



Daffodil
International
University

Project On

Study on how to manage expired drugs in Pharmacy

A composition submitted to the Department of Pharmacy, Daffodil International University in the some completeness of the necessities for the degree of Master of Pharmacy.

Submitted To

Department of Pharmacy
Daffodil International University

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ID: 183-46-240

Batch: 7th Batch

Department of Pharmacy
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Date of Submission: April 08, 2022

APPROVAL & DECLARATION

This report, **Study on how to manage expired drugs in Pharmacy** submitted to the Department of Pharmacy, Daffodil International University has been obtained as optimal for some achievement of the necessities for the degree of Master of Pharmacy and chosen as its object.

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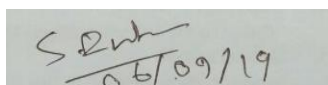
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ACKNOWLEDGEMENT

I would like to express my passionate glorification to the Almighty Allah who has given me opportunities to complete my Thesis work.

I am so thankful to my honorable project supervisor **Dr. Mohammed Shafiqur Rahman**, Assistant Professor, Department of Pharmacy, Daffodil International University for his lovely guild line and actual supervision and providing indispensable intelligence regarding the thesis and also for assistant to complete this project work.

I would like to convey my gentle compliments to **Dr. Sharif Mohammad Shaheen**, Professor and Head, Department of Pharmacy, Daffodil International University.

I want to convey my especial gratitude to **Professor Dr. S.M. Abdul Rahman**, Advisor, Department of Pharmacy, Daffodil International University.

I want to thanks my junior, **Al Fahad Ul Islam** (171-29-981), a students of Pharmacy department, Daffodil International University, for outstanding support to complete my survey.

I also convey my respected to all of faculty members of Pharmacy Department, Daffodil International University & obliged to for their brilliants cooperation.

Finally, I would like to convey my regards to my family members for their cooperation and inspiration which helped me in complete of this project.

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DEDICATION



Dedicated to my Parents and Supervisor

Abstract

Every drug has a limited period of time to maintain their physical stability and during that time they can show their pharmacological effect, after that period every drug lose their activity which is known as the expiration date of drug. Which a drug may not be capable for use because that drugs are very harmful for the human body. The study of expiration is needed to know the potency of drugs. For every drug Also need to know the expiration date for every drug but especially have to know about that drug which are so risky for the body such as those containing nitroglycerin, tetracycline, liquid antibiotics. These kinds of drugs should only be taken within the designated time frame. To prevent the risk of bacterial growth or a change in chemical composition which may cause to make them unsafe to use, might be controlled by knowing the expiration. In this thesis try to find out the percentage of pharmacy which are abide by the rule of expiration, & trying to find out the percentage of follower of expired drug disposal guidelines. And also trying to find out the percentage of safe or unsafe people who are unknowingly use these drugs. About 60% pharmacist (shop) don't know about FIFO but their knowledge about drug expire date is good.

Key word: Drug Policy, Drug disposal Guide line, Expired Product Return

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Chapter one

Introduction

1. Introduction:

Customer can ordain its shelf life by examining its packaging for an expired date. Drugs that have exceeded shelf life may rot & be void or detrimental. The Standard lesson from medicine producer and other health related institution to destroy the drugs after expired. However, the expiration date is not complete intimation that medicine are wasted. Sometimes customer & companies use expired medicine for a price reduction or otherwise they can't use expired drug. Regulatory of medical to trace for consumers can securely use medicine because clear information is hard to achieve. This problem can easily overcome by pharmacy management system. The management system of Pharmacy gathered data and enables to work that arrange and maintains the medication system in pharmacies. It is uncommitted terminology for the use of pharmacy, pharmacies are integrated in inpatient (CPOE) scheme. [1] Basic functioning of pharmacy management may involve data entry, retention & safety limits to defend consumer information. [2][3] Across the world several software (related to pharmacy)) operating instruction are used for practice fixing of pharmacy. [4][5][6]. the management system of pharmacy provide safe and effective use of medicine. During dispensing the pharmacist will verify the medication for correct patient, contains the proper strength and dosage and provide accurate indication on the prescription. Advanced pharmacy management systems alert the pharmacist to make clinical interventions, like, to counseling the patients, if they need any extra information. Pharmacist patient care consists of 5 steps: a) collect b) assess c) plan d) implement e) follow-up. [7] The management system of Pharmacy boost each of these practices. Data will be gather and processed & the pharmacist learns their history of disease that are associated to their health. The information system of pharmacy to evaluate the information of patients and should be proper diagnosis of the disease. After that, the pharmacist will need to Follow-Up regularly and provide disease related information if further needed.

2. Does Medicine Really Expire?

Expired dates on OTC and prescription drug must be put of Pharmaceuticals Since 1979, recommends of US FDA.

The bottle of ibuprofen will not collapse in similar way of expired milk carton. Expired date ensure that safety and full potency of drug until the drug is manufactured. It is often debate

how amount of time a drug is safe and effective. With the exception of some drug such as nitroglycerin, insulin, and liquid antibiotics and many ingredients are less stable over time.

The Expired drug may not be beneficial for use as Product. In 2017, Le Cantrell published an article that for life-threatening allergic reactions expensive auto-injectors are used— more than 84 percent of potency are held four years past their expired dates. In Cantrell's view, for long-term studies on drug's efficacy, Pharmaceuticals companies need absolute financial support. The United States keep on a record of drug that may be needed incase emergency situation. The FDA and U.S. Defense launched the Shelf-Life Extension Program to protect the expenditure of expired drugs in 1986. In 2006 examined 122 several medicine collected from ideal environment, expansion the expired date is a major ship of the medicine in the stockpile. SLEP saved \$2.1 billion which would be used on replacing expired drugs in 2016. Still FDA highly consumers against taking expired medicine. Expired drug are dangerous that may fail to treat infectious disease that cause antibiotic resistance. In 2018 recovering around 3.7 million pounds of inapplicable and expired drugs.

