

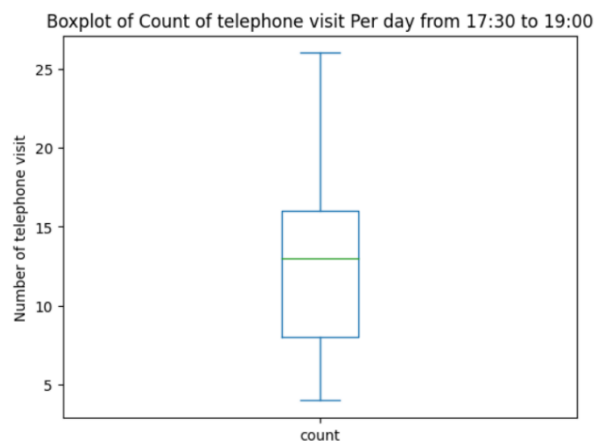
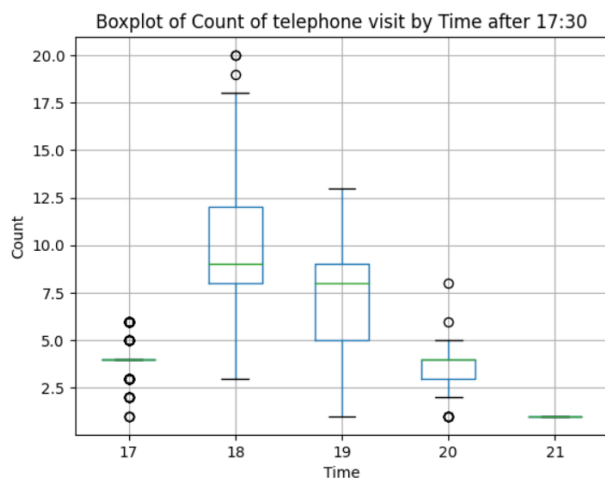
Appointment Data Questions:

Background: Some time ago, for our evening clinic (visits after 5:30pm) we explored the idea of providing telephone visits as an alternative to a face-to-face visit to patients to improve service. We felt that this would be a more convenient alternative for the patient to get their medical needs met without having to come in. Attached is about 6 months worth of visits, which includes the telephone encounters. After we implemented the program, we wanted to use the visit data to determine how to staff for the evening appointments and evaluate the effectiveness of the program.

Please use this data to determine the effectiveness of the program by answering the following business questions:

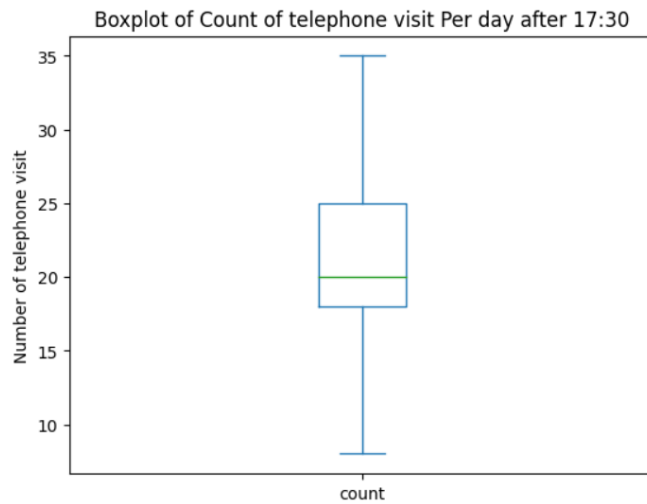
* How many physicians would you need to staff the after-hours (appointments after 5:30pm) telephone clinic? Assume, that 1 physician can see 4 telephone visits per hour.

- **For both patient satisfaction and cost effectivity, according to number of telephone visit per hour, I recommend 4 physicians from 17:30 to 19:00; 3 physicians from 19:00 to 20:00; 2 physicians after 20:00.**
- **17:30 – 19:00 is peak time, we need ability to cover 24 telephone visits during this time. So, we need 4 physicians during that time. Then we need ability to cover 12 telephone visits from 19:00 to 20:00. So we need 3 physicians. After 20:00, we only need ability to cover 8 telephone visits and solve telephone visits from previous time. So we need 2 physicians.**



- **If only care about cost effectivity, I recommend 3 physicians from 17:30 to 21:30, because the maximum number of telephone visit after hours is 35. 3 Physicians can see 48 telephone views from 17:30 to 21:30.**

