453	453	42.1
Back Desk		0	0	2	2	178	89	8.3
Pre-Op		1	3	3	7	912	130	12.1
PACU		2	0	1	3	1152	384	35.7
Waiting Room	10:45	1	6	0	7	862	123	11.4
Front Desk		0	0	2	2	453	227	21.0
Back Desk		0	0	4	4	178	45	4.1
Pre-Op		2	2	2	6	912	152	14.1
PACU		1	1	2	4	1152	288	26.8
Waiting Room	11:15	1	5	0	6	862	144	13.3
Front Desk		0	0	1	1	453	453	42.1
Back Desk		0	0	3	3	178	59	5.5
Pre-Op		2	0	1	3	912	304	28.2
PACU		2	0	3	5	1152	230	21.4
Waiting Room	11:45	0	1	0	1	862	862	80.1
Front Desk		0	2	5	7	453	65	6.0

Back Desk		0	0	2	2	178	89	8.3
Pre-Op		2	1	1	4	912	228	21.2
PACU		1	4	3	8	1152	144	13.4

D.4: Facility 4

Main Activity	**Time**	**Number of People**				**Gross Floor Area (ft^2)**	**OFL**	
		Patients	**Companions**	**Staff**	**Total**		**ft^2/pers**	**m^2/pers**
Waiting Room	9:30	1	0	1	2	13367	6684	620.9
Front Desk		0	0	2	2	702	351	32.6
Back Desk		0	0	3	3	6174	2058	191.2
Patient Rooms		4	1	2	7	16181	2312	214.8
Waiting Room	10:00	0	0	0	0	13367	0	0
Front Desk		0	0	2	2	702	351	32.6
Back Desk		0	0	2	2	6174	3087	286.8
Patient Rooms		5	3	0	8	16181	2023	187.9
Waiting Room	10:30	1	0	2	3	13367	4456	414.0
Front Desk		0	0	1	1	702	702	65.2
Back Desk		0	0	1	1	6174	6174	573.6
Patient Rooms		1	0	1	2	16181	8091	751.6
Waiting Room	11:00	1	0	0	1	13367	13367	1241.9
Front Desk		0	0	2	2	702	351	32.6
Back Desk		0	0	1	1	6174	6174	573.6
Patient Rooms		2	0	0	2	16181	8091	751.6
Waiting Room	11:30	1	0	0	1	13367	13367	1241.9
Front Desk		0	0	3	3	702	234	21.7
Back Desk		0	0	1	1	6174	6174	573.6
Patient Rooms		6	2	3	11	16181	1471	136.7
Waiting Room	12:00	0	0	0	0	13367	0	0
Front Desk		0	0	1	1	702	702	65.2
Back Desk		0	0	5	5	6174	1235	114.7
Patient Rooms		3	1	2	6	16181	2697	250.5

D.5: Facility 5

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	Occupant Load Factor	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Pre-Op	8:00	3	0	5	8	5,000	417	38.7
Recovery		0	0	0	0			
Staff Break		0	0	0	0			
Waiting Room		0	3	1	4			
Offices		0	0	0	0			
Pre-Op	8:30	2	0	3	5	5,000	357	33.2
Recovery		1	0	2	3			
Staff Break		0	0	2	2			
Waiting Room		0	3	1	4			
Offices		0	0	0	0			
Pre-Op	9:00	1	0	2	3	5,000	455	42.2
Recovery		1	0	2	3			
Staff Break		0	0	0	0			
Waiting Room		0	2	1	3			
Offices		0	0	2	2			
Pre-Op	9:30	1	0	2	3	5,000	417	38.7
Recovery		1	0	2	3			
Staff Break		0	0	3	3			
Waiting Room		0	2	1	3			
Offices		0	0	0	0			
Pre-Op	10:00	1	1	2	4	5,000	500	46.5
Recovery		0	0	0	0			
Staff Break		0	0	0	0			
Waiting Room		1	4	1	6			
Offices		0	0	0	0			
Pre-Op	10:30	2	2	1	5	5,000	417	38.7
Recovery		0	0	0	0			
Staff Break		0	0	0	0			
Waiting Room		0	2	0	2			
Offices		0	0	5	5			
Pre-Op	11:00	1	1	0	2	5,000	833	77.4
Recovery		0	0	1	1			
Staff Break Area		0	0	1	1			