3. What is the definition of expiration?

The expiration date is the last day of drug that the potency and safety of retain 90 percent of drug. Most medications have expiration date on their label. Before marketing the United States Pharmaceutical required by law to set expiration dates. Due to legal liabilities, Pharmaceuticals do not recommended de medication before the actual life. [8] Most of the manufacturer tested the stability of drug drugs, it is usually 2-3 years. In United States, from the date of manufacturer Pharmaceuticals product marketed that have an expansion from twelve to sixty months. When opened the container, the patient or the healthcare provider who will deliver the medicine, can no longer rely on the original expiration date in that container. [9] However, the stability analysis has shown that the shelf life of the medicine can be much higher. [10] In pharmacies, patients prescribed the prescription bottle are often labeled “out of use”. These are often says "don't use later..." or "throw away later”. It's usually 1 year from the expiration date. The durability of the drug cannot be assured after opening the original container. Temperature, Relative humidity and other storage condition can affect the stability of drug. Every year's retailers, nursing homes & hospital worth billions of dollars due to expiration dates of drugs. A studies showed that hospitals destroyed

more than \$800 million in medicine in every years. The manufacturer's bottle will never have an "out-of-use" date after the expiration date.[11] The expired date on the Pharmaceuticals usually 1 year from the date of completion; again a different fair date.

4. Expired medication losses potency?

The American Medical Association has concluded that the real shelf life of some drugs is higher than the expiration date. The FDA's Shelf Life Extension Program (SLEP) is the best evidence for the Department of Defense. [14] The main objective of the SLEP program was to evaluate the shelf life of drug for further use and to save money.[12] More than 3K lots, represent 122 various medicine evaluated by the SLEP program. Based on stability data, 88% of lots expiration dates have been extended for 66 months by their original expiration date. Such a common drugs that successfully tested include antibiotic and morphine sulfate injection. These products have a drug expiration dates on more than 15 years. [15]. These apprise that many pharmaceuticals products extended their shelf life beyond expiration date. It is tenacious for a consumer to know which drug product have an elongated shelf life. The capability to have an extended shelf life of a fork will defend on the composition drug, ingredients, like Light, Temperature, Relative Humidity etc. If a drug is repackaged into another container the shelf-life may be reduce due to environment variation. [10]

5. Is it safe to take expired medication?

There is a lack of studies regarding this issue. In 1963, a studies showed that decayed tetracycline damaged renal tubular called "Franconia Syndrome"; as a results, in US market, the formula of tetracycline in no longer, [8] and many medical specialist has questioned the outcome of this report. Tablets and capsules are more stable since the expiration date. Solution and suspension required lypolization, may not have the strength they need when they are old. In case of Antibiotic loss of potency is a major health concern. With sub-potent medicine antibiotic may resistance. If solution forms a precipitate, it should be destroyed. [8] Drug that are expired, may be unsafe for use. [8]

6. Expired EpiPen is useble?

After expiration EpiPen auto injectors should not be used. [8] It is used for life-threatening condition, thus it is major health threat if use expired EpiPen. A studies showed that the pens retained 80 percent of their initial dose of epinephrine, after their expiration date up to 4 years. The lower epinephrine obtained froman EpiPen Jr.; it retain more than 80% of its original dose of epinephrine. Around 56% of the EpiPen Jrs. & EpiPens composed approximately 90% of their original dose. In case of fetal allergy, expired EpiPen may be considered if the solution is cleared. As a results, it saving a life outweigh the potential risk of the patients. [13], [8]

What kind of medications are unsafe after expired?

There are some measures are given bellow:

- To control the blood glucose level Insulin are used.
- To treat angina pectoris nitroglycerin are used and after opened the container it loses its potency.
- Sensitive drug product can also deteriorate rapidly after the expiration date.
- Tetracycline is a toxic metabolite but could create this controversy among researchers.

Medications that look old: crushed or crumbling drugs, drugs that have a strong odor should be destroyed.

To retain the potency of active substance must be needed proper storage condition. The cabinet store of medicine is not a proper place due to their temperature and relative humidity. Similarly, medicine should not be kept in glove box, or in freezing weather. It is more stable in stable in dry and cool place. Keep the medicine away from children and the container are closed tightly. Destroyed expired materials as early as possible due to the risk of drug diversion. National Prescription Drug held twice a year for safe way to solve of these prescription drug.

7. Can I take an expired drug?

It is better to use non expired drug; it's just a safe route. If a medicine is essential for a life-threatening like, cancer treatment, should take a new prescription before it expired. Patient should be conscious that it may not produce the desired effect. As a results prescription should be changed. Expired medicine is a major health problem, so it's not safe for patients, and the drug do not work properly, if the potency is not 100%. For example, if ibuprofen lost its potency, it does not relieve the headache.

Military stockpile medicine retained 90% of its potency in their original stock studies shown that. [10] The storage conditions of these drug are optimized for temperature and RH and obviously don't mimic the general storage environment. If an expired drug is taken and it has no effect, the drug must be replaced. If any drug has a harmful order, it should be destroyed.

