Clipboard Case: Growth Manager [Jan '23]
Part I

At Clipboard Health, we use math to solve problems, and we write to clarify and scrutinize our thinking. If you enjoy this exercise, it's a good sign you'll like how we work here. In addition to the data provided, we encourage you to get a sense of our users' experience (download the app, read app store reviews, etc.) and feel free to use any publicly available information. Please submit your response in a document, and include any assumptions made and all analyses.

Context

Clipboard Health is a marketplace that allows healthcare professionals (HCPs) to book and work open shifts at healthcare facilities (HCFs) that fit their schedule. For HCFs on the platform, a good experience means that when they post a shift, it's picked up quickly by an HCP that shows up on time and does a good job. For HCPs on the platform, a good experience means having lots of open shifts to choose from, knowing what to do when they show up to the facility, and getting paid on-time.

Like any marketplace, supply-demand equilibrium is important: if a facility posts shifts that are never picked up by workers, the facility is likely to churn. We find that when fewer than 25% of a facility's posted shifts are filled in a given month, it has a 50% chance of churning in the subsequent month. We have a corporate sales team, and when a contract is signed with a corporate parent with many facilities under its umbrella, we may suddenly see an influx of demand; when this happens in an MSA (metropolitan statistical area), we will need to acquire workers quickly. To get workers onto the platform, we primarily use paid marketing and referrals. Our referral program is simple: we pay an HCP and the friend they refer $150 each when the friend completes their first shift.

You are provided 3 sets of data:
- Paid marketing data: impressions, clicks, and spend by day by campaign
- HCP data: MSA, agentReq (worker type, like CNA or Medical Technician), timestamps for when they created their account, became enrolled, booked their first shift, and worked their first shift, as well as the source they came from (job board, paid search, referral, organic, etc.)
- Shift data: posted and filled shifts by MSA and agentReq by month

Questions

1. What was CAC (customer acquisition cost) in October?
2. How much would you be willing to increase the referral bonus in Los Angeles and Nashville? Why?

Data

Data sets are partial, and numbers have been modified.

1 | Paid marketing data (link)
2 | HCP data (link)
- Qualification: worker type (RN = registered nurse, for instance)
- Created_at: when the HCP created their account
- License_reviewed: when our documents team approved that the HCP has a valid CNA / LVN / RN license
- Onboard_at: when the HCP has submitted all documents and is now able to book a shift
- First_claim_time: when the HCP books a shift for the first time; if an HCP books a shift on 9/3 and the shift starts on 9/7, 9/3 is the time that will show in this column
- First_shift_time: the first shift the HCP works
- Lifetime_shifts: how many shifts the HCP has worked to-date
- Referrer: the HCP ID of the person who referred this HCP; if this column is empty, this HCP was not referred by an existing user
- Campaign ID: the paid marketing campaign that we attribute this HCP to; if the column is empty, this HCP did not come through a paid marketing channel (that we can attribute)
3 | Shifts data (link)
- Agent_req: same as qualification in the data set above
- Posted shifts: how many posted shifts start in this month in this MSA
- Filled shifts: how many shifts that start this month were claimed by an HCP in this MSA

For this case, you can assume the following charge rate (what facilities pay Clipboard per hour per shift) and pay rate (what HCPs are paid per hour per shift), and all shifts are 8 hours long. In reality, charge and pay vary, and we often increase pay where the fill rate is lower.

	Charge rate	Pay rate
CNA	$20	$15
LVN	$40	$30
RN	$60	$45