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	Occupant Load Factor	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Waiting Room		0	1	1	2			
Offices		0	0	0	0			
Pre-Op	11:30	1	0	1	2	5,000	714	66.4
Recovery		0	0	0	0			
Staff Break Area		0	0	1	1			
Waiting Room		0	3	1	4			
Offices		0	0	0	0			
Pre-Op	12:00	2	0	2	4	5,000	417	38.7
Recovery		0	0	1	1			
Staff Break Area		0	0	0	0			
Waiting Room		1	5	1	7			
Offices		0	0	0	0			

D.6: Facility 6

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	OLF	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Area A	8:00	29	2	7	38	6031	159	14.7
Area B		11	6	2	20	2525	126	11.7
Area C		15	6	8	29	3044	105	9.8
Area D		5	0	2	7	1320	189	17.5
Area E		8	2	2	12	2789	232	21.6
Area F		9	0	3	12	2789	232	21.6
Area G		1	1	2	4	943	236	21.9
Area H		1	3	3	7	2702	386	35.9
Area I		1	2	9	12	2761	230	21.4
Area J		2	1	2	5	823	164	15.3
Area K		7	2	3	12	2879	240	22.3
Area L		5	2	4	11	2894	263	24.5
Area M		8	3	3	14	1296	93	8.6
Area A	8:30	30	4	6	40	6031	151	14.0
Area B		4	4	2	10	2525	252	23.5
Area C		8	0	4	12	3044	254	23.6

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	OLF	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Area D		3	0	2	6	1320	220	20.4
Area E		5	4	4	13	2789	215	19.9
Area F		5	1	5	11	2789	254	23.6
Area G		0	0	4	4	943	236	21.9
Area H		8	3	5	16	2702	169	15.7
Area I		8	11	5	24	2761	115	10.7
Area J		6	1	4	11	823	75	7.0
Area K		8	0	3	11	2879	262	24.3
Area L		12	6	3	22	2894	132	12.2
Area M		6	1	5	12	1296	108	10.0
Area A	9:00	22	5	5	32	6031	188	17.5
Area B		11	6	4	21	2525	120	11.2
Area C		5	0	6	11	3044	277	25.7
Area D		5	1	2	8	1320	165	15.3
Area E		8	8	2	18	2789	155	14.4
Area F		6	3	5	14	2789	199	18.5
Area G		1	2	1	4	943	236	21.9
Area H		6	7	3	16	2702	169	15.7
Area I		8	7	5	20	2761	138	12.8
Area J		4	0	3	7	823	118	10.9
Area K		17	3	3	23	2879	125	11.6
Area L		7	7	4	18	2894	161	14.9
Area M		2	2	7	11	1296	118	10.9
Area A	9:30	22	6	12	40	6031	151	14.0
Area B		25	11	10	46	2525	55	5.1
Area C		14	4	7	25	3044	122	11.3
Area D		7	0	2	9	1320	147	13.6
Area E		11	4	3	18	2789	155	14.4
Area F		5	6	6	17	2789	164	15.2
Area G		1	1	4	6	943	157	14.6
Area H		2	7	4	13	2702	208	19.3
Area I		6	10	2	18	2761	153	14.3
Area J		2	0	5	7	823	118	10.9
Area K		14	4	4	22	2879	131	12.2
Area L		6	3	4	13	2894	223	20.7
Area M		4	1	6	11	1296	118	10.9
Area A	10:00	23	10	7	40	6031	151	14.0
Area B		10	8	3	21	2525	120	11.2

