

**MANAGEMENT OF MEDICATION ERRORS,
INCREASE SAFETY FOR PATIENTS:
Effectiveness of Self-training and Team-work
model of Pharmacy staff in Fortis Hoan My Da
Nang Hospital**

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Content:

1. The importance of management of medication errors.
2. Self-training model, team-work process.
3. Results of detecting, preventing and interrupting medication errors in 9 months of 2012.
4. Conclusion

the importance of management of medication errors and the role of hospital pharmacists

Medication history

List of patients

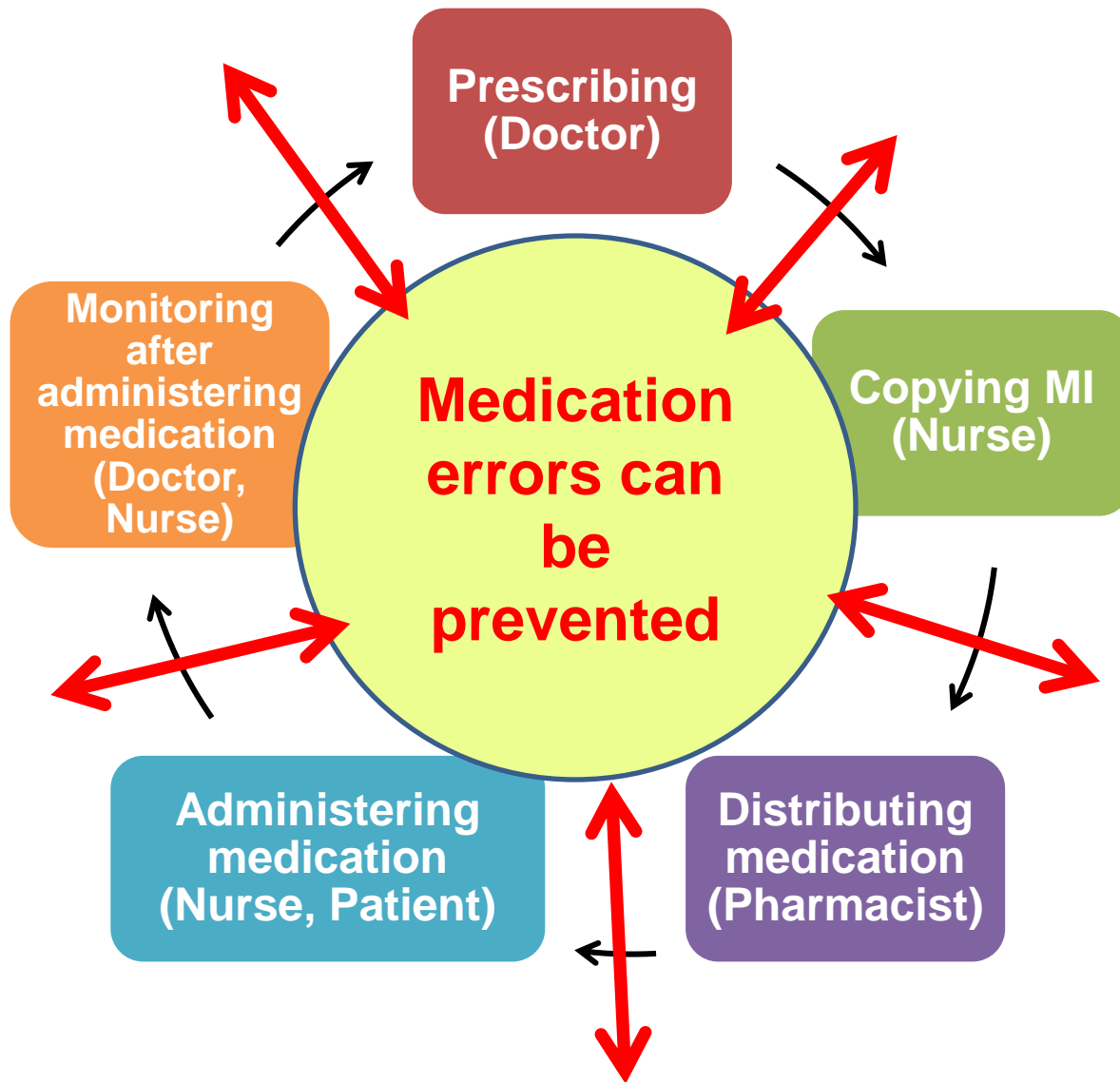
**Despite of attempts
to minimize
medication errors**

**Errors are
always
occured like
challenges**

Information technology



Adapted by P.Thornton from J. Reason, 9/2001



Damage of MEs in American every year:

- 3.8 millions of hospitalized patients
- 3.3 millions of out-patients
- 7000 mortal cases
- Medical cost of 21 billions USD

*Theo National
Priorities
Partnership,
10/2010 và Err is
Human*

**One of the important
roles of Pharmaceutical
Care in Fortis HM DN
hospital**

**Discovering and interrupting medication errors,
increasing safety for patient**

HOSPITAL PHARMACISTS : key role



Source of Pharmacists ?