8. True expiration versus Labeled expired date:

Expiration dates print on the label of the bottles. [16]. It is not an indication when a drug has become unsafe for use. After their expiration dates many of drugs are effective for years.[16] However, it is difficult for anyone to find out information to justify how amount of drug will decline in its effectiveness.[16][17] The manufacturers never suggest to take a expired drug because if something goes wrong it can make them liable.[18] The expired of packaging materials will differ from the actual expired date of the drug.[19] Before actual expiration of a medicine, active materials will retain its strength.[5] Since the products are consistently changing, the characteristics of drug product are not unchanged.[19] A 10% degradation of the active ingredient make a drug is unusable.[6] The manufacturer must set an actual expiration date before choosing expiration date for printing.[19] The printed expired date will always be earlier than the actual shelf life, if the drug kept properly, the drug always be effective and safe for use.

9. Option for Expired drug

9.1 Settlement:

The U.S. Center for Drug Evaluation and Research recommends that drugs should be destroyed before expired. [7] This practice is prodigal, as medical facilities and consumers are encouraged to buy new drug to replace their expired drug. [8]

9.2 Consumer use:

Some customer may face the hard situation or may choose to use expired medication or for going medicine. [9] Some common medicine that are authorities say are always unsafe they expired involve antibiotics. [16] Sometimes consumers do not use drug because of expiration. [11] No one use prescription drugs without the supervision of a physician [11] Authorities motivate the preservation of over-the-counter medications, destroying them on a regular basis and taking care to use them as guided. [12]

9.3 Recycling of Drug:

It marginal and empirical idea but it does occurs in some places. [13] If the drug used by before expiration date, then the transfer of ownership of the drug to the interested persons is sometimes away from the party which is their party which will not use it. [13] In such conversation, anyone considering a drug transfer will also consider. [13]

9.4 Shelf life Extension program

The US FDA have launched a Self-Life Protection Program (SLEP) to reduce the military cost of maintaining stockpiles of certain drugs. Medicinal controlled storage conditions for safety and stability of drug. In many other cases, the drugs tested have been shown to be effective for years after expiration date; a studies showed that two-thirds of the 122 patients tested with SLEP were effective for at least 4 extra years. In 2016, the DoD reported that program collaborated to protect 2. 21 billion on stockpile drug replacement.[14]

9.5 “use by date’ means?

If a drug used before the expiration, it usually means we should not take this medicine. If, a physician has given an indication about the use of drug, we should follow this. Destroyed the Drug within Seven days after opening. We must intake any medication after this period to be disposed of by the pharmacist, even after the manufacturer's prescribed period has expired.

9.6 Short expiry date:

Prepared antibiotic mixtures: when water adds into the powdered antibiotic, changes its stability, that is depends on the product.

Eye drops: these are usually given of 4 weeks after opening the container, because, eyes are particularly susceptible to any other bacteria.

9.7 The validity time of prescription?

Six months from the date of the prescription, if not the medication prescribed contains a controlled drug.

10. The date on the prescription:

The health professional has instructed should not be delivered earlier if a prescription shows stating the date 6 months later. This applies to NHS and individually prescribed medication. Always pursue the indication of GP, or the physician, when taken the medication. Return prescriptions accommodate the same prescription to the delivered more .

Thereafter, return prescription may last for more than 6 months as per prescription instruction. Some prescription drug are regulated under the drug abuse act. These involve pethidine, morphineand, and methadone. These drug are sometimes miss used, so strict legal restriction are imposed on their supply to control them being acquired improperly. Prescription of the controlled drug is potent for 28 days. If a prescription of controlled medication states the more pills delivered in different instalments and the first instalment must be delivered within 28 days.

11. Management of expired drug:

EMS provider's different of prescribed drug to the patients in the pre-hospital premises. Pharmaceuticals such as glucose & oxygen, to excessive complicated medicine that could be lifesaving. These drugs have been an abundance and seemingly endless supply for many decades. However, over the past decade, the lack of national drug has significantly affected EMS systems.

11.1 Preserve Condition?

Above all, we want to know where and when we or someone else needs it. Always keep medicines out of children, a favorite pet or a visiting householder. Some medicines, such as pain killer, are stolen from of the cabinets of friends and family:

- List of drugs at our home every 6 month.
- Check the expired date on the pharmaceuticals
- Do not take faded dried or broken medicine. Also check the expired date for eye eardrops & drops. These may no longer be workable, may be a generation ground for fungus or bacteria. Destroyed of unnecessary drugs.
- Negation the remaining prescription drugs from a previous disease. We should not try weasel to deal with an unused medication, the symptoms may seem the same as previous, but the cause may be different.
- Identified the drugs and take them in a safe place.
- Take a drug away and out of sight, such as shelves in a kitchen cabinet. Keep medicines away from children. According to the Safe Kids Worldwide, 23% of children found pills on the ground.
- Be aware about misuse of drugs especially painkillers and Antibiotic.
- Heat and moisture can damage the drugs.
- Some drug needed lypolization, so check the bottle or label information on the bottle.

12. Sample approaches to work around a medicine storage:

EMS supervisors can solve a few works close immediately. For example, the initial expiration date of medicine is used earlier. Although this may seem preliminary, physically moving over-the-counter medications putting them together. The bottom line is to stay active with expiration dates. The minimum level of drug storage in the jump bag and in the unit itself. Stocks of drugs can be better delivered to the ambulance fleet. Consider also the use of multidisc vials. Single-use prefills extremely costly and if we do not use the full amount the drug are losses.

