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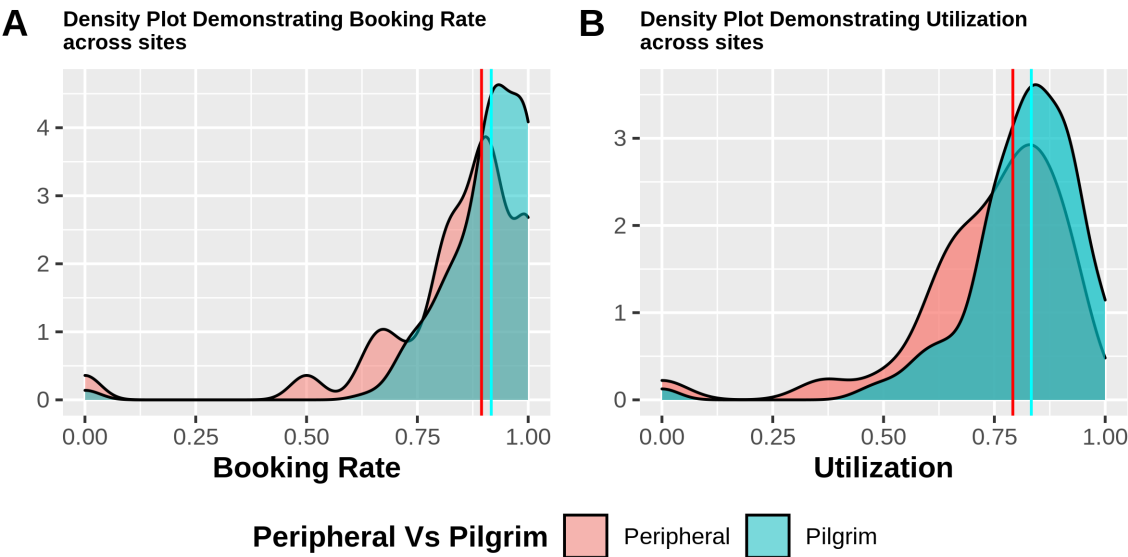
A comparison across clinics and between pilgrim and peripheral sites

The aim of this project is to audit our use of general surgery and colorectal surgery clinics. We acquired our clinic attendance data from hospital information services. We further analysed this data to assess our utilization and DNAs. These are the clinic codes use for the purpose of this analysis **JH-MIRO2, JH-ZAIO4, PH-ATE35, PH-ATEPF, PH-GOR52, PH-MIR41, PH-MIRPF, PH-MMC35, PH-MOB21, PH-MOB40, PH-RTH11, PH-RTH45, PH-ZAI50, SD-MMCS, SD-ATESD**

1.The Data

With a preliminary view we can see that our **Pilgrim Median Booking Rate:91.7%** is marginally higher than our **Peripheral Median Booking Rate:89.5%**. Difference in median was found to be statistically significant at p-value of *0.023*(Graph 1.1A). Similarly our **Pilgrim Median Utilization Rate:83.3%** is marginally higher than our **Peripheral Median Utilization Rate:79.2%**. Difference in median was found to be statistically significant at p-value of *0.011* (Graph 1.1B)

