

# Analytical Roles in the Pharmaceutical Industry

## Introduction

Those working in analytical roles within the pharmaceutical industry will use and analyse data to inform decision-making, improve processes, and develop new medicines and therapies. These roles are critical to the success of pharmaceutical corporations and their variety have increased in recent years. In this document we outline just some of the current types of analytical roles.

## Required Skills and Qualifications

Analytical jobs in the pharmaceutical industry require the unique intersection of technical, analytical, and communication skills. Depending on the role, technical skills include knowledge of statistical analysis, machine learning, software or programming languages, and data management. Analytical skills include the ability to interpret and critique data, identify trends and patterns, and draw meaningful insights. Communication skills are essential for presenting findings to key stakeholders, collaborating with cross-functional teams, and translating technical information for non-technical audiences. Educational requirements vary, but most jobs in this field require at least a Bachelor's degree (though apprenticeship programs exist), and many require a Master's degree or higher.

## Departments in Pharmaceutical Corporations

Pharmaceutical companies are made up of a broad range of functions and departments, each of which contribute to the discovery, development, and commercialisation of new medicines or vaccines. Below is a non-exhaustive list of the variety of functions that exist.

1. **Research and Development (R&D):** Broadly concerns the design and conduct of novel research and experimentation to develop new medicines and therapies.
2. **Manufacturing and Production:** The manufacture of medicines and therapies at scale in compliance with regulations and quality standards.
3. **Quality Assurance (QA):** Ensures compliance with regulations and quality standards in the development and manufacture of medicines.
4. **Commercial Operations:** Markets and sells medicines and therapies.
5. **Supply Chain:** Manages the flow of materials and products from suppliers to customers.
6. **Legal and Compliance:** Ensures compliance with legal and regulatory requirements, and the management of legal risks.
7. **Medical Affairs:** Provides medical and scientific support for commercial, regulatory, and R&D departments.
8. **Finance and Accounting:** Manages, monitors and adjusts financial budgets. Finance departments prospectively plan for the required resource needed to prioritise delivering the portfolio.
9. **Human Resources (HR):** Recruits, manages, and provides support to employees.
10. **Information Technology (IT):** Develops and manages information systems and infrastructure to support business operations.

## General Types of Analytical Jobs across Departments

The following analytical roles are present across the different departments, often with different names. For this reason, we are providing a description, which should help you identify them.

1. Data Analyst
2. Data Scientist
3. Business Intelligence Analyst

Data analysts are responsible for obtaining and processing data, as well as performing formal analyses. They work closely with domain experts to help interpret data and provide critical insight to inform decision-making.

Data scientists are responsible for developing and implementing data-driven solutions to business problems. They use statistical and machine learning techniques to analyse data and provide insights that inform decision-making across various departments.

Business intelligence analysts are responsible for designing and developing business intelligence dashboards and reports. They work closely with stakeholders across different departments to gather requirements, design solutions, and provide insights that inform business strategy.

## Specific Examples of Analytical Jobs in Departments

In addition to the general types of analytical jobs listed above, here is a non-exhaustive list of the specific roles that can be found in specific departments. This should help you in your job search.

- **Research and Development (R&D):**
  - **Biostatistician:** works across the full life cycle of getting a new medicine to market. Provides critical input on the design of studies, the conduct and oversight of current trials, as well as planning and coordinating for the formal statistical analysis of R&D data.
  - **Clinical Data Manager:** responsible for managing clinical trial data, including collecting, cleaning, and ensuring the accuracy and integrity of the data. They oversee the data entry and quality control process, and work closely with researchers, statisticians and programmers to enable data to be delivered for review prior to its release for formal analysis.
  - **Statistical Programmer:** responsible for programming and validating statistical analysis programs for clinical trials. They work closely with biostatisticians and data managers to ensure that the programming is accurate and meets regulatory requirements.
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  - **Real-World Data Analyst:** responsible for analysing observational data to generate insights for medicine development and commercialization. They use various data sources like electronic health records and United States insurance claims to identify trends and patterns, and provide insights that inform decision-making.
  - **Biomarker Analyst:** responsible for analysing data related to biomarkers, which are biological indicators of disease or health. They work closely with researchers and clinicians to interpret data and identify novel biomarkers that can be used in medicine development.

- Medical Data Scientist: responsible for analysing and interpreting clinical and medical data to support medicine development, clinical trial design, and patient safety. They work closely with cross-functional teams to ensure that data is accurate and meets regulatory requirements.
- Bioinformatician: responsible for processing and analysing biological data, such as DNA sequences or protein structures. They work closely with biologists, chemists, and other domain experts to identify patterns that help understand disease and inform medicine discovery and development.
- **Quality Assurance (QA):**
  - Quality Control Analyst: responsible for ensuring that pharmaceutical products meet quality standards and regulatory requirements. They perform quality control tests and inspections, and work closely with manufacturing and production teams to identify and resolve quality issues.
- **Commercial Operations:**
  - Market Research Analyst: responsible for collecting and analysing market data to inform product development and marketing strategies. They use various research methods to gather and interpret data, and provide insights that inform business decisions.
- **Supply Chain:**
  - Supply Chain Analyst: responsible for analysing and optimizing the supply chain processes, including inventory management, logistics, and demand forecasting. They use data to identify areas for improvement and develop strategies to increase efficiency and reduce costs.
- **Information Technology (IT):**
  - Data Engineer: responsible for creating systems that ingest, transform, and curate big data gathered from different sources. They work closely with data analysts and scientists to ensure that data is accurate.
  - Data Platform Engineer: responsible for designing, building, and maintaining data infrastructure and systems. They work with data analysts and scientists to ensure that data are accessible and secure.
- **Legal and Compliance:**
  - Pharmacovigilance Analyst: responsible for monitoring and analysing the safety and efficacy of pharmaceutical products. They use data to identify potential safety concerns and work closely with regulatory agencies to ensure compliance.
  - Infosec Analyst: responsible for ensuring that data is held securely and that privacy regulations, such as GDPR, are followed. They are also responsible for maintaining data quality.
- **Finance and Accounting:**
  - Health Economics Analyst: responsible for analysing the costs and benefits of pharmaceutical products and treatments. They use data to inform pricing strategies, market access, and reimbursement decisions.
  - Portfolio Analyst: responsible for analysing the performance of a portfolio of medicines or therapies, identifying areas for improvement, and making recommendations to senior management.

## Recap

You have joined this event to learn more about analytical roles in the pharmaceutical industry. We hope that this document helps you gain a stronger understanding of data roles in the industry.

Analytical roles are crucial to the success of pharmaceutical companies because they help ensure that newly approved medicines are deemed safe, effective, and meet regulatory requirements. These roles require a combination of technical, analytical, and communication skills, as well as a strong educational background. By understanding the different types of analytical roles in the pharmaceutical industry, you can better position yourself for a successful career in this field.

We wish you luck in your future endeavours and eventual job search!