ED Staffing and Flow Workshop

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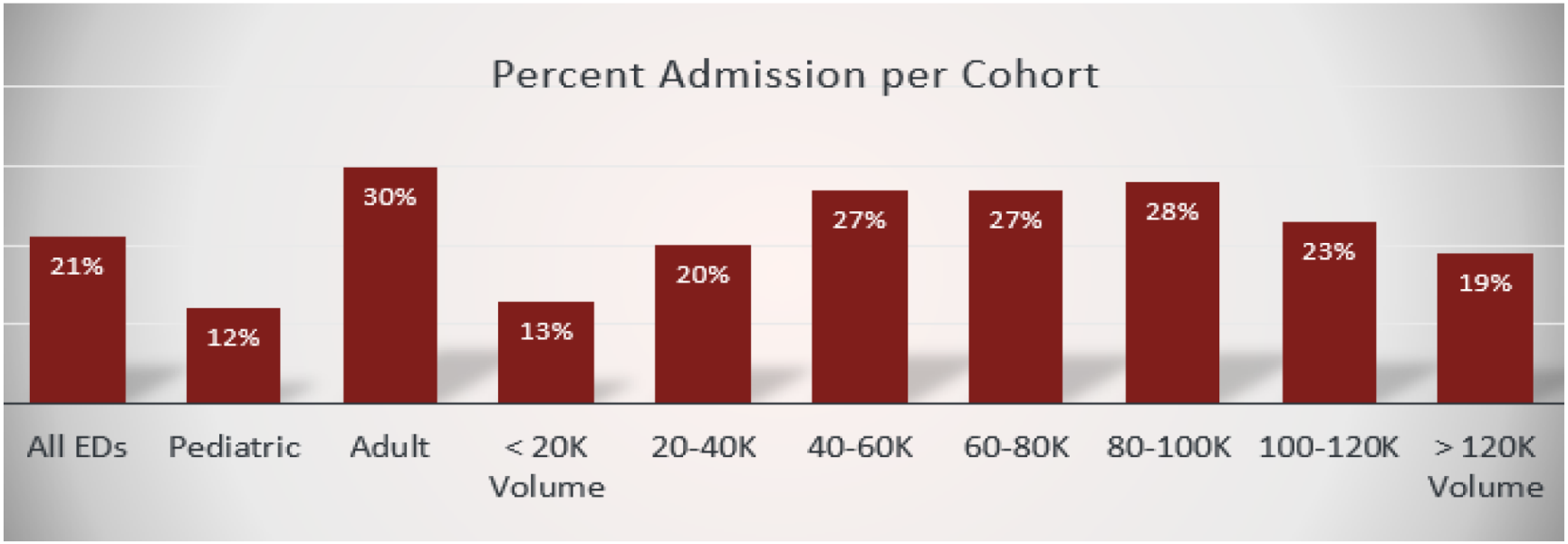
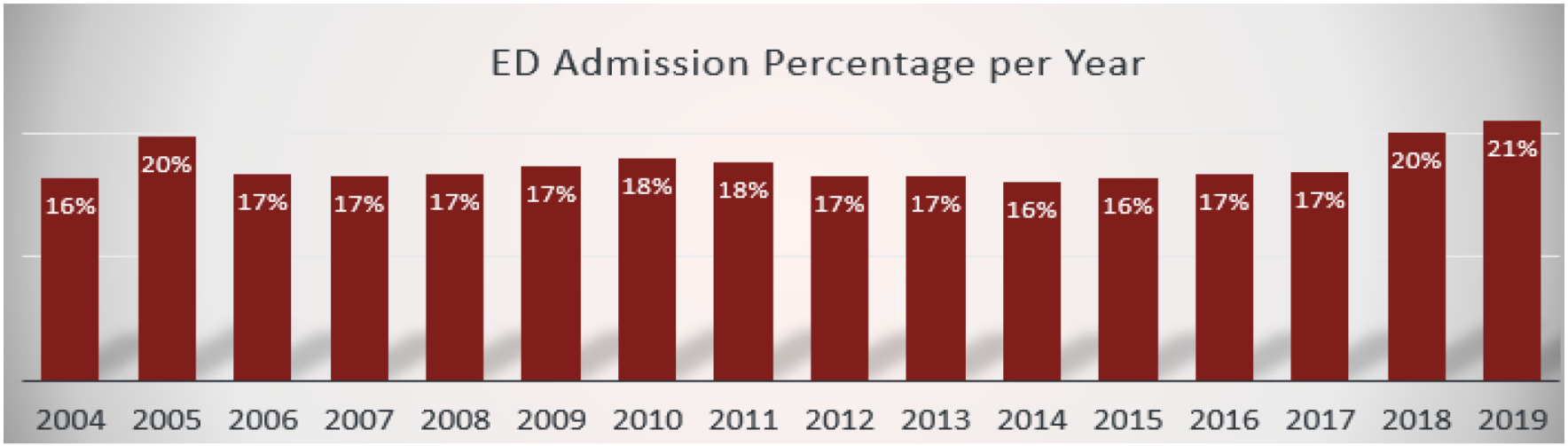
Please Estimate the Following

