Journal of Current Medical Research and Opinion Received
17-03-2022| Revised 10-04-2022| Accepted 18-04-2022| Published Online 21-04-2022

DOI: https://doi.org/10.52845/CMRO/2022/5-4-2 **ISSN (O) 2589-8779 | (P) 2589-8760**
CMRO 05 (04), 1175–1183 (2022)

Review Article

Overview of Status and Challenges of Drug Information Services in India

Satish Kumar BP[1] | Dr Samraksha M[2*] | Dr Parvathi K[2]

1Associate professor, Department of Pharmacy Practice, Sri Adichunchanagiri College of Pharmacy, B G Nagara- 571448, India.
2 Pharm D Intern, Department of Pharmacy Practice, Sri Adichunchanagiri College of Pharmacy, B G Nagara, Karnataka- 571448, India
*Corresponding Author

Supplementary information The online version of this article (https://doi.org/10.52845/CMRO/2022/5-2-4) contains supplementary material, which is available to authorized users.

Abstract:

Drug information service is defined as a dedicated and specialised service provided by pharmacists to boost information of medicines use, promote rational prescribing among prescribers, and scale back medication errors. It is a clinical pharmacy service that responds to patient-related considerations by providing current, unbiased, and analysed information. According to the World Health Organization, DIC is an essential component of national drug rationalisation strategies. The goal of the drug information centre is to provide accurate individualised, useful, and unbiased drug information to consumers and healthcare professionals across the country for health care and drug safety concerns by responding to their requests on all major concerns relating to drug information, uses, and side effects.

In India, there is a scarcity of accurate drug information services, and doctors in general acquire their information from medical representatives who are openly partial to their product. Low-income people, diverse health-care systems, and a lack of knowledge about the risks and benefits of medication therapy make competent clinical pharmacy practise even more relevant and necessary in India. However, there is less awareness of the service in the Indian hospitals, and healthcare staff being constantly encouraged to use the services for improved patient care. Furthermore, the department of pharmacy practice's drug information services created a network of DICs in India and internationally for improved patient care now and in the future.

Introduction:

Drug information service is defined as a dedicated and specialised service provided by pharmacists to boost information of medicines use, promote rational prescribing among prescribers, and scale back medication errors. It is a clinical pharmacy service that responds to patient-related considerations by providing current, unbiased and analysed information.[1]

The phrase “clinical Pharmacy” was coined to represent pharmacist’s ability to speak with patients and members of the health-care team, build potent therapeutic treatment suggestions, monitor drug medical care response, additionally give drug info to people who request it.

Supplementary information The online version of this article(https://doi.org/10.52845/CMRO/2022/5-4-2) contains supplementary material, which is available to authorized users.

Clinical pharmacy services area unit so considered services offered by pharmacists so as to support rational drug medical care that's safe, applicable, and efficient. Clinical Pharmacists works in the main in hospitals and clinical care settings, that specialize in patients instead of drug connected services. 2, 3

According to the World Health Organization, DIC is an essential component of national drug rationalisation strategies.[4] The goal of the drug information centre is to provide accurate individualised, useful, and unbiased drug information to consumers and healthcare professionals across the country for health care and drug safety concerns by responding to their requests on all major concerns relating to drug information, uses, and side effects.[5]

A highly successful initiative in establishing and promoting rational drug therapy is the drug information service.[6]

The World Health Organization (WHO) recognises the drug information centre as a crucial component of national initiatives to encourage the rational use of drug therapy. The basic services provided by such centres include collecting, analysing, assessing, cataloguing, and disseminating information about medicines to health care professionals. This offers you access to healthcare settings, libraries, research facilities, and educational programs.[7]

The profession of pharmacy needed to evolve new duties and responsibilities for pharmacy professionals to promote rational medication use in response to increased need for enhanced efficacy, safety, potency, and accuracy of drug therapy.[8]

DI can be gained through a variety of sources, including primary, secondary, and tertiary education. The foundation on which secondary and tertiary information is created is the primary source. It consists of new articles, case reports, case series, and more. A secondary source serves as a supplement to or evaluation of primary sources. This comprises review papers, meta analyses, indexes (Index Medicus), abstracts (International Pharmaceutical Abstracts), and a combination of abstracts and full text reprints (International Pharmaceutical Abstracts). Formulary manuals, standard treatment manuals, textbooks, general reference books, drug bulletins, and drug compendia are examples of tertiary sources.[9]

In comparison to the past, the number of pharmaceuticals entering the market is increasing. Due to the availability of new medications on the market, treatment guidelines are also changing more regularly. Due to the increased availability of DI, it is becoming increasingly challenging to retain such a large amount of medication information.[1]

As a developing country with a vast population, India has a great demand for drug information. Doctors in India depend on medical representatives for pharmaceutical guidance. These representatives cannot be expected to provide unbiased information because they are clearly prejudiced in favour of their products. When accurate information is readily available, it can help with health care, which is in great demand in India.

