

# A Survey of Health Care Support System for Consultation Using Data Mining and Predictive Analytics.

<sup>1</sup>Prof. Sunita Patil, <sup>2</sup>Sanket Jadhavar, <sup>3</sup>Aniruddh Deshmukh, <sup>4</sup>Prabhat Chaudhary, <sup>5</sup>Dipesh Kumar Pathak  
<sup>1</sup>Assistant Professor, <sup>2</sup>Student, <sup>3</sup>Student, <sup>4</sup>Student, <sup>5</sup>Student  
 DY Patil College of Engineering Ambi Pune

**Abstract** - Nowadays health is a major concern for everyone so right consultation is important. There are very fewer solutions for that so new and improved solution should be developed. This system predicts the disease of the user(patient) by the symptoms provided by the user(patient) and also provides prescription verified by the doctor himself. There are systems like these which are previously implemented but most of them just give reference to the doctor's which are related to the particular disease and all of them focus on a major disease like kidney, heart or liver disease. Proposed system overcomes the drawbacks of other existing systems as in, this system provides prescription verified by the doctor and it mostly focuses on a basic disease like dengue, malaria, cold, fever, etc which are mostly not highlighted by other systems. The proposed system is better as in this system has a doctor module which verifies the prescription. This proposed system has three types of symptoms categories which are (basic, normal, critical) which is useful as if the patient is critical, he/she will be directly provided with the calling details of the doctor instead of system prescribing them. The proposed system involves a prediction system where a patient can see various doctors for their health issue. This system will also provide a list of various expert doctors available for a particular medical issue. In the medical sector, decisions usually have very high risk and to avoid that result should be very accurate with verification from doctors.

**keywords** - Data Mining, Machine Learning, Disease Prediction, Health Care, Predictive Algorithm and Technique.

## I. INTRODUCTION

In today's world, everyone knows the importance of health. As we know there are many incidences happens in our life that we need correct consultation at the lowest price but we didn't get that, and there are lots of people out there those are not getting proper medication and hospital services at a time. There are many villages in India they don't have proper hospitals and many people don't have any idea about doctors who are specialized in those diseases. So, this proposed system will provide an accurate and efficient way to get medication and consultation for everyone at the lowest cost as possible. The proposed system will create a chance for small hospitals to get in touch with patients so that every doctor will get a chance to provide the right consultation.

Proposed Health care system will verify the data with doctors and will make sure every patient will get the correct consultation. There are some existing systems which are available nowadays but all of them are not very accurate and not all of them are available for everyone these systems have their restrictions so they cannot reach out to all peoples. so this system is coming with the system which will be available for everyone and anyone can use it. This system will be more secure and more efficient and easier to use.

This system aims to provide services to villages with low cost and connecting people with the right doctors. As per the modern technology, a huge amount of data is available in the medical and health care area. So, utilizing this data and creating new solutions for different problems in this field is important. This proposed system will work on different parameters like prediction, clustering and result verification. The most important thing is generating accurate results and verifying them. So that patients will not get any problem from this system. This proposed system is end-user support and online consultation system that allows patients to get a better solution for their issue.

## II. LITERATURE SURVEY

1. *Title*: Smart Health Prediction System Using Data Mining.[1]
  - *Description*: Connecting database and designing system design. Used to make successful decision by analyzing huge amount of data classification algorithm and feature selection methods are used to predict disease.
  - *Idea of Extraction*: Extraction of user interface and architecture.
2. *Title*: Smart health care system using data mining.[2]
  - *Description*: Making successful decisions that will improve success of healthcare organizations and health of patients. Predict future request, needs, desire which improve condition of patients and make accurate and optimal results.
  - *Idea of Extraction*: Helps predicting the behavior of chronic kidney disease, liver disease and heart disease.

