APPROACH OF DIGITALIZING PRESCRIPTION FOR DRUG CONTROL AND MONITORING THE REGULATORY AFFAIRS OF DRUG'S BUYING CAPABILITY AMONG THE PEOPLE

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Abstract: **The fundamental Approach on the "Digitalization of Prescription" is to enrich the capability of the Individual Prescription role and its value of correspondence, and responsibilities among the public by** *Systemised Approach on Regulating Prescription and Randomized Interface Youngish Application.* **Is a techno-based module of customizing the prescription in a randomized digital version with a Unique Identifying Number (UIN) and validating the prescription in every Drug Store, The outcome of the software is discussed in the paper below.**

Keywords: **Digitalizing Prescription, UIN (Unique Identifying Number), Artificial Intelligence (AI).**

1. INTRODUCTION

"Digitalizing Prescription" is the concept of Unleashing the practicing of buying Drug's from the Medical Store according to the Prescription and the Pros &Cons of the prescription handling in society and ill effect of unaccountable prescription practicing. Discussing the Fundamentals of Digitalizing the prescription to avoid the unnecessary drug is available for Registered Doctors and Pharmacists on verifying and controlling the Drug Distribution to the patient on Recommended level by authorizing the prescription by the UIN (Unique Identifying Number) Generated by the Application on Randomized Manner. By using the Randomized number able to Monitor the prescription and to control the level of Narcotics and Non-OTC (Over the Counter) drug's supply chain management, The motive of the Research is to Characterizing the Prescription and discussing the outcome of Research into a detailed conversation, and the Solution to the Problems faced by Drug's Distribution among the society and the Unaccountable Prescription, Which on changing the unaccountable to the accountability.

2. PRESCRIPTION

Prescription is one of the most important therapeutic between physician and patient. The word prescription derives from 'pre' (before) and 'script' (writing, written), which denotes that it is an order that must be written down before or for the preparation and administration of a drug. Commonly the term prescription is used to mean an order to take certain medications[1]. A prescription (R) is defined as a health-care program implemented by a physician in the form of instruction that governs the plan of care for an individual patient. The fact that a prescription instructs someone to 'take' rather than 'give', makes it clear that it is directed at the patient, and is not directly at the patent, and is not directly an instruction to anyone else. Prescription writing is a crucial task and suggested prescriber's responsibility towards clinical care and the safe monitoring of the patient thus also carries legal implications. It is a written order of a medication to be used for diagnosis, prevention, and treatment of a specific patient directed by a physician.

The art of prescription writing is ancient in origin and had complex prescriptions which were in Latin, recently it is being replaced by English and the contemporary practices are more simplified and systematic. The prescription symbol currently in use is an ancient symbol which was established centuries ago. It signifies the specific Latin verb recipe of the medication and the direction for taking it, Many historic stories are associated with a prescription symbol which notes it's a similarity to the Eye of Horus or the symbol of Zeus or for Jupiter and to various Gods.

A. Who can write prescriptions?

The prescriber is not always a doctor or the dispenser is not always a pharmacist. National or local (i.e. state or provincial) legislation governs who can write a prescription. Only a registered medical practitioner who has registered with the respective State Council is authorized to prescribe allopathic drugs that include an allopathic doctor, a dentist, and a veterinarian. Some states stipulate that only a dentist can prescribe those classes of drugs directly involved in dental treatment. A nurse, pharmacist, unqualified persons or persons with dubious and unauthorized degrees, not recognized by the government as quacks are not authorized to recommend allopathic prescription medicines. In some countries, the clinical pharmacists, nurse practitioners, medical psychologists and physician assistants who have undergone specialized training in scriptwriting to prescribe drugs to treat emotional and mental disorders can prescribe medications. Doctors with full registration who hold a license to practice may prescribe all medicines, but not those drugs in Schedule 1 which includes drugs with high abuse potential and may lead to severe dependence such as heroin, marijuana, LSD, mescaline, methaqualone, peyote and psilocybin.

3.   FORMAT OF PRESCRIPTION WRITING:

The document on which prescriptions are written is called prescription order or prescription pad or prescription blank. Prescription order is a legal document. It should be clear, concise, accurate and legible. It should include complete information and be written in indelible ink pen especially while prescribing for Schedule II controlled substances that although has accepted medical use show high abuse potential. It includes drugs like amphetamine, cocaine, codeine, meperidine, methadone, methylphenidate, morphine, oxycodone, pentobarbital and secobarbital. At some of the places, prescriptions are regulated by state and federal laws and must be properly written with specific information included to avoid the errors and to prevent misuse of prescription information. Prescriptions are made for `prescription drugs, there are three categories of drugs as follows,

- **Over-the-Counter (OTC) Drugs**: can be dispensed to a patient without a prescription.