Despite the fact that the first DIC in the world was developed in 1962, it was not until the late 1990s that it was created in India. In India, JSS College Ooty and Trivandrum Medical College were the founders in this concept. The Karnataka State Pharmacy Council DIC was established in 1997, making it India's first independent DIC. The Maharashtra State Pharmacy Council Centre was India's third DIC and the first in the western zone. By 2007, WHO India had created 5 DICs across India, in partnership with the Karnataka State Pharmacy Council, after recognising the need for organised information. Haryana, Chhattisgarh, Rajasthan, Assam, and Goa were among them.

In India, DIS is still in its development. There are a few centres in India that deal with DISs. This is due to a lack of infrastructure, a shortage of skilled labour, and a lack of interest in the field. The majority of the centres collaborate with hospitals, with a few working in secondary care hospitals (district level) and others in tertiary care facilities. DI is provided by certified clinical pharmacists in most DICs in India. After developing drug information centres in various parts of India clinical pharmacists directly have impact on the

patient care by numerous interventions, decreasing the medication errors and improve the patient compliance.[10]

The role of a clinical pharmacist is to provide health care practitioners with unbiased, non commercial, independent, and well-referenced information in order to improve patient care. The providing of drug information services by a clinical pharmacist is an important aspect of his or her regular activities. Effective drug information and evaluation abilities are crucial in everyday pharmacy practise. Because pharmacists are increasingly involved in prescribing decisions, it is critical that they provide accurate, evidence-based drug information to prescribers [10]. It's hard to compare the efficacy of different therapies, in an increasingly challenging health-care setting.[11]

A rational evaluation of all areas of scientific evidence in respect to similar medications is the best way to determine which drug is ideal for formulary addition.[12,13]

The drug information centre (DIC) has a significant impact on the development of drug formularies as well as the execution of rational therapy. The centre aims at delivering reliable drug information which is well referenced, critically analysed, and up-to-date in order to enhance medication safety and efficacy.[14]

Most emerging countries lack drug information due to lack of availability of recent literature, validated freely accessible databases, under reporting, and poor reporting of medication-related problems, particularly adverse events (AEs) and adverse reactions. However after establishment of drug information centres in different parts of India, now Clinical pharmacists can immediately participate in patient care by providing interventions, reducing pharmaceutical errors, and improving patient compliance. [15]

In comparison to underdeveloped countries, developed countries have a good information flow and DIS practise. Due to the following factors, most developing countries lack appropriate DI: inadequate availability of current literature; poor documentation and transmission of the minimal accessible knowledge, lack of funds, insufficient trained staff, nonavailability of research-based periodic drugs and therapeutic information, limited availability of current literature, and poor or no information exchange services make the effectiveness of existing DICs in India questionable.[16]

Because of this malfunction, biassed and limited information is provided, which might contribute to a poor patient outcome in terms of pharmacoeconomics. As a result, maintaining the quality of service offered by DICs is an important aspect of DIS.[16,17]

Need for DIC:

The minimal need for drug information in the past was owing to the lesser range of accessible drugs, but newer drugs and multiple therapy combinations are currently being released. There are around 20,000 biomedical journals available, with over 6,000 new ones being produced every day.

Maintaining current knowledge of available pharmacological information is a demanding undertaking for health care professionals. Due to a variety of problems such as restricted access to current research, insufficient documentation, and inadequate funding, most developing countries, such as India, are in need of comprehensive medication information.

In India, there is a scarcity of accurate drug information services, and doctors in general acquire their information from medical representatives who are openly partial to their product. Low-income people, diverse health-care systems, and a lack of knowledge about the risks and benefits of medication therapy make competent clinical pharmacy practise even more relevant and necessary in India.