Complete this section prior to arrival

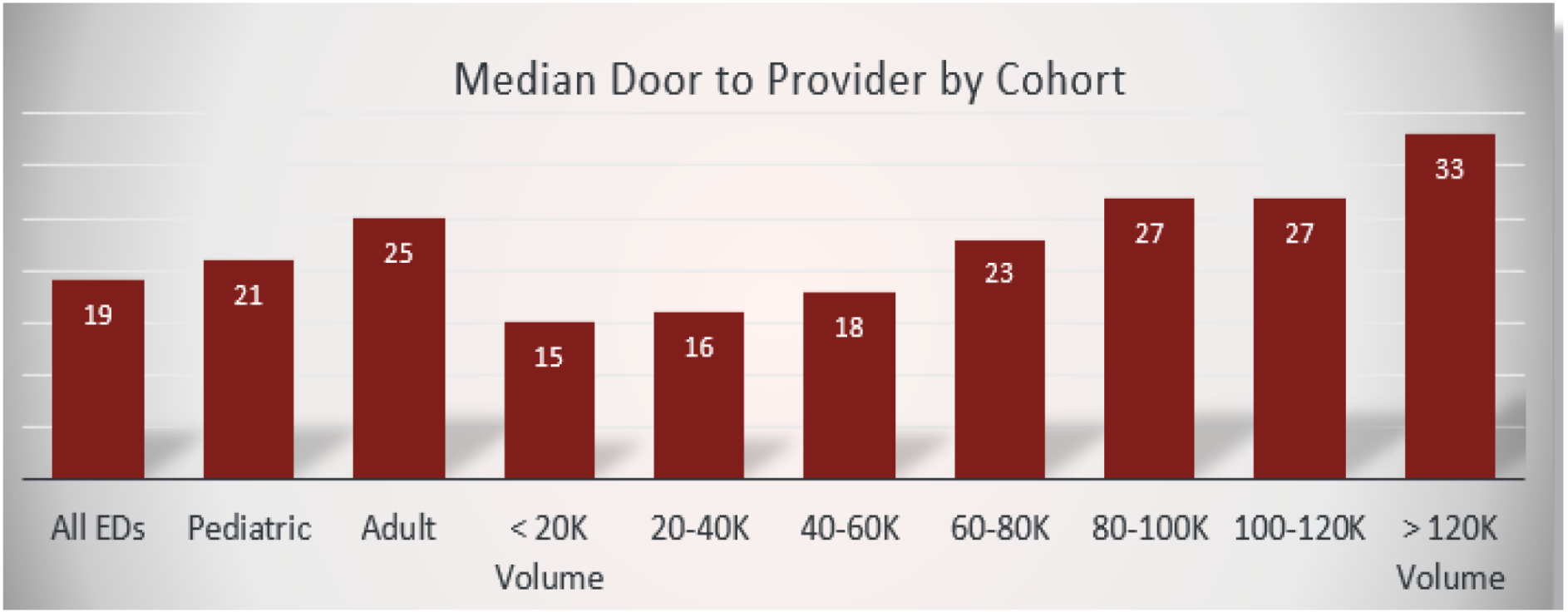
Annual Volume	_____
% LBTC	_____
% Admit	_____
# of ED Treatment Spaces	_____
ESI % 4,5	_____
% Vertical 3	_____
Door to Doc	_____
LOS	_____
Dispo to Depart Admitted	_____
Physician productivity (PPH)	_____
Hospital WHPUOS*	_____
# Providers at Peak	_____
# RN at Peak	_____



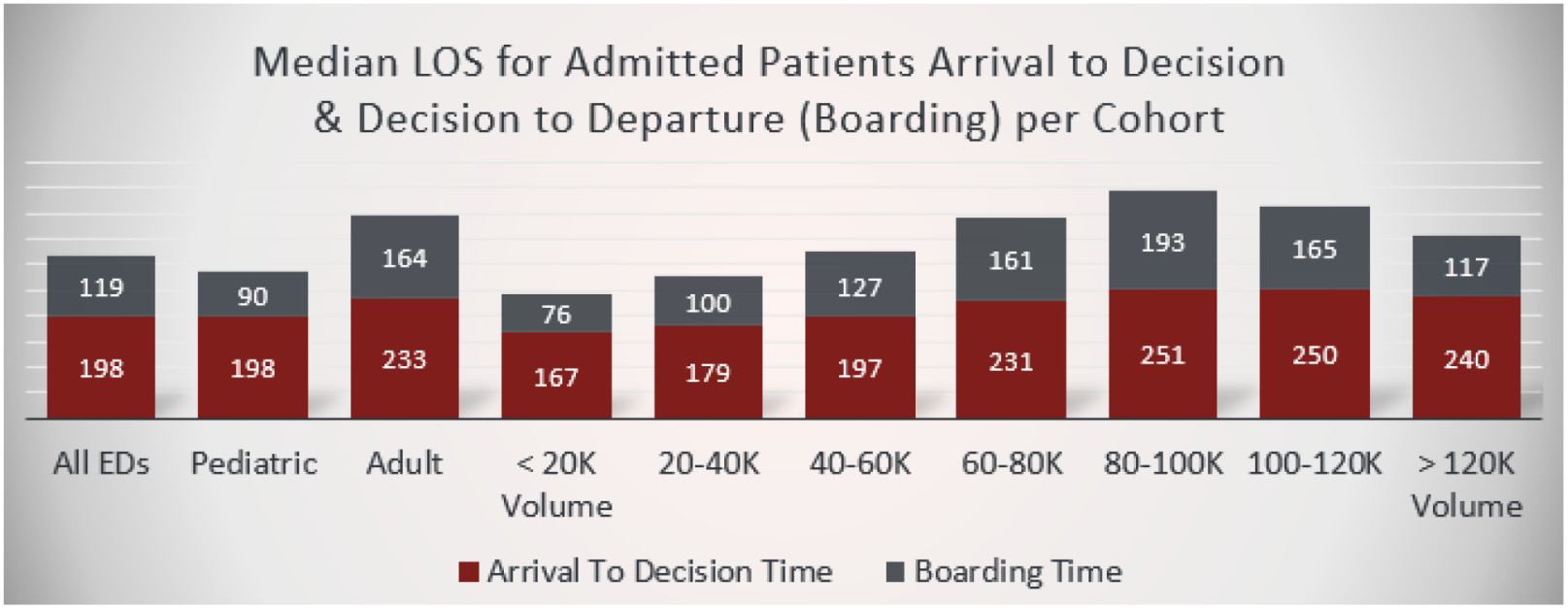
Graph 3. ED Admission rate by cohort.



