



HOSPITAL  
PHARMACY  
ADMINISTRATION



### Special points of interest:

- Clinical Pharmacy Implementation
- Medication Errors Reporting & Prevention
- Pharmacists Continuous Education
- HPA News & Achievements

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# HPA Newsletter

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## HPA Latest Updates

In order to make sure that a promising health care plan is given to every patient throughout all governmental hospitals, a proposal is developed to establish a central PK Lab working on facilitating clinical pharmacy role in drug safety.

### WHY IS TDM NECESSARY?

there are a number of drugs whose desired (or toxic) effects cannot readily be assessed clinically, but are related to the amount of drug in the body. In such cases, the logical approach to control the effect of the drug is to limit the amount that is given to the patient. Therefore this can be done by using standard doses that will produce a satisfactory response in the majority of patients.

### WHICH DRUGS SHOULD BE MONITORED?

TDM is primarily of potential benefit where there is poor correlation between dose and effect (wide inter-individual pharmacokinetic variation). When there is a narrow concentration interval between therapeutic and toxic effects the therapeutic index (therapeutic ratio, toxic-therapeutic ratio) for a drug indicates the margin between the therapeutic dose and the toxic dose.

### Examples:

#### Antibiotics

- Vancomycin
- Amikacin
- Gentamicin

#### Antiepileptics

- Phenytoin
- Carbamazepine
- Valproic acid

#### Immunosuppressants

- Methotrexate
- Cyclosporine
- Fk 506

#### Others

- Lithium
- Digoxin





## Selected cases of dispensing errors

A large number of dispensing errors were received to NO HARMe. The following are just few examples:

- Minipress 2 mg instead of Multi-relax 5 mg
- Somenileta (amp) instead of Atropine (amp.)
- Zantac 150 mg/8hrs instead of Zantac 50mg ampules /8hrs

**A dispensing error** is a discrepancy between a prescription and the medicine that the pharmacy delivers to the patient or distributes to the ward on the basis of this prescription. Quality improvement systems and multiple levels of check-offs are critically important to help pharmacies catch errors before they reach patients.

### Strategies for Minimizing Dispensing Errors :

1. Confirm that the prescription is correct and complete

-Pharmacists' "second guessing" of illegible and/or ambiguous prescriptions, nonstandard are frequently associated with medication errors.

- Call the prescriber to clarify any uncertainties or doubts regarding the prescription.

- All verbal prescriptions should be immediately transcribed to a blank prescription pad and read back to the caller to ensure that the prescription has been transcribed correctly.

2. Beware of look-alike, sound-alike drugs.

-Such errors can be reduced by placing reminders on the stock drugs or in the computer system to alert staff about these commonly confused drug names.

3. Be careful with zeros and abbreviations.

Misplaced zeros, decimal points, and faulty units are common causes of medication errors due to misinterpretation.

A transcription or interpretation error involving a zero or a decimal point means that the patient may receive at least 10 times more medication than indicated, which can result in serious consequences .

These errors may be detected when reviewing the label directions during patient counseling.

The Institute for Safe Medication Practices (ISMP) offers a list of error-prone abbreviations, symbols, and dose designations (a brief list of

common dispensing errors is given in the Table). Being familiar with this type of information may also help prevent dispensing errors.

4. Organize the workplace.

-Proper lighting, adequate counter space, and comfortable temperature and humidity can help facilitate a smooth flow from one task to the next, thus reducing the chances of dispensing errors.

5. Reduce distraction when possible

Multitasking and distraction during work is the leading cause of dispensing errors.

6. Take the time to store drugs properly.

-One way to avoid mix-ups among lookalike drugs is to store them away from each other in the medication storage area. Medication bottles should be properly organized with labels facing forward.

Table

Common Dispensing Errors	
Prescriber's Intention	Misinterpretation
AD, AS, AU (right ear, left ear, each ear)	OD, OS, OU (right eye, left eye, each eye)
qod (every other day)	qd (daily) or qid (4 times a day)
U or u (units)	Zero, causing a 10-fold increase in dose (eg, 4U to 40)
Trailing zero (1.0 mg)	1.0 mg mistaken as 10 mg
Naked decimal point (.5 mg)	.5 mg mistaken as 5 mg
Drug name and dose run together (Inderal40)	Mistaken as Inderal 140
Large doses without properly placed commas	100000 units mistaken as 10,000 units
AZT (zidovudine)	Mistaken as azathioprine or aztreonam

- check all medications on the shelves and discard any expired medications.