Because of the growing population and limited number of doctors, their practises are overburdened, causing undue stress. As a result, quality management suffers as a result. Clinical pharmacists have the capacity to fill this need.[18, 19]

Resources:

Original journal articles are primary sources of information since they are the most up-to-date, and they are grouped into three categories: primary,

secondary, and tertiary. They are good sources of information, but they take a long time to read and are expensive. Secondary sources of information, such as bibliographic, indexing, and abstracting services, are tremendously useful for swiftly and selectively analysing primary literature, but they are also very expensive to keep up with.

Comprehensive, concise information can be found in books and other tertiary literature sources. Despite being one of the most extensively used reference sources, its main disadvantage is that the data tends to lag behind that found in journals and that they do not allow easy access to information. [20-23]

1. Primary sources:

Primary sources contain previously unpublished research papers or clinical experience, as well as the consequences of clinical events such as adverse drug responses or unexpected therapeutic outcomes. Annals of Internal Medicine, Clinical Pharmacology and Therapeutics, and other journals publish primary literature.[24-25]

2. Secondary sources:

Secondary sources, such as primary literature indexing and abstracting services, provide an overview of previously published work. The National Library of Medicine's IOWA drug information service (IDIS), Medline, International Pharmaceutical Abstracts (IPA), Clinalert, and PubMed are only a few examples.[24-25]

3. Tertiary sources:

In tertiary sources, we can find general literature such textbooks and references like American Hospital Formulary Services (AHFS), Martindale the Complete Drug Reference, Meyer's Side Effects of Drugs, Remington's Pharmaceutical Sciences, and United States Pharmacopoeia Drug Information (USPDI). These sources include composite, condensed, and compressed information. When analysing tertiary literature, we should look at the author's expertise and experience, the accuracy of the literature, the appropriateness of the citations used, the clarity, conciseness, and accessibility of the literature. [24-25]

4. Electronic bulletin boards:

Local bulletin boards that are updated through a server and viewed through a computer and modem are known as electronic bulletin boards. Clinnet, Pharmline, and pharmnet are other examples. They keep us up to date on side effects and drug class evaluations (including benefits and risks), as well as help us to figure out how much alternative medicinal products cost. The major purpose is to promote drug usage that is safe and responsible. [24-25]

5. Additional medication information sources:

If the above-mentioned sources unable to provide answers, additional pharmaceutical information sources can be examined. Local and national websites, professions and government organisations, and pharmaceutical industries are among the most common.[24-25]

6. Some Useful internet web resources

World Health Organisation:

http://www.who.int

Australian Prescriber:

http://www.australianprescriber.com

British Medical Journal:

http://www.bmj.com

The Free Medical Journal:

http://www.freemedicaljournal.com. [24-25]

Indian Scenario and Start up

Jagadguru Sri Shivarathreeshwara (JSS) in Mysore, Trivandrum Medical faculty (TMC) in Thiruvananthapuram, and Mysore State Pharmacy Council (KSPC) in bangalore launched drug data services in 1997. The drug data centre of the Mysore State Pharmacy Council (KPSC) has become associate autonomous drug data centre. This centre provides unbiased drug data to many hospitals and general practitioners in Bangalore, in addition as some hospitals in Mysore. The Mysore centre made a customary treatment guideline and a vital drug list for Mysore in partnership with the urban center community to market rational drug use (DSPRUD). [26]

Many drug information centres have been established in hospitals since then, and the National Human Rights Commission (NHRC) has urged that such centres be built in every hospital. The clinical pharmacy department's success in establishing this service has prompted other institutions to do the same in their own hospitals. [27]

Table 1: List of Independent Drug Information Centre in India [28-30]

Sl. No	Independent Drug Information Centre
1.	Christian Medical College Hospital Vellore, Tamil Nadu
2.	Drug Information Centre, (KSPC), Victoria Hospital, Bangalore, Karnataka
3.	Drug Information Centre, (KSPC), Bowring & Lady Curzon Hospital, Bangalore, Karnataka
4.	Department of Pharmacy Practice, Chidambaram, Tamil Nadu
5.	Department of Pharmacy Practice, National institute of Pharmaceutical Education and Research (NIPER), Chandigarh
6.	Jawaharlal Nehru Medical College Hospital (JNMC), Belgaum, Karnataka
7.	JSS, Mysore, Karnataka
8.	JSS, Ooty, Tamil Nadu
9.	N.R.S. Medical College & Hospital, Calcutta, West Bengal