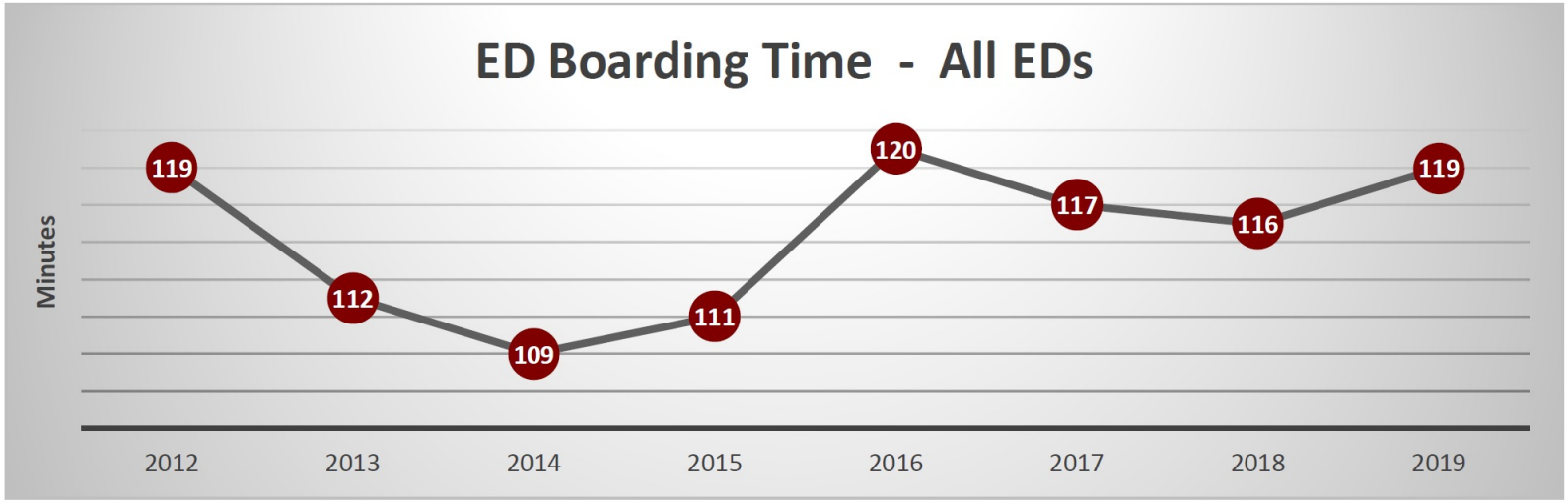
Graph 4. Trend of Percent of ED patients admitted.



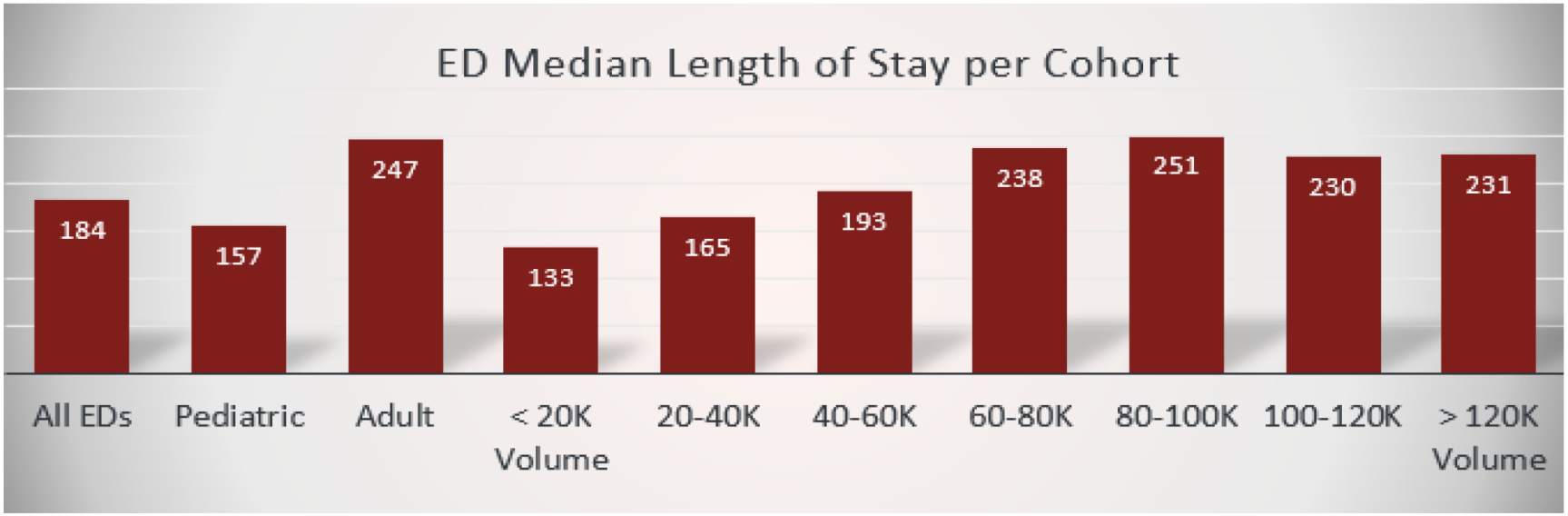
Graph 10. Median Time, in minutes, from Door to Doctor (or APP). The data for 2019 report the average at 19 minutes.



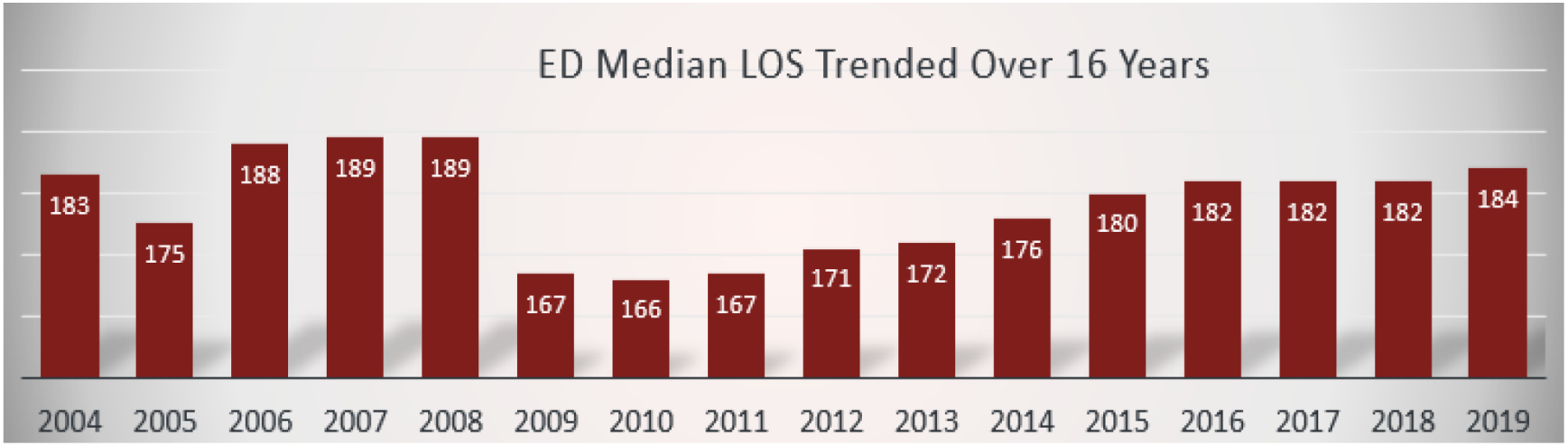
Graph 12a. Median Length of Time for ED patients who are admitted, their Arrival to Decision and "Boarding Time".