7. Always provide thorough patient counseling  
It is considered good practice to open the container and show the actual medication to the patient during counseling rather than deliver it to the patient in a sealed bag.

### References:

1. 10 Strategies for Minimizing Dispensing Errors [Internet]. Pharmacytimes.com. 2016 [cited 11 August 2016]. ([Click Here](#))



Dispensing error is the discrepancy between a prescription and the medicine that the pharmacy delivers to the patient or distributes to the ward on the basis of this prescription.



## Congestive Heart Failure- Case

Embaba General Hospital

### Presenting Complaint:

A.M is a 80 years old male patient, 80 kg. She was admitted to the ICU on 9/8 /2016 suffering from right side weakness, chest pain.

### Diagnosis:

Congestive heart failure( EF 31% )

### Patient History:

HTN, IHD.

### Subjective:

The patient was suffered from: Tachycardia, Fatigue, weakness, Anorexia, weight loss, nausea.

### Objective:

#### 1. Laboratory Investigation:

Hb 14 u/L, TLC 8 , S. Cr 3 mg/dL , PLT 189  $\mu$ L, APTT 43,

#### 2. Physical Examination:

Vital Signs: BP: 140/90 , RBG: 140

#### 3. Diagnosis:

CHF ( EF 31% )

### Assessment:

Pharmaceutical related problems:

- CHF
- HTN
- IHD

#### Problem I: Treatment of CHF :

**Etiology:** Hypertrophic cardiomyopathy (HCM) is a genetic cardiovascular disease. It is defined by an increase in left ventricular wall thickness that is not solely explained by abnormal loading conditions ([Click Here](#))

#### Current Therapy:

- Cefaxone 2gm/24hrs
- Aspidol 75mg/24hrs
- Fraxiparin 0.6ml/24hrs
- Zantac amp. /8 hrs
- Ator 20mg/24hrs
- Ringer 500mg/8hrs

#### Therapy Indicated: ([Click Here](#))

### Plan:

#### Problem I: Treatment of CHF :

#### Therapeutic Objective:

- Diuretics (to reduce edema by reduction of blood volume and venous pressures) and salt restriction (to reduce fluid retention) in patients with current or previous heart failure symptoms .
- (ACEIs) for neurohormonal modification, vasodilatation, improvement in LVEF, and survival benefit.
- Beta-adrenergic blockers for neurohormonal modification, improvement in symptoms and

LVEF, survival benefit, arrhythmia prevention, and control of ventricular rate.

- Aldosterone antagonists, as an adjunct to other drugs for additive diuresis,
- Digoxin, which can lead to a small increase in cardiac output, improvement in heart failure symptoms.<sup>(1)</sup>

#### Interventions:

- Patients with heart failure should be evaluated for coronary artery disease, which can lead to heart failure.
- B-blockers should be taken only in case of stable heart failure.

#### Monitoring Parameters:

- S.Cr, LDL,HDL, B.P, K level

### Clinical Pharmacist Intervention:

#### Problem I: Treatment of CHF :

- Lasix should be taken to treat edema due to CHF.
- B-blockers should be taken .

#### Patient Education:

#### Patient counseling for the following:

- I. Limiting Salt and Fluids and Monitoring Your Weight Always cover your mouth when you cough
- II. Mild to moderate exercise
- III. Avoid cigarettes, alcohol, and recreational drugs. <sup>(2)</sup>

### Quiz:

#### 1. What is the drug should not be taken in CHF?

- CCB
- Atenolol
- A&B

#### 2. What is the drug that need renal dose adjustment ?

- Zantac
- Ator
- Cefaxone

#### 3. Do you have any further recommendations?

Please, contact us at:  
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### References:

1. Heart Failure Treatment & Management: Approach Considerations, Nonpharmacologic Therapy, Pharmacologic Therapy [Internet]. Emedicine.medscape.com. 2016 [cited 15 August 2016]. ([Click Here](#))
2. White M, Kirschner J, Hamilton M. Self-Care Guide for the Heart Failure Patient. Circulation. 2014;129(3):e293-e294. ([Click Here](#))



*About half of people who develop heart failure die within 5 years of diagnosis*



### Last Month Quiz Answers

1. B
2. <https://www.verywell.com/procalcitonin-results-and-what-they-mean-3156825>

## Egyptian Scientific Publication: Incidence and Predictors of surgical site infections at Cairo University Hospitals.

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and Yasmine S. Abdelhamid*

### ABSTRACT

#### Background:

Surgical site infections are one of the most important causes of health-care associated infections. Effective surveillance of SSIs and feed back of data on infection rates to hospital leadership and surgeons could significantly reduce SSI rates.

