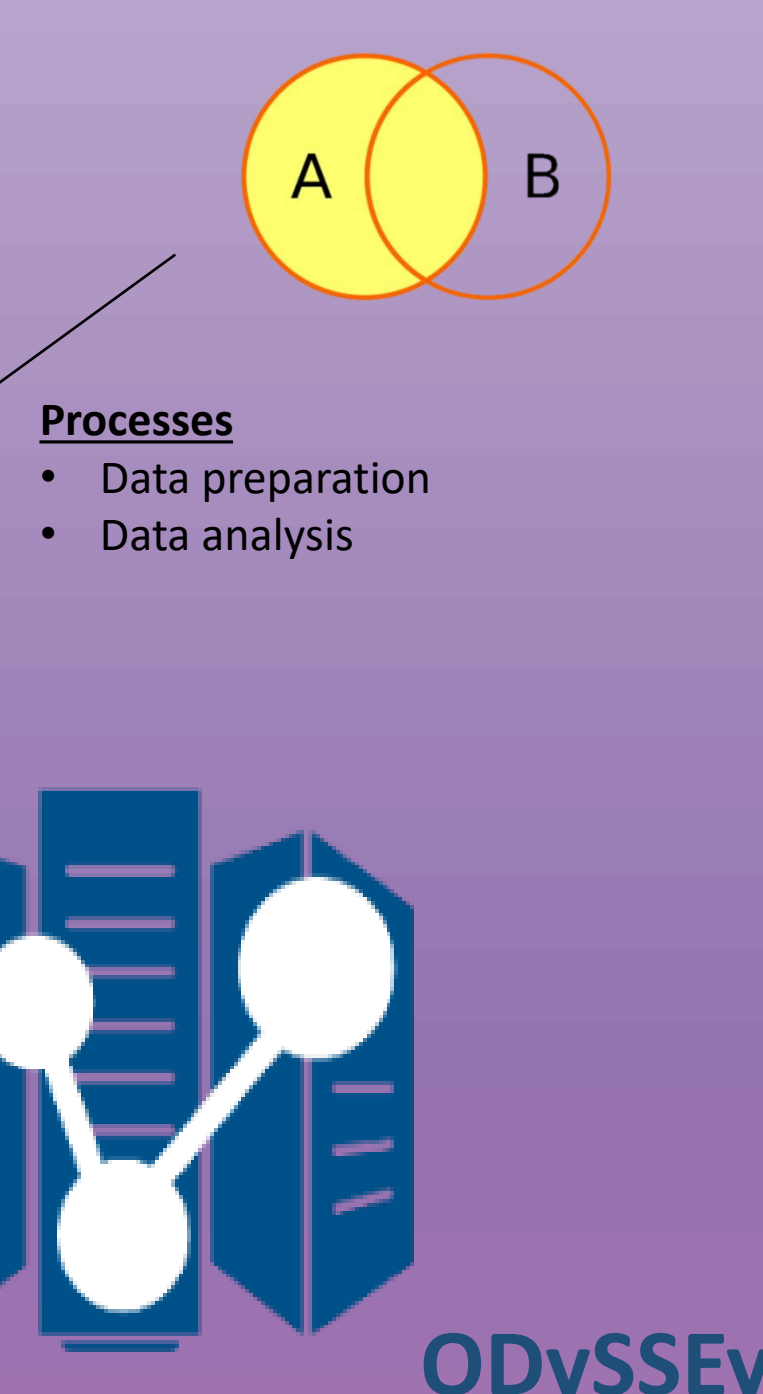# Turning to self-service analytics to empower core breast cancer multi-disciplinary team (MDT) member to make data-informed decisions more efficient

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Clinical Data

Drug Data

Billing Data

OT Data

Visit Data

Breast Cancer Registry

Processes
- Data preparation
- Data analysis

ODySSEy

Background

Breast cancer data is an extremely broad category of clinical measurements and disciplines, self-service analytics has recently emerged as a significant driver of accelerated digital transformation.

People with breast cancer are cared by a team of healthcare professional and each with their own expertise. Joint Breast Cancer Registry is an excellent collaborative effort by specialists from multiple disciplines across all institutions in SingHealth to build a registry of breast cancer patients. Self-service analytics can empower the professionals to streamline operations, improve strategy, and breast cancer patient experience. Today's world, data analytics has been increasingly used in medicine, especially in oncology.

Methodology

At the heart of digital transformation in clinical, scheduling, operations, finance, and other multi-functions is the move from manual spreadsheet-based data processing to structured, robust, and efficient automated processing using self-service analytics tools.

