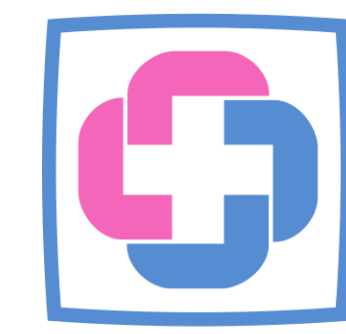




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How We Applied Data Analytics In Answering Polygamy Questions (1H5W) On Medication Administrations Compliance

Introduction

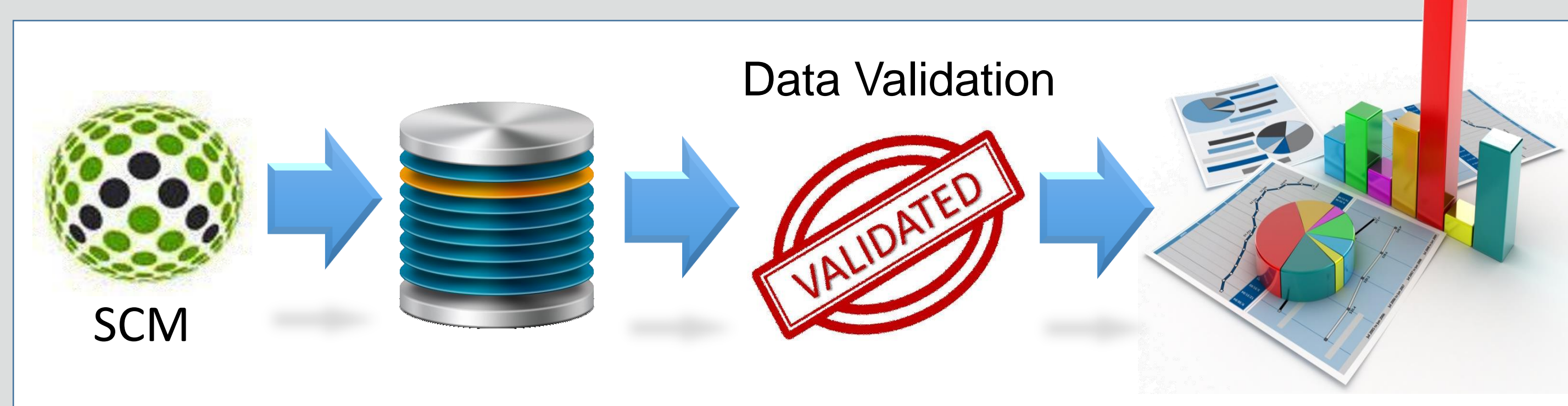
KKH Nurses perform Knowledge Based Medication Administration (KBMA) from Medication Cart by scanning barcoded patient's wristband and medications, which then electronically validates patient identification, retrieves his/her medication orders, and matches drug orders.

Aim

This project aimed to provide a better understanding of KBMA practices on the ground. Through visual analytics, it helped to answer the 1H5W questions, and uncovered some **actionable insights**.

Method

About one million of medication administration data from all KKH inpatient wards spanned over one year from **May 2014 to April 2015** were extracted from the SingHealth Electronic Medical Records system. The data was loaded into a standalone database and 'cleansed' to ensure data integrity and accuracy. The final good quality dataset was then connected to an analytics tool for further analysis and multi-facet data visualization.