**How is the working
process?**

**1. Model of
SELF-TRAINING TO IMPROVE LEVEL OF
PROFESSIONAL OF PHARMACY STAFF**

**PROCESS OF TEAM-WORK TO CONTROL, DISCOVER
AND INTERRUPT MEDICATION ERRORS**

2. Evaluation

**Results of discovering and interrupting medication
errors in prescribing and transcribing medication
orders/prescriptions**

from 01/2012 to 09/2012

Model : Self-training staff of pharmacist assistants about medication use knowledge and communicative skill with doctors, nurses and patients

In charging of program and training: graduate pharmacists specialized in clinical pharmacy

Implemental plan : CME, CPE/weekly, explanation of orders/prescriptions, clinical cases/every morning

Content: following to real need

Medication use knowledge :

Indication, Dosage, Usage, Interaction, Contraindication.

Focus on: Antibiotic, Cardiovascular, Anti-hyperglycemia, High-risk drugs

Knowledge of clinical treatment:

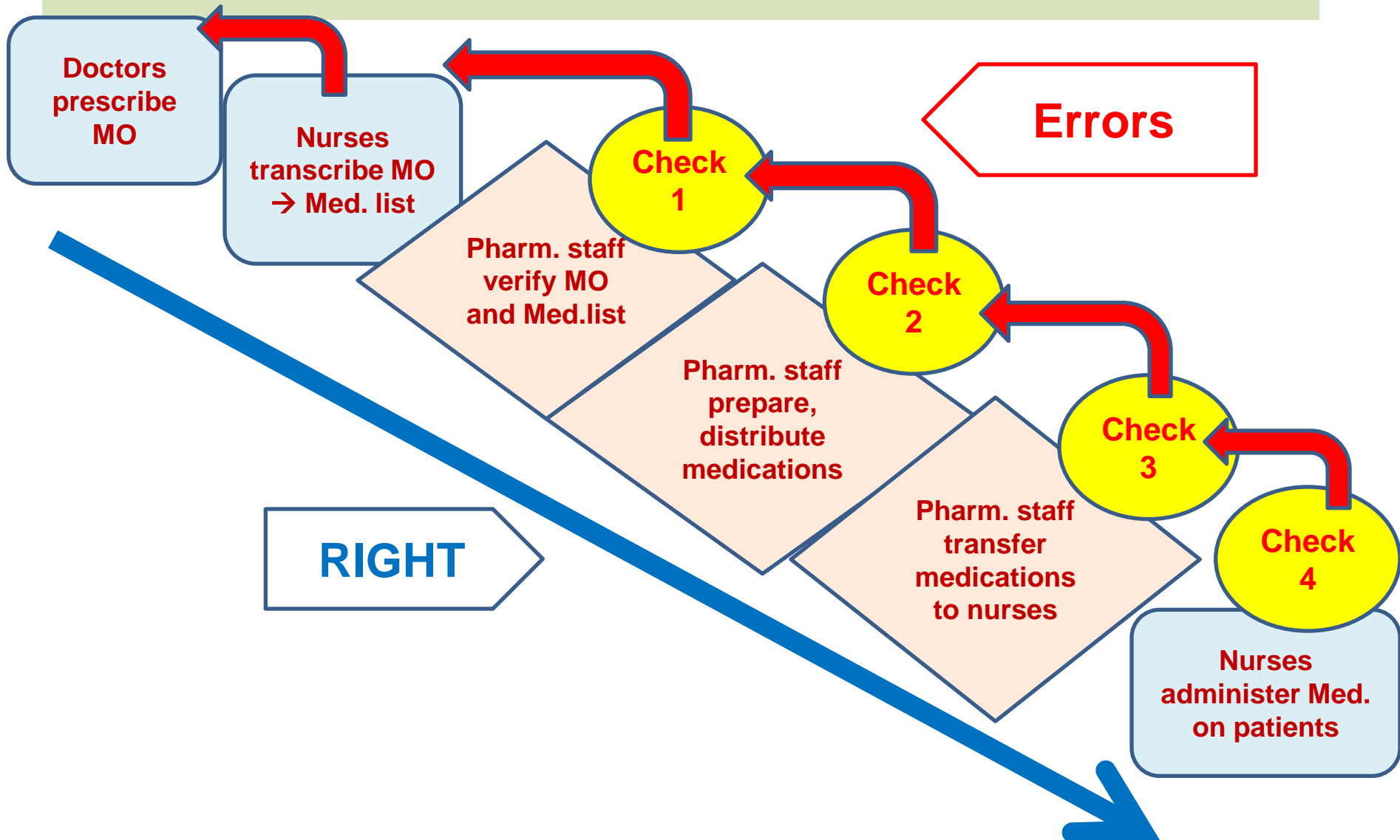
Updating guidelines treating common diseases