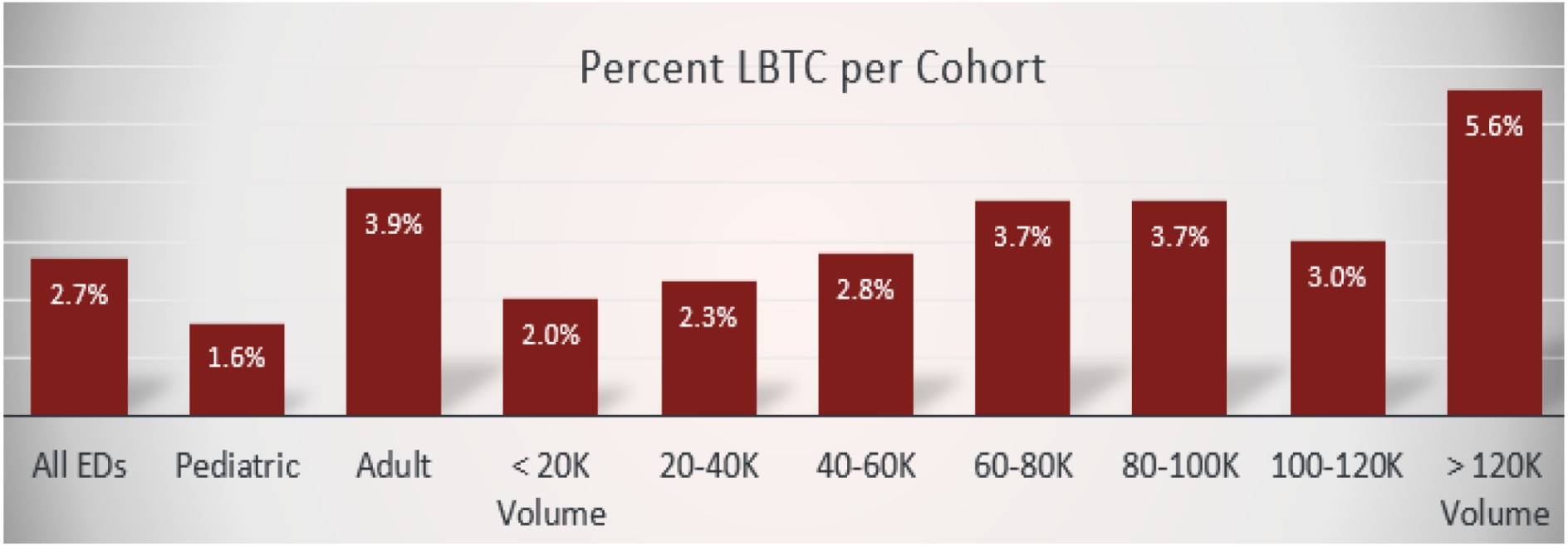
Graph 12b: ED Boarding Time from 2012 through 2019.



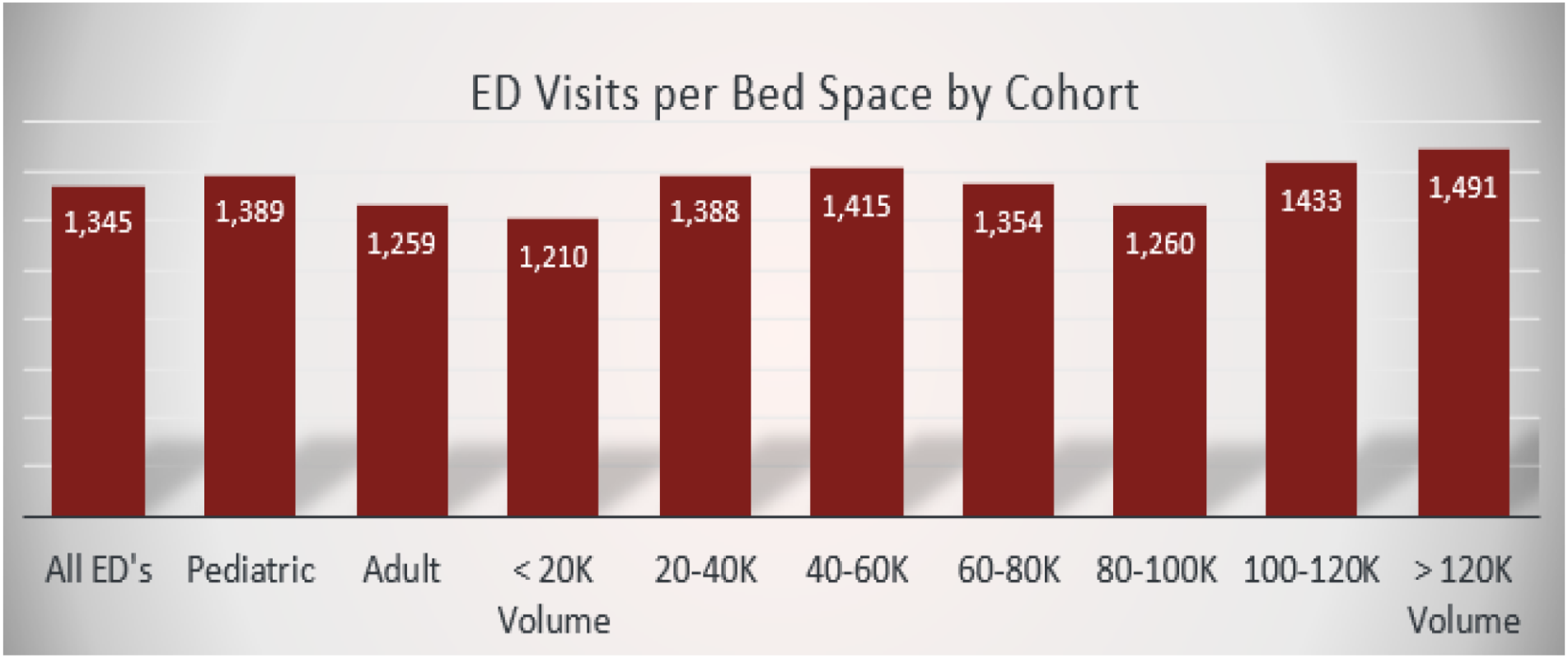
Graph 8. Median Length of Stay for all ED patients. There are significant variations by type of ED.



