ABSTRACT
Health care industry is growing with fast pace across globe with increase in the number of health care centres / clinics / hospitals to meet the requirements of the patients. At the same rate the number of medical stores are also being set up as per the needs. It doesn't mean all medical stores do wonders irrespective of competition, place and investment. The increasing complexity of the drug therapy with its potential adverse side effects along with the danger of drug abuse has brought into focus the important role of both the pharmacists and pharmacy workers in the health care system. In India, initially training was imparted primarily for preparing manpower for the tasks of compounding and dispensing according to prescriptions written by medical practitioners. But with the introduction and increasing availability of ready-to-use medicines pre-packaged in required dosages, the need of compounding and dispensing has become redundant. Yet the basic knowledge, concepts, notion even hypothesis is still similarly important and essential to run a pharmacy at different state in the country. Medical stores must have a system for classifying or organizing medicines and must ensure that all employees know the system being used. This paper gives us an idea about storage of drugs in medical shops of Gwalior region in Madhya Pradesh.

KEYWORDS: organizing medicines, hypothesis, medical practitioners.

INTRODUCTION
The Regulation of Retail Pharmacy Businesses Regulations 2008 cover a number of requirements relating to the appropriate sourcing, storage and disposal of medicines. As pharmacies are the final link in the chain of supply of medicinal products, from manufacturers to patients, all medicinal products sold or supplied from pharmacies must be
sourced from appropriate manufacturers and wholesalers, and stored in accordance with the relevant marketing authorisation, to assure the safety, quality and efficacy of such products. In addition, the disposal of medicinal products, within a pharmacy, must be carried out in a manner which protects public health and does not result in any risk to the environment. The guidelines in relation to storage aim to ensure that medicines are stored in appropriate physical premises and conditions, including in appropriately robust stock management procedures in place, including date checking procedures and procedures for managing controlled drugs, refrigerated medicines, ‘exempt’ medicines, veterinary medicines, etc.

The guidelines in relation to disposal aim to ensure that:

1. public health and the environment are adequately protected,
2. pharmacists and pharmacy owners are cognizant of their obligations under other waste legislation,
3. the requirements around the destruction and disposal of controlled drugs and the disposal of returned medicinal products are clarified, and
4. patients and the public are facilitated in regard to the management of waste medicines.

Maintaining proper storage conditions for health commodities is vital for ensuring their quality. Product expiration dates are based on ideal storage conditions and protecting product quality until their expiration date is important for serving customers and conserving resources. Guidelines for the Storage of Essential Medicines and Other Health Commodities is a practical reference for those managing or involved in setting up a storeroom or warehouse. The guide contains written directions and clear illustrations on receiving and arranging commodities; special storage conditions; tracking commodities; maintaining the quality of the products; constructing and designing a medical store; waste management; and resources. It was written to meet the needs of district-level facilities; however, the guidelines and information it contains apply to any storage facility, of any size, in any type of environment.[1]

RESULT OF IMPROPER STORAGE: DRUG DEGRADATION

1. If medications are not properly stored, they may lose efficacy or potency, therefore compromising the desired effect.
2. All expired, damaged, or contaminated medications must be stored separately until they are removed.
3. Improper storage may increase the potential for medication errors.
4. If medications are not properly secured, the opportunity for theft is increased, which can have tragic consequences.

**PROCESSES LEADING TO DRUG DEGRADATION**[2]

**Exposure to air (oxidation):** Many medicines undergo oxidation when they come in contact with oxygen present in the environment in which they are stored. For example, Ascorbic acid (Vitamin C.), Epinephrine, Chlorpromazine, Isoproternol, Morphine & preparations containing fats and oils. Most of the above products are oxidized to a less active chemical forms.

**Exposure to heat:** The heat sensitive drugs like Vitamins, Insulin, Oxytocin, Heparin, Dutasteride, Dry Syrups like Ampicillin, are inactivated when exposed to high temperatures. They are either converted to a less active or in case of most of the vaccines; they may be converted to a complete inactive or even harmful toxic form.

