Dissertation Report By

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Healthcare IT

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Organization profile

- **Dell Services** is an information technology services provider based in Texas, USA.
- Dell has acquired Perot System in 2009, for $3.9 billion.
- Dell was ranked 1st in 2010 in healthcare IT sector according ta a report by Gartner Inc.
- Again in 2011, Dell services has proved no. 1 Healthcare IT Services Provider by Gartner Inc. Report.

Reflective learning

- ✓ VistA modules:
  - CPRS module
  - Pharmacy module
  - BCMA module
  - Lab module
  - Diet module
- ✓ Enhancements of BRDs (Business Requirement Document)
- ✓ Testing
  - Testing of any new enhancement in preproduction servers.
  - Automatic failover testing
  - Testing of any issue felt by customer

Significance of Unit Dose Drug Distribution System: Perception of stakeholders

What is UDDDS??

- ✓ Type of drug distribution systems for inpatients in hospital.
- ✓ Drugs are packed in single doses and in separate packages.
- ✓ Drugs are dispensed to use in 24 hours or less but not more than 24 hours.
- ✓ Proper labeling for drug identification as well as patient identification.

Advantages

- ✓ Reduction in drug wastage.
- ✓ Minimization of drug returns from inpatient.
- ✓ More accurate patient billings for drugs.
- ✓ Reduction in the size of drug inventories located inpatient-care areas.
- ✓ Less medication errors.

Therefore it has proved safer for patient & to improved overall drug control in a hospital.

Problem statement

Traditional Drug distribution system is associated with many disadvantages i.e. drug returns, wastage, pilferage etc.

There is an ample revenue loss to the organization!!!

Literature review

- UDDDS support nurses in administration of medication, to provide nurses and pharmacists with more time for patient care and to reduce wastage of increasingly expensive medications.

  M. Al Adham and B. Abu Hamad, 2011

- A study on University Hospital in Saskatoon revealed that a reduction in drug cost of about 36 percent due to decreased pilferage and wastage resulting from the use of unit dose packaging.

  B.R. Schnell and R.W. Hammel, 2006

- One way to prevent some types of medication errors is to administer medications in unit- dose packages since this ensures that the medication name, dosage, and other characteristics are available to the administering professional right until the time the medication is administered.

  K. K. Thompson and D. J. Scheckelho, 2002

Objectives

- ✓ To study the changes in drug dispensing work flow after implementation of unit dose drug distribution system.
- ✓ To compare the knowledge and attitude (perception) of different stakeholders towards unit dose drug distribution system (UDDDS).
- ✓ To compare benefits and barriers of UDDDS perceived by nurses and pharmacists.

Methodology

- ✓ **Research design** – Quantitative, comparative cross- sectional study
- ✓ **Study setting -** Conducted at Super Specialty Hospital, Delhi.
- ✓ **Target population -** Nurses and pharmacists
- ✓ **Sample size –** 30 nurses & 30 pharmacists
- ✓ **Data collection tool –** Close ended questionnaire & observation approach
- ✓ **Quantitative analysis technique –** Cross tabulation & chi-square test was carried out to find differences in perception of nurses and pharmacists for those questions which are common for both.
- ✓ Frequency tables were done for specific questions related with nurses & pharmacists separately.

Hypothesis

H_0: There is no significant difference in the knowledge, attitude and perceived benefits between nurses and pharmacists towards unit dose drug distribution system.

H_1: There is significant difference in the knowledge, attitude and perceived benefits between nurses and pharmacists towards unit dose drug distribution system.

Work flow changes in dispensing process

Before UDDDS

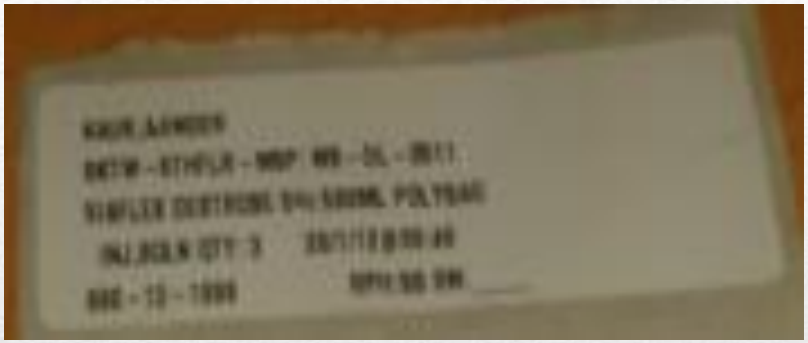
- Physician prescribes
- Nurse sends indent for minimum of 3 days (As hospital policy)
- Pharmacist receives
- Pull drugs
- Billing of drugs
- Packed in one bag
- Sends to ward

