INTERNATIONAL MULTIDISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT
SJIF 2019: 5.222 2020: 5.552 2021: 5.637 2022:5.479 2023:6.563 2024: 7,805
eISSN :2394-6334 https://www.ijmrd.in/index.php/imjrd Volume 12, issue 04 (2025)

CONVERTING PHARMACY LOGS TO ELECTRONIC FORMAT AND STORING THEM IN CLOUD STORAGE

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Annotation: The rapid development of digital technologies is causing significant changes in various areas, including the health care system. Magazines and documents kept in pharmacies are still kept in paper form in many cases. This poses a number of challenges in data security, quick access to them, and overall management. This article is a modern approach to the science of facilitating the work of Pharmacy, highlighting the advantages, stages of implementation and important aspects of converting pharmacy journals to electronic formats and storing them in cloud storage,.
Keywords: electronic, pharmacy logs, logger, temperature, moisture measurement, cloud**.**

An average of 23 magazine catches are currently required for a single pharmacy. Magazines kept in pharmacies are used for the following main purposes:
Report on the origin and realization of medicines;
List of drugs given by prescription / / ;
Motion of Special Controlled preparations;
Preparation for internal control and state inspections;
To record temperature and humidity.
These journals are legal documents, and their proper maintenance is an important sanitary and epidemiological and pharmaceutical requirement.
The need to convert to electronic format
Digitization of Pharmacy magazines will be the solution to the following problems:
Paper problems:electronic data security is more reliably protected from damage, loss wear, poor readability and destruction.
Quick access to data: built-in search engines allow you to quickly find the information you need and make it easier to analyze, prepare a report.
Easing the work of employees: automatic filling, prevent duplicates.
Simplification of control and audit processes: quick presentation of information to inspection bodies.
GPP compatibility: electronic format makes it easy to comply with all GPP requirements.
Advantages of cloud technologies
With cloud storage (cloud storage), electronic logs can be stored safely and conveniently:
Security: confidential information is protected by password, authentication and backups.
Flexibility: any device where the internet is available can be used.
Backup: data is automatically backed up, the risk of loss is reduced.
Possibility of teamwork: multiple users can log in at the same time.
To carry out the project, it is necessary to follow the following steps::
1.The development of a project plan is an analysis of existing journals, which are determined to be digitized.
2.Choosing suitable software-local or cloud platforms (Google Drive, OneDrive, Dropbox or special pharmacy systems).
3.Scan and digitization-existing documents are scanned, brought to the desired format (PDF, Excel, db).
4.Uploading to a cloud storage system-creating an organized file structure.
5.Training staff-teaching the use of a new system.
6.Constant monitoring and audit – system updating and security monitoring.

Automatic temperature recording in the pharmacy and the creation of a cloud storage system for this information in the form of an electronic journal

It is known that to record the temperature in the pharmacy requires at least 4 logs, as well as special time and labor. It is not possible to determine how correctly it is written, but to constantly check.

In the pharmacy, we need to choose the necessary sensory (sensory) dries (loggers) for constant measurement of temperature and humidity, as well as for recording. Since there are no other specific indicators on how many there will be, the number of psychrometers (hygrometers) depends on the number of storage rooms (zones) and refrigerators.

For this, reliable sensors are selected, such as DHT11 or DHT22. These sensors can be integrated with Arduino or other microcontrollers. For most medicines, the ideal temperature range in the pharmacy room is a temperature range of 20 to 25 degrees, but different medicines and vaccines have different temperature requirements that must be met continuously. Manufacturers of medicines must comply with strict quality control standards for the production and delivery of medicines in the conditions of proper storage and transportation. If the temperature deviates from the specified range, this is called a temperature change. How temperature changes are made depends on whether the temperature is above or below the specified range and the manufacturer's instructions.

Manufacturers must comply with and document temperature control rules in the process of working with bulk products, packaged products and shipped products until they reach their final storage location, such as a pharmacy. From there, pharmacies must take responsibility for the temperature range in the appropriate pharmacy room and keep records according to the rules and individual instructions for the product. Temperature and humidity recording products are used to record temperature and humidity factors during transportation

In an ordinary pharmacy, two psychrometers are required for a pharmacy, consisting of a sales area and a supply area. If suddenly a "dry" zone appears, another. The minimum number of refrigerators in the pharmacy is two. It is a refrigerator with a mode of 2-8 °C and a mode of 8-15 °C. In total, there should be at least 2 magazines for psychrometers and 2 magazines for refrigerators. The journal is kept for 2 years without taking into account the current year

DHT11

Many vaccines and biological preparations distributed from pharmacies rely on what is known as the cold chain. A cold chain is a temperature-controlled supply chain with special monitoring and procedures. It starts from the manufacturer's refrigerator and ends in the correct pharmacy room temperature range until it is distributed to patients.

All measuring instruments must be calibrated and certified. During Operation, devices undergo periodic inspection at certain intervals. To ensure timely inspection of the pharmacy, the head of the pharmacy confirms the schedule.

Microcontroller and wireless communication: microcontrollers such as Arduino Uno or Arduino Nano are used to process and transmit data from sensors. ESP8266 or nRF24L01 modules may be used for wireless data transmission.

Data transfer to the cloud: temperature data from sensors is sent to the storage service in the cloud via a Wi-Fi module. For example, IoT platforms such as ThingSpeak allow data storage and analysis.
Electronic Journal creation: an electronic journal is formed based on data stored in the cloud. This log is updated in real time and allows users to track temperature changes.
Mobile app or web interface: a mobile app or web interface is developed so that users can remotely track temperature data. Through this interface, data is presented in the form of graphs and tables.

Security and privacy: encryption and authentication mechanisms are introduced to ensure the security of the data. This is especially important in sensitive environments such as medical facilities.
By implementing these steps, it is possible to automatically record the temperature in the pharmacy and create a cloud storage system in the form of an electronic journal. It not only helps to manage data efficiently, but also allows real-time monitoring and quick action.
Conclusion
Converting pharmacy logs into electronic form and storing them in cloud storage serves to increase efficiency and reliability in the health system. This not only simplifies internal management, but also relieves work with regulatory authorities. The application of modern technologies to pharmacy activities is an important step towards digital medicine.

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