

NACI_Analysis

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Demographics

The ED had 57,514 patient visits between July 2009 and June 2010, and 9,176 visits during the 81 observed shifts. Research staff approached 6,060 (66%) patients in total, and 4,983 consented to participate. Demographic characteristics of the annual ED population, the population from the 81 shifts, and our representative sample are presented in Table 1.

Demographics Tables

Characteristic	Visitors during study year N = 57514	Visitors during observed shifts N = 9176	Visitor sample N = 4983
Disposition			
Admit	9,807 (18%)	1,709 (20%)	1,032 (22%)
AMA/LWBS	4,477 (8.1%)	584 (6.7%)	160 (3.4%)
Discharge	40,234 (73%)	6,317 (72%)	3,495 (74%)
Other	459 (0.8%)	125 (1.4%)	39 (0.8%)
Acuity			
1 Immediate	955 (1.7%)	118 (1.3%)	31 (0.6%)
2 Emergent	15,376 (27%)	2,685 (30%)	1,668 (34%)
3 Urgent	26,845 (48%)	4,413 (49%)	2,473 (50%)
4 Stable	11,992 (21%)	1,659 (18%)	746 (15%)
5 Non Urgent	817 (1.5%)	113 (1.3%)	33 (0.7%)
Race			
Black	46,637 (81%)	7,466 (81%)	4,113 (83%)
White	9,026 (16%)	1,423 (16%)	734 (15%)
Other	1,753 (3.0%)	274 (3.0%)	127 (2.5%)
(Missing)	98 (0.2%)	13 (0.1%)	9 (0.2%)
Sex			
Female	32,316 (56%)	5,092 (55%)	2,839 (57%)
Male	25,197 (44%)	4,084 (45%)	2,144 (43%)
Age	44 (29, 58)	45 (30, 59)	46 (31, 60)
Arrival Category			
Ambulatory	38,953 (71%)	6,195 (70%)	3,388 (69%)
EMS	16,165 (29%)	2,651 (30%)	1,508 (31%)
Custody	41 (<0.1%)	5 (<0.1%)	0 (0%)
¹ n (%); Median (IQR)			

Characteristic	Black N = 4113	White N = 734	Other N = 0	(Missing) N = 9
Disposition				
Admit	867 (22%)	147 (21%)	0 (NA%)	1 (11%)
AMA/LWBS	127 (3.3%)	24 (3.5%)	0 (NA%)	2 (22%)
Discharge	2,877 (74%)	515 (74%)	0 (NA%)	6 (67%)
Other	30 (0.8%)	8 (1.2%)	0 (NA%)	0 (0%)
Acuity				
1 Immediate	27 (0.7%)	4 (0.6%)	0 (NA%)	0 (0%)
2 Emergent	1,375 (34%)	261 (36%)	0 (NA%)	4 (50%)
3 Urgent	2,041 (50%)	358 (49%)	0 (NA%)	3 (38%)
4 Stable	619 (15%)	102 (14%)	0 (NA%)	1 (12%)
5 Non Urgent	29 (0.7%)	2 (0.3%)	0 (NA%)	0 (0%)
Sex				
Female	2,407 (59%)	349 (48%)	0 (NA%)	6 (67%)
Male	1,706 (41%)	385 (52%)	0 (NA%)	3 (33%)
Age	47 (31, 61)	47 (34, 59)	NA (NA, NA)	53 (22, 78)
Arrival Category				
Ambulatory	2,764 (68%)	518 (72%)	0 (NA%)	5 (62%)
EMS	1,280 (32%)	202 (28%)	0 (NA%)	3 (38%)
Custody	0 (0%)	0 (0%)	0 (NA%)	0 (0%)
¹ n (%); Median (IQR)				

Demographics Q & A

How many patients were female?

There were 2,839 (56.97) female and 2,144 (43.03%) male participants.

How did most visitors arrive?

Most participants (69.2%) arrived via personal or public transportation (i.e., ambulatory), and 30.8% arrived via emergency medical services (EMS).

What was the most common disposition? Least common?

21.84% of patients were admitted to the hospital and 73.95% were discharged to the community.

Most common chief complaint? Least common?

Pain was the most common chief complaint, followed by cardiovascular and respiratory complaints, respectively.

How old was the sample?

The average age of participants was 47.05(SD 19.23).

What was the acuity of the sample?

There were 31 immediate, 1,668 emergent, 2,473 urgent, 746 stable, and 33 non-urgent acuity visitors.

Nodes

We observed 5,406 participants (both patients and staff) with one or more CIs. There were 3,264 patients with CIs represented in the RFID data. We assigned every staff participant ($n = 88$) with one RFID tag to use during the study. Since interactions were impossible between shifts and we did not want observations from one shift to affect the network in another, we assigned a unique identification number to every staff participant (88) for each shift they worked. Since many staff participants were present during multiple shifts, we report them as 2,142 unique staff participants.

Node Descriptive Statistics

Characteristic	MD <i>N = 401</i>	NT <i>N = 31</i>	PATIENT <i>N = 3264</i>	RN <i>N = 961</i>	STAFF <i>N = 749</i>
CI Frequency	16 (7, 29)	19 (8, 30)	3 (1, 8)	23 (9, 64)	37 (15, 107)
Total CI Duration	56,499 (13,923, 121,324)	84,614 (30,866, 154,208)	3,219 (252, 12,454)	146,180 (36,146, 312,295)	274,110 (96,683, 473,660)
Mean CI Duration	2,887 (1,380, 5,279)	3,961 (1,241, 8,168)	682 (108, 2,218)	4,021 (1,795, 7,479)	4,237 (2,032, 8,349)

¹ Median (IQR)

Characteristic	Black N = 4113	White N = 734	Other N = 127	(Missing) N = 9
Number of CIs per person	3 (1, 8)	3 (2, 8)	3 (1, 7)	6 (4, 10)
Mean combined CI duration per person (hr)	0.9 (0.1, 3.5)	0.9 (0.1, 3.1)	0.7 (0.1, 3.5)	3.5 (2.6, 3.8)
Mean CI duration (min)	11 (2, 37)	11 (2, 29)	11 (2, 46)	19 (10, 34)
Minimum CI duration	11 (5, 63)	11 (4, 42)	16 (9, 78)	10 (7, 26)
Maximum CI duration (min)	33 (3, 119)	34 (3, 101)	32 (3, 115)	106 (19, 210)

¹ Median (IQR)

Node

Characteristic	PATIENT N = 3264	RN N = 961	MD N = 401	NT N = 31	STAFF N = 749
Clinical Interactions (CIs)	3 (1, 8)	23 (9, 64)	16 (7, 29)	19 (8, 30)	37 (15, 107)
Total Time in CIs (min)	54 (4, 208)	2,436 (602, 5,205)	942 (232, 2,022)	1,410 (514, 2,570)	4,568 (1,611, 7,894)
Mean CI Duration (min)	11 (2, 37)	67 (30, 125)	48 (23, 88)	66 (21, 136)	71 (34, 139)
Minimum CI Duration (sec)	11 (5, 63)	5 (0, 29)	9 (1, 61)	8 (2, 44)	2 (0, 13)
Maximum CI Duration (min)	33 (3, 115)	391 (166, 589)	221 (81, 347)	218 (79, 419)	456 (233, 620)

¹ Median (IQR)