Skills in consulting, communicating with doctors, nurses, patients

And

Skills in solving problem .

Applying Process of Team-work to control, discover and prevent medication errors: In-patient



STUDY OF RESULT ASSESSMENT

DISCOVERING AND INTERRUPTING MEDICATION ERRORS IN PRESCRIBING AND TRANSCRIBING MED. ORDERS/PRESCRIPTIONS FROM 01/01/12 TO 30/09/12

- **Method : prospective.**
 - **Writing data: Excel**
 - **Analyzing data: EpiInfo 3.5.3**
- **Subject : all medication errors in the stages of prescribing and transcribing medication orders/prescriptions.**
 - **MEs in prescription : counting from the moment when MDs complete prescriptions and give them to patients, or MDs complete medical records and pass them to the nurse.**
 - **MEs in transcribing med. orders: counting from the moment when nurses complete medication lists and send them to Pharmacy Department.**
 - **Excluding : MEs in other stages.**

RESULTS, COMMENT & DISCUSSION

Table 1: The average number of prescriptions/orders verified and distributed daily

	Average number	Min	Max
Number of in-patient med. Orders per day	305 ± 16	226	317
Number of out-patient prescriptions per day	278 ± 19	178	305
Number of staff of pharmacist team implementing the process.	10 ± 2	8	12

Table 2: The total number of verified prescription/MO and percentage of discovered MEs in 9 months of 2012

	Number of prescription/MI	Number of MEs	Percentage p.10000
In-patient	80.553	110	14
Insurance out-patient	51.612	156	28
Total	132.165	266	19

Table 3: Comparing the percentage of MEs in prescription/MO and transcribing MO between 2012 and 2011 :

	Percentage of ME in 2011	Percentage of ME in 2012	P value
In-patient	6/10.000	14/10.000	$P < 0.05$
Insurance out-patient	18/10.000	28/10.000	$P > 0.05$
Total	11/10.000	19/10.000	$P < 0.05$

Table 4: The percentage of MR prevented by pharmacist team/process

	Number of discovered cases	Number of interrupted cases	Percentage of number of interrupted cases
ME /out-patient prescription (Doctor)	156	155	99,35
ME /in-patient prescription (Doctor)	52	41	78,84
ME /transcribing MO (Nurse)	58	58	100
Total	266	254	95,49

Table 5: Reasons for not interrupting the discovered ME

Reasons	Number of cases (N=11)
Administering drugs before detecting Mes	7 (63,6%)
Patients discharged before detecting Mes	2 (18,2%)
Medications for the same patient but ordered from different clinical wards	1 (9,1%)
Prescriber get out of hospital, calling impossible	1 (9,1%)

Tab. 6: Evaluation of effectiveness in detecting MEs in different steps of Pharmacy process:

Different steps for detecting MEs	MEs in in-patient orders (110)	MEs in Insurance out-patient prescription (156)	Total (266)
Verifying med. orders or prescriptions	83 (75,5%)	146 (93,6%)	229 (86%)
Preparing, dispensing, transferring medications to patients/nurses	22 (20%)	9 (5,8%)	31 (11,7%)
Pharmacist's clinical visit (in-patients), counseling patients (insurance out-patients)	5 (4,5%)	1 (0,6%)	6 (2,3%)