13. Clinical changes:

EMS systems may changes to protocols or drug dosages. For clinical treatment and eliminating certain medicine Physicians should explore current knowledge. Although there have been problems with similar drug such as morphine sulfate, other medicine such as versed, valium or Ativan are may be reasonably available. State regulatory agencies may ensure sensitivity to care standards. Most officials are aware and want to work to find out the problem. To ensure patient safety significant changes in training will be required. ALS calculating several medicine which creating weight-dependent dosage of medication. Changing medicine have several dosages form and dosing intervals. Alternative dosages forms of the same drug may come in several packaging, which making it harder to justify.

14. Operational approaches:

It may possible to set up drugs exchanges in hospitals. If companies knew what enjoyable through other services in their area finding scary drug might be easier. A similar relationship can be introduced with hospitals. Hospitals tend to buy in more amount of drug and have more of the rare medicine gain able. It's important to expansion the medical-legal issues related to distribution or purchasing preparation.

15. Using expired medication:

Different countries introduced "hands-off" procedure for the use of expired drug in pre-hospital treatment. Numerous drugs do not use their effectiveness after expired. The dates of expiration are determined by the manufacturer and based on a various parameters. Laboratory test are short, when a drug become inactive there is no specific way to know. It's

not translucent that whether any drug is usable after its expiration date. Pharmaceutical specialist need to work closely to adopt for patient safety and immediate medication and treatment needed.

16. Compounding Pharmacies:

Compounding pharmacy has been approved on request or for the manufacturer of compound medicine. These orders can often be fulfilled very fast. These drug may come in forms and packaging and to ensure safe usage of medication training is very important. Native and state authority allow the use of compound medicine. Such drug are attainable for life-saving condition due to the pre-hospital medication. It does not happen that drug will disappear immediately at any time and field providers have to think outside the medication at the right time.

CHAPTER TWO

Pharmacy Management system

2.0 Pharmacy management system:

It system is a system where stores information that maintains the Medicine use in Pharmacy. This is might be an autonomous technology pharmacies may be mobilized within an in-patient hospital CPOE system. [20] Steps required for a pharmacy management system such as data entry for protecting patient health information. [21][22] In Pharmacy, Computer software is usually purchased from supplier by a drug wholesaler. Different operating systems are used in many pharmacy practice all over the world. [23][24][25]

2.1 Purpose:

The management system of pharmacy distributes several purposes, for safe and effective use of medication. During the delivery, the system need approval to the pharmacist whether the drug met the requirements or not, right dose, and displays the correct information. Pharmacy management systems provide clinical information to the patients if the patient needs any information on the prescription. also serve pharmacists entirely the patient care process.



Rx,

Easy order submission method:

e-prescribe, Call, fax etc.

Verification of Bill:

Adjustment the billing to assure drug coverage.

Best-fit verification:

The script is re-checked for accurate diagnosis & effectiveness.

Protocol verification:

Check the packaging materials and dosage form, if necessary.

Appropriate order package per Rx:

Prescription should be verified and fulfill the correct order.

Second Clinical Verification:

QC check point to ensure medicine accuracy

Check Quality:

Label scan and manifestation investigate.

2.2 Pharmacist with prescription:

2.2.1 Seamless Workflow:

We use DocuTrack, where track all the faxes. This has remarkable reporting including every employee that who reviews document within our process. Pharmacy management software tracks the time an order arrives, until it is scanned into the delivery tote before it is released. Through the web portal of Pharmacy, employees can see where an order is being processed.

2.3 Administrator typing at keyboard:

2.3.1 One Order after another:

Pharmacy technician is dedicated to this facility, the team works to ensure coverage of resident, dedicated pharmacy technician residents who are comfortable with the ordering process. We always receive active notifications before order delivery. The technician to

obtain proper approval or works with pharmacists to recommend changing the order to a covered drug.

2.3.2 Timely order verification:

Due to the complicated nature of the usual governance for long-term, a sophisticated clinical screening software is needed. Software screens all new orders and also verified by the pharmacist. We care about the safety of the drugs, as much as we care about the residents.

2.4 Scanning prescriptions:

2.4.1 Accurate medication dispensing:

To ensure accuracy of delivery and have to be triple check and also ensure right time, right medication for each medicine. Numerous verification ensures that all medicine orders are verified by a registered pharmacist both before dispensing.

2.4.2 Speedy medication delivery:

For life easier we can do everything; this includes delivery system and times customized to meet demand. Director of Health, we are proud to make timely and accurate deliveries because on-time medication delivery is very important care in resident. This is way we follow our commitments and provide remarkable services.

2.5 Personalized care:

To optimize drug therapy need pharmacy management system, to reduced adverse drug effect, prescribe the drug of choice and delivered the right medicine at the right time for the right treatment resulting in optimal resident care.

2.6 Drug Purchasing system:

A Pharmacy managers should understand the development and management of their existing system. A pharmacy purchasing system must ensure that the quality product at affordable price and are available when needed and supply estimate is adequate. The job responsibilities of pharmacy purchasing personnel are described, and the data are observed. Different order-placement are compared and order-shipment alternatives are specified.

2.7 Designing of Pharmacy storage:

2.7.1 Shelving Pharmacy storage:

Pharmacy is an important area in any healthcare center. This section must always be well stocked at all times to meet the immediate need of any medication. This section includes multi-sized items from packets and pills, bottles and various size of container and prescription forms...all require a storage condition with flexibility. More shelf space is needed for the trend toward unit dosages form of packaging. In addition to the required Pharma prescription, new drug are continuously being ordered as they take place on the market, therefore, for the storage of these items space must be allocated. The operation level in this field is very high. Nurses maintain their routine work with daily patient medications. Orders are re-stock daily when new deliveries arrived three to four times per day. As a results, the employee needs all accessibility and ease of recovery with the ongoing inventory.