**Access to moisture (hydrolysis, microbial growth):** Many medicines undergo hydrolysis when they come in direct or indirect contact with water through the humidity in environment in which they are stored. The growth of micro-organisms like fungus is facilitated in presence of moisture. For example, Antibiotics like Penicillins and amoxicillin are hydrolyzed to Penicillinic Acid, the less potent/active chemical form. The preparations containing proteins, carbohydrates like glucose are easily contaminated with microbes in presence of moisture.

**Exposure to light (Oxidation or photochemical degradation):** Some medicines and their preparations are sensitive to light and lose their action when exposed to light. Example, in ciprofloxacin the flourine present in chemical structure of ciprofloxacin is liberated in presence of ultraviolet light and it is converted to a toxic form. Most of the water soluble Vitamins like Riboflavin, Cyanocobalamin are inactivated in presence of light. More importantly, all the chemical reactions mentioned above Hydrolysis, oxidation, etc. are facilitated in presence of light.

**STORAGE CONDITION OF DRUGS (IN INDIA)**[3]

Indian Pharmacopoeia describes conditions for storage of some official substances which are likely to deteriorate, if not stored properly. It is important to follow the manufacturer’s recommended storage conditions for all products. The terms used under definite meaning of the pharmacopeia are:
1. **Store frozen:** Some products, such as certain vaccines, need to be transported within a cold chain and stored at -20°C. Frozen storage is normally for longer-term storage at higher-level facilities.

2. **Do not freeze** or do not store over 8°C: To be kept in refrigerator (from +2°C to +8°C but not in the freezer chamber).

3. **Keep Cold:** Storage at any temperature NOT exceeding 8°C and usually between 2°C and 8°C but must not be frozen. These are usually kept in the first and second part of the refrigerator (never the freezer). This temperature is appropriate for storing vaccines for a short period of time. A refrigerator is a cold place in which the temperature is maintained thermostatically between 2°C and 8°C.

4. **Keep Cool:** Store at 8°- 25°C. An article for storage in a cool place is directed, may, alternatively, be stored in a refrigerator (at temperature between 2°C and 8°C), unless otherwise specified in the individual monograph. Store at room temperature or do not store over 30°C: store at 15°C -30°C.

5. **Storage at ambient temperature:** Store at the surrounding temperature. This term is not widely used due to significant variation in ambient temperatures. It means “room temperature” or normal storage conditions, which means storage in a dry, clean, well-ventilated area at room temperatures 15° to 25°C or up to 30°C, depending on climatic conditions.

6. **Protect from moisture:** To be stored in normal humidity at room temperature (Relative Humidity less than 60%).

7. **Protect from light:** To be stored in a light-resistant cupboard/drawer; to be provided by the manufacturer in a light-resistant container.

**Special Storage Requirements**

1. Products to be stored at a certain temperature- Vaccines and sera
2. Products sensitive to heat & requiring refrigeration – Insulin at 2 – 8°C Do Not freeze.
3. Flammable products Elixirs and alcohol based products.
4. Products that have reduced shelf life at uncontrolled room temperature- Nitroglycerine.
5. Products prone to theft or misuse expensive & habit forming drugs.
6. Storage of Antibiotics should be as per the manufacturer’s instructions.

The potency of vaccines, sera, test kits, and many other items depends on cold storage. Vaccine, in particular, must be kept at precisely controlled temperatures from the point of manufacture to the point of administration. Also daily temperature record should be maintained properly.

Storage of vaccines: All vaccines and diluents must be stored in the refrigerator for short term between 2°C and 8°C in a pharmacy that issues to the end-user or clinics. For long terms storage -20°C is preferred only for BCG, OPV and measles/MMR. Do not freeze other vaccines. Domestic refrigerator, ice lined refrigerator are used for short term storage and deep freezer for long term storage. SIHFW: an ISO: 9001:2008 certified institution.

STORAGE CONDITION OF DRUGS (IN US)\(^{[4,5]}\)
Storage statements should be based on the stability evaluations of the Pharmacopeial drug substances and in accordance with national and international requirements.

