

Hospital Formulary: An Overview

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ABSTRACT

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Formulary is a continually revised compilation of pharmaceuticals and some important ancillary information that reflects the current clinical judgement of medical staff. The main reason for developing hospital formulary is to set standards for best practice, promoting high quality, evidence based prescribing thus reduces the variation in the level of treatment provided to the patients and controlling drug cost. Hospital formulary is the vehicle by which the medical, pharmacy and nursing staffs make use of the system; hence it is important that it should be complete, concise, updated and easy to use. The implementation of the formulary will have significant impact on clinical practice of health care professionals. It helps physicians to know about the available drugs in the hospital pharmacy and also helps in better inventory control. This review gives the complete information about the importance, preparation and benefits of the formulary.

Keywords: Hospital Formulary, pharmacy, best practice, standards, drug cost.

INTRODUCTION

With the increased prevalence and incidence of diseases and with increased number and diversity of medicines world wide, every hospital should maintain a formulary on its own so as to reduce the variations in the level of treatment provided to the patients. Formulary is a continually revised compilation of pharmaceuticals and some important ancillary information that reflects the current clinical judgement of medical staff.¹

One way of rationalizing the selection of drugs and one hopes of improving prescribing, is the development of a general practice formulary.² Hospital formularies originally started life in hospitals as a collection of commonly prescribed pharmaceutical preparations, produced mainly for reference purposes. As time went on, the hospital formulary was adopted to incorporate the detailed information on the increasing number and diversity of medicines.³ It is difficult to achieve efficiency in the hospital pharmaceutical system if there are too many medicines.⁴ However, these new and expensive preparations required ever increasing funds and the formulary rapidly turned into a list of restricted medicines.³

Members involved in the preparation of Hospital Formulary

The most important function of Drugs and Therapeutics Committee (DTC) is to prepare and implement a formulary for the hospital. The committee should have sufficient

members to represent all stakeholders, including the major clinical departments, the administration and the pharmacy. Members should be selected with reference to their positions and responsibilities.

In most hospitals, the membership includes:

A representative clinician from each major specialty, including surgery, obstetrics and gynaecology, internal medicine, paediatrics, infectious diseases, and general practice (to represent the community).

A clinical pharmacologist, if available.

A nurse, usually the senior infection control nurse, or sometimes the matron.

A pharmacist (usually the chief or deputy chief pharmacist), or a pharmacy technician where there is no pharmacist.

An administrator, representing the hospital administration and finance department.

A clinical microbiologist or a laboratory technician where there is no microbiologist.

A member of the hospital records department.⁴

Importance of a Formulary

When a formulary is used effectively, it becomes the cornerstone of a formulary system, which can be one of the most effective methods of ensuring rational drug therapy and controlling drug cost. Medicines which play a crucial role in the prevention and treatment of diseases, when used correctly they can offer simple and cost-effective solutions for many

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health problems.⁵ The main reason for developing hospital formulary is to set standards for best practice, promoting high quality, evidence based prescribing thus reduces the variation in the level of treatment provided to the patients. A formulary can be used as a tool to rationalize the range of medicines used in standard practice. Hospital formulary is the vehicle by which the medical and nursing staffs make use of the system; hence it is important that it should be complete, concise, updated and easy to use.³

Types of hospital formularies

There are three basic types of formularies-open, closed or restricted and incentive based.

An open formulary serves merely as a guide; a physician may prescribe any drug, but is encouraged to use the formulary list in prescribing decisions.

In contrast, a closed or restricted formulary lists the drugs that will be reimbursed by the health care provider; non-formulary drugs will be reimbursed only if they are authorised prior to prescribing.

An incentive-based formulary represents a hybrid between the open and closed formularies; patients pay a higher price for non formulary drugs.⁶