- **Prescription medications or Legend Drugs**: may not be dispensed by a pharmacist without a prescription from a physician. Labels on these medications carry the legend, "Caution! Federal law prohibits dispensing without a prescription."

- **Controlled Drugs**: Along with prescription, these drugs require additional safeguards for storage. Both State and Federal government agencies generate regulations regarding these drugs.

A. Requirements of the Prescription:

The Prescription should talk adequately to patients and communicate clearly with the pharmacist. Every state has it's requirements for prescription but most follow a similar format. In which beyond that the inappropriate or inadequate knowledge on the prescription following lead to inappropriate and inadequate medicines supply to the patient who is in need.

4.   E-PRESCRIPTION (DIGITALIZING PRESCRIPTION)

The digitalizing prescription, is the concept of thing's that in order to minimize the error and "Create social awareness among the people", regarding the individual prescription data saving and exchanging mechanism of content in the paper to the digitalized format for validating the contents of medicines in the prescription while the pharmacist needs to deliver, and the physicians writing the prescription is also unnoticed and the rational distribution of the medicines to the patient on the required medicine distribution is also dependent on the consoled thing.

The primary motive behind the portfolio of the research is to create a randomized account of the prescription in an accountable manner to create an interconnected database and an interface, which works as End to end encryption (E2EE)[2] (Fig.1.1) protected specifically for the people of Medical profession and the regulatory affairs department such as (Ministry of Health & Family Welfare, Central Drug Standard Control Organisation (CDSCO)[3], State Drug Control Authorities).
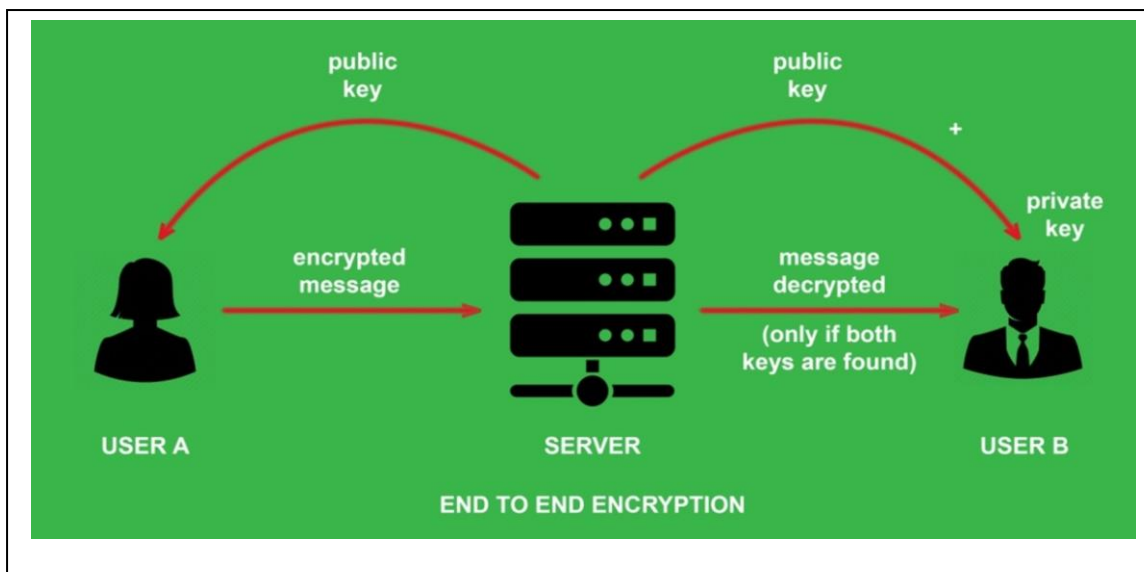
Fig. 1

The Interface should be End-end encrypted for the safeguard of the applications in the content under the data which have been stored in the UIN (Unique Identifying Number). The UIN (Unique Identifying Number) is a Novel Number Generating applicator software in which named as a (*Systemised Approach on Regulating Prescription and Randomized Interface Youngish Application*).

5. (SYSTEMISED APPROACH ON REGULATING PRESCRIPTION AND RANDOMIZED INTERFACE YOUNGISH APPLICATION).