Percentage % of the different MEs

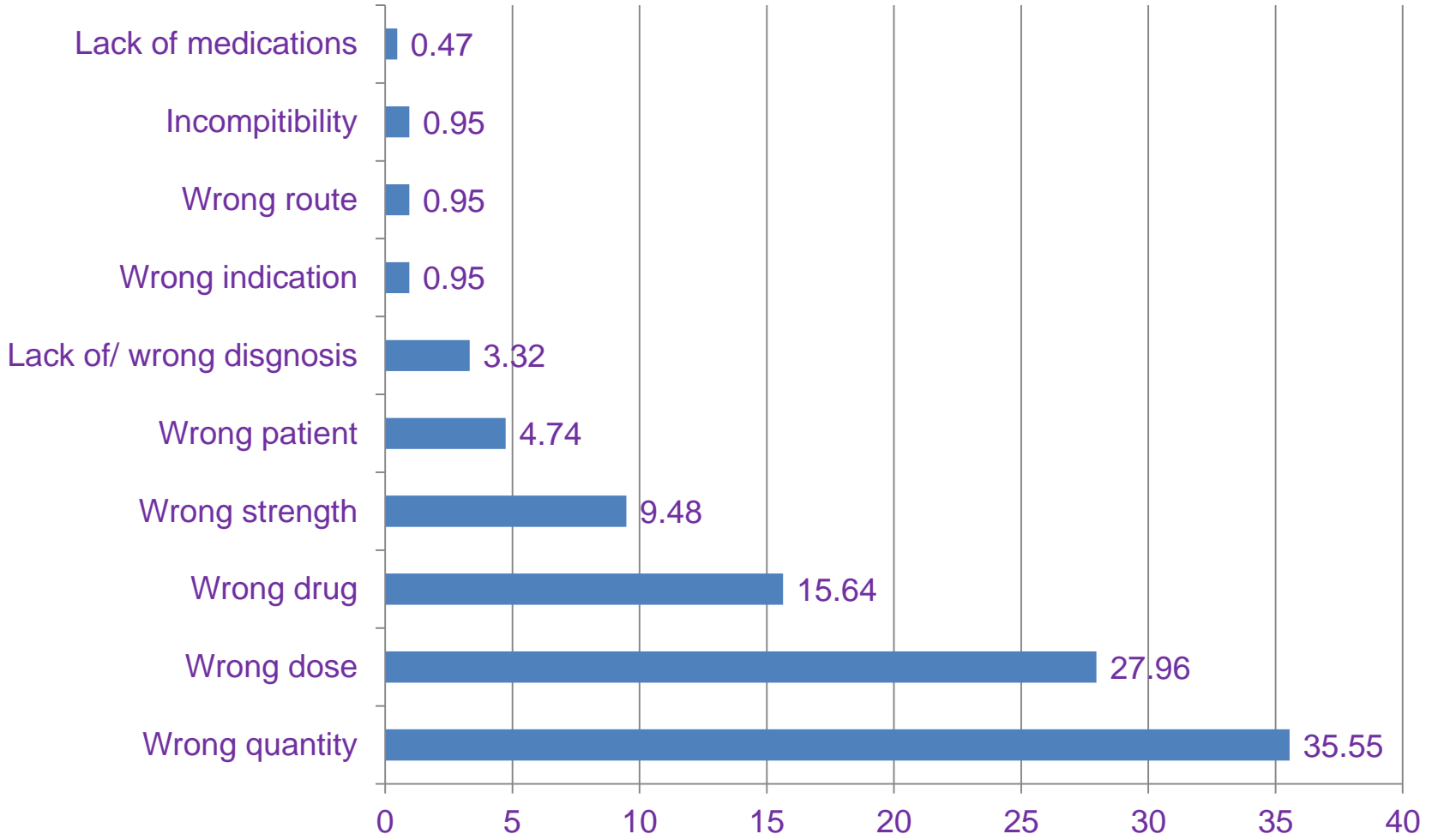