2.7.2 Drug dispensing system:

Medicine therapy are major part of hospital budgets. For costs control safe and effective drug-delivery systems is necessary. A proper delivery system is help to reduce the chance of errors in a pharmacy for reduce the appropriate errors. At present a hospital has a variety of distribution arrangement for medical prescriptions. These studies accomplished in USA, intensified in the 1970s and 1980s, with the goal of providing a secure delivery systems.

2.7.3 Collective system:

The conventional method, is the oldest and most obsolete. There are numerous favorable conditions for errors in this system. It features drug delivery in hospital service based on a nurse's request. This inventory is complete under the supervision of a nurse. [[37]], [[38]] Nurses consume about 25% of time recording prescriptions, sorting medicines in different areas. Due to expiration of medicine institutional costs are high. [[38]], [[39]] The advantage of this method is that the medicines are available in the units, there are requests in the pharmacy, there is a cutting associated with the pharmacy cost related to human resources. These facilities hinder the delivery of advanced medicine to patients. [[38]] A negative results is high rate of drug error, wrong medication, inappropriate dosage, ROA and prescribed medication.

2.7.4 Individualized System:

In a segregated drug-delivery system, in this system, drugs are distributed to each patient within 24 hours. The pharmacy distributes medicines individually for the patient in hospital units as per the medical prescription. [[37]], [[38]] the rate of errors and thefts in the indirect system is high, as transcripts may fail and be omitted. In the direct method, the prescription can be sent to the pharmacy as follows:

- A) The prescription is written on carbon paper to make a copy of the original.
- B) Photocopy to imitate the main prescription.
- C) The doctor writes the prescription. The main benefit is reduction of errors because bed handwriting
- D) Computerized prescription: Different units of hospital are connected to each other using clinical management software. Prescription and delivery reporting systems are created that can be mobilized with software. The safety measures that warn against toxic drug substance, drug interaction, contraindications and side effects of drug. Automation using bar codes allows drug testing during drug delivery and handling.

Radio system that connects computers and optic readers to radio: Physicians use a touch-sensitive terminal, which makes it possible to check patient data, quick prescriptions and computers check.

There are advantages to a separate drug-delivery system, for example, the possibility to review prescriptions and separate patient shipments. Disadvantages include high rates of delivery and nurses spending time calculating and preparing drugs. [[37]], [[38]] Pharmacy assistants collect prescriptions and treatment to the patient's fort 24 hours. On a monthly basis they checked the drug in the listed and unapproved list. Pharmacists visit the hospital every day to supervise the work. Pharmacist's consultant with doctor about prescription.

2.7.5 Mixed System:

Mixed distribution systems combine joint and segregated systems. Hospital s are fully supported by separate systems and supported by joint systems. [[38]] The mixed method is used by 13.2% of hospitals in Brazil to distribute medicines.[[41]] The disadvantage of its tendency to the collective rather than the isolated system, favoring the delivery of drugs by the hospital rather than the distribution per patient. It is easier for each patient to be

delivered separately. Pharmacy workers should be aware to their work and combined delivery is easy.

2.8 Dispensing system and medication error:

Research in the mid twentieth century has shown that the prescription drug-delivery systems, as a results 1 incorrect out of 6 doses of patients. These is happened for the bed handwriting, prescription copying, incomplete prescriptions and lack of knowledge about drug. [[42]], [33] A 1965 study showed that the outbreak of drug errors in dispensing systems as a results reduced the rate of drug error with unit dose system. The rate of drug error was 3.8% unit dose. [34] Another study comparing the therapeutic and the unit dose distribution systems that nursing was involved a 50% reduction in drug use and control, and a drug error rate %-2. Hospitals using unit doses can eliminate the rate of error around 2 or 3%.

2.9 Factors associated with dispensing errors:

2.9.1 Cause and consequence:

Error Concern about determining the cause of the errors. A 1939 study reported that the most common miss diagnosis and drug administration being passed on to the wrong patient. Most factors related in prescription failures, forgetfulness, and inapplicable patient concretion. [39] There are numerous known cause today that distribute errors. These factors can be concise as communication failures, drug label related problem and the structure of the working place, confusionand incorrect sources of information.

2.9.2 Communication Failures:

Anyone who read the prescription is responsible for providing information about the prescribed drug. Obscure, .misleading prescriptions can lead to bed understanding of basic information for drug delivery and dispensing. Problems with to read ability of prescription are well-informed as a matter of drug errors. It should be ready easily rather than explained. This condition can cause errors or even death. Writing a manual can complicate the difference between two drugs of the same names. Numerous drugs may have the same names which can lead to confusion to the consumer, especially for the the same route. The

felodipine is responsible in a case as dispensing pharmacists and physicians responsible for the death of a patient after taking the wrong medication.

2.9.3 Labeling and packaging related problem:

Problems associated to drug labeling and packaging are the most commonly reported medicine errors indicated to the USP-MERP and accounted approximately 20. [[36]] Sometimes package design make a problem during buying many drugs. It is more critical with injections, where ampoules size, shape are same. As a results consumer get confused.

2.9.4 Working environment and condition:

An unfavorable work condition increases the rate of distribution errors. The area designated for drug delivery should have sufficient space, lighting and relative humidity for flexible work. [[36]] Medicines should be stored in cool and dry place. The most notable reason for overcoming errors in community. The pressure to impose a maximum deadline for prescription delivery is an important factor. To minimize the workload have adequately trained staff and extend prescription delivery deadlines. [[36]] Lack of knowledge contributes to drug error and also pharmacy assistants are usually trained.