Graph 9. ED Median LOS for all Patients trended over the last 16 years.



Graph 13. % of Patients who Leave Before Treatment Complete (LBTC). The average is 2.7%



Graph 20a. An average ED supports 1,300 to 1,500 visits per patient care space.

Exercises – Calculate the Following:

1. Peak Arrival Rate
2. Peak Arrivals Low Acuity
3. Peak Arrivals Vertical 3
4. ED Bed Ratio
5. Peak Doc Productivity/Service Time
6. Peak RN Productivity/Service Time
7. Beds Needed and Target LOS

Peak Arrival Rate

$$\frac{\text{Annual Visits} * 2}{10{,}000} =$$

Peak Arrivals Low Acuity

$$\frac{\text{Annual Visits} * 2}{10{,}000} \times \%\ \text{ESI 4,5} =$$

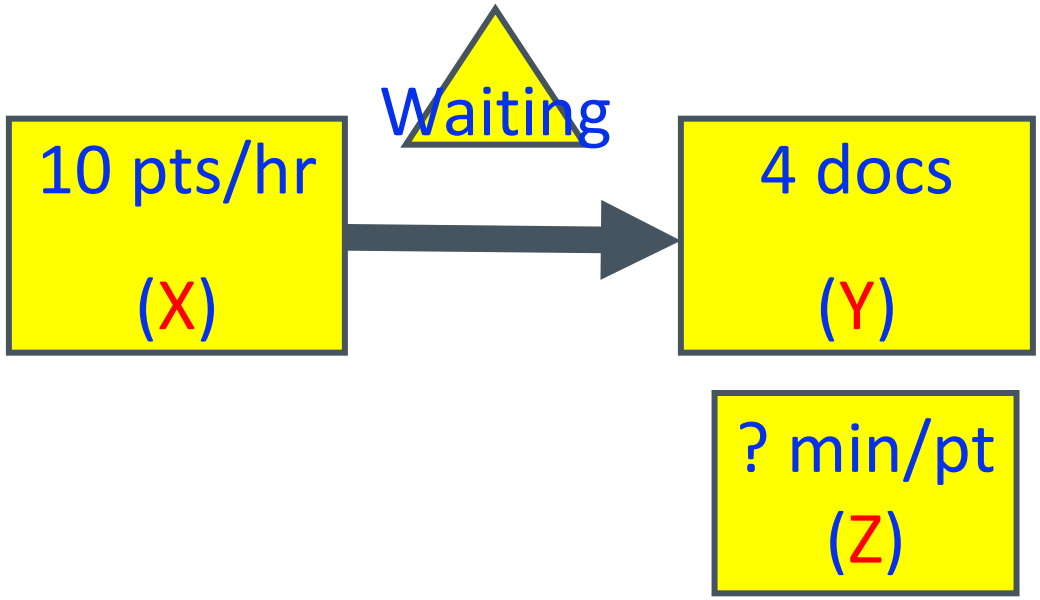
Peak Arrivals Vertical 3

$$\frac{\text{Annual Visits} * 2}{10{,}000} \times (\%\ \text{Vertical 3 X}\ (100\% - \%\ \text{ESI 4,5} - \%\ \text{admit})) =$$

Do you Have Enough Beds?
Annual Visit : ED Bed Ratio

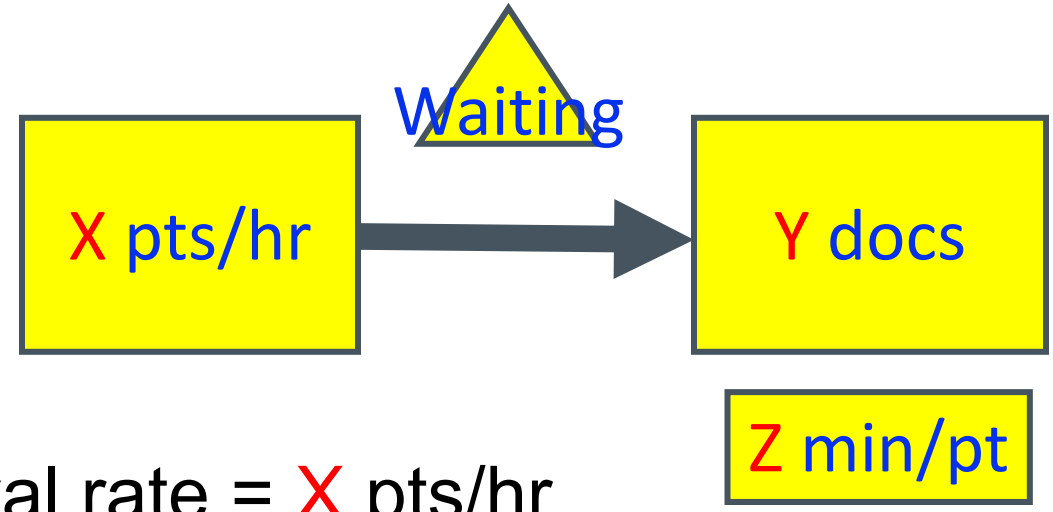
$$\frac{\text{Annual Visits}}{\text{\# ED Treatment Spaces}} =$$