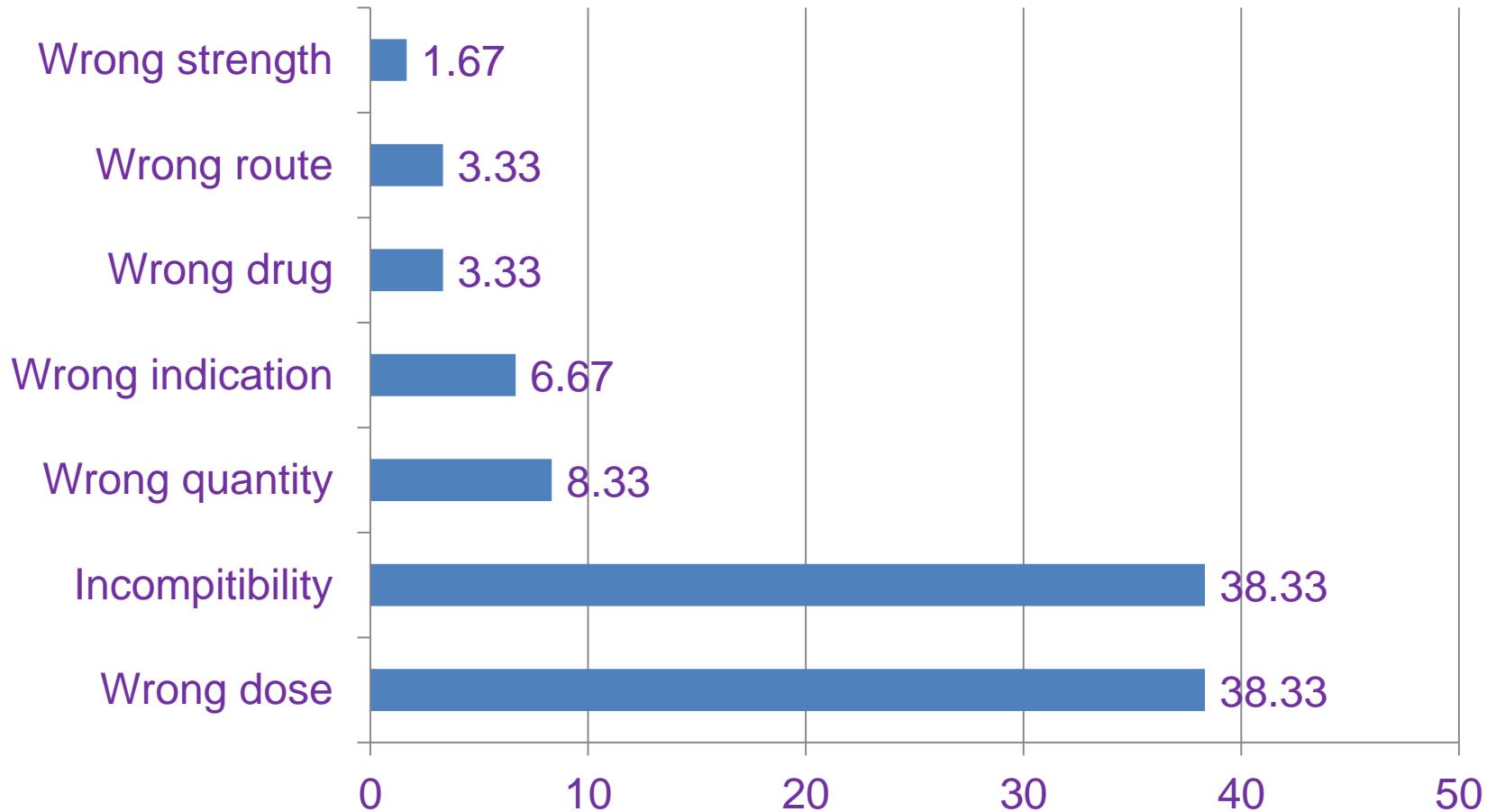