CHAPTER THREE

Method

3.0 Method:

In this survey 50 Pharmacy data has been collected around Dhanmondi, Dhaka. Survey paper is adorn with 3 ideal question to take this data. Data expired drug has many side effects. By this survey we can know that how pharmacy management there data expires. Throw away the expired drugs after identification may causes threats for environment. It should dispose in the right ways in our country, how the disposal of data expired drugs occurs and do the pharmacies know the proper way of disposal has been shown in this survey.

Name of the pharmacy	Do they know with Expiry drug Policy	If they Follow	Do they know Expired Drug disposal Guide line	Expired Product Return	Way of Disposal	Knowledge about FIFO
Moni Medical Hall	Yes	yes	Yes	Yes	yes	yes
Ahmed Medical corner	Yes	yes	Yes	Yes	yes	yes
Al-Mukti Pharmacy	Yes	yes	Yes	Yes	yes	no
Mariom Drug House	Yes	yes	No	Yes	yes	yes
Alamgir Medical Hall	Yes	yes	Yes	Yes	yes	no
Royal Pharma	Yes	yes	Yes	Yes	no	yes
Ahmed Aoushadha Laya	Yes	yes	Yes	Yes	yes	no
New Lid Pharma	Yes	yes	no	Yes	yes	yes
Sheba Pharmacy	Yes	yes	no	Yes	yes	no
Alam Drug House	Yes	yes	no	Yes	yes	no
New Taznin Pharmacy	Yes	yes	YES	Yes	yes	yes
Health and Hope Pharma	Yes	yes	YES	Yes	yes	yes
Bismillah Pharmacy	Yes	yes	YES	Yes	yes	yes
Jonoprio Pharmacy	Yes	yes	YES	Yes	yes	no
Lupa Medecine Corner	Yes	yes	YES	Yes	yes	yes

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Nahar Pharmacy	Yes	yes	YES	Yes	yes	yes
Anika Pharma	Yes	yes	YES	Yes	yes	yes
Ronoda Pharmacy	Yes	yes	NO	Yes	no	no
New Abir Pharmacy	Yes	yes	Yes	Yes	no	no
Aaraf Pharmacy	Yes	yes	YES	Yes	no	no
Rabbi Pharmacy	Yes	yes	NO	Yes	no	no
Ibn sina Pharmacy	Yes	yes	NO	Yes	yes	yes
New Life Pharmacy	Yes	yes	yes	Yes	yes	yes
Noor Pharma	Yes	yes	yes	Yes	no	yes
Green Life Pharmacy	Yes	yes	yes	Yes	yes	no
Janata Pharmacy	Yes	yes	yes	Yes	no	no
Samota Pharmacy	Yes	yes	yes	Yes	no	no
Ratul Pharmacy	Yes	yes	yes	Yes	no	no
Sorkar Pharmacy	Yes	yes	yes	Yes	no	no
Get-Cured Pharmacy	Yes	yes	yes	Yes	no	no
Bhai Bhai Pharmacy	Yes	yes	yes	Yes	no	no
Muzahar Pharmacy	Yes	yes	yes	Yes	no	no
Special Care Pharmacy	Yes	yes	yes	Yes	no	yes
BRB hospital Pharmacy	Yes	yes	yes	Yes	yes	yes
Square Hospital Pharmacy	Yes	yes	yes	Yes	no	no
Khaza Pharmacy	Yes	yes	yes	Yes	no	yes
Sujon Pharmacy	Yes	yes	yes	Yes	no	no
Swapnil Pharmacy	Yes	yes	No	Yes	no	no
Lazz Pharma Ltd	Yes	yes	yes	Yes	yes	yes
Mim Pharmacy	Yes	yes	no	Yes	no	no
An, Khan Modern Hospital Pharmacy	Yes	yes	yes	Yes	yes	yes
Asian Pharmacy	Yes	yes	no	Yes	no	no
Hoq Pharmacy	Yes	yes	no	Yes	no	no
Russel Pharmacy	Yes	yes	no	Yes	no	no
Maa Pharmacy	Yes	yes	no	Yes	no	no
Rezwana Pharmacy	Yes	yes	no	Yes	no	no

Mala Pharmacy	Yes	yes	no	Yes	no	no
Masud Pharmacy	Yes	yes	no	Yes	no	no
Naz Pharmacy	Yes	yes	no	Yes	no	no
Mimi Pharmacy	yes	yes	no	yes	no	yes