Table 2: List of Hospital attached Drug Information Centre in India [28-30]

Sl. No	Hospital attached Drug Information Centre
1.	Christian Medical College Hospital Vellore, Tamil Nadu
2.	Drug Information Centre, (KSPC), Victoria Hospital, Bangalore, Karnataka
3.	Drug Information Centre, (KSPC), Bowring & Lady Curzon Hospital, Bangalore, Karnataka
4.	Department of Pharmacy Practice, Chidambaram, Tamil Nadu
5.	Department of Pharmacy Practice, National institute of Pharmaceutical Education and Research (NIPER), Chandigarh
6.	Jawaharlal Nehru Medical College Hospital (JNMC), Belgaum, Karnataka
7.	JSS, Mysore, Karnataka
8.	JSS, Ooty, Tamil Nadu
9.	N.R.S. Medical College & Hospital, Calcutta, West Bengal
10.	Kempagowda Institute of Medical Sciences (KIMS), Bangalore, Karnataka
11.	Kasturba Medical College (KMC), Manipal, Karnataka
12.	Poison Information Centre, All India Institute of Medical Sciences (AIIMS), Delhi
13.	Poison Information Centre, National Institute of Occupational Health, Ahmedabad, Gujarat
14.	Department of Toxicology (Incl. Poison Information & Laboratory Services) Amrita Institute of Medical Sciences & Research, Cochin, Kerala
15.	Toxicology & IMCU Unit, Government General Hospital, Chennai
16.	Sri Ramachandra Hospital, Porur, Chennai
17.	Sri Ramakrishna Mission Hospital, Coimbatore, Tamil Nadu
18.	Trivandrum Medical College, Trivandrum, Kerala

Challenges:

Although the development of DICs has numerous advantages in terms of resolving health-care providers' information and improving patient care, it also has significant drawbacks. When it comes to establishing these centres, there are some

challenges that must be overcome. The major challenges include:

Funds and Resources:

The biggest challenge in establishing a DIC in resource-limited and underdeveloped nations is the lack of funds and resources. A adequate supply of recurring and non-recurring budgets is required for the successful establishment and implementation of DIC services. Since, such fields have limited departmental budgets in India, the cost of setting up a stand-alone DIC may be a disincentive. To justify its budgetary requirements, DIC could also provide other services such as poison information, adverse medication reaction monitoring, and training of postgraduate students in related areas.

Human resources:

The highly qualified and experienced professionals are required in the DIC to deliver reliable drug-related information. [31-36]

Lack of funding, a lack of skilled pharmacists, inappropriate prescribing, and poor economics, lack of knowledge about the drug information centre, national drug policy is industry-focused rather than health-focused, doctors and pharmacists are unaware of the concepts of appropriate drug usage, the over-the-counter sale of prescription drugs and Patients with a high rate of illiteracy and poverty are the major obstacles for developing a well-equipped drug information centre in developing nations such as India (DIC).

Furthermore, most developing countries, such as India, lack sufficient pharmacological expertise due to a lack of current literature, as well as poor recordkeeping and funding. There are few independent medication information sources in India, thus doctors get their information from medical representatives who are clearly predisposed toward their medicine.

Low-income people, numerous health-care systems, and a lack of understanding of the risks and benefits of medication therapy make competent clinical pharmacy practise even more relevant and necessary in India. Because of the growing population and limited number of doctors, their practises are overburdened, causing undue stress. As a result, the quality of the product diminishes. Clinical pharmacists have the potential to accommodate this need.

Conclusion:

DICs have existed since the 1960s, but their full potential has yet to be realised, particularly in developing countries. Although the number of centres will be limited in the future, their current activities will become more specialised and productive provided the following challenges are solved effectively.

In India, academic institutions' DICs may collaborate with the in-house department of complementary and alternative medicines (AUYSH) to supply medication information. TDM services, adverse drug monitoring, and collaboration with forensic scientists for drug identification, forensic pharmacology, post mortem toxicology, and expert testimony are all innovative ventures that could be replicated in India. Other activities have been described as a means of promoting evidence-based medicine practises and rational drug use, such as online or offline academic detailing, in which specially trained pharmacists/ pharmacologists with detailed medication knowledge interact with physicians to share the best practises of prescribing. Such activities will have a positive impact if they are tried in Indian settings.