ED Docs – Peak Productivity and Service Rate



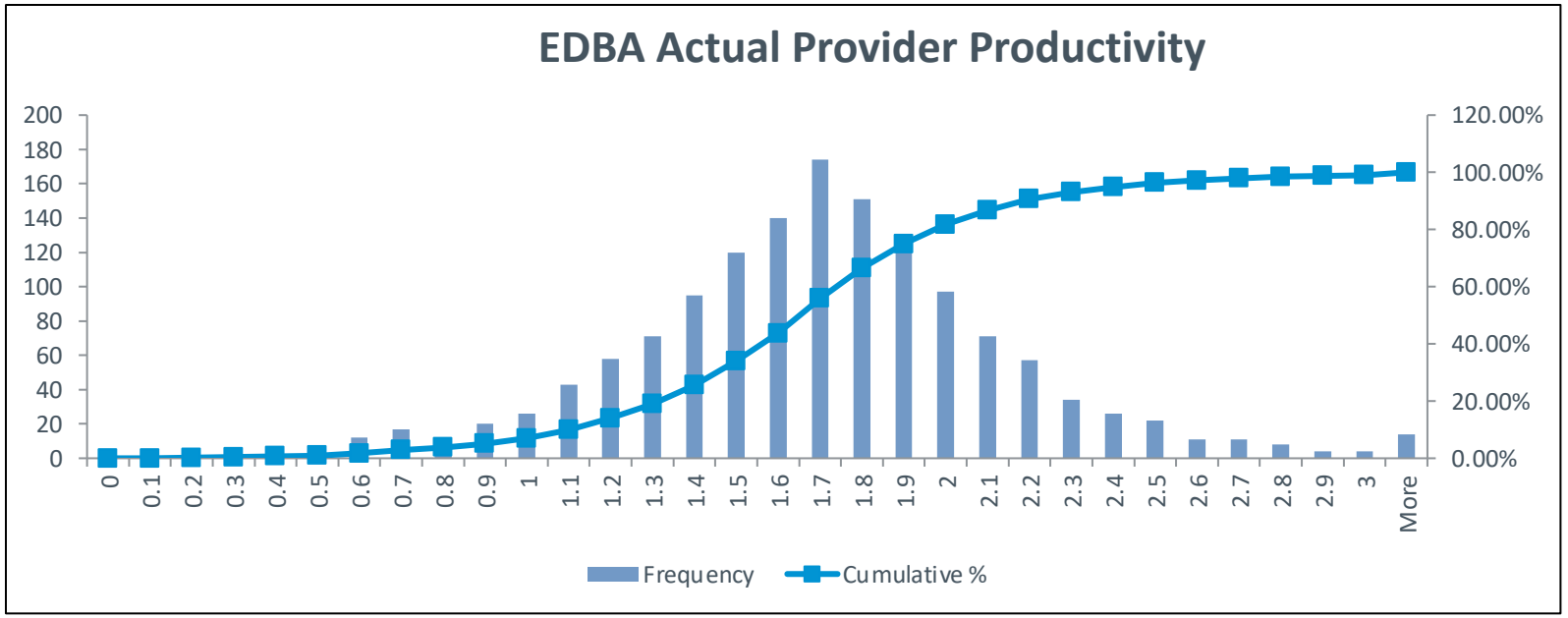
- Peak arrival rate (X) = 10 pts/hr
- Peak Productivity (Y) = 10 pts/4 docs = 2.5 pph
- Peak Service Rate (Z) = 60 min/2.5pph = 24 min

What is *Your* Doc Peak Productivity and *Service Rate*?



- Peak arrival rate = X pts/hr
- Peak Target Service Rate = X pts/Y docs = X/Y
- Peak Service Time = 60 min/X/Y = Z min

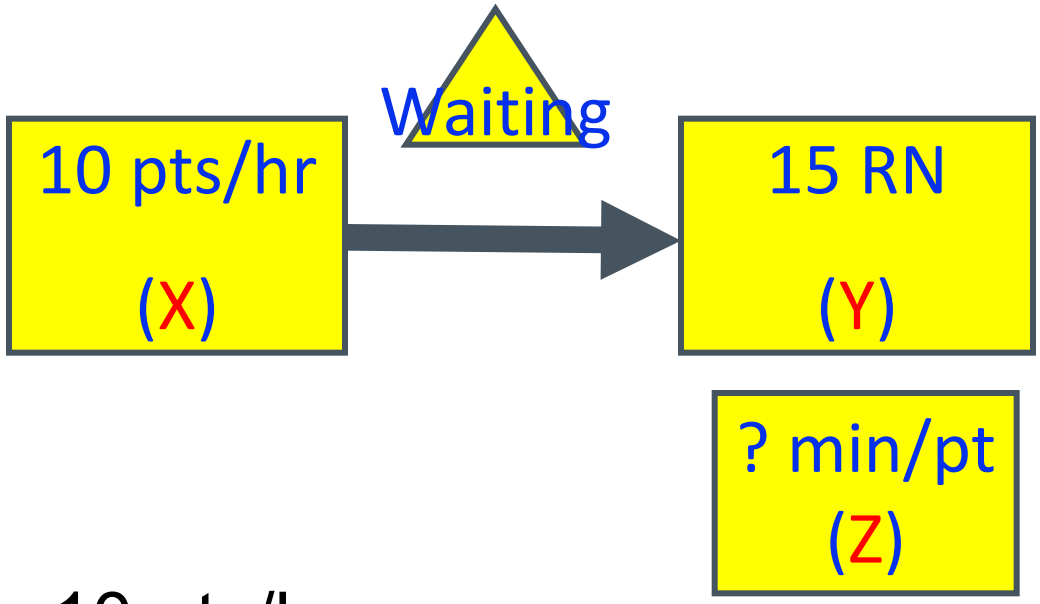
Provider Productivity



EDBA Actual Provider PPH	
Mean	1.67
Median	1.67
Mode	1.34
Standard Deviation	0.46
Range	3.84
Minimum	0.14
Maximum	3.98
Count	1377