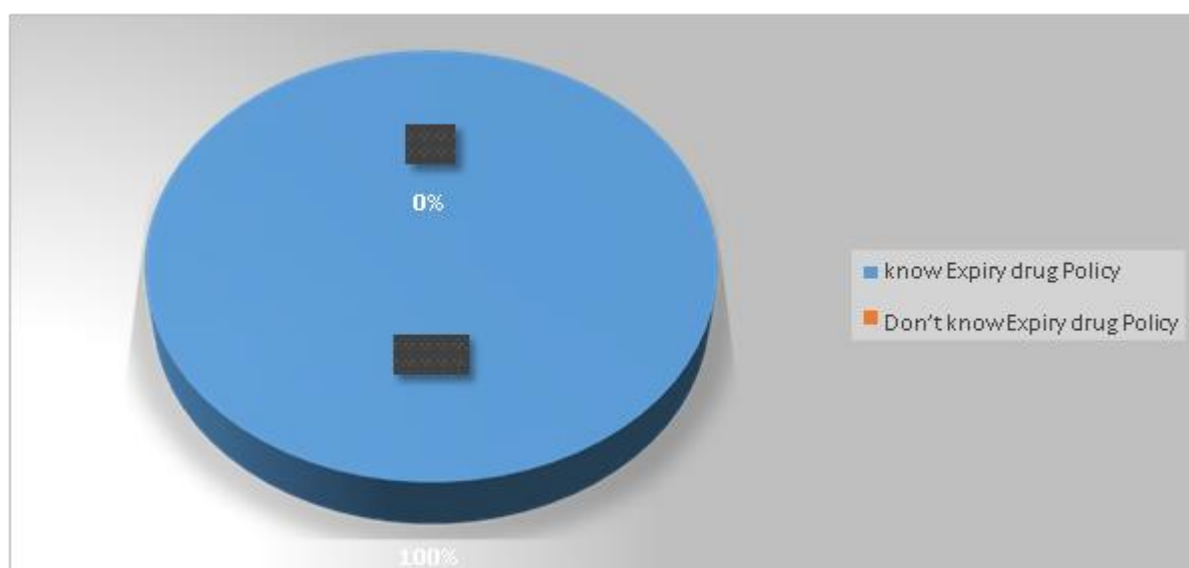
Table 1: Survey data

Chapter Four

Results

4.0 Know Expiry drug policy:

Criteria	Number of pharmacy
know Expiry drug Policy	50
Don't know Expiry drug Policy	0

Table 2: Expiry drug policy**Fig 1: Expiry drug policy**

1. According to survey we found that very pharmacy know about expiry date. This is very good news for Bangladesh Pharmacy system.

4.1 Following drug policy:

Criteria	Number of pharmacy
Following Drug policy	50
Do not following Drug policy	0

Table 3: Following Drug Policy.

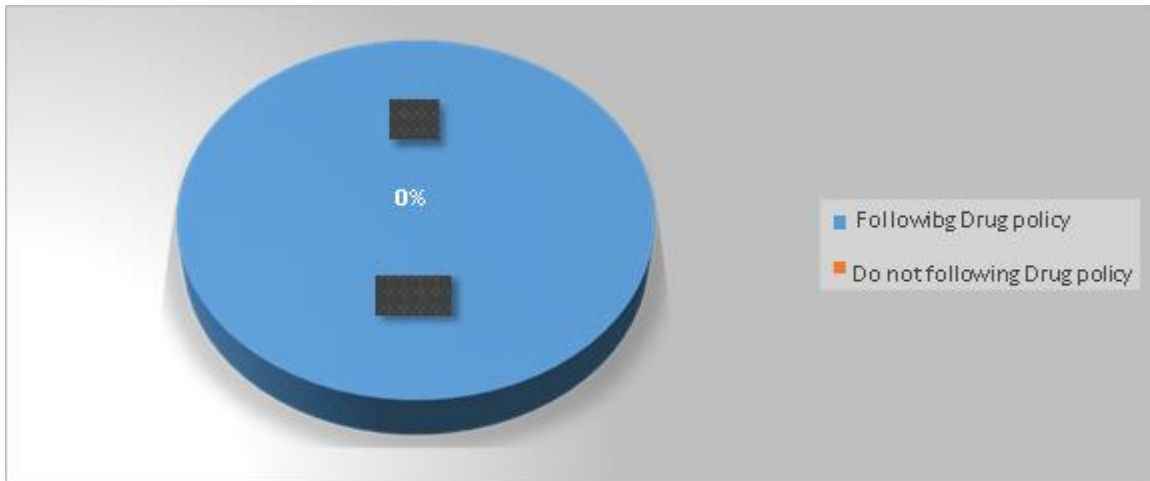


Fig 2: Following Drug Policy.

- Following drug policy is essential for every country. And if is a good news that 100% of our pharmacy know about drug policy.

4.2 Know Expired drug disposal guild line:

Criteria	Number of pharmacy
know Expired Drug disposal Guide line	32
Don't know Expired Drug disposal Guide line	18

Table 4: Know Expired Drug disposal Guide line.

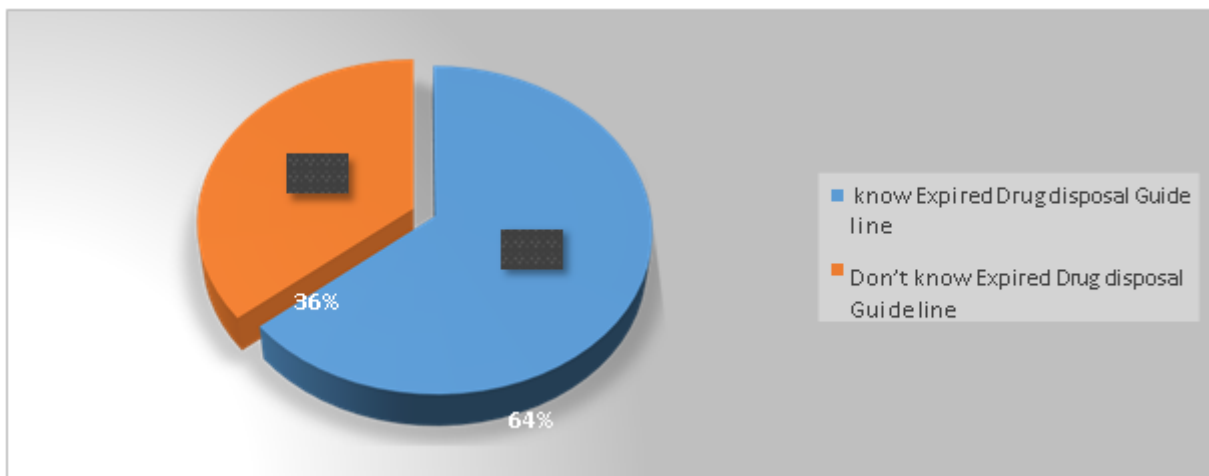


Fig 3: Know Expired Drug disposal Guide line

3) Very drug is a position. If Can cause harmful effect in our environment so expired drug disposal guide line is important. We can say about 36% pharmacy in our country don't know about this.

