
INTERNSHIP REPORT

Submitted By: Urvashi Lakhani

Internship Organization: PharmaACE Analytics Pvt. Ltd

Location- Pune

Duration- 21st march-19th June

Internship Role- Trainee Analyst

Department- Forecasting



1. Introduction

Introduction to forecasting- Forecasting is the process of predicting future based on historical and present data. Pharmaceutical companies do forecast to get idea about how their product will perform in market. Pharmaceutical forecasting is divided into two parts:

- New-product forecasting- This is done before the launch of product into market
- In-market product forecasting-This is done to identify demand and sales of product that are already in the market.

New-product forecasting- Patient based modelling- Patient based forecasting starts with the number of patients on disease and it is filtered out to arrive at number of patients who are currently receiving the therapy. The patient number receiving therapy is calculated by applying following cuts:

- disease prevalence/incidence
- diagnosis rate to estimate patient who get diagnosed accurately with disease
- treatment rate estimate patients that have access to treatment
- class share to estimate patients who are on therapy of interest
- brand share to estimate patients who are the drug of interest

Types of patient-based forecasting models

- Prevalence based models- These models use total number of disease cases throughout year irrespective of patient history. Thus, this doesn't consider if patient is in second or tenth year of treatment.
- Incidence based models- These models use new disease cases and patient history is critical. Based on patient history they can either be called "naïve" i.e., those who are recently diagnosed with disease or "progressed patients" i.e., those who are in progressed stages of disease.

2. Objective of internship

- To undergo training for PowerPoint, excel and forecasting.
- To understand oncology market including different types of cancers, treatment, and choice of drugs.
- To study brand profile of client.
- To build forecast model from scratch.
- To run different forecasting scenarios based on client requests.

3. Organization profile

PharmaACE Analytics Pvt. Ltd is a US-headquartered life sciences focused company with offices across the globe including Germany, Canada and India. The company provides consulting and data analytics solutions for the efficient commercialization and development of pharmaceutical products/portfolio. The company has been employing professionals from top educational institutions and seasoned individuals with experience in the consulting/analytics domain. Services are designed to provide clients with business critical research and insights that enables them to make informed decisions around clinical development and commercial strategies. It operates at the intersection of science, data, technology, and business strategy. Aims at providing clients with innovative solutions based on deep industry insights, analytical expertise, and an unbiased perspective.

4. Services provided by PharmaACE

Analytics & Consulting Services	Technology Services
Forecasting	Data analytics
Sales analytics	SaaS
Competitive intelligence	Business intelligence

Business analytics	Mobile applications
Primary market research	Custom solutions

5. Key Activities

5.1 Training

Training	Learnings
Basics	In-depth study of Pharma market, Oncology market, chart audit, competitive intelligence, critical thinking, email-etiquettes, soft skills, PowerPoint etc
Epidemiology	Terms like incidence, prevalence, mortality rate, progression rate, hazards ratio, persistent rate, compliance rate, overall survival, progression free survival etc.
Excel	Cell referencing, date functions, name ranges, lookup functions, charts, pivots, and macros.
Forecasting	Patient based and trend-based forecasting
Competitive intelligence	Company profiling, sales force estimation, pipeline overview, threat analysis, attribute analysis, analogue analysis

5.2 Live Project- An outlook on gastric cancer in China and forecasting

Insights

Gastric Cancer (GC) is one of the deadliest and commonly occurring cancers in the world, especially targeting older males. It arises when malignant cells start developing in the inner lining of the stomach. The incidence and the mortality can differ based on the region, diet, lifestyle, etc. There are about 26,380 new cases of stomach cancer every year in the US of which 15,900 and 10,480 cases occur in men and women, respectively. Gastric cancer consists mainly of 4 types namely adenocarcinomas, gastrointestinal stromal tumors (GISTs), neuroendocrine tumors, and lymphoma. There are 7 types of standard treatments that are

available for gastric cancer namely surgery, endoscopic mucosal resection, chemotherapy, radiation therapy, chemoradiation, targeted therapy, and immunotherapy. Gastric cancer is a very aggressive form of cancer which has a very poor prognosis with a 5-year survival rate and being one of the most prevalent malignant types. Biomarkers can be very helpful in identifying whether a biological process is normal or pathogenic, or it can also help in knowing the pharmacological response to a therapeutic intervention, thereby facilitating more and better individualized treatment approaches.

The emergence of Immuno-Oncology (IO) therapies and targeted antibodies to treat the various cancers are novel approaches to treat cancer by utilizing the body's own immune system and IO therapies have shown the potential to be the new promising treatment for cancer. The breakthrough has been through the immune checkpoint inhibitor, especially the blockage of the programmed death-1/programmed cell death receptor ligand 1 (PD-1/PD-L1) and it has become a new therapeutic strategy to deal with gastric cancer. The Progression Free Survival (PFS) and the Objective Response Rate (ORR) of the patients has increased after the selection of suitable biomarkers that are predictive and also developing and incorporation of the combinations of the anti-angiogenic targeting drugs along with the other chemotherapeutic drugs. Previously, when the IO therapy was being used as an individual therapy without any combinations, the results of the single-arm and randomized trials were unsatisfactory.

Key learning

China has one of the most frequently occurring cases for gastric cancer with an estimate of 380,000 new cases per year, which constitutes for more than 40% of the incidence of GC on a global level. The market in China is still developing unlike well developed and documented behemoths like Europe and US, thanks to their electronic medical record systems, excellent insurance schemes, good coverage, and claims data recovery, to name a few factors. The introduction of insurances and the listings in NRDL (National Reimbursement Drug List) show scope for the client's products to reach a wider audience but the presence of local IO competitors like Daboshu have their own difficulties for the multinational and overseas pharmaceutical giants like BMS, AstraZeneca, and Merck and Co., likewise because the local competitor's price their products very competitively which becomes very difficult for the pharma giants. This can be offset by the better efficiency and

safety of the products but that will involve the expenditure on advertising and marketing, not to forget the healthcare professional (HCP) visits to educate the doctors on the product and its benefits.