In developed countries, information flow is usually adequate, if not extensive, whereas most underdeveloped nations lack appropriate information. The lack of independent drug information in developing nations could be due to a variety of factors includes: a scarcity of recent publications and books as sources of information, a lack of documentation and sharing of what little information is available, Information exchange/interlibrary loan services are weak or non-existent, Information procurement from foreign countries is often delayed and inefficient, a general lack of established treatment

recommendations and formularies in health facilities, Those who receive information might make it more personal by modifying it, a lack of acquaintance with computers or an incapacity to use them, lack of contemporary communication and information generation facilities, unregulated marketing practices of pharmaceutical companies, Despite their importance, organised drug information centres are relatively uncommon in underdeveloped nations.

As a result, it's crucial that developing-world pharmacologists, clinical pharmacologists, and pharmacists participate actively in the establishment of independent drug documentation and information centres. Because it is sometimes difficult in developing nations to obtain all of the suggested books, journals, databases, computers, and other equipment before beginning an information service, we could begin with whatever resources we have and gradually expand. If we can demonstrate our commitment and utility, it will be much easier to persuade local authorities and potential development partners to provide additional assistance.

Clinicians must be informed of DIC as well as the service in order to use DIS effectively. If physicians use DIS effectively, it can be used as a referral service similar to other specialties in a tertiary care institution. Through DIS, clinical pharmacologists can make a significant contribution to improving patient care safety and quality. The number of queries in DIC can be enhanced by increasing physician knowledge through continuing medical educations (CMEs), offering easy access to DIC via intranet or internet, and providing DI service 24 hours a day, seven days a week. The qualities of the drug information centre services needed to be improved.

In India, DIS is still in its development. There are a few centres in India that deal with DISs. This is due to a lack of infrastructure, a shortage of skilled labour, and a lack of interest in the field. The majority of the centres collaborate with hospitals, with a few working in secondary care hospitals (district level) and others in tertiary care facilities. DI is provided by certified clinical pharmacists in most DICs in India.

However, there is less awareness of the service in the Indian hospitals, and healthcare staff being constantly encouraged to use the services for improved patient care. Furthermore, the department of pharmacy practice's drug information services created a network of DICs in India and internationally for improved patient care now and in the future.

References:

1. Mohammed W, Afroz S, Miriyala S, Ramya G. Drug information service: A valuable service for better patient care provided by clinical pharmacists in government hospital.
2. World Health Organization. The role of the pharmacist in the health care system: preparing the future pharmacist: curricular development: report of a third WHO Consultative Group on the Role of the Pharmacist, Vancouver, Canada, 27-29 August 1997. World Health Organization; 1997.
3. SHPA Committee of Specialty Practice in Clinical Pharmacy. SHPA standards of practice for clinical pharmacy. Journal of Pharmacy Practice and Research. 2005 Jun;35(2):122-48.
4. World Health Organization. Promoting rational use of medicines: core components. World Health Organization; 2002.
5. George B, Rao PG. Assessment and evaluation of drug information services provided in a South Indian teaching hospital. Indian journal of pharmacology. 2005 Sep 1;37(5):315.
6. Parthasarathi G, Ramesh M, Kumar JK, Madaki S. Assessment of drug-related problems and clinical pharmacists' interventions in an Indian teaching hospital. Journal of Pharmacy practice and Research. 2003 Dec;33(4):272-4.
7. Sreekanth SK, Deepa S. Need and importance of drug information centres in