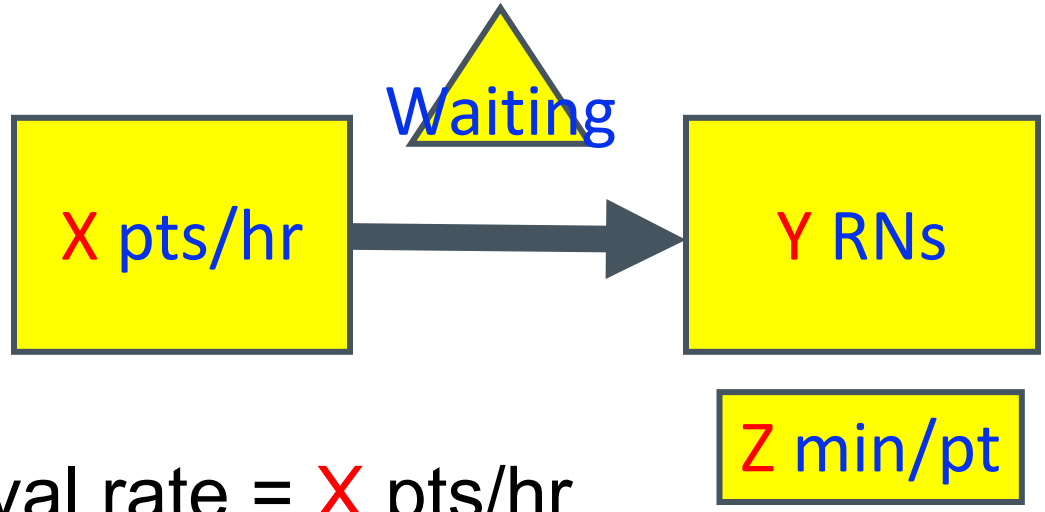
From EDBA 2018 data

ED RNs – Peak Productivity and Service Rate



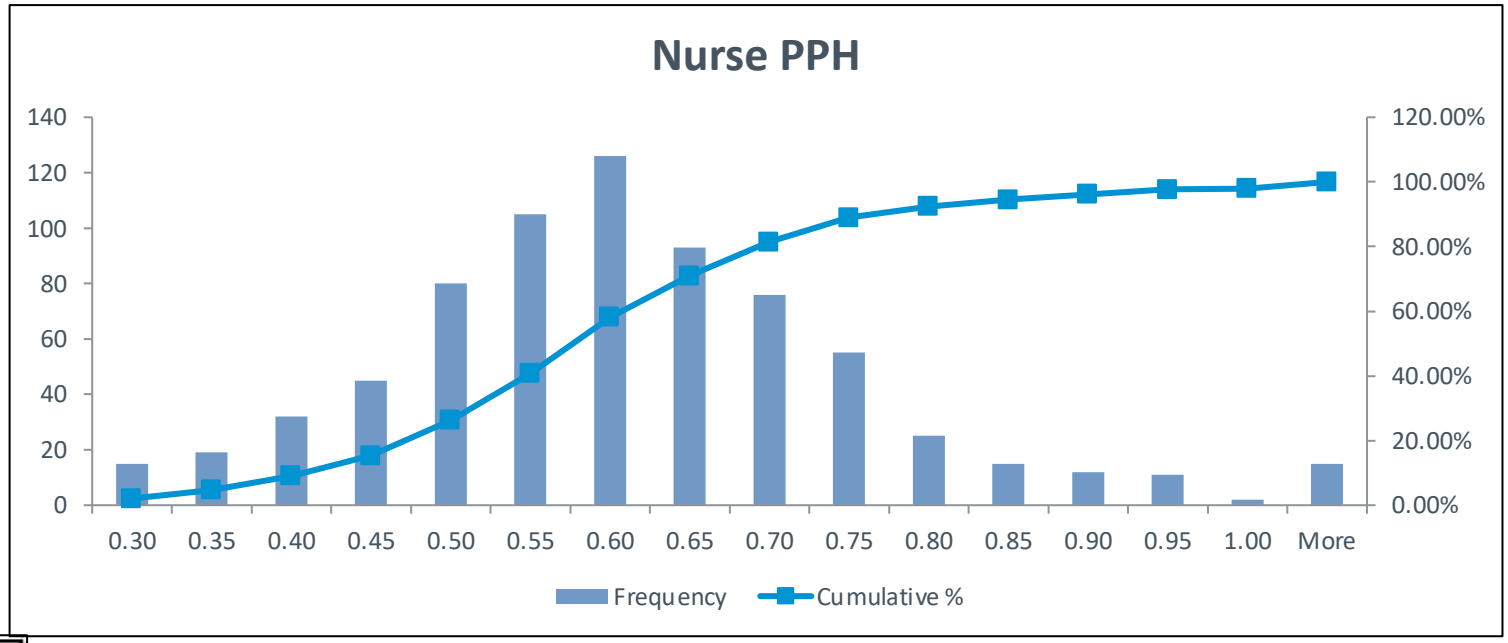
- Peak arrival rate (X) = 10 pts/hr
- Peak Productivity (Y) = 10 pts/15 RNs = 0.67 pph
- Peak Service Rate (Z) = 60 min/0.67pph = 90 min

What is *Your* RN Peak Productivity and *Service Rate*?



- Peak arrival rate = X pts/hr
- Peak Target Service Rate = X pts/Y RNs = X/Y
- Peak Service Time = 60 min/X/Ypph = Z min

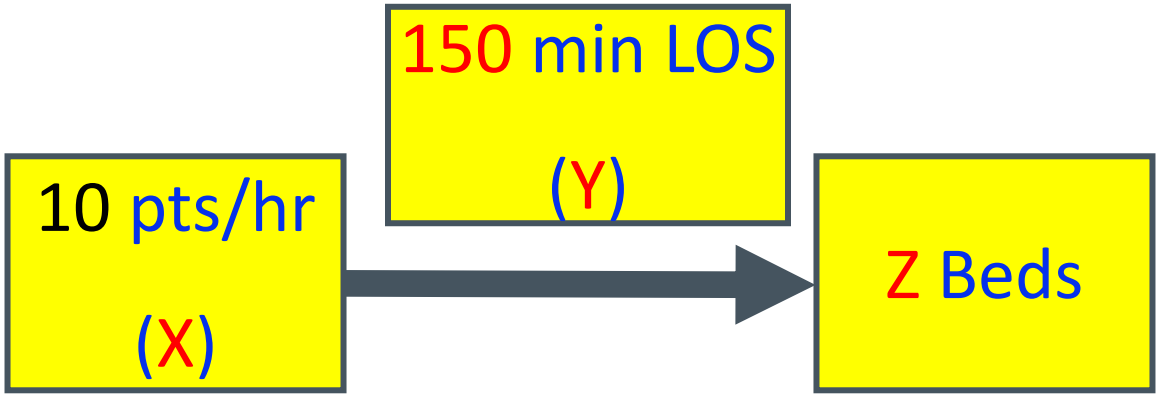
Nurse Productivity



Nurse PPH	
Mean	0.59
Median	0.57
Mode	0.53
Standard Deviation	0.17
Range	1.56
Minimum	0.13
Maximum	1.69
Count	726