After UDDDS

- Physician prescribes
- Pharmacist receives
- Pull drugs
- Cut into unit dose
- Pack in separate bag
- Stick barcode & label
- Billing of drugs
- Sends to ward through med cart
- Nurse receives

Add-on with UDDDS

Unit dose packed in separate bag



Label for patient identification

Barcode for drug identification

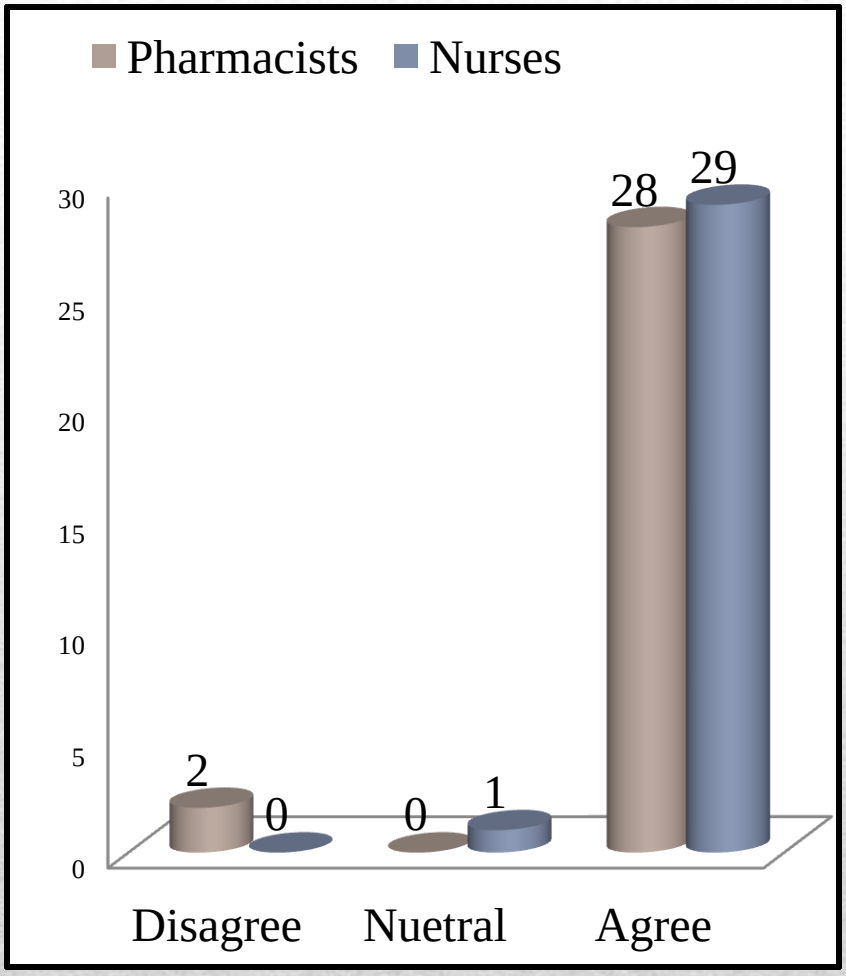
FINDINGS

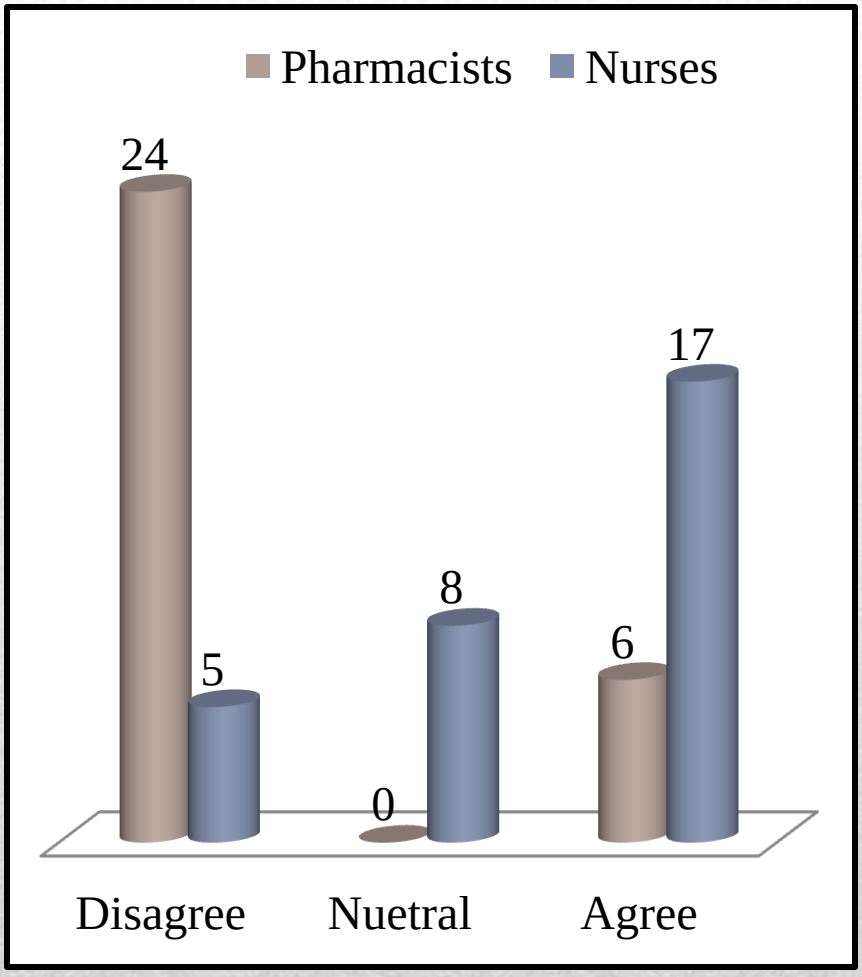
Chi-square test for comparison of knowledge

Variable	Pharmacist		Nurse		Chi-square value	*p*-value
	Number	%	Number	%		
UDDDS is medication of 24 hours					**3.01**	**0.221**
Disagree	2	6.7	0	0		
Neutral	0	0	1	3.3		
Agree	28	93.3	29	96.7		

Variable	Pharmacist		Nurse		Chi-square value	*p*-value
	Number	%	Number	%		
Number of dose dispensed in UDDDS is based on single dose a day					**25.7**	**0.000**
Disagree	24	80	5	16.7		
Neutral	0	0	8	26.7		
Agree	6	20	17	56.7		

