

CASE STUDY

PATIENT FLOW ANALYSIS FOR A GLOBAL ONCOLOGY LEADER

UNDERSTANDING REAL-TIME MARKET DYNAMICS AND PATIENT FLOWS IN HEMATOLOGIC ONCOLOGY, USING REAL-WORLD (LONGITUDINAL PATIENT-LEVEL) DATA



Patient flow analysis is a 'quality improvement tool' that can help identify inefficiencies at the healthcare facilities

INTRODUCTION

Overcrowding of healthcare facilities and inefficient patient flow affect critical care quality, on-time patient care, and patient satisfaction. In developed countries, the supply and demand gap at the healthcare facilities can often be experienced in emergency care. The difference is amplified in developing countries, where they are burdened by a high volume of patients while coping with limited resources and healthcare professionals (HCPs).



Patient flow analysis is a 'quality improvement tool' that can help identify inefficiencies at the healthcare facilities and help make HCPs informed decisions for intervention to improve patient care.

This illustration shows how Axtria engaged with a global leader in innovative oncology therapies in contextualizing the patient flow by specific objectives, identifying specific leverage points & making the patient journey actionable.



BUSINESS SCENARIO

The company had recently launched innovative therapy, with two indications within the hematologic oncology space.

In both indications, the therapeutic space for relapsed/refractory (r/r) disease was highly dynamic – though hematopoietic stem cell transplants (allogeneic/autologous HCTs) remained the standard of care for r/r disease, multiple innovative therapies. Antibody-drug conjugates (ADCs), bi-specific T-cell engager (BiTE), and cell & gene therapies had also recently entered the market.

OBJECTIVE

To understand the evolving therapeutic space, the client wanted to quantify the patient flows to determine:

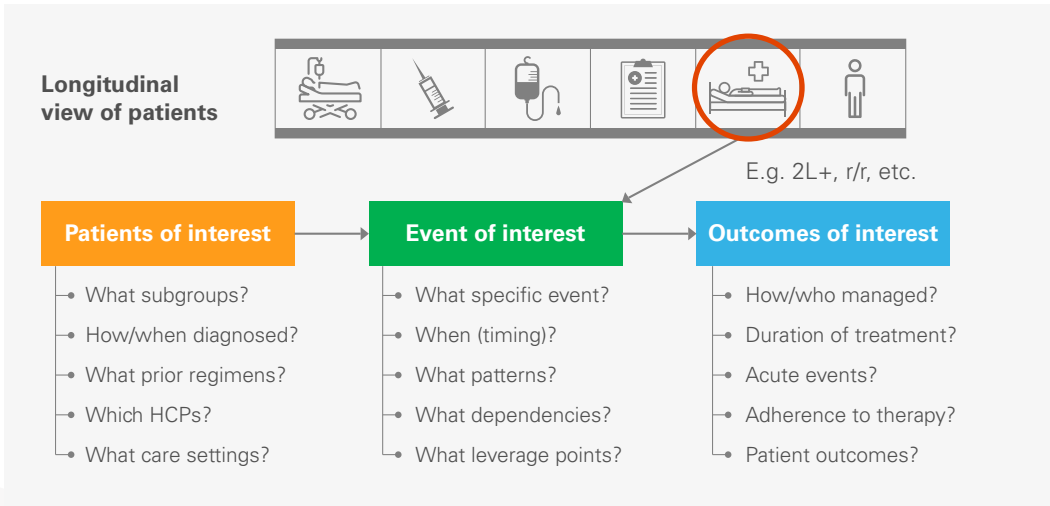


AXTRIA'S APPROACH

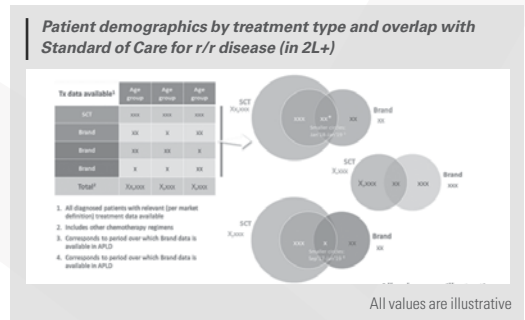
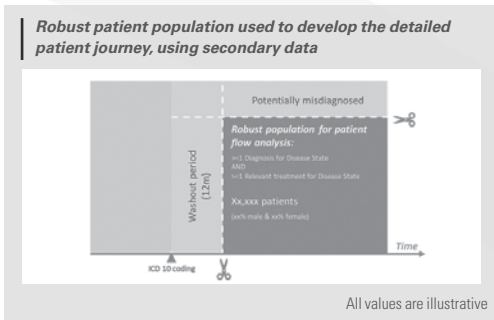
Axtria's approach intended to make the complex patient journeys simpler to comprehend and more actionable for business users.