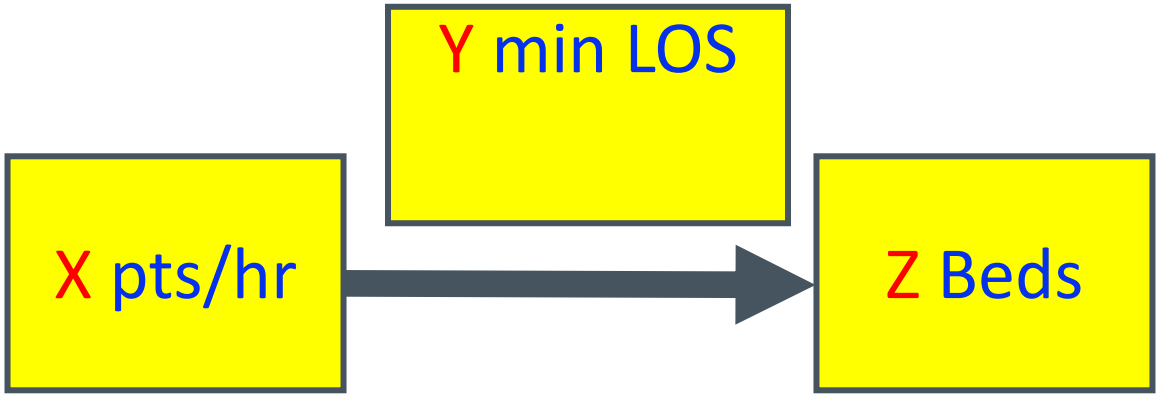
From EDBA 2018 data

How Many Beds Do You Need?



- Peak arrival rate (X) = 10 pts/hr
- Multiple X by Y and divide by 60 to get # beds = 25
- How does this compare to the number of beds you have?

How Many Beds Do You Need?



- Peak arrival rate (X) = 10 pts/hr
- Multiple X by Y and divide by 60 to get # beds = 25
- How does this compare to the number of beds you have?

What is your target LOS?

$$\frac{\text{Needed Beds (Z) - Current Beds (X)}}{\text{Needed Beds (Z)}}$$

- 25 beds – 20 beds = 5 beds / 25 beds = 20%
- Multiply your current LOS by this number to get the number of minutes you need to reduce your LOS
- 180 min x .20 = 36 min

Summary

	Total Sites	PPD	Hi CPT Acuity	Peds %	Admit %	Transfer %	EMS Arrival	EMS Arrival Admit	Median LOS	LOS Treat & Release	LOS Fast Track	LOS Admit	Boarding Time	LBTC	Door to Bed	Door to Doc	EKG per 100	Xray per 100	CT per 100	MRI per 100	US per 100	% Hosp Admits thru ED	Visits per Foot	Beds	Visits per Space
Total for All Full-Service EDs																									
2019	871	118	69%	16%	21%	3.1%	18%	36%	184	159	101	313	119	2.7%	11	19	28	48	24	2.0	7	60%	2.9	31	1,345
Over 120K EDs																									
2019	8	383	68%	11%	19%	1.4%	20.0%	40%	231	201	127	381	117	5.6%	13	33	38	63	30	3.0	18	64%	2.4	90	1,491
100 to 120K EDs																									
2019	27	294	64%	13%	23%	1.5%	23.7%	37%	230	207	112	399	165	3.0%	17	27	29	42	27	2.6	7	66%	3.4	70	1,433
80 to 100K EDs																									
2019	57	242	69%	13%	28%	1.6%	23.6%	43%	251	207	122	427	193	3.7%	18	27	40	57	32	2.3	9	60%	3.5	58	1,260
60 to 80K EDs																									
2019	119	188	71%	13%	27%	2.0%	23.1%	42%	238	199	124	391	161	3.7%	17	23	35	53	30	2.8	10	57%	2.5	48	1,354
40 to 60K EDs																									
2019	194	136	72%	14%	27%	2.3%	194.0%	37%	193	163	91	323	127	2.8%	11	18	30	54	27	1.6	8	67%	3.4	34	1,415
20 to 40K EDs																									
2019	269	80	70%	16%	20%	3.0%	16.6%	34%	165	144	86	277	100	2.3%	9	16	26	46	22	1.4	6	60%	2.8	20	1,388
Under 20K EDs																									
2019	186	32	64%	19%	12%	5.4%	11.6%	30%	133	121	77	243	76	2.0%	7	15	22	40	19	2.2	4	60%	2.0	11	1,222
Pediatric EDs																									
2019	65	91	48%	99%	12%	3.7%	9.0%	25%	157	143	96	284	90	1.6%	13	21	4	27	4	1.9	6	76%	3.4	23	1,389
Adult EDs																									
2019	130	160	76%	3.3%	30%	1.8%	26.7%	41%	247	205	117	392	164	3.9%	15	25	41	54	32	2.5	9	59%	2.7	47	1,259
Freestanding EDs																									
2019	181	42	57%	21.6%	10%	3.4%	5.6%	21%	97	90	59	251	95	1.6%	4	9	16	43	13	0.8	5		2.0	13	1,493
Specialty EDs																									
2019	10	21	69%	10%	12%	3.2%	5.3%	21%	150	134	62	236	99	1.6%	4	8	41	67	18	3.0	7		3.0	8	456

Thank You!