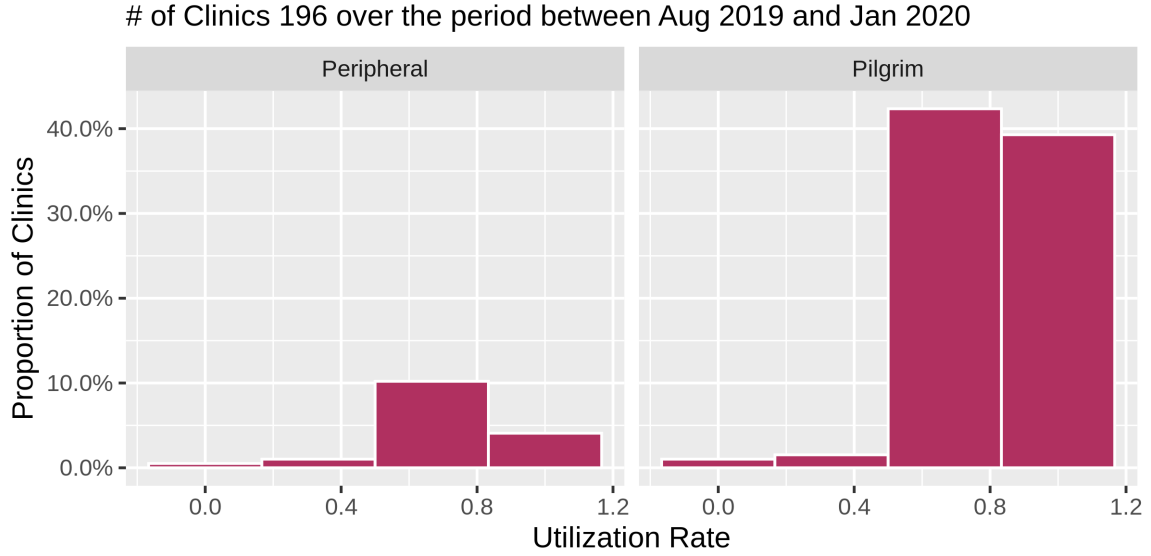
Graph 1.1



M	OneVsTwo	count	Site	M	OneVsTwo	count	Site
Aug	One Man	2	Peripheral	Aug	Two Man	2	Peripheral
Aug	One Man	13	Pilgrim	Aug	Two Man	14	Pilgrim
Sep	One Man	1	Peripheral	Sep	Two Man	4	Peripheral
Sep	One Man	13	Pilgrim	Sep	Two Man	9	Pilgrim
Oct	One Man	3	Peripheral	Oct	Two Man	2	Peripheral
Oct	One Man	17	Pilgrim	Oct	Two Man	17	Pilgrim
Nov	One Man	6	Peripheral	Nov	Two Man	10	Pilgrim
Nov	One Man	20	Pilgrim	Dec	Two Man	2	Peripheral
Dec	One Man	5	Peripheral	Dec	Two Man	10	Pilgrim
Dec	One Man	13	Pilgrim	Jan	Two Man	2	Peripheral
Jan	One Man	2	Peripheral	Jan	Two Man	11	Pilgrim
Jan	One Man	18	Pilgrim				

Table 1: Total number of One and Two Man Clinics Per Month for Pilgrim and Peripheral Sites