As by the technical concept of making the paper to a digitalized format revolution occurs by the states of incorporating the technology into the day to day activities of medicine, in which the fundamental condition that enables with the latest technology and the revolution of Artificial Intelligence (AI) and Machine Learning with the help of the Neural Networks. The revolution of AI had changed day to day activities of the people life, by better supportive tool such as the "Google My Activity control" is Assisted by "Google Assistant" a chief incorporated techno assisted application to help people on the fundamental of linking the maps and the experience of using the content of things have been changing even better day today. And it's now changed as a "part and parcel of everyday activity", Systemised Approach on Regulating Prescription and Randomized Interface Youngish Application (Fig.1.4).

"similia - similimum - quantum"

Cancer as like the tumor's multiplication[4], the gadgets on regular revolution is familiar and needed for the development of the society, and also for the cheaper and efficient access of services to the people who are eagerly involved in making the Society even better than earlier.

A. Why the Software & Scheme Needed?

Beyond the verification of the matter's, Let's discuss some important facts and pro's of the medical profession here, the physician is the person's who are regularly involved in making the life more precious and even they sacrifice their personal needs on service to the society. A study by Harvard University last year showed that nearly 50, 00,000 deaths occur in India annually due to medical error[5], Due to the insufficiency of ACCC (Acute Critical Care Course) in the country unnoticeable abnormality among the patient's is not governable by the Doctor's & Nurses and Pharmacists, by regular randomizing the prescription of the patient will make us to evolve and coordinate us to work effectively. Which provoke a better prospect of patient monitoring.

B. How does it Work?

The systematic language here is somewhat complicated and effective by involving the latest 5D E-Prescription technology is already used by leading medical giants. But now making with that technology is more wise by using the "Image

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scanning and processing Technology" (Fig.1.6) capture the prescription with the Mobile camera and with the "Machine Learning Technology" we can convert the complicated handwriting of the different prescription in to a typed computer format easily approachable version by "Neural Networks Technology".

In the application of Neural Networks, the connecting of the different styled hand writing to a same pattern word's is desirable and quick, so the handwriting is not a matter here the Neural Networks (Fg.1.2) will systemized and change it into a computerized reading version. In which the Heartbeat of the scheme is "UIN" number (UIN- Unique Identifying Number) which is generated by the application during personally enrolled by the medical practitioner while prescribing for the patient. That once the Physician login with the credentials of is Government approved Registered ID, the open forum for the patient's credential available and by providing the name of the patient, the enrolment space for data of medication need to be provided by the doctor may available, During this once the doctor takes a picture of the specific prescription regarding to the patient's credentials. The picture is the main database of medication list provided by the physician. By the mechanism of neural networks, the image will be processed on micrometer range and already the network is build with sophisticated language network, which converts the writing script to a digital manner in a digital Txt version. Attached with the UIN Number, Hereafter once the physician completes the process the prescription s secured with end to end encryption, then the Role of the Pharmacist starts.

