

BACKGROUND

International Cancer Specialists (ICS) is an outpatient cancer care facility founded in 2008 with the purpose of providing competent and compassionate care.

PROJECT OBJECTIVES

Problem Statement 1:

Analyzing the Feasibility of the Clinic's Pricing Model amidst rising costs for 4 components of interest (Chemotherapy Facility, Nursing Treatment, Consumables and Drug Compounding/Preparation)

Problem Statement 2:

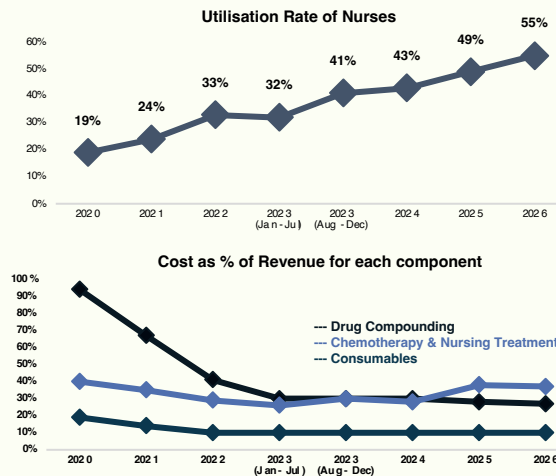
Designing a Compensation Package for Newly Onboarded Oncologists and Determining the Optimal Number of New Doctors and/or Nurses for Onboarding

METHODOLOGY

1) Using historical monthly component usage, we applied **time series models** (Auto ARIMA, Facebook's Prophet, and Generalised Linear Model) to project future usage and ICS's monthly revenue. Model selection was based on minimizing the Root Mean Square Error (RMSE).

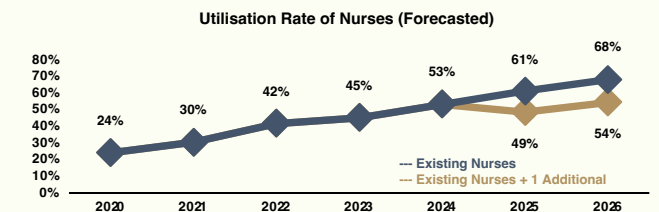
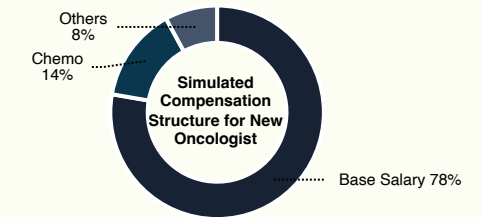
2) We ran a 100-scenario **simulation** to estimate future costs for the components, allocating expenses based on facility space and nurses' utilisation rates, determined through data analysis and research.

3) We analysed **total cost as a percentage of revenue** to assess the pricing model's viability amid rising costs.



1) We ran a 1,000-scenario **simulation** to optimize the oncologist's salary structure and analysed the potential impact on our current doctors' revenue when integrating the new doctor. This was accomplished by leveraging on **Excel's RNG** functions

2) We adjusted the nurse's utilisation rate to include consultation time, using the **Generalised Linear Model** to forecast future utilisation and recommend optimal staffing levels.



RESULTS & DISCUSSION

Problem Statement 1:

Taking into consideration the anticipated surge in patient demand, the clinic's total cost-to-revenue ratio is expected to remain relatively stable at an average of 25% over the next 3 years. This suggests that the clinic's pricing model will continue to be sustainable and affordable even in the face of rising costs.

Problem Statement 2:

Considering the projected nurse utilisation rates, ICS may consider hiring an additional nurse in 2025 to maintain the current average utilisation range of 35% to 55%. In addition, our analysis indicates that the introduction of a new doctor could result in a 5% decrease in revenue for existing doctors.



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