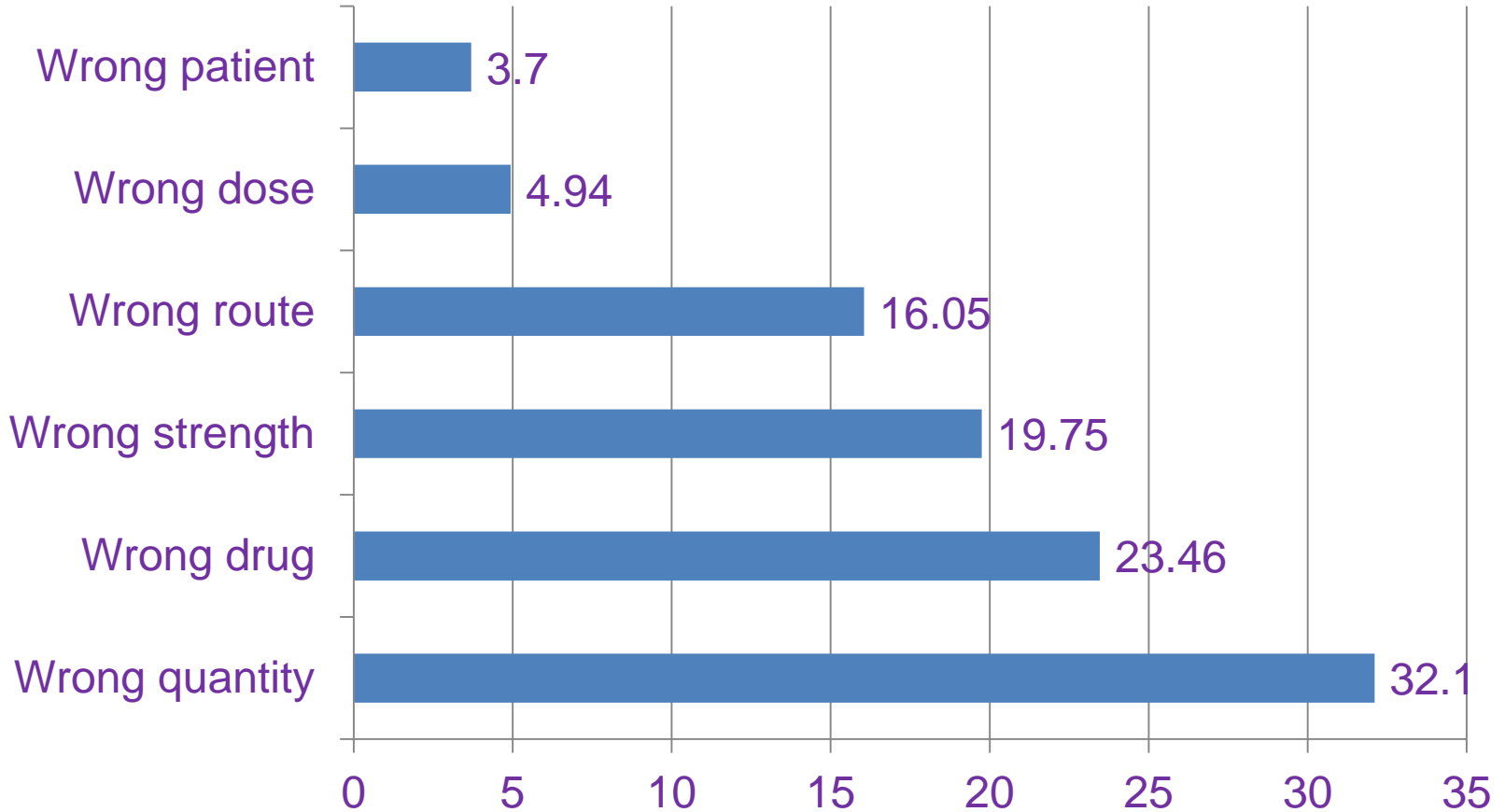
Figure 1: Percentage of common errors in out-patient prescriptions (errors of doctor)