3. *Title:* Study and analysis of data mining of Health Care.[3]
  - *Description:* Processing data to provide better quality information which contribute in order to take decision and finding useful data and hidden pattern.
  - *Idea of Extraction:* Data mining help in exploiting the complexity of data and find results.
4. *Title:* Prediction of human health using Machine Learning and Big Data.[4]
  - *Description:* Processing input and validating data with the help of prediction algorithm. Describes the use of Back propagation algorithm to reduce the error in the proposed system.
  - *Idea of Extraction:* Predicting valid/invalid input and function of system.
5. *Title:* Predictive analytics in Healthcare using Machine Learning Tools and Techniques.[5]
  - *Description:* Using different algorithms representing data diagrammatically for better understanding. Includes study of high-dimensional data. Explains predictive algorithms and use of it.
  - *Idea of Extraction:* Use of Machine Learning algorithms and Prediction algorithms.
6. *Title:* Diabetes Disease prediction using Machine Learning on Big Data of Healthcare.[6]
  - *Description:* Creating test and training databases which will help to provide better output with more accurate results. For classifiers are used based on machine learning algorithm which are Naive Bayes, Support Vector Machine, Random Forest and Simple CART have been used for experimentation on WEKA tool to predict Diabetes disease.
  - *Idea of Extraction:* Using different databases and converting them into test and training dataset.
7. *Title:* Machine Learning Methods for Disease Prediction with claims data.[7]
  - *Description:* Using different methods and algorithms for data representation. A model that entirely disregards the sequential and temporal relationships in the data.
  - *Idea of Extraction:* Data Representation and Data Modeling and Processing.
8. *Title:* A Comprehensive Survey of Graph Embedding: Problems, Techniques and Applications.[8]
  - *Description:* Different methods of analyzing and data modeling. Show the comprehensive view on graph and modeling of data. Includes two taxonomies of graph embedding, categorizing existing work based on problem settings and embedding techniques respectively
  - *Idea of Extraction:* Using different methods for representing data.

#### LITERATURE SURVEY

SRNO	TITLE	YEAR	IDEA OF EXTRACTION	DESCRIPTION
1.	Smart Health Prediction System Using Data Mining	2017	Extraction of User Interface and Architecture.	Connecting database and designing system design.
2.	Smart health care system using data mining.	2018	Helps predicting the behavior of chronic kidney disease, liver disease and heart disease.	Making successful decisions that will improve success of healthcare organizations and health of patients.
3.	Study and analysis of data mining of Health Care.	2016	Data mining help in exploiting the complexity of data and find results.	Processing data to provide better quality information which contribute in order to take decision and finding useful data and hidden pattern.
4.	Prediction of human health using Machine Learning and Big Data.	2018	Predicting valid/invalid input and function of system.	Processing input and validating data with the help of prediction algorithm.
5.	Predictive analytics in Healthcare using Machine Learning Tools and Techniques.	2017-2018	Use of Machine Learning algorithms and Prediction algorithms.	Using different algorithms representing data diagrammatically for better understanding.
6.	Diabetes Disease prediction using Machine Learning on Big Data of Healthcare.	2018	Creating test and training databases which will help to provide better output with more accurate results.	Creating test and training databases which will help to provide better output with more accurate results.

7.	Machine Learning Methods for Disease Prediction with claims data.	2018	Data Representation and Data Modeling and Processing.	Using different methods and algorithms for data representation.
8.	A Comprehensive Survey of Graph Embedding: Problems, Techniques and Applications.	2017-2018	Using different methods for representing data.	Different methods of analyzing and data modeling.

Table No: 1

### III. EXISTING SYSTEM

As we have seen in above literature survey all the systems are using data mining techniques and machine learning algorithms for generating results but both are not used at the same time for results so these systems are not efficient and not providing the accurate results. And the main important thing is there is no option for verification and validation of result with doctors for more accuracy.