Room Temperature Storage Statements— For products with a storage statement reading, “Store at controlled room temperature,” the labeling should read as follows on the package insert: “Store at 20°C to 25°C (68°F to 77°F), excursions permitted between 15°C and 30°C (between 59°F and 86°F).

Brief exposure to temperatures up to 40°C (104°F) may be tolerated provided the mean kinetic temperature does not exceed 25°C (77°F); however, such exposure should be minimized.”

On the immediate container label, the following may read for controlled room temperature (CRT): “Store at 20°C to 25°C (68°F to 77°F), excursions permitted between 15°C and 30°C (between 59°F and 86°F).”

Cool Storage Statement— The storage statement for labeling may be as follows: “Store in a cool place, 8°C to 15°C (46°F to 59°F).”

Refrigerator Storage Statement— The storage statement for labeling may be as follows: “Store in a refrigerator, 2°C to 8°C (36°F to 46°F).”
Freezer Storage Statement—The storage statement for labeling may be as follows: “Store in a freezer, −25°C to −10°C (−13°F to 14°F).”

Other applicable storage conditions, such as Storage Under Nonspecific Conditions and store in a Dry Place. Additional cautionary statements to protect the Pharmacopeial drug product from extreme temperature and humidity conditions may be included on the container label and package insert, as the manufacturer desires. Shipping of temperature-sensitive articles requiring thermally controlled packaging presents a special challenge. Unlike shock, vibration, and other physical hazards, thermal hazards tend to be unique to a given system labeled for special storage conditions (between 2 and 8) vary widely in their tolerance of short-term exposure to heat and cold. Some, such as soft gelatin capsules and suppositories, affected by multiple, short-term excursions beyond the storage temperature limits should be performed.

METHODOLOGY
Method of research exploratory research
Technique of data collection oral questions
Type of data required primary data
Instrument used questionnaire
Sampling size 100 respondents
Sample element medical stores
Sampling Gwalior region

A team of enthusiastic students was constituted. They prepared the questionnaire. The results were complied and conclusions were drawn.

RESULT
The questionnaires were collected from the medical stores. Following results obtained from the answers given by the respondent:
1. Qualification of person:
   a. 10th (0%)
   b. 12th (1.25%)
   c. D. Pharm (43.75%)
   d. B. Pharm (32.5%)
2. Understand Latin term:
   a. Yes (56.25%)
   b. No (43.75%)

3. Understand labelling instruction of storage:
   a. Yes (86.25%)
   b. No (13.75%)
4. Drug stored in alphabetical order:
   a. Yes (66.25%)
   b. No (33.75%)

5. Storage of narcotic drugs
   a. In separate drawers (75%)
   b. Along with other drugs (25%)

6. Know about different schedule of storage
   a. Yes (56.25%)
   b. No (43.75%)
7. Storage of breakage and expired drugs
   a. Stored in separate boxes (82.5%)
   b. Along with other drugs (17.5%)

8. Insulin injection stored at (2-8 °C)
   a. Yes (90%)
   b. No (10%)

CONCLUSION
As the survey done by us illustrates that, a large no. of medical store in Gwalior does not follow right storage condition recommended by IP. Which illustrate that the person involved in storage of medicine in drug store have lack of knowledge. It is also found that many people who are involved in storage of drugs have no knowledge about latin term and different Schedules for storage. According to survey, in some medical stores it is found that they do not keep narcotic drugs in separate drawers, this may lead to misunderstanding when they dispense medicine to the patient.
RECOMMENDATIONS
Active media awareness and seminars should be conducted to educate drug users on the dangers of poor drug storage. Pharmacovigilance centres can take up this as an added responsibility. Regulatory bodies that issue licenses to patent medicine stores should sit up to their responsibility by going round to ensure that premises meet up with regulatory requirements. Market sampling of drugs should be carried out in patent medicine stores for quality control assessment to ascertain their potencies or presence of degradation.

REFERENCES
4. www.pharmacopeia.cn.