Once the Patient approaches a pharmacy the pharmacist as a Medical Practioner, Pharmacist login to the credentials list of patient's medication, by providing the UIN number of the prescription and delivers the prescribed medication to the patient, Here the process is more complicated in which the billing done on the respected medicines of the prescription is also attached with the UIN number of the prescription. The crucial step of prescribing that the content of medication once delivered for the period will not be delivered again by any medical store and the person may able to get the medication after the suitable physician-prescribed period. The medicines manufactured company list also attached to the prescription UIN number (Fig.1.3). In which the manufacturing list attached will be helpful for the regulatory affairs department, it may maintain the narcotics supply to the patient and also checks and maintains the stock available and unnecessary supply chain at the specific zone, by digitalizing the content of uniformity will be maintained in the medical field and more deliberated interface for the doctor's pharmacist's and also mainly for the regulatory government officials, it's the better indication system for them to identify the unnecessary medicine outflow in the field can be verified and visualized and inspected directly to the respected place as indicated by the software.
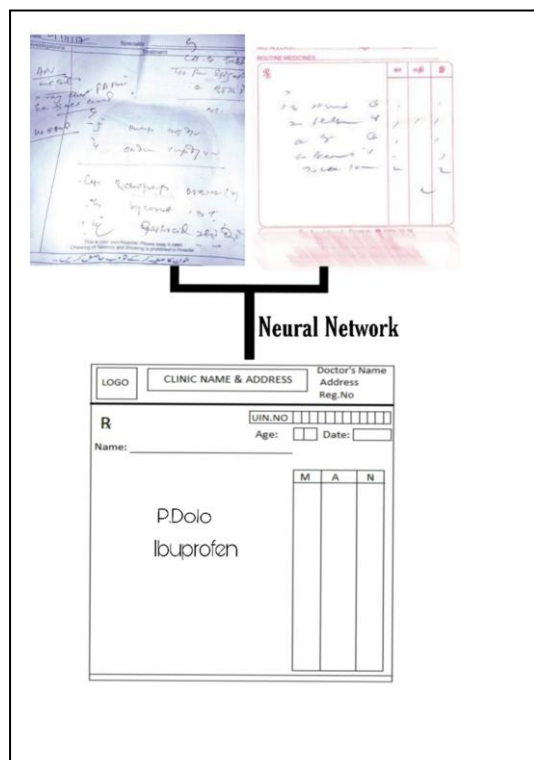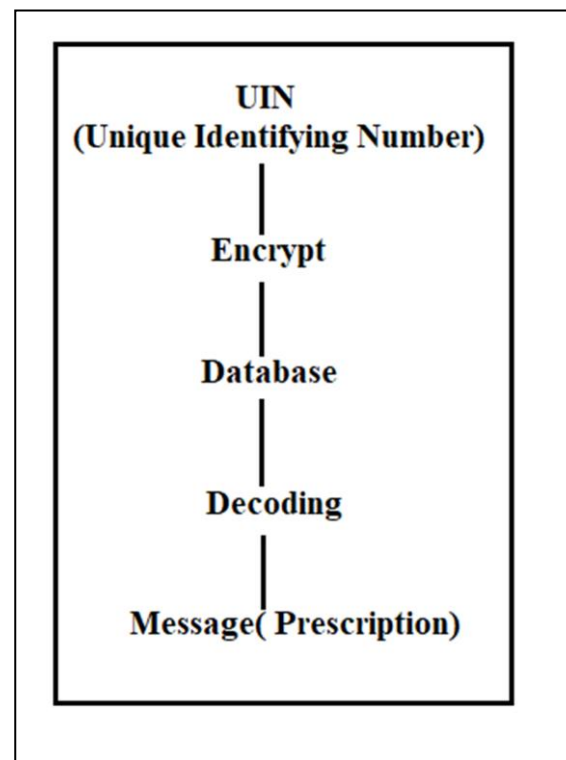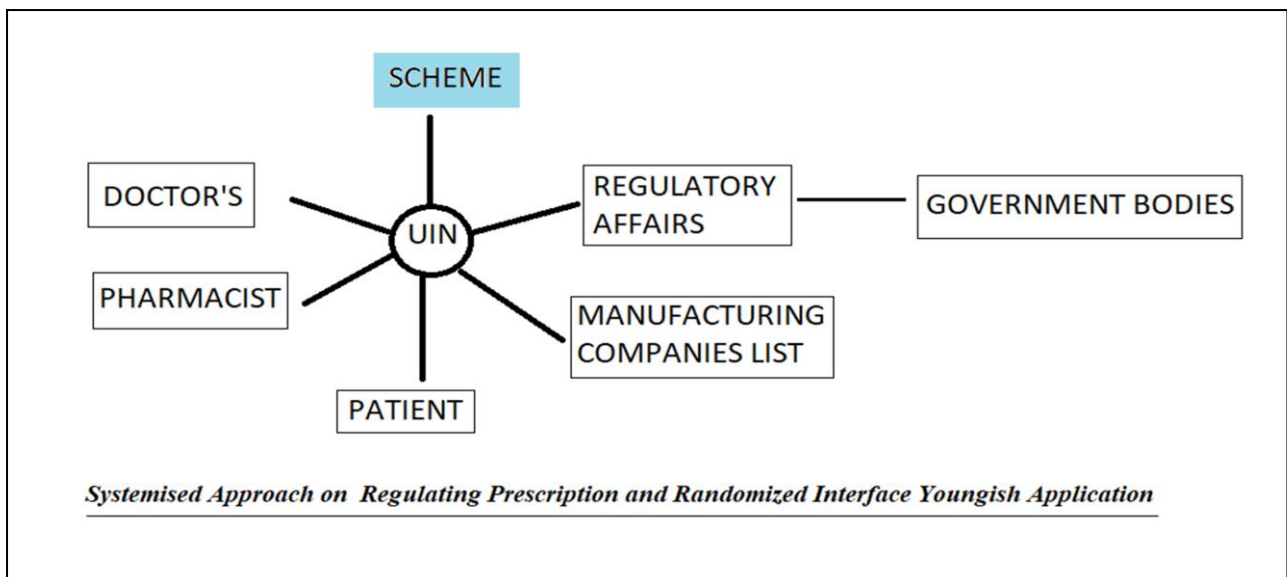

Fig. 2

Fig. 3

Systemised Approach on Regulating Prescription and Randomized Interface Youngish Application

