



Health Informatics and Data Analytics as a Career Choice

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Data analytics and informatics both have become essential for the success and reputation of healthcare organizations and with the current increasing demand for the same by such organisations, a career path seems to be full of success and blooming opportunities. Big data analytics in medicine and healthcare covers integration and analysis of large amount of complex heterogeneous data such as various -omic data (genomics, epigenomics, transcriptomics, proteomics, metabolomics, interactomics, pharmacogenomics, diseasomics), biomedical data and electronic health records data.

KEYWORDS: Data Analytics, Data Mining, Health Informatics, Healthcare Information Systems.

INTRODUCTION

The 21st Century is all about digital economy where data is an untapped valuable asset, almost like oil was in the 18th Century. And just like oil, which when transformed into energy becomes the driving force of many dependent industries, when data is processed and analysed, significantly hikes its value and runs most of the world we live in today. In 2006, Clive Robert Humby, a British mathematician and entrepreneur in the field of data science and customer-centric business strategies gave the popular phrase “data is the new oil”² and years later we see how data has become an integral part of today’s economic models. So, to nobody’s surprise, data processing fields have emerged offering aspiring talents with unprecedented opportunities and job options to satisfy the growing data hunger of government and private corporations.

HEALTH INFORMATICS

Also known as healthcare informatics, biomedical informatics or medical informatics.³ It is considered to be the intersection of computer science, health care and information science.⁴ Healthcare informatics essentially uses technology to organize and analyse health records to improve healthcare outcomes through better collaboration among the healthcare providers to improve the quality and safety of patient care. As a health informatics professional, you are expected to organize the data in today’s evidence-based medicine and you will thus help support patient care, research and bring improvement in quality and legal inquiries.

SIGNIFICANCE IN TODAY’S WORLD

In the era of contactless medical consults due to COVID-19, Health Informatics has become even more

essential in the sharing of patient records to allow healthcare providers to collaborate. Smaller clinics too are now relying on data sharing to improve care and thus as a result, job opportunities are increasing.

WHAT IS THE DEMAND?

Not only are the opportunities for people harbouring degrees in health informatics quite high even today, but are expected to further skyrocket in the years that follow. Hospitals and nursing homes are finding it increasingly difficult to find professionals that can bridge the gap between keeping medical records manually and keeping them electronically. There is also a great demand for health informatics professionals in public health organizations, NGO’s, health insurance companies, Government and they can also be employed as teachers and researchers in various institutions.⁵

WHAT IS THE SCOPE IN INDIA?

Once graduated with a master’s degree in health informatics, the following opportunities are unlocked:

- Academic/Researcher/Consultant
- Medical Director for Informatics
- Clinical Data Manager
- Health Care Webmaster
- Chief Medical Officer
- Pharmacy Systems Analyst
- Medical Director for information System
- Information Security/Risk/Revenue/ Privacy Manager

DATA ANALYTICS

Professionals in data analysis have experienced an exponential increase in demand following the increasing need of data processing and analysis



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throughout government and private corporations during the age of the internet. So, it is no surprise that jobs in this sector are plentiful with salaries being high with many career opportunities.

ROLE IN HEALTH CARE

With increasing number of healthcare facilities generating digital data sets with electronic record keeping, a significant amount of data, so complex, that ancient processing and storage can no longer be used. In patients that require hospitalisation, data analytics can aid clinicians predict infection risks, deterioration and need for readmission. This can further bring down costs and help in an overall positive outcome. COVID-19 has also impacted health care data analytics as more and more facilities have shifted to electronic data collection for keeping patient records.

TYPES OF HEALTH CARE ANALYSIS⁶

- **Descriptive Analytics:** involves use of historical data for comparisons to discover patterns.
- **Predictive Analytics:** involves use of current and historical data to predict the future.
- **Prescriptive Analytics:** similar to predictive analysis but utilises machine learning to predict the future.

SIGNIFICANCE IN TODAY'S WORLD

No matter how much data these facilities generate, it's no good if they don't know what to do with that data. We therefore need a centralised way of processing and analysing it so it can ultimately be used for the greater good.

WHAT IS THE DEMAND?

Health care organisations require the use of prescriptive and predictive analytics to obtain detailed models that can be used for lowering costs and patient risk in addition to reduce failure of medical equipment, management of supply chain costs and even decrease fraud. Therefore, the demand of professionals that have the necessary skill set are increasingly growing in demand. And with the pandemic, the demand for such professionals is expected to skyrocket.

EMPLOYMENT OPTIONS IN HEALTH CARE:

Various health care facilities, organisations, public health and industries that generate data related to health require the help of data analytics. These might include:

- Private and Govt. Hospitals
- Diagnostic Centres
- Health Insurance Companies
- Health Care Consulting Companies
- Health Organisations
- Health IT Vendors

Pay scale:

As a Health Informatics or Data analysis professional, your salary, much like your responsibilities, vary largely on the employing organisation for whom you might choose to work.

REFERENCES:

1. Ristevski B, Chen M. Big Data Analytics in Medicine and Healthcare. J Integr Bioinform. 2018 May 10;15(3):20170030. <https://doi.org/10.1515/jib-2017-0030>.
2. Toonders J. Data Is the New Oil of the Digital Economy (Online Article). Available from: <https://www.wired.com/insights/2014/07/data-new-oil-digital-economy/> [Last Accessed on 21st February, 2022]
3. Michigan Tech. Health Informatics -MS. (Online Article). Available from: <https://www.mtu.edu/health-informatics/what-is/> [Last Accessed on 21st February, 2022]
4. Discover Data Science. Guide to a Career in Health Informatics Overview. (Online Article). Available from: <https://www.discoverdatascience.org/articles/guide-to-a-career-in-health-informatics/> [Last Accessed on 21st February, 2022]
5. Government of India. Health Informatics: Career Prospects. (Online Article). Available from: https://www.nhp.gov.in/health-informatics_pg [Last Accessed on 21st February, 2022]
6. University of Pittsburgh. The Role of Data Analytics in Health Care. (Online Article). Available from: <https://online.shrs.pitt.edu/blog/data-analytics-in-health-care/> [Last Accessed on 22nd February, 2022]

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