

Healthcare Data Analysis App for Helping Patients to Get Proper Treatment at Lower Cost

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Abstract:

This project involves developing a healthcare analysis app that utilizes data science to identify patient medical history, treatment outcomes, and patterns. The app will provide personalized health advice and treatment plans, enabling patients to compare treatment costs and select doctors based on their small bio. Patients can also upload their prescriptions and receive recommendations for apps that offer certified medication at lower prices. The app will also benefit healthcare professionals by reducing treatment costs and time. It will provide proper medical treatment at a reasonable cost, thus reducing fraud cases related to medical reasons.

Many healthcare providers, including hospitals and medical apps, use Healthcare Analysis for medical tests, purchasing medicine, doctor consultations, and health supplement advice.

1.0 Problem Statement:

The problem statement is to analyze the medical conditions of patients based on their symptoms and medical history using healthcare analysis. In our country, a large population of patients faces difficulty in finding the right place for their treatment, and many doctors prescribe expensive medications that patients have to buy, impacting their financial condition. Additionally, patients are often targeted by fraudsters who offer quick access to doctors from big hospitals. To address these issues, I am working on a service that will assist patients in finding the appropriate place for treatment, purchasing medications with the same composition but at a lower price, and scheduling appointments with doctors at hospitals to prevent them from falling victim to fraud. This service will help patients reduce their medical expenses.

2.0 Market/Customer/Business Need Assessment:

As we are aware, medical facilities in small towns and villages are often inadequate to provide proper medical treatment for various diseases and trauma conditions. Patients are forced to travel to bigger cities, where they may not know which hospital to go to. Private

hospitals in these cities can be very expensive and often prescribe unnecessary tests and high-cost medication. This can be especially difficult for patients from weaker sections of society, who may have to liquidate their assets to pay for treatment. This system/app can help patients find hospitals that offer similar facilities at lower costs, such as large government hospitals. Additionally, patients can opt for generic medicines with the same composition as high-cost medicines, but at a lower cost.

3.0 Target Specification:

This service or app aims to assist patients in finding the appropriate medical facilities according to their financial capacity. The government provides several medical treatment schemes for the weaker sections of society, and this app aims to inform patients of such schemes to help them with their treatment expenses. The app also helps them find competent doctors who specialize in the treatment of their specific disease. This will ensure that their treatment starts perfectly with the best facilities available at a lower cost. This will not only save many lives but also bring a small smile to the faces of those who can now afford the correct treatment at a lower cost.

4.0 External Search:

I used the following sources as references for analyzing the need for a service or app that provides patients with proper treatment and medicine at a lower cost, as well as how big medical services such as Tata1mg and Apollo use techniques to attract patients and enhance medical facilities:

- Health Care Analysis Article
- Patient Optimization Techniques
- How Medical Services/Apps Use These Techniques
- Resource Allocation and Operational Efficiency
- Drug Discovery and Development
- Remote Patient Monitoring.
- AI healthcare breakthroughs

5.0 Benchmarking Alternate Product:

Healthcare services giants like Apollo and Tata1mg utilize blend technology to provide accessible medical information, prescription services, and personalized recommendations, thereby enhancing the overall patient experience.

6.0 Applicable Patents:

- **AI-driven Health Assistant-**
Various companies offer personalized medical advice using AI technology. Some of these companies include Your.MD, Suki.AI, Babylon Health, CureMe, Oscar Health, and Welltok. These companies develop their versions of AI-powered EHR systems that can analyze patient data for better decision-making, improved healthcare delivery, and treatment recommendations. The EHR systems are offered by healthcare giants such as GE Healthcare, Oracle, Cerner, Allscripts, and Epic.
- **AI-based system that can personalize treatment plans for patients**
- **AI system that detects Alzheimer's disease from brain scans.**
- **AI-based system that can detect and prevent healthcare fraud**
- **AI-based system that can personalize cancer treatment plans for patients.**

7.0 Applicable Regulations:

- **Data protection and privacy regulations (Patients)**
- **Govt Regulations for Healthcare Services**
- **Drug Control Act**

8.0 Applicable Constraints:

- **Taking Medical Data from Patients**
- **Always Updating Data**
- **Convincing Patients to use Service**
- **Awareness of the disease symptoms**
- **Convincing the Patients and Small healthcare units to use the Service:**
Small healthcare units are usually the first point of contact for patients seeking treatment for their illnesses. However, some healthcare units may not be equipped to provide the necessary treatment. In such cases, these healthcare units can refer patients to other facilities that can provide the correct treatment at a lower cost. This referral service helps patients receive the right treatment while also reducing their medical expenses and Advertising these Services in the local language Outside the healthcare unit so that Patients can also use them.