Knowledge of respondents about UDDDS

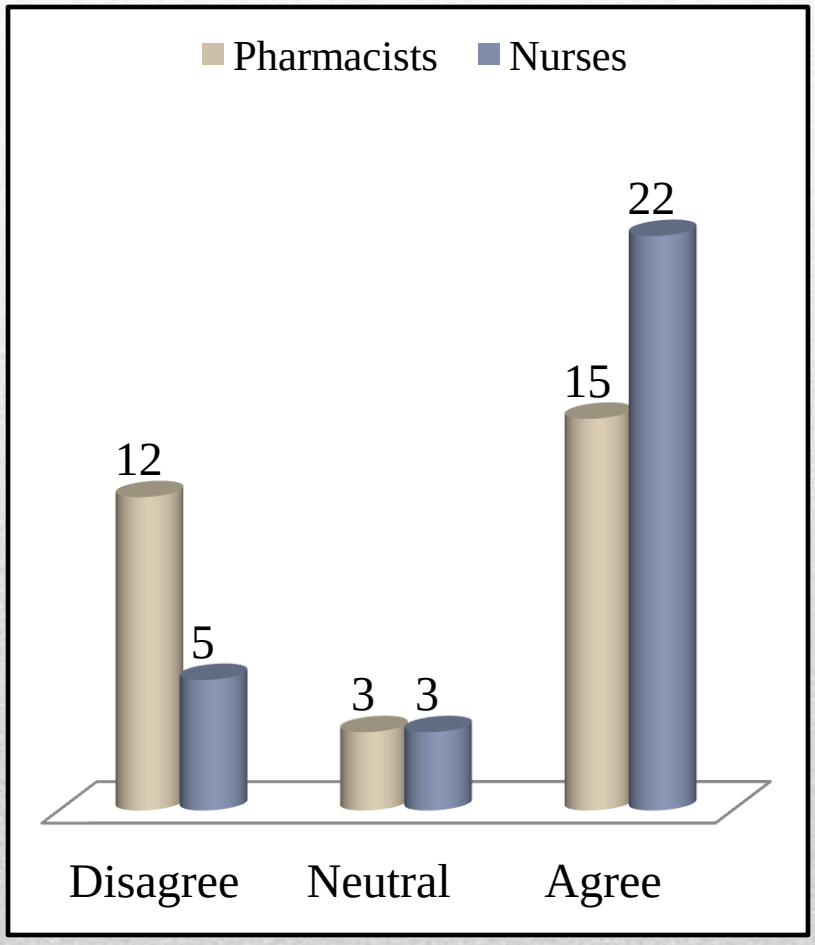




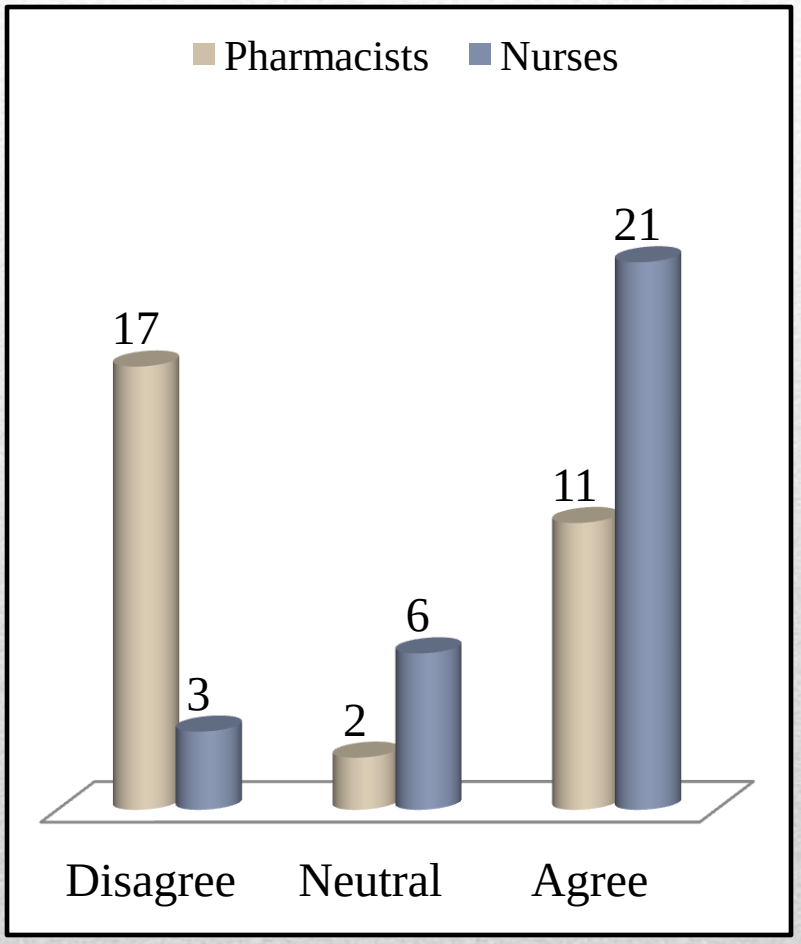
UDDDS is medication for 24 hours

Number of dose dispensed in UDDDS is based on single dose a day