Indian hospital system. Int J Med Health Prof Res. 2015;2(1):9-16.
8. Parthasarathi G, Nyfort-Hansen K, Nahata MC, editors. A text book of clinical pharmacy practice: essential concepts and skills. Orient Blackswan; 2004.
9. Chauhan N, Moin S, Pandey A, Mittal A, Bajaj U. Indian aspects of drug information resources and impact of drug information centre on community. Journal of Advanced Pharmaceutical Technology & Research. 2013 Apr;4(2):84.
10. Wang F, Troutman WG, Seo T, Peak A, Rosenberg JM. Drug information education in doctor of pharmacy programs. American Journal of Pharmaceutical Education. 2006 Jun 15;70(3).
11. Wiedenmayer K, Summers RS, Mackie CA, Gous AG, Everard M, Tromp D, World Health Organization. Developing pharmacy practice: a focus on patient care: handbook. World Health Organization; 2006.
12. Kasilo OJ, Nhachi CF. Recommendations for establishing a drug and toxicology information center in a developing country.
13. Smith S, Bottle R. Use of information services by drug information pharmacists. Pharmaceutical journal. 1994;253(6810):499-501.
14. Kumar MM, Sowmya B, Dinesh R, Karthik M, Nagar AK, Yogananda R, Amanpathan S. Evaluation of performance of drug information center providing quality of information services to healthcare professionals in a tertiary care teaching hospital of South India. Inov Pharm Pharmacother. 2013;1:81-90.
15. Joshi MP, Drug information services in teaching hospitals in developing countries, Indian Journal of Pharmacology 30, 1998, 1-5.
16. Mohan JP. Drug information service at teaching hospitals in developing countries. Indian journal of pharmacology. 1998 Jan 1;30(1):1.
17. Ramesh M, Parthasarathi G. Drug information-Role of pharmacist. Indian Journal of Pharmaceutical Education. 2000;34(3):120-3.
18. Lal A, Sethi A. Drug package inserts in India. Annals of Pharmacotherapy. 1996 Sep;30(9):1041-.
19. World Health Organization. Promoting rational use of medicines: core components. World Health Organization; 2002.
20. Hudson SA, Walker RW, Drug Information and Pharmaceutical Advice, In, Collett DM, Aulton ME, Pharmaceutical Practice. Britain, ELBS, 1991, 421-431.
21. Remington JP, Gennaro AR. Remington's pharmaceutical sciences. Mack Pub.; 1985.
22. UK drug information manual, England, The Drug Information Pharmacists Group of the UK, 1992.
23. Kasilo OJ, Nhachi CF. How to establish a drug and toxicology information centre in a developing country. Essential drugs monitor. 1993(16):8-9.
24. Banker GS, Chalmers RK. Pharmaceutics and pharmacy practice. Lippincott Williams & Wilkins; 1982.
25. Aja GN, ABC of Rational Use of Medicines, Agbo Areo Publishers, Ibadan, 2001, 32.
26. Mohanta GP, Kumar IV, Manna PK, Manava R. 24-Independent, unbiased drug information a need to promote rational drug use. Health Administrator. 2005;20(1&2):99-101Pg.
27. Phadke AR. The quality of prescribing in an Indian district. National Medical Journal of India. 1996 Mar 1;9:60-5.
28. Malik M. Drug Information services-An Emerging Practice in India—A Review. Pharmacologyonline. 2010;2:85-90.
29. Thireesha P, Mounika K, Kumar P, Sri Harsha C. An overview of drug information centre-functions and challenges in India. Asian J Pharm Clin Res. 2020;13:11-5.
30. Chauhan NS, Raveendra R, Geetha J, Gopalakrishna B, Karki R. Drug

Information Centre (DIC)-An Indian Scenario. Indian Journal of Pharmacy Practice. 2009;2(1).
31. Khaliq A, Sayed SA. Drug and poison information centres: An emergent need for health care professionals in Pakistan. JPMA. 2016 Jun;66(639).
32. Joshi MP. University hospital-based drug information service in a developing country. European journal of clinical pharmacology. 1997 Oct;53(2):89-94.
33. Gitanjali B, Manikandan S. Availability of five essential medicines for children in public health facilities in India: A snapshot survey. Journal of Pharmacology & Pharmacotherapeutics. 2011 Apr;2(2):95.
34. Lall SB, Peshin SS. Role and functions of poisons information centre. The Indian Journal of Pediatrics. 1997 Jul;64(4):443-9.
35. Kshirsagar NA, Bachhav SS, Kulkarni LA. Clinical pharmacology training in India: Status and need. Indian Journal of Pharmacology. 2013 Sep;45(5):429.
36. Ananthakrishnan N, Arora NK, Chandy G, Gitanjali B, Sood R, Supe A, Nagarajan S. Is there need for a transformational change to overcome the current problems with postgraduate medical education in India?. National Medical Journal of India. 2012 Mar 1;25(2):101.

How to cite this article: BP, S. K., M, S., & K, P. (2022). Overview of Status and Challenges of Drug Information Services in India. Journal of Current Medical Research and Opinion, 5(04). https://doi.org/10.52845/CMRO/2022/5-4-2