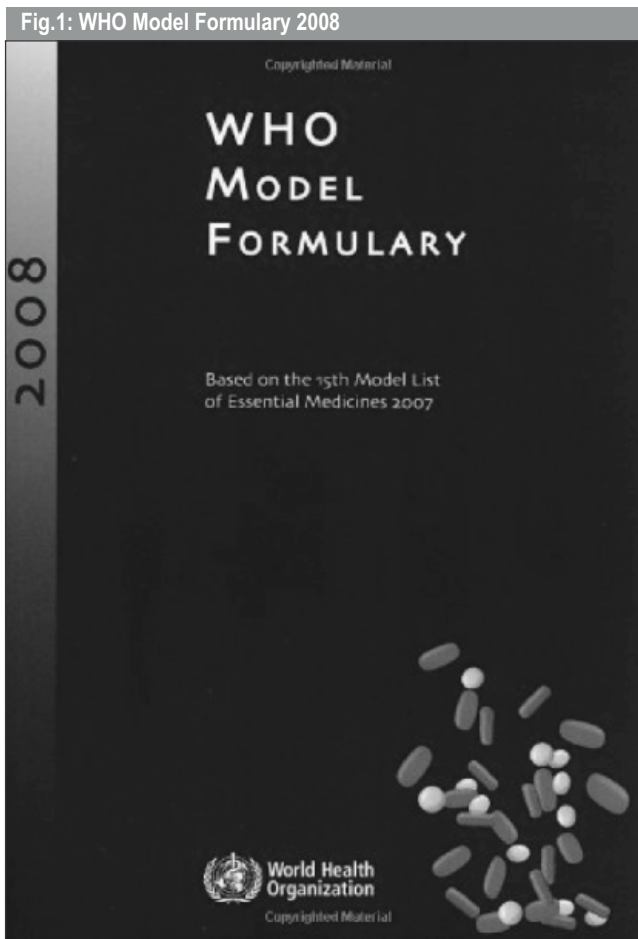
Examples of Formulary

WHO Formulary, British National Formulary, Indian National Formulary are some of the formularies used as standard references in many hospitals. Many hospitals in India have developed their own Hospital Formularies like Kasturba Hospital at Manipal, Christian Medical College Hospital at Vellore and KLE Hospital at Belgaum etc. (Figure 1, 2, 3).

Benefits of the hospital formulary

All aspects of drug management, including procurement, storage, distribution and use are easier if fewer items must be dealt with. Appropriate selection of drugs can achieve the following results:

- **Cost containment and enhanced equity in access to essential medicines:** Procuring fewer items in large quantities results in more competition and economies of scale with regard to quality assurance, procurement, storage and distribution. Such economies can lead to improved drug availability at lower costs, so benefiting those who are in most need.
- **Improved quality of care:** Patients will be treated with fewer but more cost-effective medicines for which information can be better provided and prescribers better trained. Prescribers gain more experience with fewer drugs and recognise drug interactions and adverse drug



reactions better. Quality of care will be further improved if medicine selection is based on evidence based treatment guidelines.⁴

It is made so precise that it is very handy for use by the physician and nursing staff.

Criteria in medicine selection

Selection of drugs depends on many factors, such as the pattern of prevalent diseases, the treatment facilities, the training and experience of available personnel, the financial resources, and genetic, demographic and environmental factors. WHO (1999) has developed the following selection criteria:

- Only those medicines should be selected for which sound and adequate data on efficacy and safety are available from clinical studies, and for which evidence of performance in general use in a variety of medical settings has been obtained.
- Each selected medicine must be available in a form in which adequate quality, including bioavailability, can be assured; its stability under the anticipated conditions of storage and use must be established.

Fig.2: British National Formulary 2011



Fig.3: British National Formulary for Children 2011-2012



- When two or more medicines appear to be similar in the above respects, the choice between them should be made on the basis of a careful evaluation of their relative efficacy, safety, quality, price and availability.
- In cost comparison between medicines, the cost of the total treatment, and not only the unit cost of the medicine, must be considered. Where drugs are not entirely similar, selection should be made on the basis of a cost-effectiveness analysis.
- In some cases, the choice may also be influenced by other factors, such as pharmacokinetic properties, or by local considerations such as the availability of facilities for storage or manufacturers.
- Most essential medicines should be formulated as single compounds. Fixed-ratio combination products are acceptable only when the dosage of each ingredient meets the requirements of a defined population and when the combination has a proven advantage over single compounds administered separately in therapeutic effect, safety or compliance.

- Drugs are specified by the international non-proprietary name (INN) or generic name without reference to brand names or specific manufacturers.⁴

Steps involved in the preparation of hospital formulary

Identify the most common diseases being treated in the hospital by consulting all medical departments. For each disease, an appropriate first choice of treatment should be identified using standard treatment guidelines. An expert committee can be brought together to identify the appropriate treatment for each of the common health problems.

The alternative method is reviewing the WHO model list of essential medicines may also be used as a starting point. The capability of the hospital and its staff to handle specific drugs should not be forgotten during the selection process.