Percentage of different MEs (%)



Graph 2: Percentage of common errors in in-patient med. orders (errors of doctor)

Percentage of different MEs (%)



Graph 3: Percentage of common errors in transcribing MO (errors of nurse)

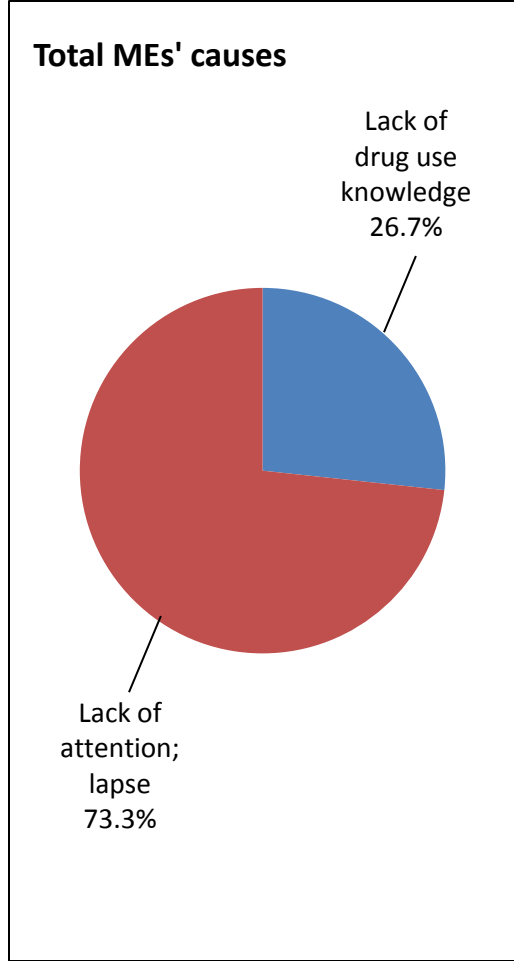
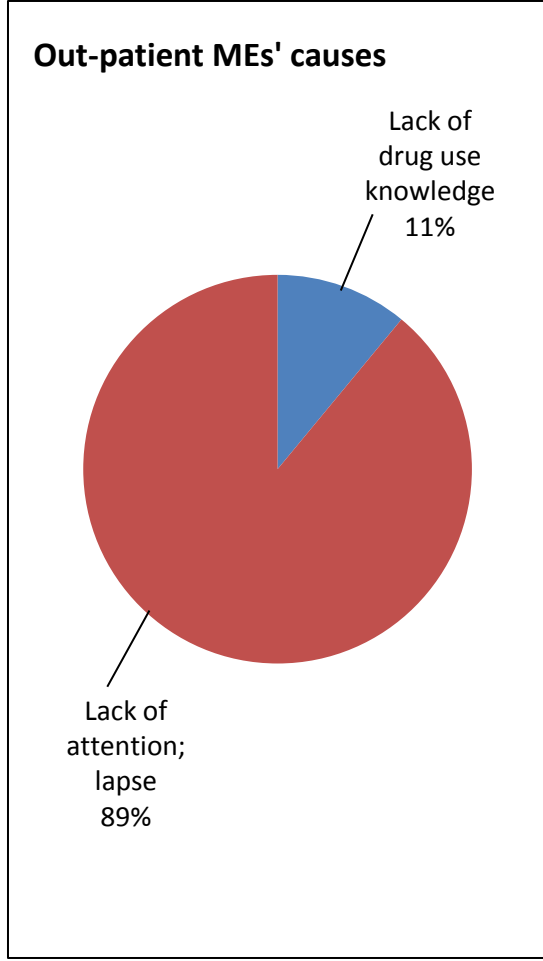
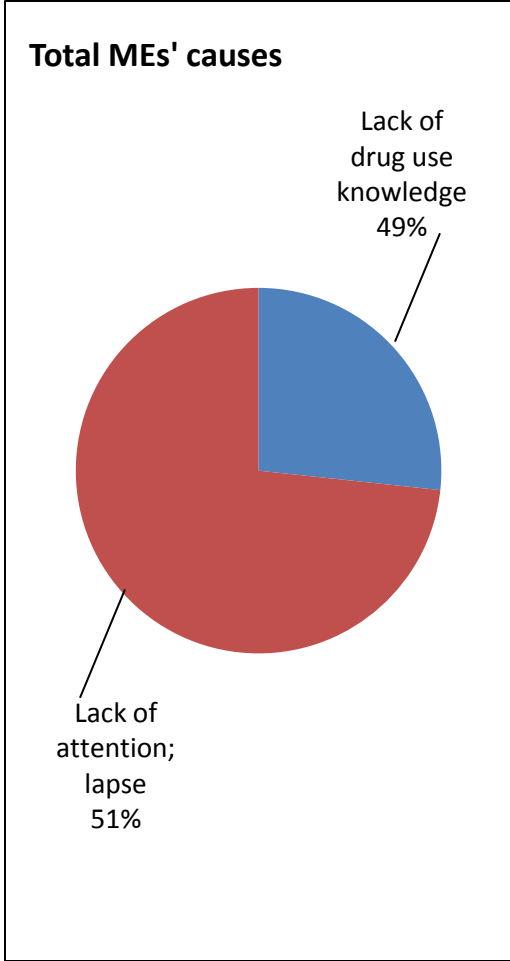


Fig. 3,4,5: Percentage of causes of medication errors

Tab. 7: Percentage of MEs because of Sound-Alike drug names

Reason of Wrong drug errors	In-patient (N=21)	Out-patient (N=33)	Ttoal (N=54)
MEs because of Sound-Alike name and adjacently placed in Digital medication list (in eHospital)	9 (42,9%)	10 (30,3%)	19 (35,2%)
Other reasons	12 (57,1%)	23 (69,7%)	35 (64,8%)

Biểu đồ 7: Tỷ lệ gặp của các Nhóm thuốc khác nhau ở các ca SST:

No.	Group of medication	Number of cases/in-patient	Number of cases/out-patient	Total	Percentage
1	Antibiotics	48	60	108	43,55
2	Analgesics	8	26	34	13,71
3	Vitamins, minerals	14	8	22	8,87
4	Gastrointestinal	7	13	20	8,06
5	Cardiovascular	9	7	16	6,45
6	Anti-asthmatics	9	5	14	5,65
7	Antiseptics	0	7	7	2,82
8	Anti-allergics	2	3	5	2,02
9	Anti-hyperglycemia	1	4	5	2,02
10	Cerebral Activators	4	0	4	1,61
11	Corticoid	0	3	3	1,21
12	Infusion solutions	3	0	3	1,21
13	Hormones	0	3	3	1,21
14	Sedatives, Hynotics	1	1	2	0,81
15	Anaesthetics	1	0	1	0,40
16	Diuretics	1	0	1	0,40
	Total			248	100