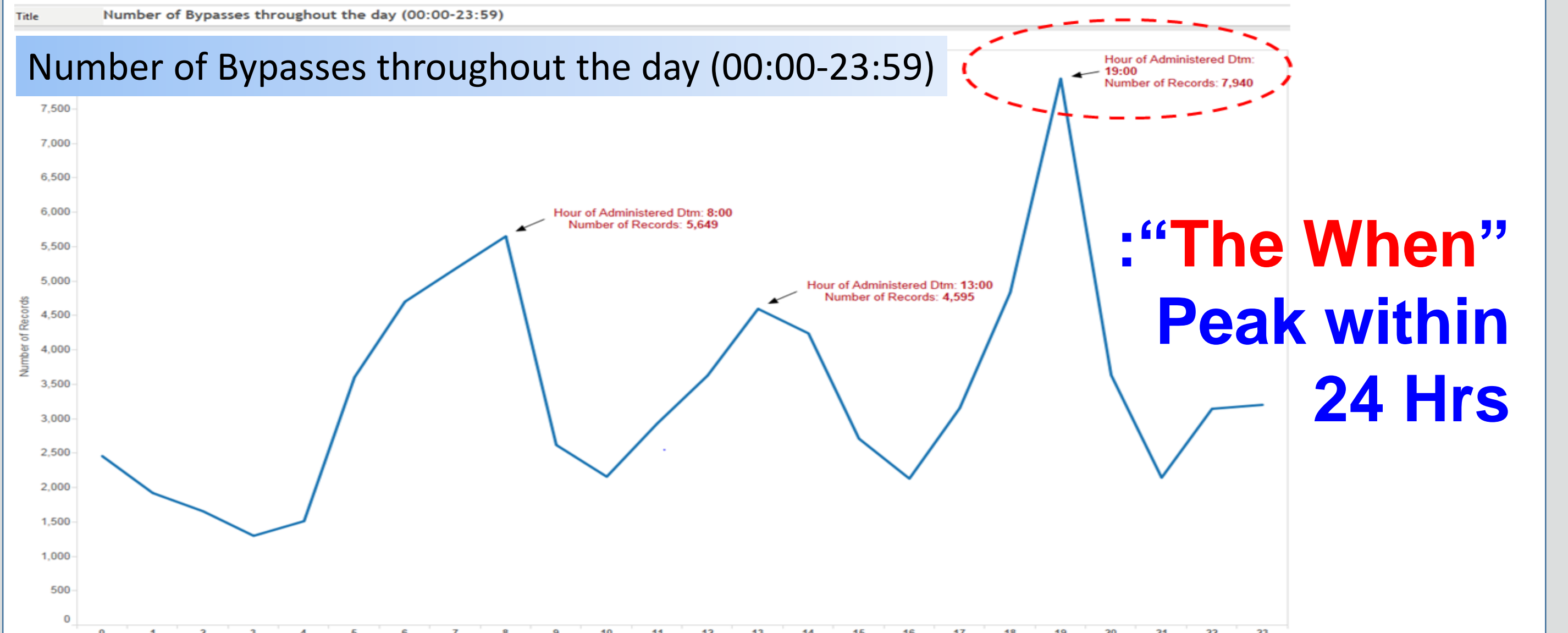
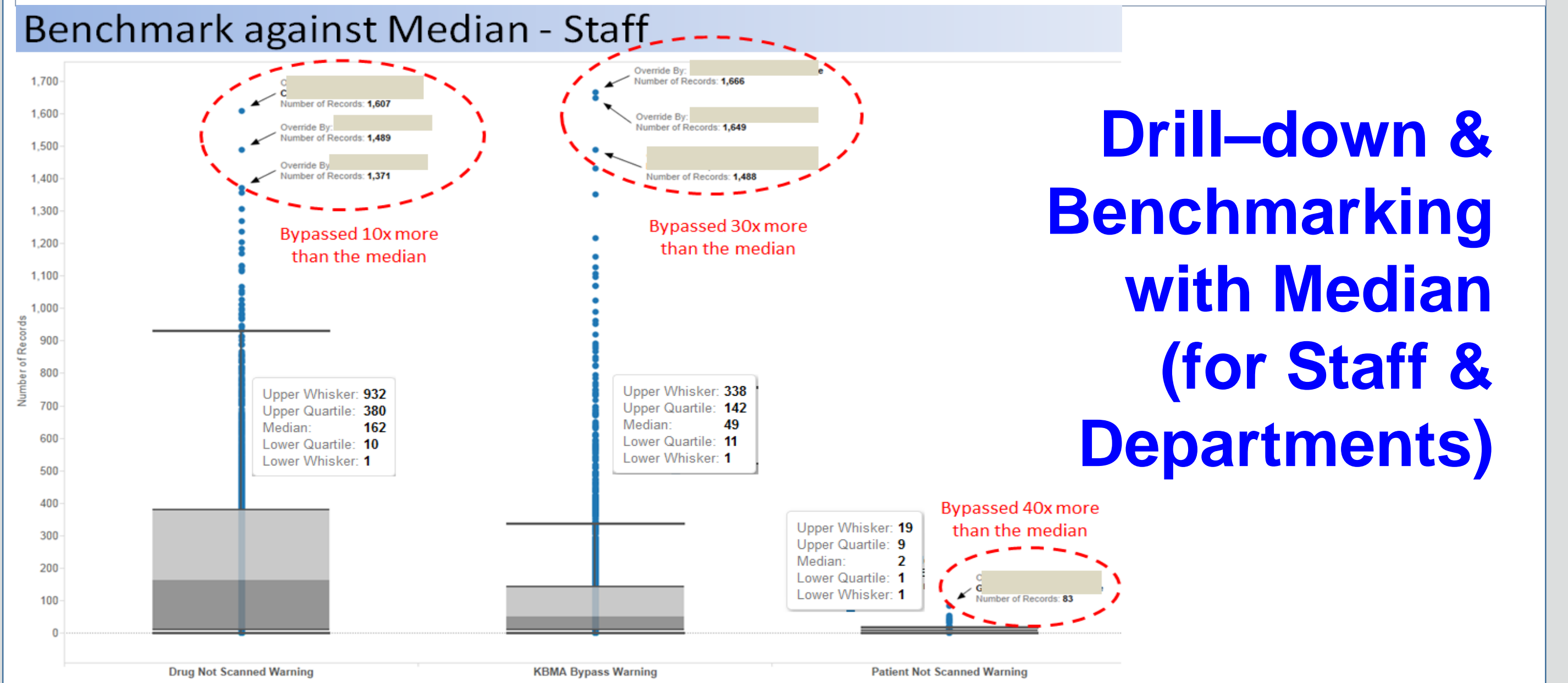
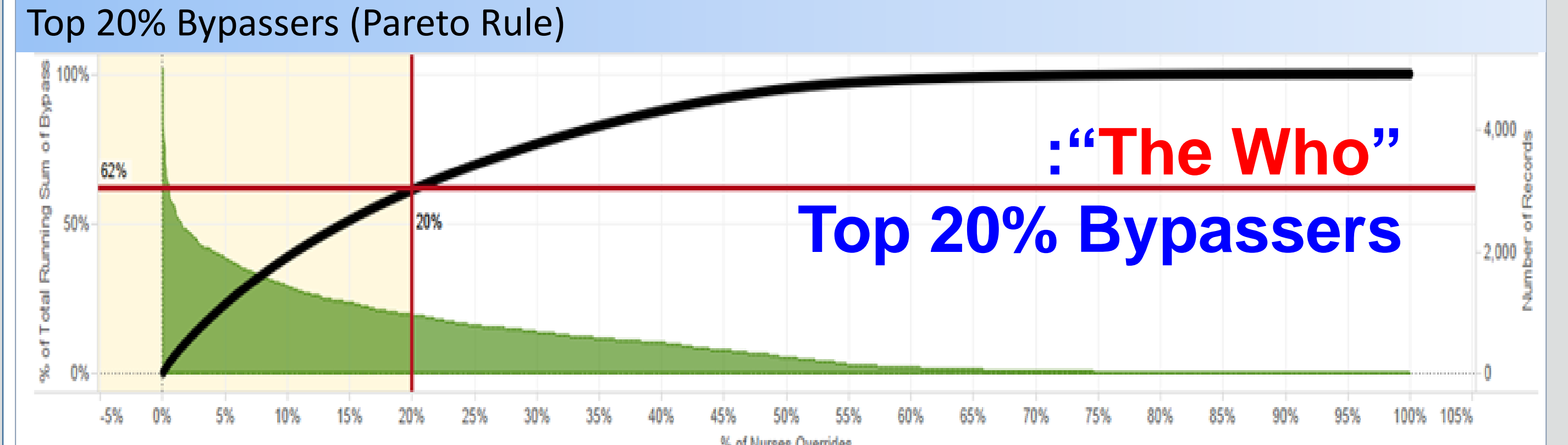
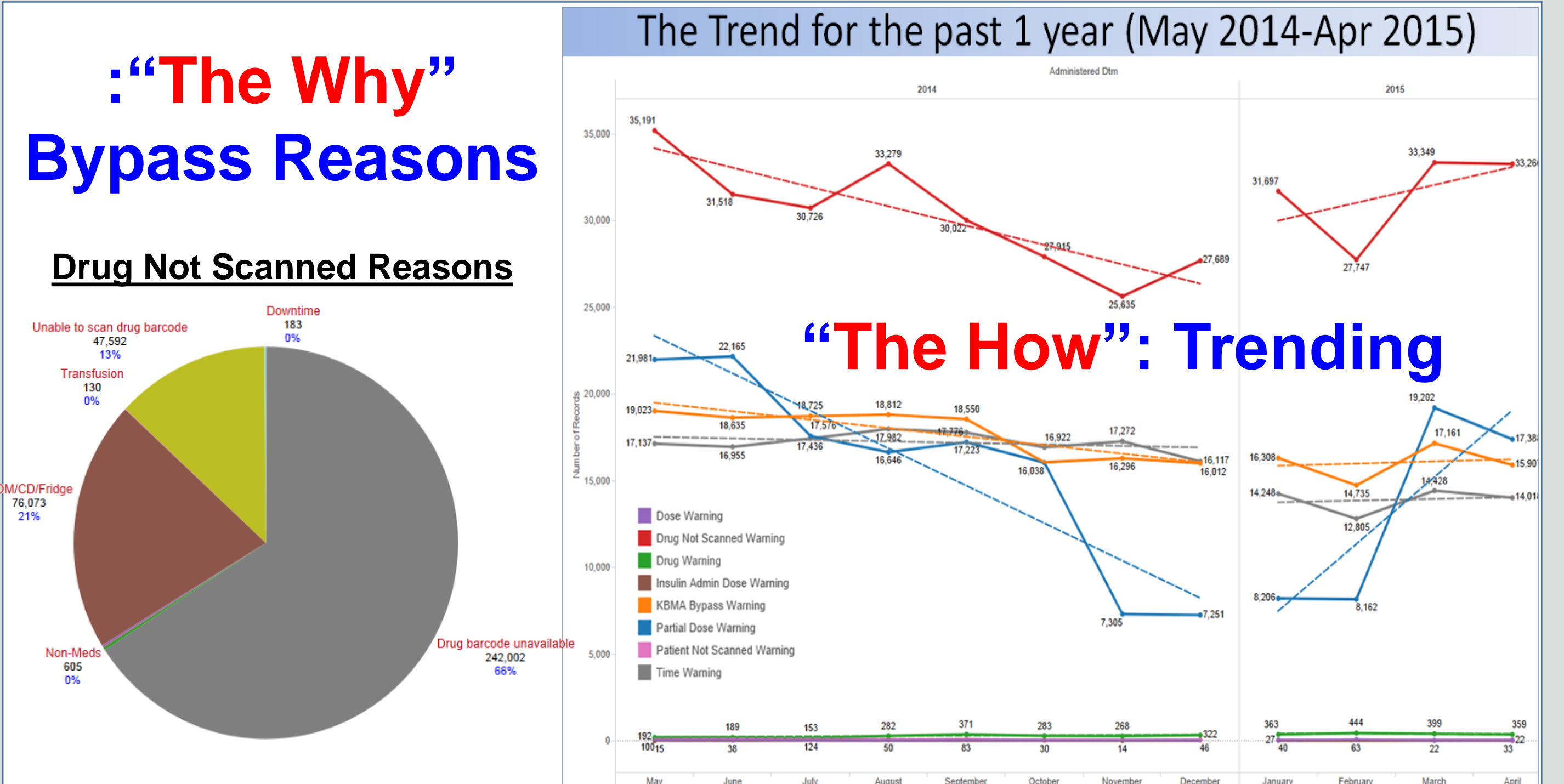
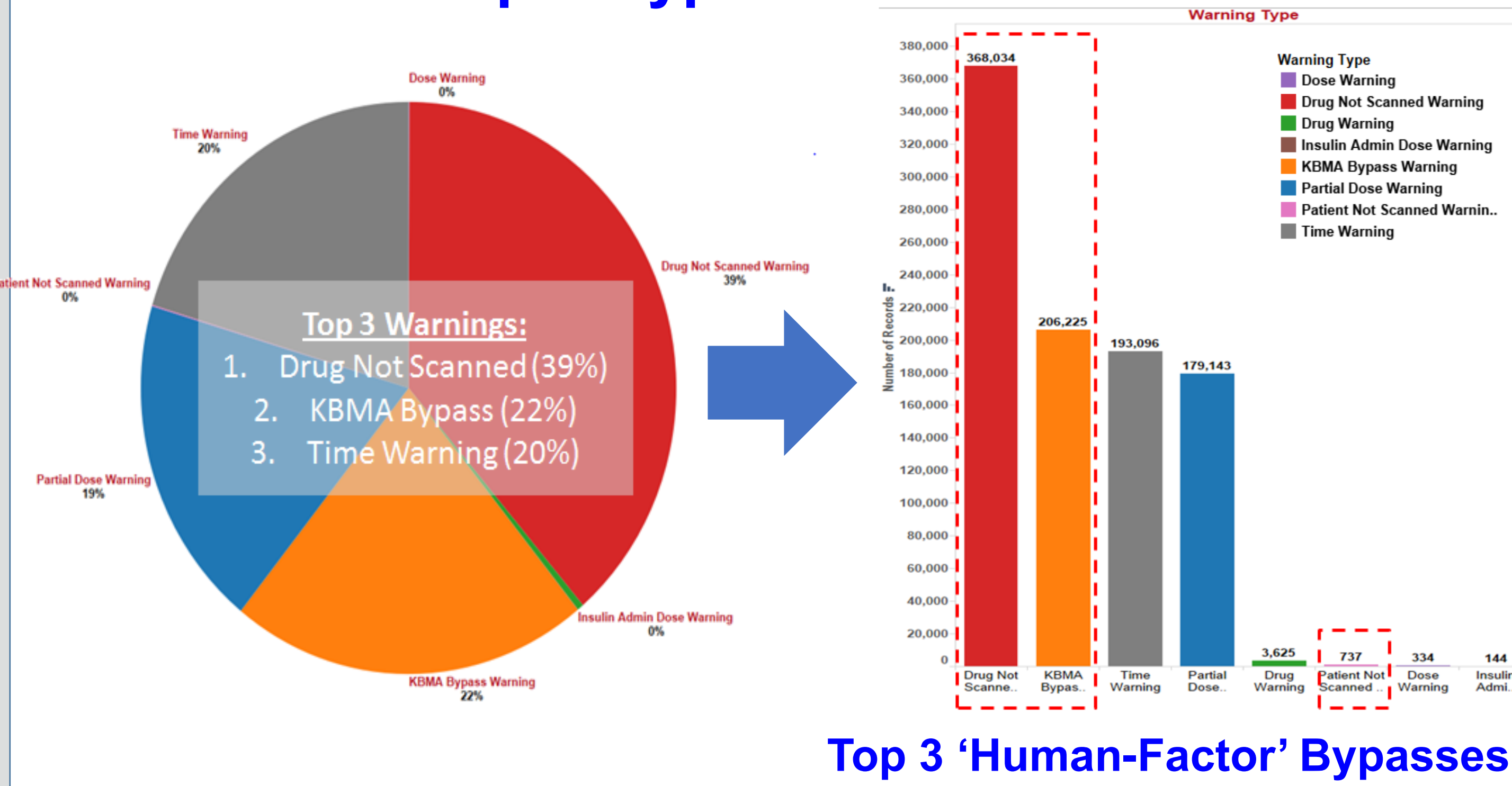


Results

The outcome provides an intuitive **visualisation of data patterns** in identifying **WHAT** are the Top 3 Bypasses, **WHY** do the staff bypass the scanning, **HOW** is the trend like, **WHERE** are the areas that happen the least/the most rampantly, **WHO** are the Top 20% staff who are involved, and **WHEN** do the bypasses normally occur?

Various **gaps stood out** include hardware issues like scanners functionalities, invalid/redundant electronic documentation, and drugs labels that are not scannable. Training needs were also raised for possible knowledge deficit.

"The What": Top 3 Bypasses



Conclusion

Unlike traditional manual audits, **data analytics** proved to be an **objective and non-bias approach in truth presentation**. It helps to visualize how things work right from bird-view drilled down to details to **identify gaps and focus on targeted problem areas** in formulating the right solutions.