Benefits perceived by nurses & pharmacists from UDDDS



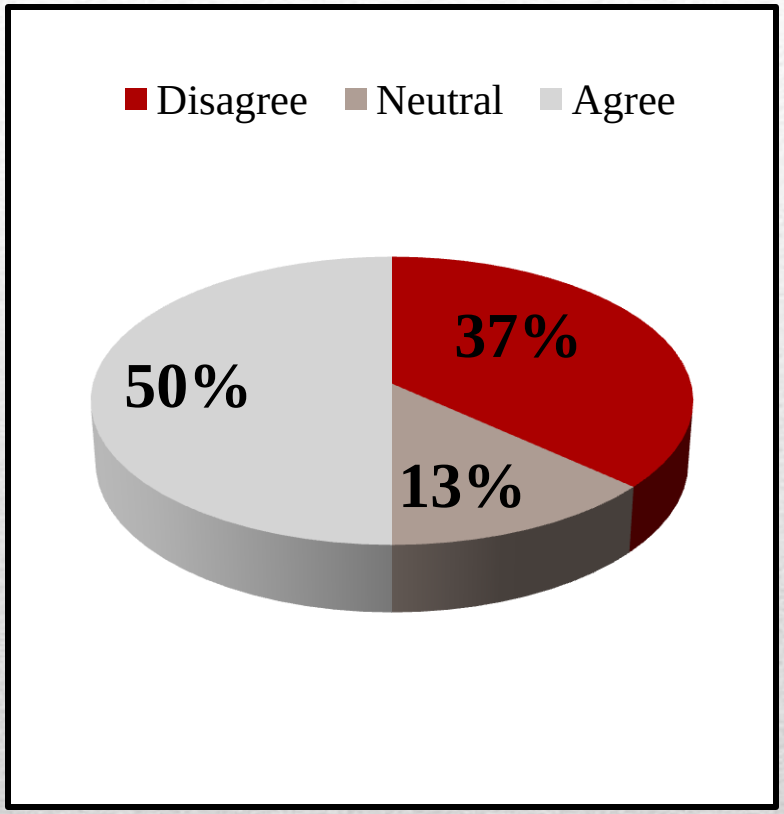
Drug returns reduced



Drug wastage reduced

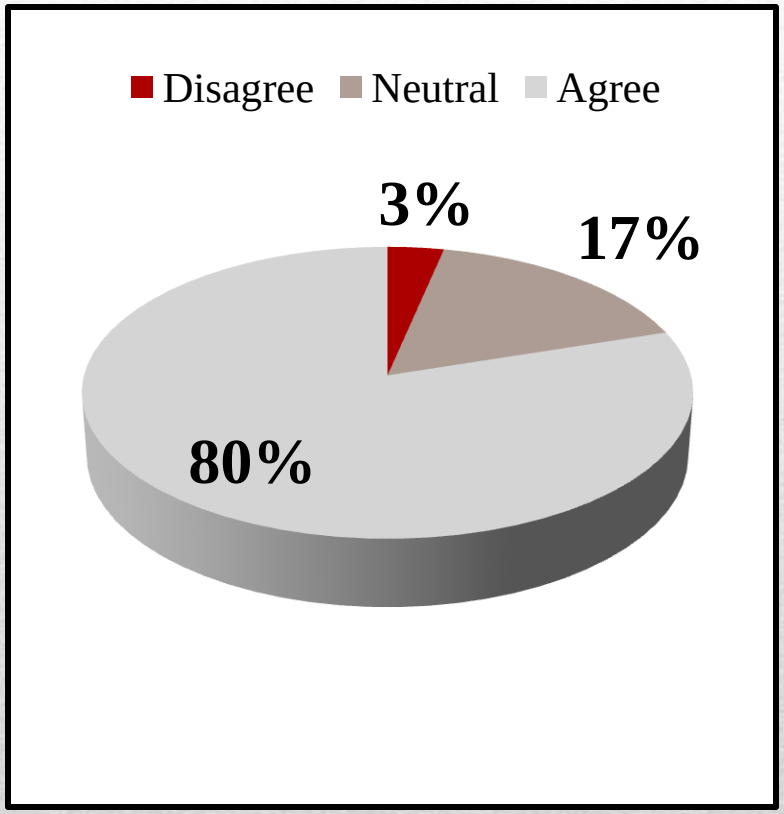
Benefits cont…..

