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# A REVIEW ON "INTELLIGENT MEDICAL PRESCRIPTION TECHNIQUE USING DATA MINING"

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**Abstract:** Today there are number of cloud based application that maintains data regarding patients' personal health records, the application such as E-Health Care Systems, Digital or Electronic Health Records and E-Patients Personal Health Records which stores patient's data regarding health and diseases. We propose an "Intelligent medical prescription technique using data mining" system which maintains data regarding patient's history with their prescriptions and bills of the medicines. The patients and doctors communicate with each other regarding treatment updates and problems. The medicines searching facility regarding availability and price details are provided to users of system. The KMP (Knuth–Morris–Pratt) string search algorithm is used for searching medicines. A facility of an advertisement about newly introduced medicines is provided.

**Keywords:** Sequential Pattern mining, Medicines Searching, String Mining, KMP Search.

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## INTRODUCTION

Modern computer systems, in combination with communication systems, offer a variability of new services, in business as well in private households and environment. The Health Care sector, as a combination of private and public sector, also experienced various changes with the introduction of information systems. In 1999, the term eHealth showed up in academic literature, and has been introduced for a variety of related services. Eysenbach defines eHealth as “an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies”.

A more specific definition for eHealth mentions the usage of information and communication technology (ICT) by the health care stakeholders. We will follow this definition and extend it slightly:

- On the patient’s side: seeking health related information online, the usage of self-management tools or the request of second opinions from health care professionals,
- For primary care: ICT for patient management, medical records and electronic prescription
- In home care: medical services delivered electronically by medical professionals to the patient’s home. This includes automatic data transfer of patient data from electronic medical devices for personal usage or support of continuous long term treatments, e.g. coronary heart diseases or diabetes by electronic supervision of current conditions
- In hospitals: ICT for scheduling logistics, patient administration, inner-organizational information exchange of clinical and administrative data (including laboratory, pharmacy, nursing) and telemedicine
- For insurers and governmental organizations: ICT for invoicing between the participants and collecting statistical data.

## I. LITERATURE REVIEW & RELATED WORK

In the past few decades as the technology and organization of medical practice have become increasingly specialized, complex, and expensive. Most doctors are now specialists, and the practice of medicine, even by non-specialists, commonly involves tests, procedures and many technical personnel. Thus weakening the personal bond between doctor and patient. In an era of specialists and high technology, the doctor-patient relationship tends to become perfunctory

and transient. Patients now see multiple specialists or organized groups of physicians rather than one primary care given. This encourages physicians to take a more businesslike and technically oriented approach to their duties. The diagnostic and therapeutic technology now available has vastly expanded the economic dimensions of medicine. Physicians now have many choices to make and many opportunities to generate income through the use of new technology in the office and hospital. In addition, medical indications for the use of much of the new technology are not precisely defined and that makes choices about its use more problematic and susceptible to influence by economic factors [6].

## II. PROPOSED WORK & OBJECTIVE

We propose a system to provide easiness, to less interactions of patient with doctor and pharmacist and easy search medicine facility to doctor. In the proposed system, patients and doctors communicate with each other regarding treatment updates and problems. The proposed system maintains data regarding patients with their prescriptions and bills of the medicines. Also concept of data mining is used when doctor searches for any medicines, as keyword enters in application provides better results on the basis of previously prescribed medicines to particular patient or mostly prescribed medicines by doctor. The copy of doctor's prescription sent to patient account as well as to tie-up pharmacist on cloud. Patients can ask queries about their diseases and medicines without meeting doctor anytime from anywhere. The proposed system establishes communication between doctors and pharmacists so as to give effective medicines to patients.

This system performs other functions are as follows-

- An application maintains data regarding patients, their prescriptions and bills of the medicines.
- Provides best results when searched for medicines in the application.
- Establishes communication at anytime from anywhere between doctors and pharmacists so as to give accurate medicines to patients.
- Advertisements about newly developed medicines by companies.

## III. SEQUENTIAL PATTERN MINING

It is a topic of data mining concerned with finding statistically relevant patterns between data examples where the values are delivered in a sequence. It is usually presumed that the values

are discrete, and thus time series mining is closely related, but usually considered a different activity. Sequential pattern mining is a special case of structured data mining. There are several key traditional computational problems addressed within this field. These include building efficient databases and indexes for sequence information, extracting the frequently occurring patterns, comparing sequences for similarity, and recovering missing sequence members. In general, sequence mining problems can be classified as ***string mining*** which is typically based on string processing algorithms and itemset mining which is typically based on association rule learning. The Knuth–Morris–Pratt string searching algorithm (or KMP algorithm) searches for occurrences of a "word" W within a main "text string" S by employing the observation that when a mismatch occurs, the word itself embodies sufficient information to determine where the next match could begin, thus bypassing re-examination of previously matched characters.

## IV. BENEFITS

Collecting patients' data in a central location as the e-Health Cloud results in many benefits:

### i. Better Patient Care

The ability to offer a unified patient medical record containing patient data from all patient encounters across all operators. These records will be available anywhere and anytime allowing healthcare providers to have a comprehensive view of the patient's history and provide the most suitable treatments accordingly.

### ii. Better Quality

The health care operators by having their clinical data stored in the cloud will facilitate supplying concerned entities such as the Ministry of Health or the World Health Organization with information on patient safety and the quality of care provided. The information will be attained by one of two methods; (1) aggregating existing data to arrive at the indicators requested and/or (2) providing on-line ability for health care operators to enter/access data directly. Health care data stored on the Cloud can be aggregated and reported along the lines of generally accepted health care quality indicators such as ones published by the Agency for Healthcare Research and Quality.

### iii. Support Research

This application can offer an integrated platform to host a huge information repository about millions of patients' cases which can be uniformly and globally accessed. This integrated

platform can be easily utilized to develop data mining models to discover new medical facts and to conduct medical research to enhance medications, treatments and healthcare services.

**iv. Support Financial Operations**

The ability to streamline financial operations as the Cloud can act as a broker between healthcare providers and healthcare payers. The billing, settlements, and approval processes can be automated and integrated among both parties.

**v. Facilitate Clinical Trials**

The data stored allow the Cloud owner to partner with pharmaceutical companies and medical research institutions for clinical trials for new medicines. As data is collected in an integrated fashion, it is easy to detect the availability of special patients' cases and provide appropriate pools of trial cases.

**vi. Facilitate Forming Registries**

The data shared will allow for the formation of specialized registries targeted for specific types of patients such as cancer and diabetes registries.

## V. CONCLUSION

In this paper, we studied "Intelligent Medical Prescription Technique using Data Mining" system which may provides easiness to doctor, patient and pharmacist communications. Patient and doctor communicate with each other regarding treatment updates, problems face after treatment and also ask queries. A facility of an advertisement about newly introduced medicines is provided which eliminates need of medical representative. This "Intelligent Medical Prescription Technique using Data Mining" system can somewhere acts like a E-Health Care System.

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