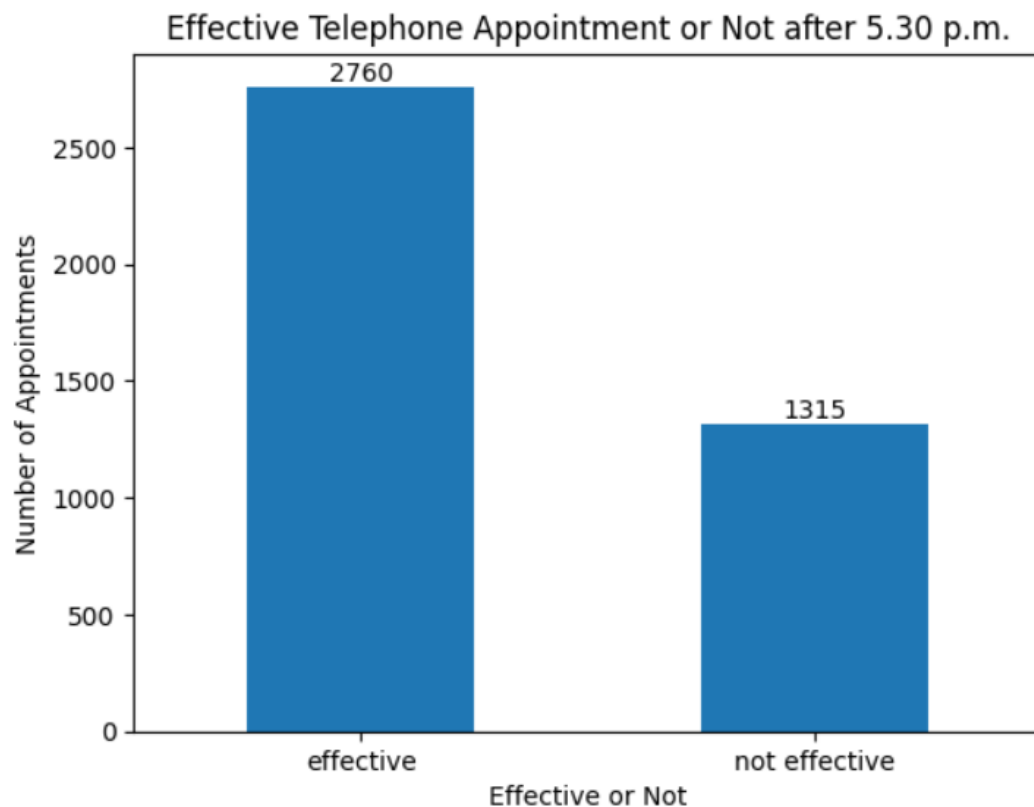
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count	193.000000
mean	21.113990
std	5.357769
min	8.000000
25%	18.000000
50%	20.000000
75%	25.000000
max	35.000000

* How effective are the Telephone Appointments during after-hours (appointments after 5:30pm)?
An effective telephone appointment is one where there are no follow-up appointments to the call within the following 7 days

- **About 67.7% telephone appointment is effective. $2760/(2760+1315) \approx 67.7\%$**

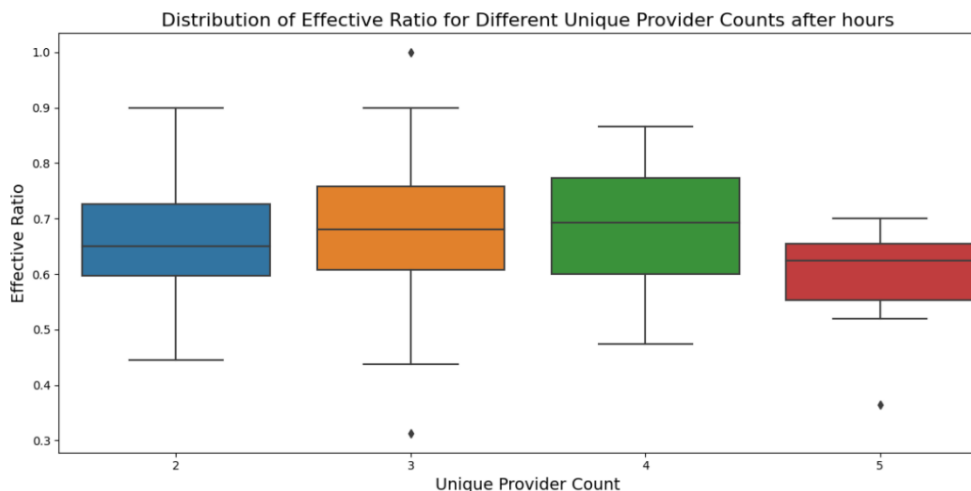


* Based on the available data, what suggestions would you have to improve the effectiveness of the telephone appointments (reduce the number of telephone appointments needing a follow-up appointment within 7 days)?

- **EFFECTIVE_RATIO** is effective telephone visit number over total number of telephone visit number
- **1. Explore providers who have high effective ratio of after-hours telephone visit and providers who have low effective ratio of after-hours telephone.**

	PROVIDER_ID	EFFECTIVE_RATIO
19	22292052	1.000000
2	01571160	1.000000
65	59874975	1.000000
11	12801161	0.923077
10	11574621	0.916667
52	46301464	0.900000
3	04149630	0.888889
104	91668939	0.866667
63	57025795	0.866667
94	80252478	0.857143

- **2. Staff 3-4 physicians after hours maybe a better choice. 3-4 physicians have high effective ratio after hous.**



- **3. Pay attention to the rest of doctors, as the efficiency rate is always higher on Mondays than on other working days. Perhaps after sufficient rest, doctors can be energized to conduct telephone interviews**

	DAY_OF_WEEK	EFFECTIVE_RATIO
1	Monday	0.698908
5	Tuesday	0.659696
6	Wednesday	0.681973
4	Thursday	0.673633
0	Friday	0.672753)

- 4. Find reasons why not effective ratio improve after 20:00, may need some actions make physicians more carefull and energized.