Pharmacists



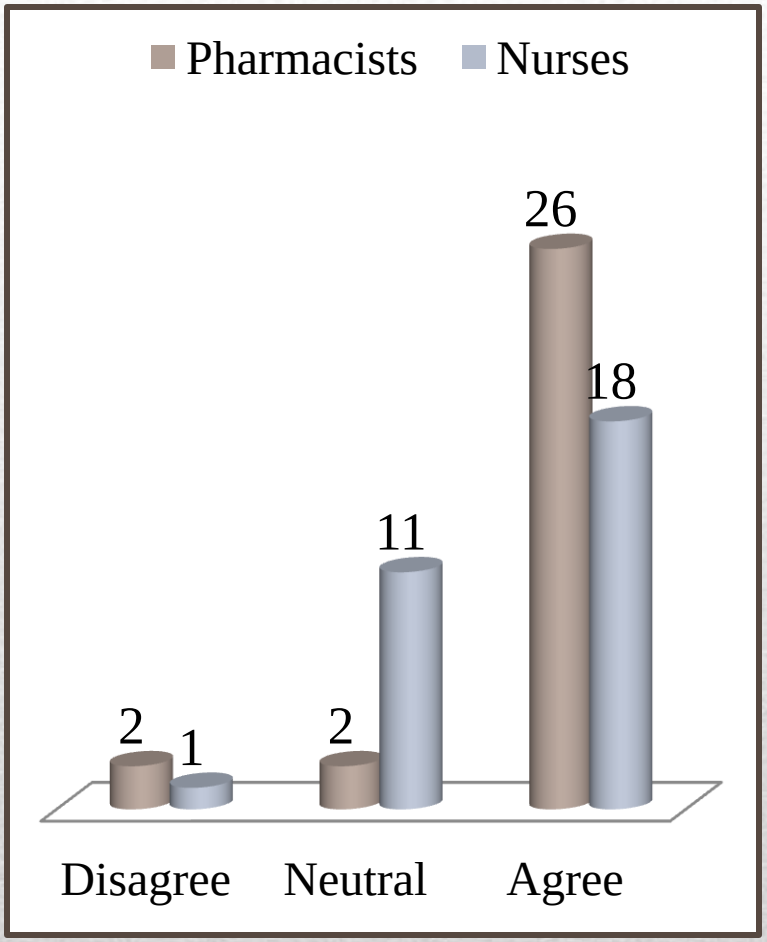
Revenue losses decreased

Nurses



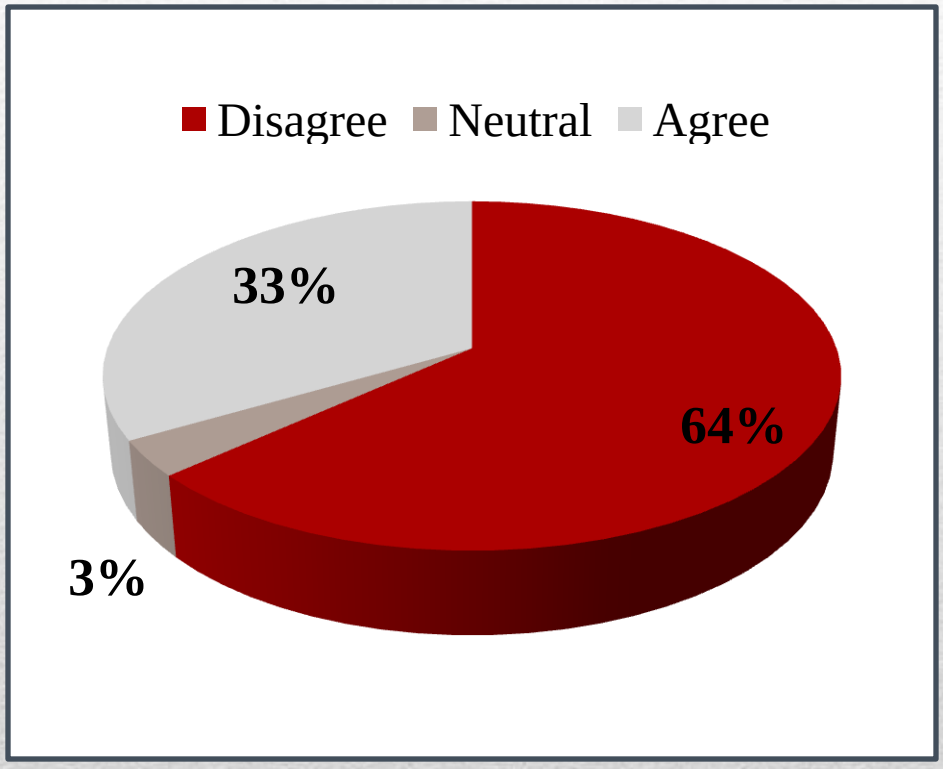
Medication error reduced

Increased Quality of care

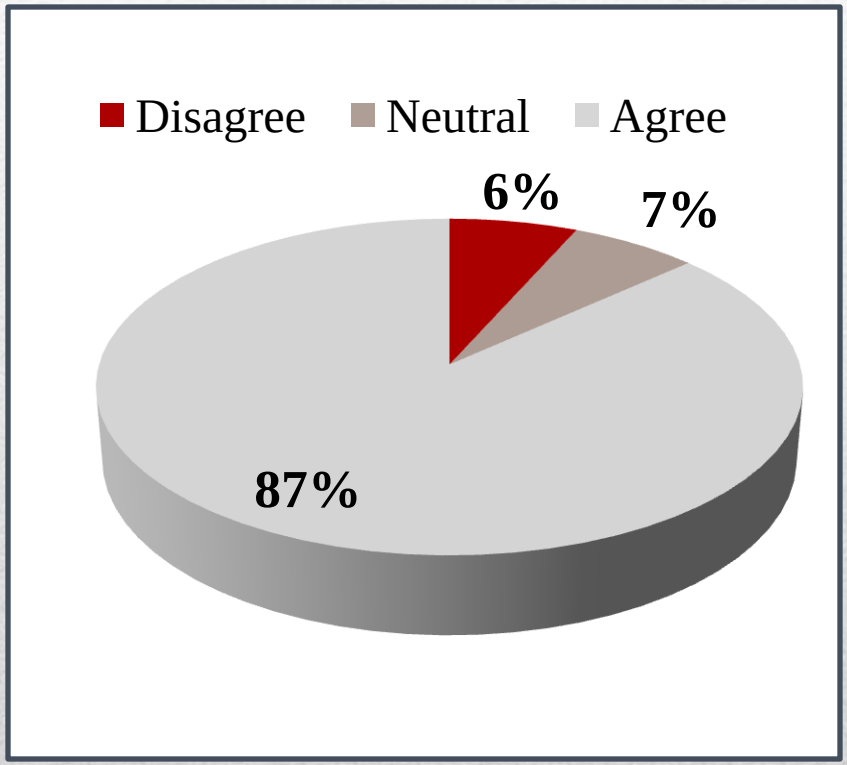


Due to less medication errors, proper documentation of returned drugs on daily basis which will reduce time consumption during discharge of patient. All these advantages given by UDDDS ultimately helps to improve patient care and patient satisfaction.