Graph 1.2 Histogram demonstrating the distribution of Clinic Utilization Rates



2.Further Breakdown

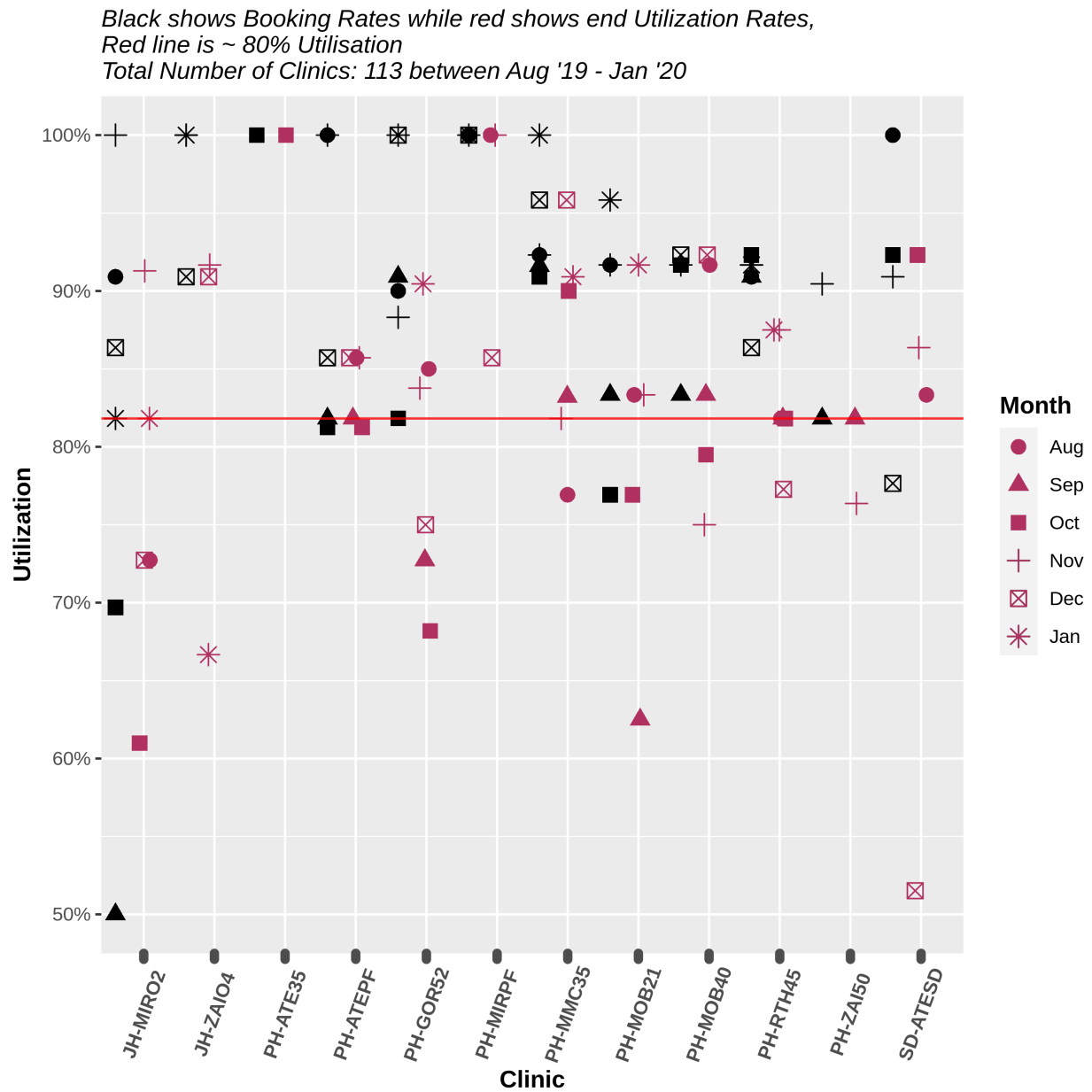
The following graphs demonstrate per clinic data. **Black Shapes** demonstrate booking rate while **Red Shapes** demonstrate utilization rates. These are monthly rates ie the actual figure is an average of clinics used per month. **Booking rate** is