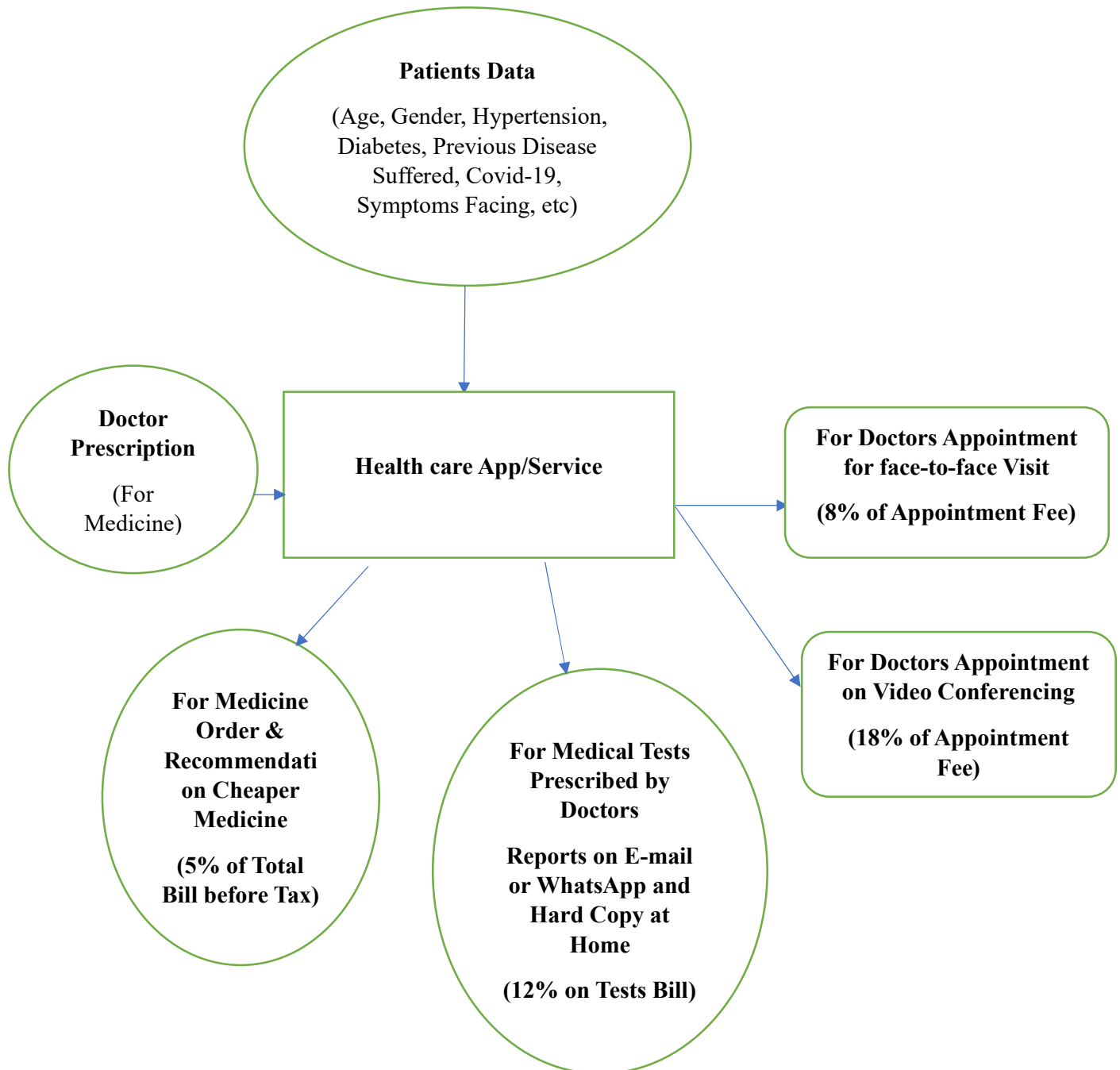
9.0 Business Model:

This service has been successful in small towns and villages. It allows people living in rural areas to book appointments with doctors in big cities through video conferencing. Patients can pay the appointment fees using UPI or Aadhaar card payment scheme available at local Pragma Kendra in every village and town. They can also purchase medicines, including those that are rarely available in their locality, at cheaper prices from the wholesaler who takes 20-25% less than MRP. We charge a 15% fee for every doctor's

appointment and a 5-8% fee for medicine orders. Additionally, we offer a 15-18% discount on the final bill. This service saves people time and inconvenience they would have faced traveling to big cities and searching for doctors. It will bring a healthcare revolution to villages and small towns.

10.0 Final Product Prototype:

This final product service allows patients to receive treatment at their fingertips at a lower cost, saving them time and inconvenience.



The above schematic diagram shows that we provide doctor appointment services by visiting hospitals and clinics. This helps reduce waiting times for patients and connects them with competent doctors for their health issue without manual searching. We charge only 8% of the appointment fee for this service.

Secondly, patients can resolve their health issues through video conferencing from their homes, without going to a hospital or clinic in their town or from any big city in India. We charge only 18% of the appointment fee for this service.

If a patient has visited a doctor in another city and cannot find the prescribed medicine in their locality, they can order these medicines at discounted prices on our app. We also recommend cheaper medicines of the same composition, which decreases their expenses on medicine. We charge only 5% of the total bill amount for this service.

We also provide medical tests like blood tests to be done through home sample collection. For tests like X-ray, MRI, and others that require a diagnostic center, we book appointments and give users the option to select convenient times. Reports for both blood tests and other tests are delivered in hard copy at the patient's home and soft copy on the given email or WhatsApp number. We charge only 12% of the total test bill amount for this service.

11.0 Conclusion:

the healthcare analysis app/service for patients represents a transformative tool in the modern healthcare landscape, offering personalized support, data-driven insights, and enhanced connectivity to empower individuals in their pursuit of optimal health and wellness. Through continuous innovation and user-centric design, this platform holds the promise of revolutionizing the way individuals engage with and manage their healthcare, ultimately leading to better health outcomes and improved quality of life.