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	OLF	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Area C		11	0	5	16	3044	190	17.7
Area D		6	0	3	9	1320	147	13.6
Area E		12	6	3	21	2789	133	12.3
Area F		11	1	6	18	2789	155	14.4
Area G		2	2	4	8	943	118	11.0
Area H		12	11	4	27	2702	100	9.3
Area I		8	9	8	25	2761	110	10.3
Area J		2	0	3	5	823	165	15.3
Area K		12	4	5	21	2879	137	12.7
Area L		9	6	8	23	2894	126	11.7
Area M		2	0	4	6	1296	216	20.1
Area A	10:30	15	7	13	35	6031	172	16.0
Area B		16	10	3	29	2525	87	8.1
Area C		13	5	7	25	3044	122	11.3
Area D		5	1	2	8	1320	165	15.3
Area E		8	9	2	19	2789	147	13.6
Area F		18	8	6	32	2789	87	8.1
Area G		4	0	6	10	943	94	8.8
Area H		8	12	4	24	2702	113	10.5
Area I		19	18	6	43	2761	64	6.0
Area J		3	1	2	6	823	137	12.7
Area K		8	7	4	19	2879	152	14.1
Area L		9	6	4	19	2894	152	14.2
Area M		2	0	2	4	1296	324	30.1

<u>Area uses and floor they are on</u>

Area A- Physical Therapy (1)

Area B- Orthopedics & Podiatry (2)

Area C- Internal Medicine (2)

Area D- Breast Care (3)

Area E- Surgery Oncology & Gynecological Cancer (3)

Area F- Dermatology and Rheumatology (3)

Area G- Pediatrics: Hematology/ Oncology (4)

Area H: Immunizations/ Allergies (4)

Area I: Pediatric Primary Care (4)

Area J: Audiology & Speech (5)

Area K: Ear/ Nose/ Throat (5)

Area L: DVBIC & Neurology (6)

Area M: Behavioral Health (6)

D.7: Facility 7

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	Occupant Load Factor	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Patient Care*	8:00	5	2	16	23	14,870	647	60.1
Waiting Rm*		3	2	3	8	2661	333	30.9
Patient Care*	8:30	8	1	13	22	14,870	676	62.8
Waiting Rm*		4	1	3	8	2661	333	30.9
Patient Care*	9:00	6	1	10	17	14,870	875	81.3
Waiting Rm*		5	1	3	9	2661	296	27.5
Patient Care*	9:30	6	1	9	16	14,870	930	86.3
Waiting Rm*		7	8	3	18	2661	148	13.7
Patient Care*	10:00	6	1	12	19	14,870	783	72.7
Waiting Rm*		9	9	3	21	2661	127	11.8
Patient Care*	10:30	5	1	11	17	14,870	875	81.3
Waiting Rm*		9	10	3	22	2661	121	11.2
Patient Care*	11:00	7	1	11	19	14,870	783	72.7
Waiting Rm*		4	1	3	8	2661	333	30.9

*Cardiology Unit Only

D.8: Facility 8

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	Occupant Load Factor	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Pharmacy	9:00	9	1	3	13	701	54	5.0
Floor 1		21	12	13	46	2073	45	4.2

Main Activity	Time	Number of People				Gross Floor Area (ft^2)	Occupant Load Factor	
		Patients	Companions	Staff	Total		ft^2/pers	m^2/pers
Floor 2		14	3	15	32	3844	120	11.2
Pharmacy	9:30	7	2	3	12	701	58	5.4
Floor 1		16	19	16	51	2073	41	3.8
Floor 2		11	2	20	33	3844	116	10.8
Pharmacy	10:00	11	4	3	18	701	39	3.6
Floor 1		19	3	21	43	2073	48	4.5
Floor 2		14	13	18	45	3844	85	7.9
Pharmacy	10:30	15	6	4	25	701	28	2.6
Floor 1		13	9	14	36	2073	58	5.4
Floor 2		15	8	19	42	3844	92	8.5
Pharmacy	11:00	14	5	4	23	701	31	2.8
Floor 1		10	9	15	34	2073	61	5.7
Floor 2		16	9	19	44	3844	87	8.1
Pharmacy	11:30	13	7	3	23	701	30	2.8
Floor 1		16	9	16	41	2073	51	4.7
Floor 2		11	4	15	30	3844	128	11.9

Pharmacy: Main pharmacy right near side entrance to Kimbrough.

Floor 1: Refill Pharmacy, Outpatient OR Waiting Room, Muscular Skeletal, & Physical Therapy

Floor 2: GI, Hand and Foot, Pain Management, and Pediatrics