$$\frac{\text{initial booked slots}}{\text{total available slots}}$$

while **Utilization Rate** is

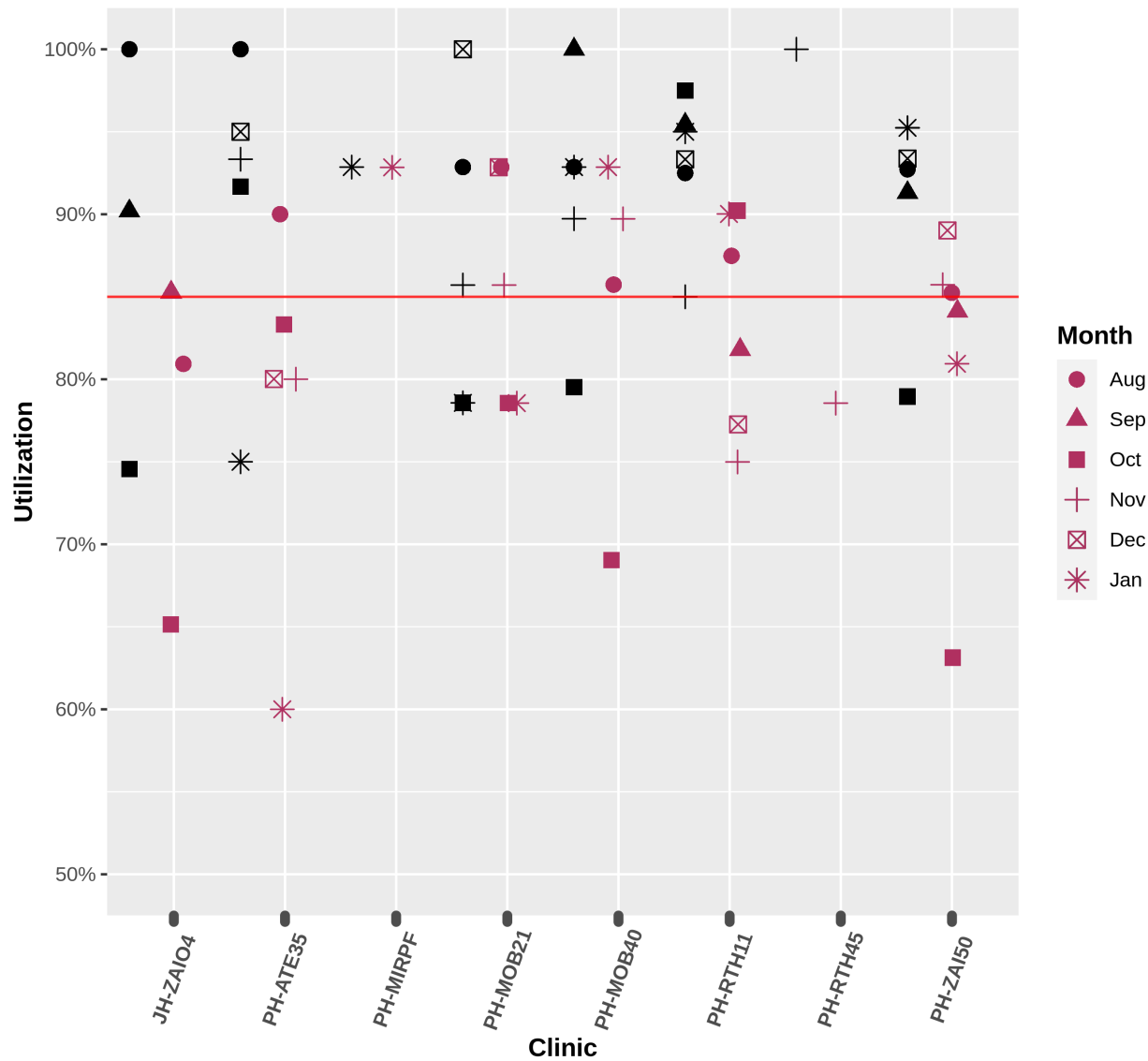
$$\frac{\text{attended clinic slots}}{\text{booked slots}}$$