CONCLUSION

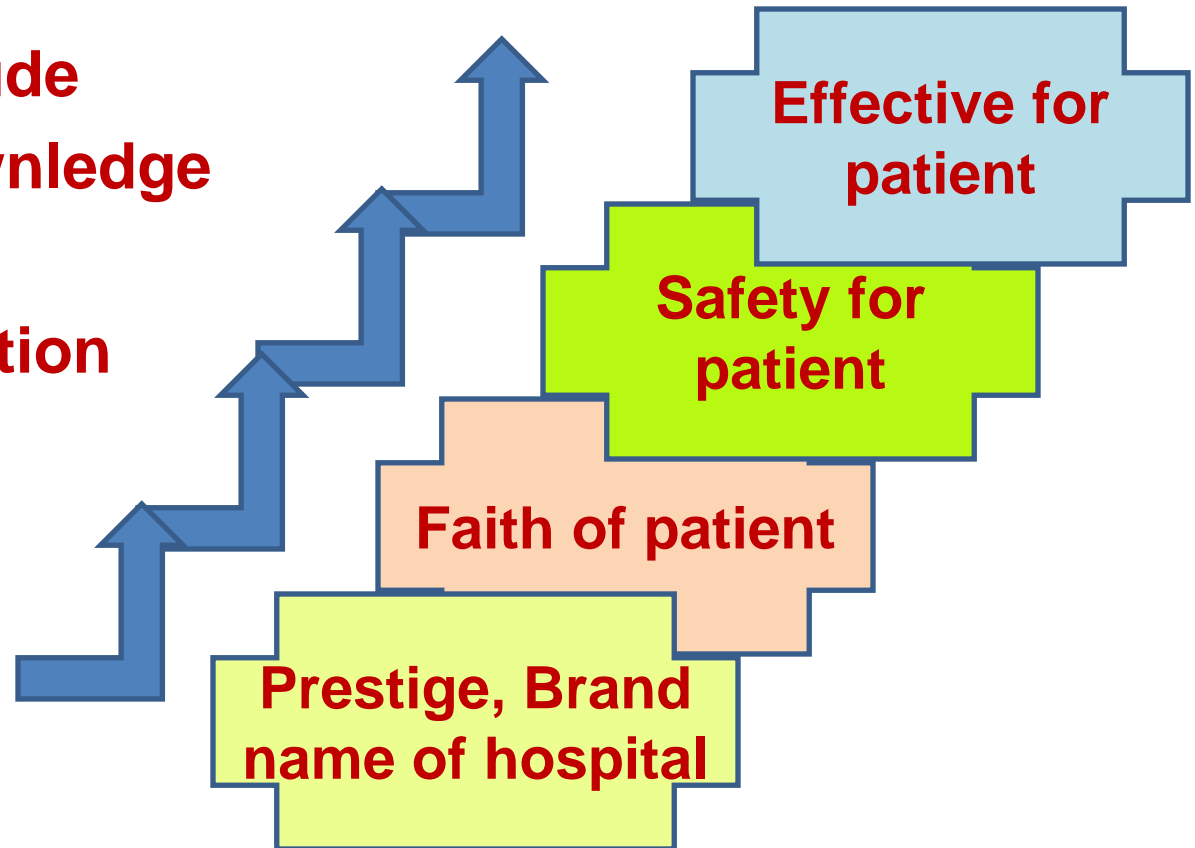
Model of Self-training to improve knowledge of using medication and skill for pharmacist assistants + Process of Team-work has been proved:

- **Clear effectiveness in controlling, discovering and interrupting MEs in prescribing and transcribing MO/MP.**
- **Help to suggest suitable measures to improve MR.**

Pharmacy staff's roles are strongly significant in improving patients' safety in pharmaceutical care.

WISHING THAT ALL PHARMACISTS PARTICIPATE IN CONTROLLING, DISCOVERING, PREVENTING MR

- **Judicious attitude**
- **Complete knowledge**
- **Good skill**
- **Close co-operation**



Reference:

1. *National Priorities Partnership. Preventing Medication Errors : A \$21 Billion Opportunity. Compact Action Brief : A Roadmap for Increasing value in Health Care. December 2010.*
2. *ASHP Guidelines on Preventing Medication Errors in Hospital- Medication Misadventure-Guidelines, p:129-137.*
3. *The Academy of Managed Care Pharmacy. Medication Errors. June 2010.*
4. *DIP Williams. Medication Errors. J R All Physician Edinburg 2007;37:343-346, CME Published online July 2007.*
5. *Steve Sternberg. Medical Errors Harm Huge Number of Patients. What will it take to make America's hospitals safer? US News and World Report. August 28, 2012.*
6. *Kathleen Dohenry, Louise Chang, MD. Medication Errors Affect Half of Heart Patients Even With Pharmacist's Help, Errors Common, Researchers Find. WebMD Health News. July 2, 2012.*
7. *Carol Rados. Drug Name Confusion: Preventing Medication Errors. MedicineNet.com. Last Editorial Review 11/10/2005.*