- Actionable: Designed to address specific business questions and identify 'leverage points' tightly aligned to business context
- Establish a common and replicable underlying approach for patient journey analyses – permitting rapid turnaround across brands, and business questions and potentially cross leverage for different therapy areas – while making the study accessible to business end-users



Longitudinal patient-level data provided the starting point to identify and characterize the robust patient universe for the disease state.



The engagement saw the Atria team working closely with several client stakeholders, across business functions: Brand team, HEOR, Market Access, and Medical (Oncologists).

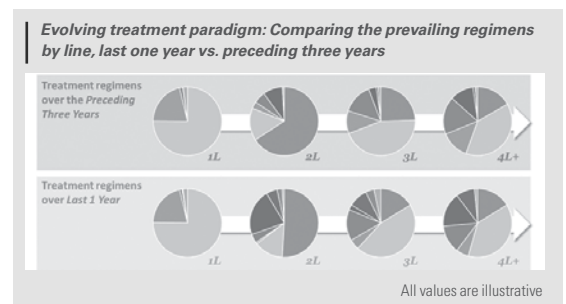
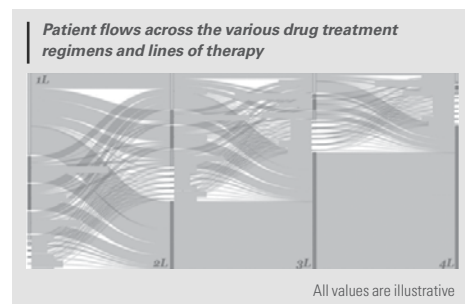
Atria conducted the initial literature review and desk research, including understanding treatment paradigms, lines of therapy, and regimens, and created fundamental business rules for identifying patients. The team also went through access and reimbursement guides for various new therapies to develop detailed criteria (e.g., business rules enough to by themselves to identify specific treatments in claims data; or business rules that must be used in combination).

Starting with a broad set of patients with at least one related diagnosis, Atria applied market definitions co-developed with the brand team and HEOR inputs, as well as a review of literature and primary research in the disease state, to identify patients who met the criteria for robust diagnosis for the condition.



Both disease states being studied had established treatment guidelines with chemotherapy being SOC in 1L. However, treatment for r/r disease was rapidly evolving in each case.

The patient counts from real-world data were compared against SEER prevalence and incidence statistics to establish the data coverage (capture rate) in claims data.



Atria profiled the patient universe to understand demographics (age, gender, geography) and pay type for the patient population. We categorized patients by disease progression, including the use of ICD coding and patient progression through regimens and lines, to identify sequence and timing of events, including when patients met particular criteria, such as disease in remission, and when patients met criteria for relapsed and/or refractory disease.

Atria analyzed patient journeys for both disease states, to form detailed pictures of patient stock, points of entry into a particular line of therapy & regimen combinations in terms of some patients, timing, and patient characteristics/inferences about patient-related and cytogenetic factors (e.g., if Ph+, inferred from TKI use in frontline chemotherapy).