Clinicians who spend their days assembling and enriching information from disparate sources in spreadsheets, performing routine formulaic processing steps, comparisons, and aggregations, now have data analytics tools at their disposal to rapidly automate the least value-added portions of their roles. The well-formed datasets (e.g. JBCR) are stored in the ODySSEy data science platform. The platform can allow MDT to access and use modern business intelligent tools to allow them to explore and visualize the breast cancer patient data. The visualization can make the data in an easy-to-understand way. Besides, the platform has data engineering and anonymization capability to allow different stakeholders collaborate and work together for their data projects.

Result & Discussion

Using few hundred number of patients to summarize the data of disease presentation such as breast cancer surgeries and outcomes, treatment utilization and costs are analyzed and presented in data visualization ways. With the visualization, the MDT can easily understand and use the charts, icon arrays, spider diagrams and survival estimates to get the insights and make better decisions.

The benefits of self-service analytics can be:

1. Standardize the data in centralized data science platform

2. Allow MDT to learn about analytics best practices and data literacy

3. Leverage tools to take data beyond historical analytics

4. Shift the analytics team and MDTs' mind-set

5. Follow data security procedures and policies (or governance).

Outcome

A new data science platform (ODySSEy, On-premise Data Science and System Explorer Platform) allows MDT to analysing data from different perspectives and visualizing it into useful information. It is the process of finding correlations or patterns in large historical datasets from various sources of clinical systems. We are also encouraging other MDTs from various cancer registries in NCCS to use their data for data science research in the platform.

Breast Cancer Dashboard (KPI)

Conclusion

We conclude that the use of well curated data such as from JBCR together with the Singhealth Odyssey platform can retrieve, transform and visualize data in ways that are more intuitive, timely and insightful. Without the need to involve IT or to await the technology investment cycle, self-service analytics solutions can be developed and implemented in only hours or days – directly by those overseeing the process. Such capabilities allow for dramatic acceleration of routine processes and reduce the likelihood that manual processing errors are introduced. Perhaps most importantly, they transform the role of healthcare professionals who can reclaim time to focus on higher-order data analysis, the implementation of improved controls, or on other emerging business priorities.

These benefits taken together amount to a quantum leap forward for organizations intent on truly harnessing data capabilities and optimally deploying human capital. Shortening the distance between masses of data and the drawing of insights may empower MDT to include data drive decision-making more readily. While self-service analytics deployments can improve process control and efficiency in the operation and finance function, they also markedly impact the internal control of breast cancer care environment.

Self-Service Analytic

Breast Surgeon

Radiation Oncologist

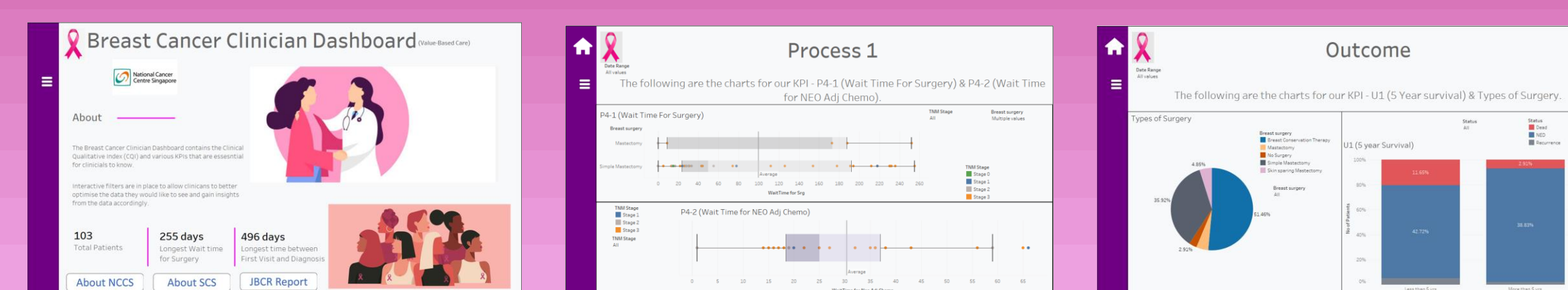Medical Oncologist

Histo-Pathologist

Plastic Surgeon

Breast Care Nurse

In Singapore, the top cancer is breast and colorectal. The National Cancer Centre Singapore shares the top ten cancers that affect local women and men. According to the Singapore Cancer Society, during the period from 2014 to 2018, an average of 41 people are diagnosed with cancer daily, with 15 people dying from it every day. Although 1 in 4 people may develop cancer in their lifetime, the good news is, with early detection and treatment, it is possible to have better clinical and management outcomes.