**The Interns’ journey in Persistent Systems**

When Obamacare’s payment pilot scheme was introduced, it was at best received with contention and skepticism by everyone in healthcare, though the economist have rejoiced. A healthcare journal pegs the total amount spent in 2011 on patients treated due to readmission within 30 days to be $41.3 Billion. An amount directly associated to the kind of care provided by hospitals and physicians. Hence, a new payment scheme was introduced which focused more on the quality of care provided. Readmission was a major deciding factor.

In Pay for performance (P4P) healthcare providers such as physicians and hospitals are compensated for services based on how well they meet predefined quality, outcome, and/or efficiency metrics. By linking quality of care directly to physician performance, providers are incentivized to both lower costs and improve the efficiency of care delivery. This brought in the practice of penalizing hospitals to the tune of %3 of their yearly reimbursement based on quality measures such as readmission ratio. What started with three particular illnesses - Acute Myocardial Infarction, Heart Failure and Pneumonia, was quickly increased to include other diseases.

As interns, we set out to simplify the workings of pay for performance model and answer one basic question. Does it work? A question with many controversial answers and none that has been universally accepted. From the get go, we were handicapped by the erratic data provided by healthcare.gov and the CMS website. Having access to only hospital and state specific data, it was difficult to predict the readmissions without the patient data.

Our first task was to consolidate all possible datasets related to readmission. We used MySql to clean and merge datasets. Resolving blocks caused by the mismatched data was the major hurdle we overcame. Further, we attempted to predict the readmissions on the basis of hospital demographics. The regression models built did not match the required accuracy and we concluded that hospital demographics alone could not be affecting the readmission.

On further research, it was realized that the ratios computed by CMS were risk standardized but factoring only the patient demographics. In effect, it did not consider any of the socio-economic factors the hospitals were run in. For example, with all possible healthcare measure provided, if the patient is not economically well off to take the required rest and goes back to work, the chances of readmission goes up. In this case the hospitals are wrongly penalized for factors not in their control.

Our next focus was on trying to find a subtle but important connection between socio-economic status of counties and the readmissions faced by the hospitals in them. The insights that we aimed to achieve were to see how factors like poverty, education level, race, age, employment and median income affect the readmission.

Throughout the two and a half months of working in persistent, we got a chance to explore the working culture in a different country. For some of us, it was the first step in this industry. Being divided into two groups with a time difference of three hours, it helped us understand the intricacies of communication and working in at team. Right at the beginning we were introduced to in house tools like shareinsights and agile work culture. Two of the major learning topics for us. Working closely with some of the seniors gave us insights on how projects and road blocks are approached in real time as opposed to what we have faced in classrooms.

We got a chance to work on many tools like Tableau, Mysql, R Studio and ShareInsights and realized why indeed a data analyst is called nothing but a data janitor. Though, it wasn’t all work. We did hone our table tennis and 8 ball skills and twice a week got together with everyone for cricket and volleyball. The potlucks were fun and winning some candies even more so. Working for the society and doing some charity just helped us make some amazing friends!