KEY TAKEAWAYS

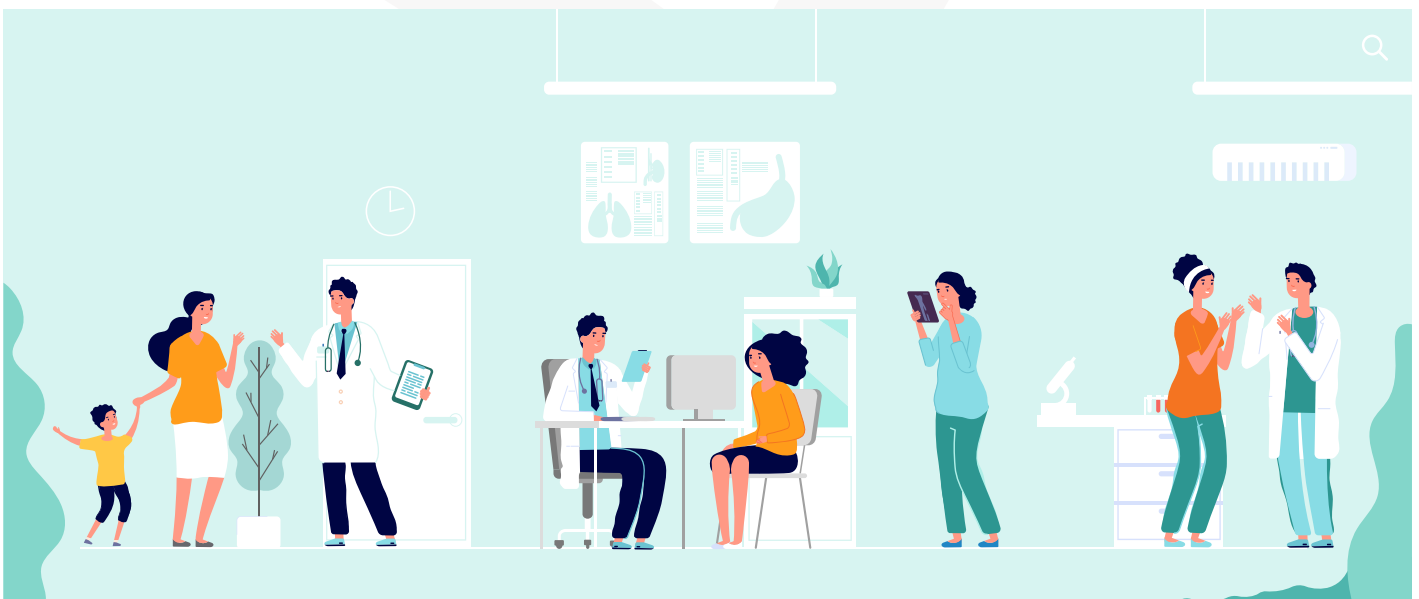
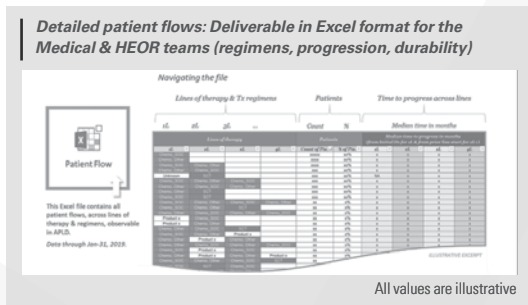
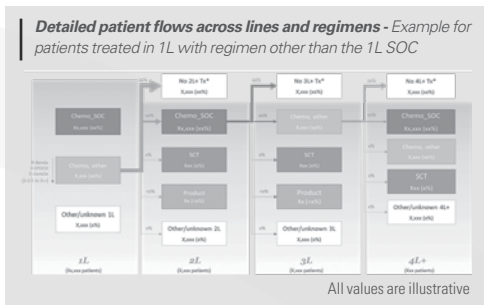
A simple excel-based tool was developed for medical and HEOR teams to directly query the patient flows and understand volumes, timing/progression, and outcomes (remissions, relapses).

Given the focus on later lines of therapy for r/r disease, we deep dived into the movement of patients from 1L chemo treatment to HCT and/or other treatment regimens. They also identified additional factors, such as:

- Patient age impacting the choice of treatment
- Patient outcomes in terms of time to move across line & regimen combinations (1L >> 2L >> 3L, etc.)
- Patient outcomes in terms of % attaining remission, timing/duration, patient meeting criteria for relapsed/refractory disease, etc.
- Particular outcomes of interest (e.g., CNS progression, CRS diagnosis, and treatment, diagnosis for GVHD following allogeneic HCT, etc.)



The tool empowered business users to deep dive into the analysis in granular detail and identify additional insights on their own.





CONCLUSION

Healthcare facilities face the challenge of providing high-quality care while struggling with large patient volumes and process inefficiencies.

Patient flow analysis is a useful technique for identifying inefficiencies in the patient visit and efficiently collecting patient flow data. With this technique's help, the inefficiencies are identified and can be improved through brief interventions. Axtria helped its client contextualize the patient flow by specific objectives, identifying specific leverage points & making the patient journey actionable.

Overall, patient analytics can help key decisions across the organization, both Commercial and Medical, and also help better patient outcomes.

COMMERCIAL

Sales	Better forecasting, targeting and resource allocation decisions
Marketing	Precision in market size and opportunity estimation at an overall and segment level
Market Access	Account for payer and provider decisions and influence

MEDICAL

HEOR	Facilitate cost/benefit tradeoffs and establish outcomes evidence
Clinical Trials	Support trials via data based patient recruitments, site selection, cohort studies
Epidemiology	Detect adverse events and identify drug – drug interactions

Founded in 2010, Axtria is a global provider of cloud software and data analytics to the Life Sciences industry. We help Life Sciences companies transform the product commercialization journey to drive sales growth and improve healthcare outcomes for patients. We continue to leapfrog competition with platforms that deploy Artificial Intelligence and Machine Learning. Our cloud-based platforms - Axtria DataMAX™, Axtria SalesIQ™, Axtria InsightsMAX™ and Axtria MarketingIQ™ - enable customers to efficiently manage data, leverage data science to deliver insights for sales and marketing planning, and manage end-to-end commercial operations. We help customers in the complete journey from Data to Insights to Operations.

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