Hence these systems are not ready to use for full medication they just allow a user to get information only and what to do next in not provided these are just informative systems. The system which is using data mining just take input data from user and process it and gives output according to that there is no verification of data. All systems are not providing security to the system and no security for the patient's data. There are no such effective algorithms used for security of the system.

### IV. PROBLEM DEFINATION

To build a system which provides end-user support and online and offline consultation using GUI technology. A system that allows users to get guidance on their health issues through an intelligent health care system online using data mining techniques and algorithms used.

### V. PROPOSED SYSTEM

So, we are proposing the system which will provide the medication to all at low cost. Our system will be more secure and more efficient to use. Now in the proposed system, we are overcoming all the drawbacks of the existing system. In the proposed system we are using a prediction algorithm to predict the result. In this system user's data will be more secure no harm to their data. In our system, we will data mining and machine learning algorithms for prediction of result. We will use backpropagation algorithms for reducing the error in the generated result. We will design the system easier to use by the user. To get better experience approach will be fewer steps and more accurate result. In this system, there will be verification of data for multiple times in the system and after the verification of data from the doctor, the result and service will be provided to the user. When a user tries to use the system, the user needs to create an account and then proceed account will help to get proper data.

In the proposed system we are generating the result and the send to the doctor for verification and then further services are provided to the patients. No data will be shared with any other system so that user data will get more secure. So, using this method we will able to produce an accurate result. This system will also provide an option for booking an appointment with the doctor to discuss problem. Hence issue will get diagnosed properly.

This system will be divided into following modules:

1. Admin
2. Patient
3. Medical Store
4. Hospital
5. Doctor

### VI. SYSTEM ARCHITECTURE

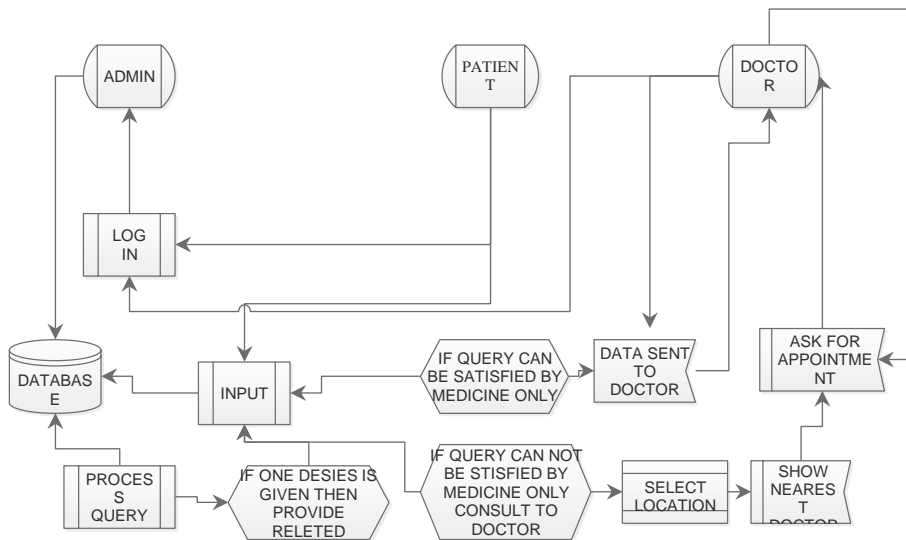


Figure No.1

## VII. ACKNOWLEDGEMENT

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## CONCLUSION

As we have seen in the above paper, we have proposed a system of Health Care Support System Using Data Mining with the help of prediction algorithm and improve performance and increasing the security of the system for preventing patient's data. Using this system, we can provide accurate results. This is an easy way for the doctor's and the patients to communicate with each other.

This system is using different data mining techniques and algorithms which are growing rapidly in today's era. At the end this is a completely a unique approach and will be helpful to the hospitals as well as the patients and we hope this system will be very demandable in the coming future. This proposed system provides an easy and simple way to user and doctors to communicate with each other. The prosed system will be helpful for all patients and all hospitals.

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