Fig. 4

Fig. 5

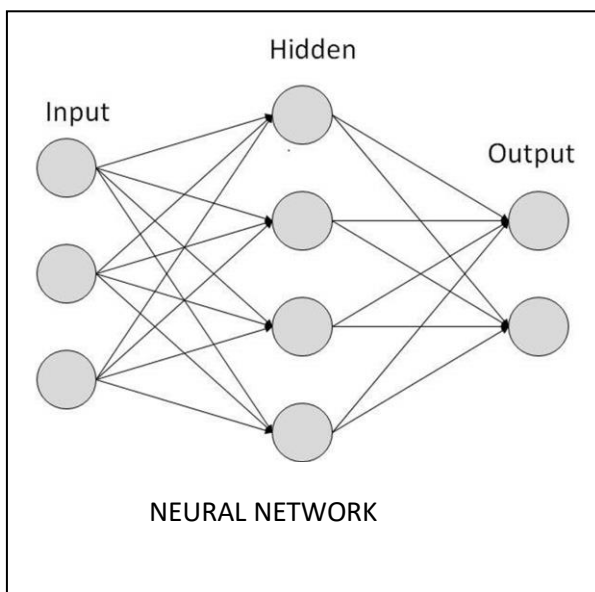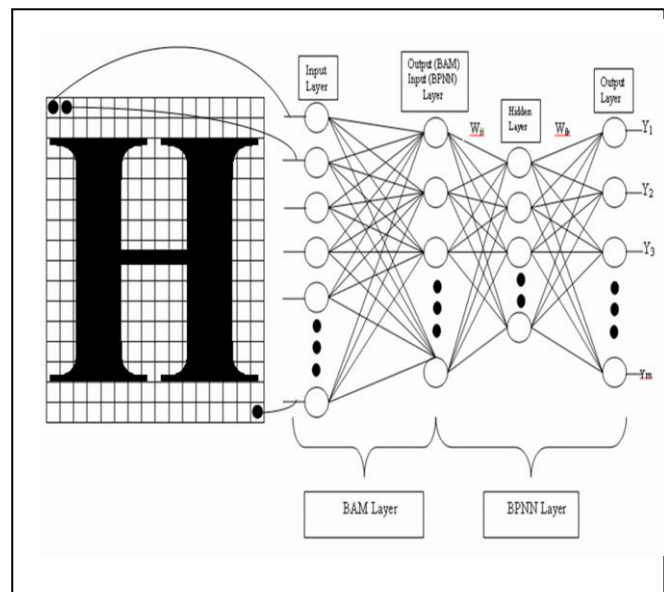**Fig. 6**

The Image Processing of the written Prescription is usually approached by graph reading series such as Range of Prepositions, Probability assigned to each of the preposition. Fine set X = {X1, X2,………Xn) by the application of designing a Bayesian Network, The application giants Doxper pen and paper on E-prescription using the logarithmic sequence, but the module of classifying the prescription on individual tracking is the novelty of the paper and the captured image processing with the machine learning technology and then makes the intense coordination neural networked application to characterized every word in the prescription. The registered identity of the Medical Practitioner's data must be only carried out by the Government Regulatory Affairs on the systematic designing of the Scheme matters to the convenient use.

6. PRO'S & CON'S OF SCHEME

- Digitalizing will help to minimize Medical Errors.

- Digitalizing will improve the efficiency of every prescription.

- Unnecessary outflow of narcotics is restricted.

- Regulatory affairs will function effectively.

- The registered Medical Practitioner of the field only able to Function.

- Non-Medical Practitioner is easily identifiable.

- Medicines manufactured and utilized by the people is accountable.

- Patient's unnecessary medicine buying is minimized.

- Ratio of people affected with the specific disease at the particular zone is accountable which makes the government take necessary steps to control.

- UIN number only enough to buy the prescribed drug.

- Online pharmacies to validate this prescription to supply of medicines and even in the online supply chain also only registered medical practitioner only able to function.

- They Identity of the patient is secured, because there is no personal information has been saved in the file of UIN number, it's just a number for verification and validating the systemic medicines list in the prescription.

- Legal Government activities of securing the better medical society s achieved by this scheme.

7. RESULT

The systematic approach on Regulating Prescription and Randomized Interface Youngish Application, is a technology encrypted software which could be works in all mobile platform by designing to the respectable devices such as the Android, ios, and in windows and Mac versions and also availably designed for online mode so access anywhere by the medical professional's as registered and only physicians only able to modify the drug's listed, and the designing of the software is also modulated by the government to secure the end to end encryption for secures service and to regulate the better medical society, and better tomorrow with error-free medical field.

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