Graph 2.1 Booking and Utilization rate per month for One Man clinics

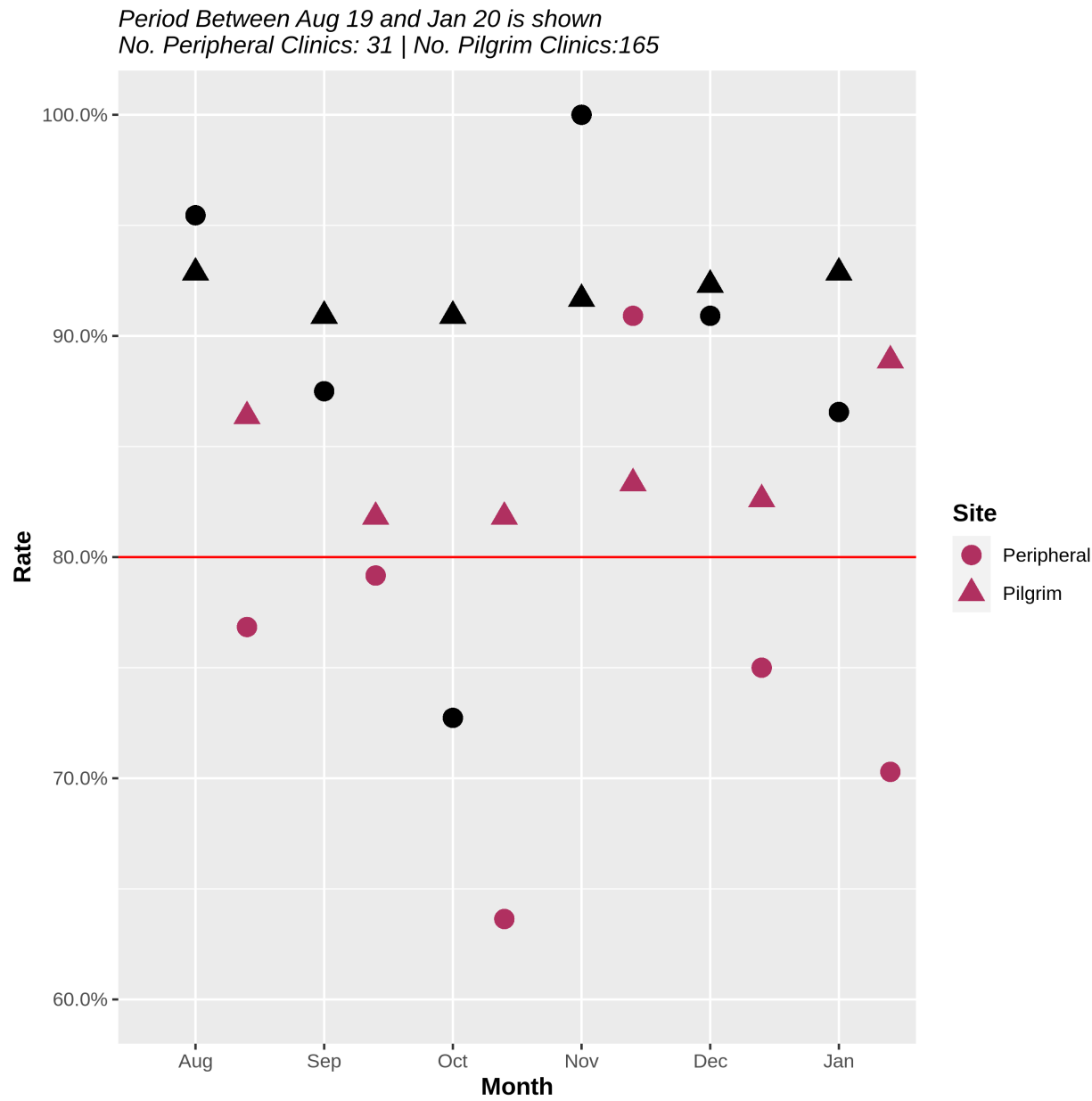


Graph 2.2 Booking and Utilization Rates per month for Two Man clinics

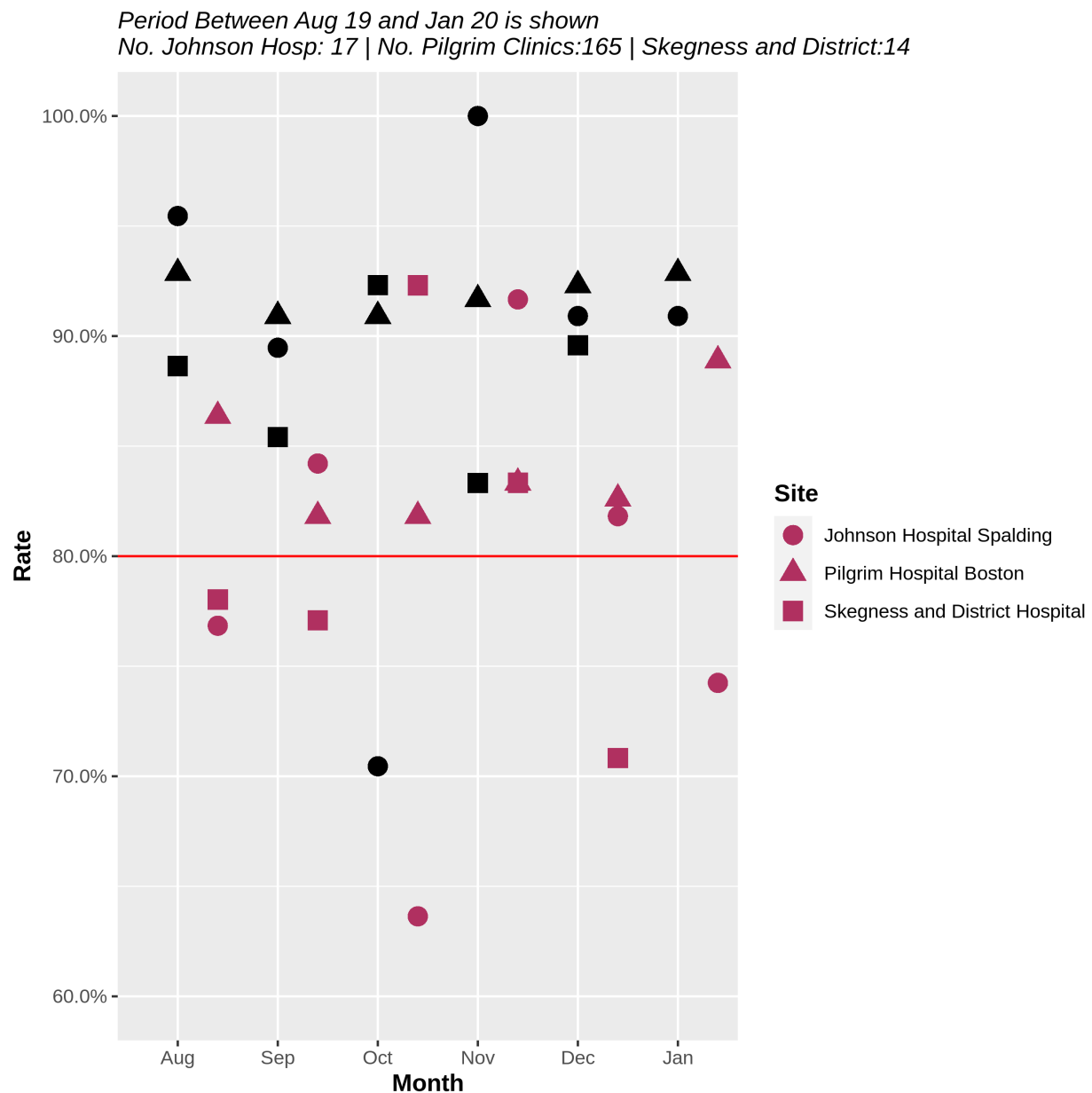
Black shows Booking Rates while red shows end Utilization Rates,
Red line is ~ 80% Utilisation
Total Number of Clinics 83 between Aug '19 - Jan '20



Graph 2.3 Utilization and Booking Rate per month across Peripheral vs Pilgrim clinics



Graph 2.4 Utilization and Booking Rate per month across Peripheral vs Pilgrim clinics



3.Discussion

Graph 2.4 & Graph 2.3 demonstrates again underutilized peripheral clinics (p-value:0.011) despite having similar Booking Rates. This appears to be more during certain month. Again however due the small sample sizes it is not possible to perform adequate analysis.

Initially it seems that the differences although statistically significant were small. However when consulting the last 4 charts it seems evident that a notable number of our clinics were underbooked at 80% booking

rate(which translates to 2 clinic slots for 1-man-clinics and about 3 clinic slots for 2-man-clinics). Although those numbers warrant attention their statistical significance is not easily demonstrated due to the small sample sizes(As shown on table 1). If we were to assume their significance the next question we need to answer is *why?*.

- Why are our **Booking rates** occasionally/frequently falling below our arbitrary 80%?
- Why are we having low **Utilization Rate**? Is it something we need to capitalize on?

And Finally the next pertinent question is do we that small of a population to explain our underutilization?

4.Recommendations