4.3 Expired product return:

Criteria	Number of pharmacy
Expired Product Return	50
Expired Product do not Return	0

Table 5: Expired Product Return.

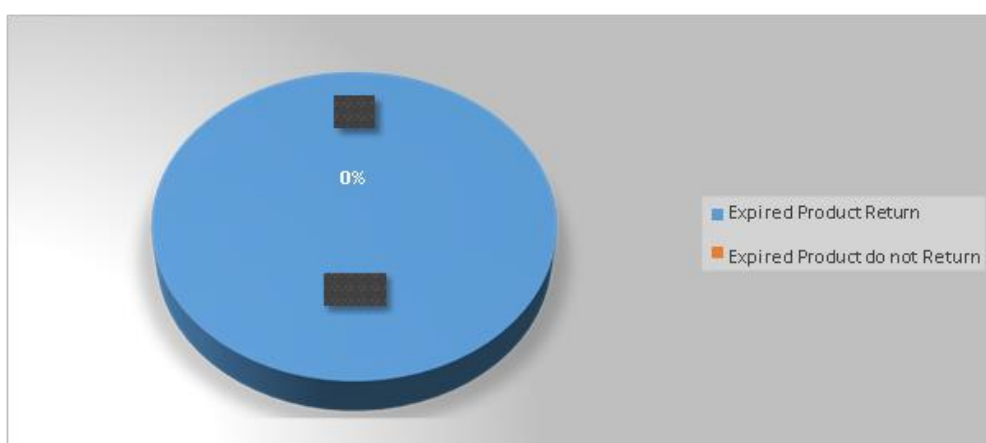


Fig 4: Expired Product Return.

4) The management of expired product is very important. In our country expired product return from 100% of pharmacy?

4.4 Know way of Disposal:

Criteria	Number of pharmacy
know way of disposal	23
Don't know way of disposal	27

Table 6: Know way of disposal.

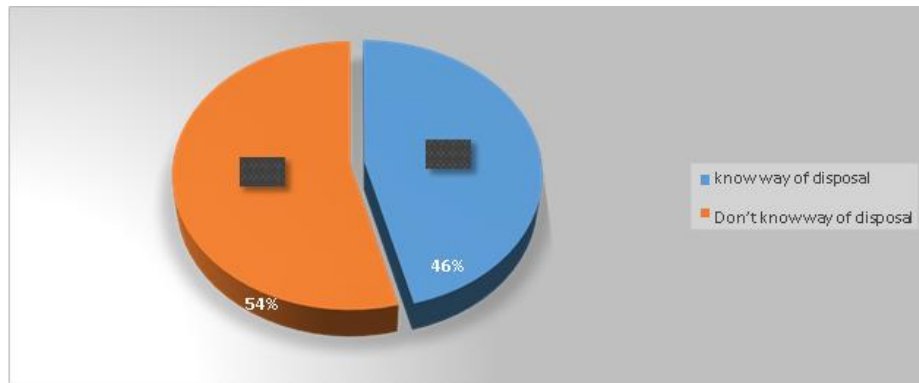


Fig 5: Know way of disposal.

5) We can't take expired drug. So if need to disposal. But if is a matter of great regret that (shop) do not know about the way of disposal.

4.5 Know About FIFO:

Criteria	Number of pharmacy
Know about FIFO	20
Don't know about FIFO	30

Table 7: Know about FIFO.

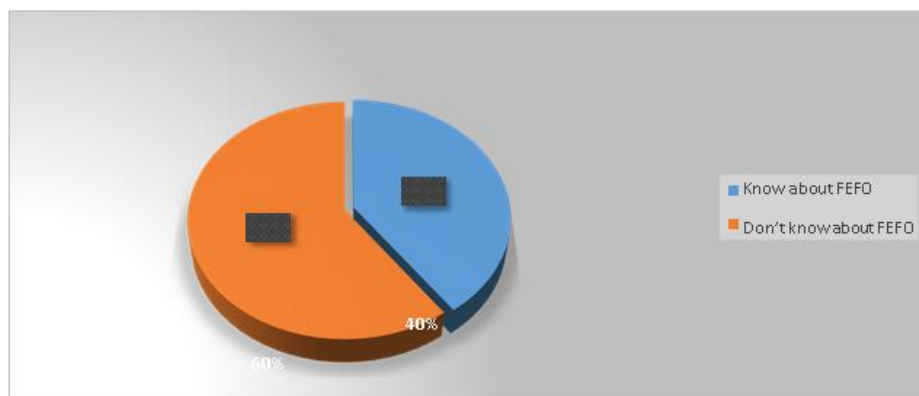


Fig 6: Know about FIFO.

6) FIFO means first is first out FIFO is very important for maintain drug expired But most of the pharmacist (Shop) don't know about FIFO.

Chapter Five

Conclusion

5.0 Conclusion:

Drug can save our life in the same time if can kill us. We the drug cross its shelf life then we can't use it. In our country our pharmacist (Shop) known about expire date but most of them don't know about FIFO. Which is very important for drug management in Pharmacy.

Chapter Six

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