Review of Literature:

1. **Armitage G and Knapman H. (2003),** in their study suggested that presence of pharmacists in patient care areas is a key strategy for improving medication safety.

2. **Asha K. Nayak et al. (2003),** determined the effectiveness of a competency programme among nursing personnel and found that there is increase in Range, Mean, Median of pre test and post test knowledge score of nursing personnel which reveals that giving knowledge improve the skill.

3. **Austin and Parish. (1976),** shown that up to a quarter of prescriptions written by doctors and almost half those written by ancillary staff are incomplete if assessed by the strict criteria of the British National Formulary.

4. **Bates D. W. (1995),** in their study claimed that 38% of preventable medication errors occur at the administration step.

5. **Beena Jimmy et al. (2008),** suggested that there is an urgent need for providing training to pharmacist for imparting responsibility in patient counseling related to Metered Dose Inhaler (MDI).

6. **British National Formulary,** provided a ready access and key information on selection, prescribing, dispensing and administration of medicines.

7. **Council of Europe Expert Group on Safe Medication Practices (2007),** claimed that nurses spend up to 40% of their time administrating medication.

8. **David Cousins (2009),** suggested that the hospital pharmacy services should ensure and monitor the quality of medicines that are purchased and supplied. Where they encounter substandard products, steps should be taken to minimize the risk and the incident should be reported to the national or regional pharmacovigilence service.

9. **David Rees Jones. (1978),** examined all prescriptions dispensed by one pharmacist during one month for errors. Only 5.1 per cent of 2,237 prescription forms contained an error which meant the pharmacist had to contact the doctor. Thirty-seven percent of prescriptions were either wholly or partly written by the receptionist. There was considerable variation between doctors and this varied from zero to 64 per cent; 4.0 percent of prescriptions written by the doctor contained errors while those written by the receptionist were almost twice as likely (seven percent) to do so.
10. Erick Odhiambo O. et al. (2007), made an quantitative estimation of medication purchased by the patients without prescription and found that majority of patients (66.21%) request OTC medication without prescription followed by prescription medication (Schedule H drugs) purchased without prescription (28.30%) followed by others (5.49%).

11. Fry J. (1978), concluded that general practitioners are coping with a growing workload by having an increasing number of prescriptions written by their ancillary staff.

12. Hamley J. G. et al. (1981), employed a method of duplicate prescription and found an efficient mean of collecting data which can be applied by individuals and groups of doctors to improve patient care and help achieve rational prescribing.

13. Hansen K. N. and May F. (1998), reviewed that an attempt to involve pharmacist to have direct role in patient health care was started through an ongoing Indo-Australian program to establish clinical pharmacy education and practice.

14. Institute for Healthcare Improvement (2008), reviewed that presence of pharmacists in patient care areas is a key strategy for improving medication safety.

15. Leape L. L. et al. (1995), Bates D. W. et al. (1999), Evans R. S. et al. (1998) and Bates D. W. (2000) concluded that Information Technology (IT) reduces the medical error in three ways: (i) by preventing errors and adverse events (ii) by facilitating a more rapid response after an adverse event (iii) by tracking and providing feedback about adverse events.

16. Leape L. L. et al. (1999), founded 66% reduction in adverse drug event related to preventable error when a pharmacist participated in daily rounds.

17. Lee A. (2008), reviewed that a medication safety-assessment guide was developed in Hong Kong which addresses the importance of confirming patient identity before drug administration, charting on the medication administration record, and documentation of drug allergies.

18. Lisa Nissen (2009), recommended that advanced practitioners with suitable postgraduate qualifications in pharmacy could be considered for medicine prescribing however, in the majority of countries, a much greater value in terms of improved patient outcomes would be achieved by increasing the role of pharmacists in medicine prescribing.

19. Lisby M. et al. (2005), conducted a study using observational technique in Aarhus University found that 41% of errors occur at administration end.
20. Manasse A. P. (1974), define the term repeat prescription commonly refers to the issue of a prescription to a patient who has a long standing condition for which regular therapy is required and where no face-to-face consultation between the patient and doctor take place.

21. National Patient Safety Agency (2008), published a recent report in which they indicated that 56.5% of reported errors associated with severe harm or death occurred at the administration step.

22. Nisha Abraham et al. (2007), concluded that clinical pharmacist acceptance by healthcare professionals of the hospital showed that the services of hospital pharmacists at the hospital were very well accepted by the healthcare professional and illustrated the value of pharmacists contribution to the healthcare delivery by the hospitals.

23. Rajesh R. et al. (2007), assessed the reported ADR’s for there preventability by using Modified Shumock and Thornton Preventability Scale and categorize either into “Definitely preventable” “Probably preventable” and “Not preventable”, and found that majority (56%) of reactions were preventable.

24. Richard Austin and Richard Dadja (1978), examined 261 prescriptions written by doctors and their ancillaries and found that there are differential incidence of such errors and these two groups shows little differing standards of prescription writing.

25. Rita Shane (1974), defined medication administration as the “sharp edge” in the medication-use process because errors introduced at the prescribing, dispensing, or transcribing step, if not intercepted, will result in the patient receiving the medication in error.


27. Seidl et al, (1966), founded that adverse effects from drugs are thought to affect between 10 and 20 per cent of hospital patients and to be responsible for between about three and five per cent of hospital admissions.

28. Shulman J. I. et al. (1981), kept 1366 medication record card to the pharmacy and found that in 86 cases potential adverse drug reaction reported and in 53 cases general practitioner changed the prescription after being contacted by pharmacist.

29. Suraj R. et al. (2008), concluded that when antibiotic usage was calculated in both the percentage of antibiotic use and DDD/100 bed-days there is a difference in observation,
ATC/DD system which is accepted globally can be used in antibiotic usage study for better expression and possible cross comparison across similar studies.

30. **United State Patent** No. 0223069, claimed a method for monitoring error in prescription data employing bar code system comprising a step of recoding the dosage type and dose of medication in prescription order by way of encoding those in the form of barcode.

31. **United State Patent** No. 0262430, claimed a method, apparatus and system for reducing medical error comprises an enter signal including an enter status when a first worker device enters a zone. This patent claim and use for the refilling of pills, suppositories and other small unit dosage form.

32. **United State Patent** No. US 6687676, claimed an unique prescription verification system in which unique identification code is given to the each prescription and which a host system is capable of receiving, storing and dispensing information therefore assigning conformation code to the prescription so as to indicate whether or not the prescription has been filled.

33. **WHO (2002)**, WHO model list of essential drugs contain 300 medicines carefully chosen to contribute to more rational prescribing, lower costs and improve supply of medicine.

34. **Wong I. C. et al. (2009)**, reviewed the factors contributing to paediatric medication errors, including lack of appropriate paediatric formulations, communication issues between health professionals, dose calculation mistakes and inadequate clinical practice. This review will also discuss risk reduction strategies such as electronic prescribing and computerized physician order entry (CPOE) systems which can significantly reduce paediatric medication errors in conjunction with pharmacist monitoring, improved communication and environments which promote best practice.