A draft of the list must be prepared and must be given to each department to comment on the list. The Drugs and Therapeutics Committee must deliberate on their comments and provide feedback. All information should be discussed with evidence based reviews where possible.

After the preparation of final list, monographs for each drug should be prepared and it should contain unbiased information.⁴

Contents of each drug monograph: The drug monograph consists of following subheadings such as non-proprietary name of drug, synonyms, available brands and cost, reconstitution and administration, dosage forms, Indications, contraindications, precautions, dose, pregnancy risk factors, adverse effects and interactions.^{3,5,7}

Managing a formulary list (Adding and deleting drugs):

For a new medicine to be added into the hospital formulary, the committee should consider the therapeutical equivalency to existing drugs in terms of efficacy, safety, or convenience of dosing/administration. For the addition and deletion of drugs the total cost for a course of treatment with new medicine should be compared with the already listed medicines.⁴

Pruning the list

If a new medicine is added to the list for reasons of improved efficacy, safety or lower price, serious consideration should be given to delete the medicine which was previously on the formulary list for the same indication, for two reasons:

- If the 'new' medicine is better, why continue to have a less good 'old' medicine on the list?
- If no effort is made to consider deleting medicines, none will be deleted and the list will grow in size.⁴

Maintaining a formulary

New drugs and treatments are emerging all the time, and without evaluation the formulary may become a collection of older, less effective drugs. Therefore, the entire formulary should be reviewed every 2–3 years. This can be done by evaluating all the formulary medicines within each therapeutic class in a systematic way on a regular basis and comparing them to other new non-formulary medicines within that class. Thus, in order to efficiently maintain a formulary, a DTC should meet regularly to discuss and decide upon:

Requests for the addition of new medicines and deletion of old medicines.

Systematic review of a therapeutic class of medicines.

Review of programmes to identify and resolve medicine use problems.

All decisions of the DTC should be documented (minuted).⁴

Improving adherence to a formulary

The existence of a well-maintained formulary does not mean that prescribers will adhere to it. Methods to promote formulary adherence include the following

- Reviewing and taking action on all non-formulary medicine use; action may include adding the medicine to the formulary, educating the prescriber about the non-formulary status of the medicines or banning use of the medicine within the hospital.
- Prohibiting the use of non-formulary drug samples in the hospital.
- Establishing procedures and approved drug product lists for therapeutic interchange or substitution.
- Providing easy access to the formulary list, with copies at each drug ordering location and in pocket manuals for staff.
- Involving medical staff in all formulary decisions.
- Advertising and promoting all formulary changes.
- Establishing agreed procedures for clinical trials with non-formulary medicines.⁴

Formulary manual

The formulary manual is the publication that brings all the important summary information on medicines in the formulary list together in a manual. There is no set standard on how this document is arranged or what is in the manual. Normally it would contain an alphabetically and therapeutically arranged listing of all the formulary drugs, and a section on drug usage including doses, contraindications, side-effects, drug interactions and price. Ideally the manual should include a section on the medicines of choice and alternates for treating the medical conditions of the region.

The DTC may be selective in what information is presented for each item, depending on what has been approved for use locally. A good comprehensive formulary can provide excellent drug information for health-care staff, but developing one is a very time-consuming process. If it is to be used, it will need to be pocket-sized, distributed widely (ideally to every prescriber), regularly updated, and developed in a transparent, participatory way.⁴

Role of Pharmacist

- Pharmacist in the DTC has a key role in developing policies and procedures governing the hospital formulary.
- The chief pharmacist has the primary responsibility for the preparation of hospital formulary.

- Pharmacist with the advice and guidance of DTC shall ascertain the quantity and source of supply of all drugs, chemicals, biological and pharmaceutical preparations used for the diagnosis, and treatment of patients.
- Pharmacist should ensure that quality of drugs is not compromised by economic considerations.⁸

Different parts/contents of formulary

Abbreviations, introduction, WHO model list of essential medicines, general advice to the prescribers, description about various drugs based on their pharmacological class.⁷

CONCLUSION

Hospital formulary promotes evidence based standard practice. It will ensure the clinical efficacy, patient safety and cost effective prescriptions for the rational drug use by identifying effective and safe medications. It provides impartial drug information to counteract biased promotional activities. Pharmacist plays a key role in developing policies and procedures governing the hospital formulary. When a formulary is used effectively, it becomes the cornerstone, which can be one of the most effective methods of ensuring rational drug therapy and controlling drug cost.

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