Barriers perceived by pharmacists from UDDDS

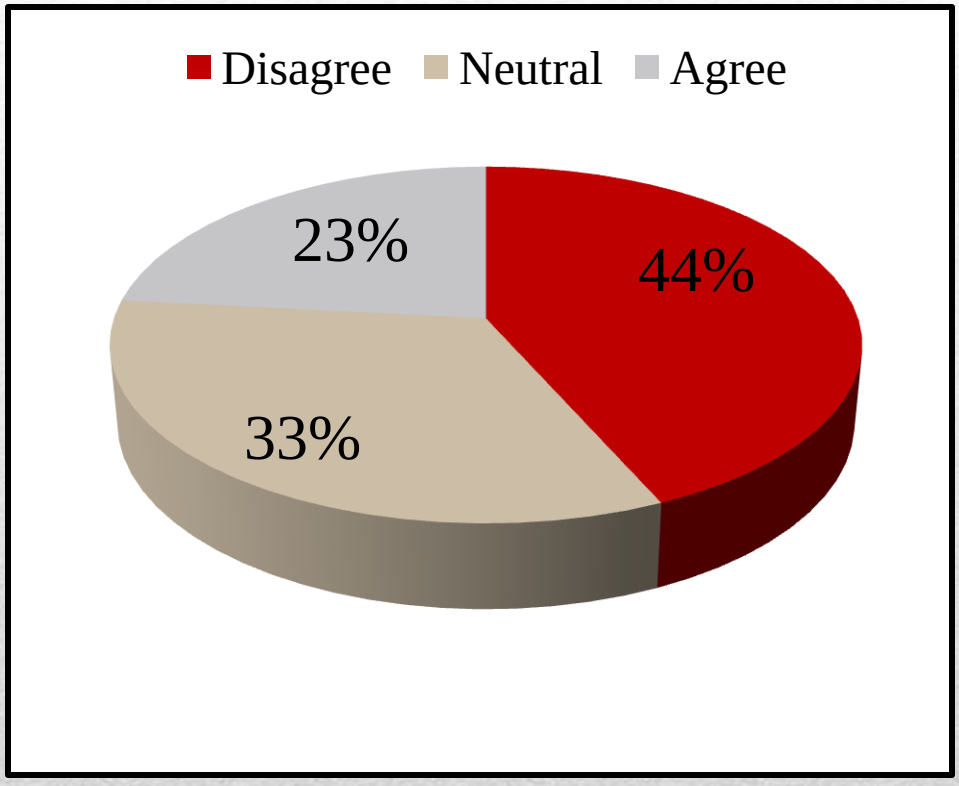


Dispensing time reduced



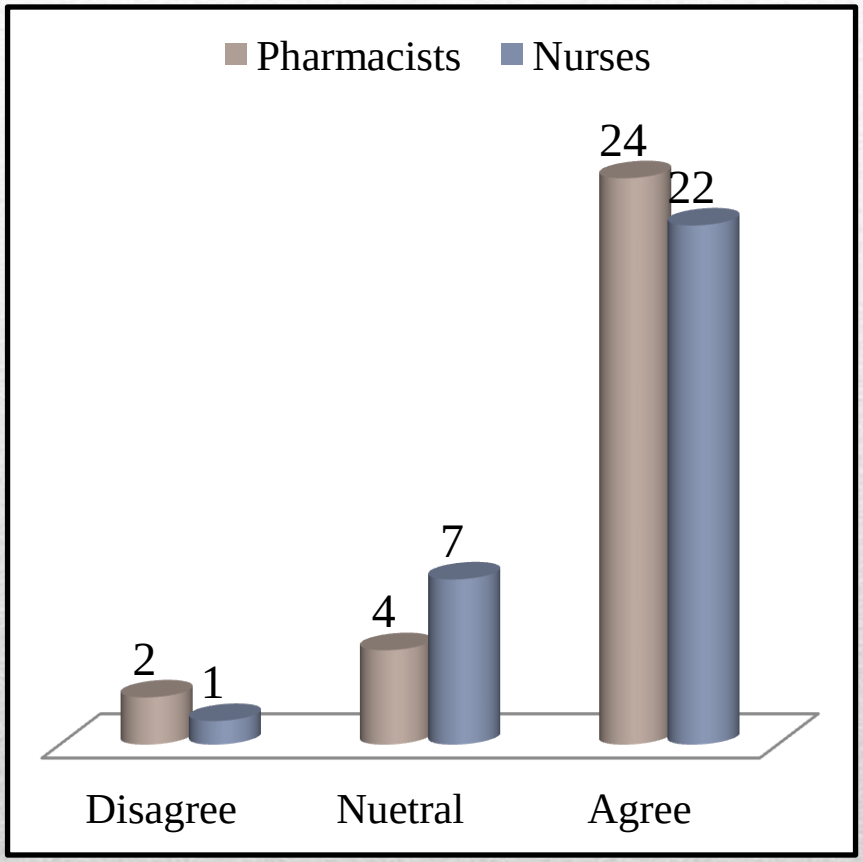
Workload increased

Barriers for nurses

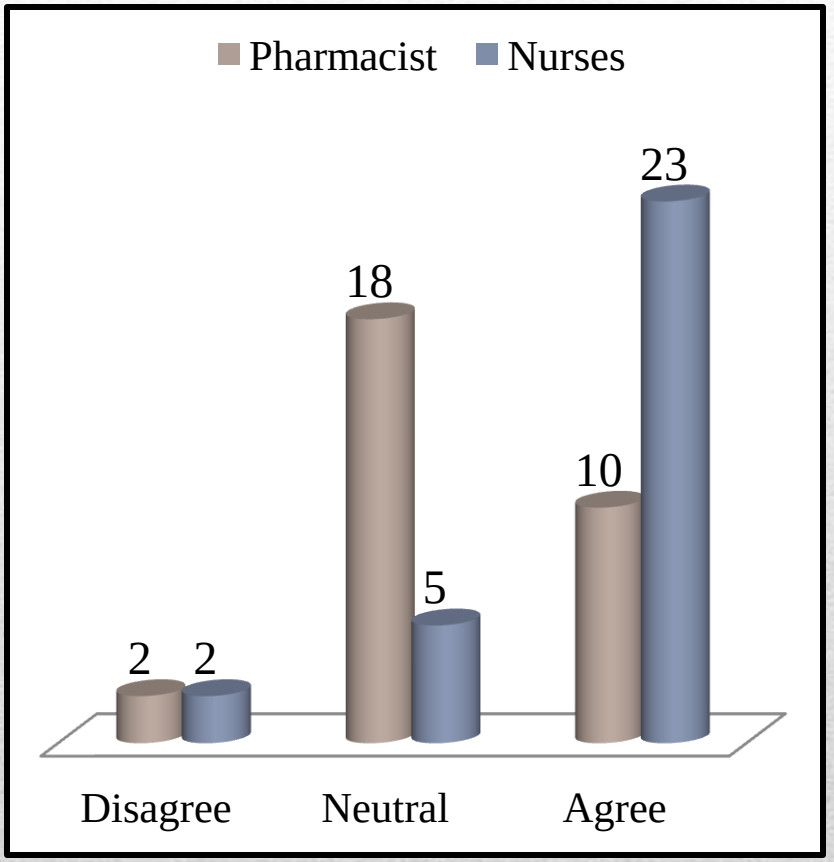


Receiving time of drugs at ward reduced

Attitude of respondents about UDDDS



Overall impact is positive



Like to continue with UDDDS

Conclusion

- ✓ Super Specialty Hospital perceived that unit dose drug distribution system has brought positive changes to their routine practices and proved beneficial for patients as well as for organization.
- ✓ Changes in work flow brought accuracy in process although it also increases dispensing time & work load on pharmacists.
- ✓ Nurses found to be more satisfied with UDDDS than pharmacists. These results shows that still there are some gaps which need to be filled for better adoption of UDDDS by pharmacists. Thus system needs some more improvements in process.

Recommendations

- ✓ Indian market should initiate awareness about UDDDS for healthcare facilities by conducting workshops and by providing training.
- ✓ Hospital pharmacists should get drugs packaged in unit dose bag with barcode.
- ✓ Indian health care market should support third party re-packaging.
- ✓ RFID tags should be used instead of barcodes.
- ✓ Pneumatic chutes should be used by hospital for easy & fast drug delivery to the wards.

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Thank You