#### Objectives:

To determine the incidence and risk factors for SSIs and the epidemiological profile for infected cases aiming to reduce the incidence of postoperative SSIs in general surgical departments at Kasr El-Aini Hospital.

#### Subjects and methods:

This is a matched case-control study nested in a prospective cohort design. A total of 542 patients were enrolled in the current study and were prospectively followed throughout the study period (9 months) at two randomly selected surgical units up to 30 days after surgery. Fifty patients developed SSI at the end of the study period, 452 patients didn't develop infection.

A matched (age/sex) 300 controls was randomly selected from the cohort through a nested case-control design. A pre-tested collection sheet was designed to collect data. Data was entered and analyzed using SPSS version 16.

#### Results:

The current study revealed an SSI incidence of 9%. The most frequent organisms detected by wound swab cultures were *Escherichia coli* (28.8%). Risk factors detected by univariate anal-

ysis included associated co-morbidities e.g. diabetes (22%), liver diseases (24%), malignancy (32%) and obesity (28%), previous hospitalization (42%), anaemia (70%), hypoalbuminaemia (56%), elevated liver enzymes (22%), abnormal kidney function (10%), elevated TLC (48%), preoperative antibiotic prophylaxis (88%), ASA score >3 (38%), operations performed by less experienced surgeons (84%), a wound class >2 (22%) and using drains (92%).

Risk factors detected on multivariate logistic regression analysis included a wound class >2 (i.e. contaminated and dirty) (OR=9.1, 95%CI 1.42-57.5), diabetes (OR=6.1, 95%CI 1.72-21.75), malignancy (OR=4.5, 95%CI 1.17-17.22), previous hospitalization (OR=3.1, 95%CI 1.1-8.85), elevated TLC (OR=5.9, 95%CI 1.98-18.11) and preoperative antimicrobial prophylaxis (OR=2.9, 95%CI 1.01-8.9).

#### Conclusion:

SSI rate was found to be quite high in comparison to developed countries. Better surveillance systems should be developed. Studies for a longer period and among different surgical departments are required. These could provide a better estimate of incidence of SSI and associated risk factors.

#### Recommendations:

Establishment of an organized program for SSI surveillance in Kasr El-Aini Hospital and implementing administrative regulations and guidelines.

- To read the full article, please [\(Click Here\)](#)



**“Surgical site infections can sometimes be superficial infections involving the skin only. Other surgical site infections are more serious and can involve tissues under the skin, organs, or implanted material.”**





## HOSPITAL PHARMACY ADMINISTRATION



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## HPA

### Our Newsletter

The Hospital Pharmacy Administration Newsletter aims to publicize up-to-date news, information, resources, and recent healthcare topics that have an impact on the patient's quality of care in addition to practices serving physicians and pharmacists. A main goal of this publication is to send our news and updates on health care drug related issues, recently reported and have direct impact on Clinical and Hospital Pharmacy practice in Egypt.

### Hospital Pharmacy Administration (HPA)

#### Vision

To implement and spread clinical awareness among our hospital pharmacists to ensure better patient quality of care.

#### Mission

To manage and assure that hospital pharmacists meet each individual patient's drug-related needs through provision of pharmaceutical care services.

#### Goals and Objectives

Increase awareness of hospital Pharmacists on the importance of applying clinical knowledge in their pharmacy practice through:

- Plotting an appropriate pharmaceutical care plan for each patient according to his medication use strategy.
- Helping healthcare team through promptly responding to drug information requests.
- Integrating patient counseling into the process of dispensing.

### NO HARMe

**NO HARMe** is a national voluntary medication error and 'near miss' reporting program founded for the purpose of sharing the learning experiences from medication errors. Implementation of preventative strategies and system safeguards to decrease the risk for error-induced injury and thereby promote medication safety in healthcare is our collaborative goal.

To report a medication error to NO HARMe:

- Visit our website: [www.eda.mohealth.gov.eg](http://www.eda.mohealth.gov.eg)  
or,
- Email us at:  
[medication.errors.system@gmail.com](mailto:medication.errors.system@gmail.com)

**NO HARMe** guarantees confidentiality  
and security of information received



**WHEREVER THE ART OF  
MEDICINE IS LOVED,  
THERE IS ALSO A LOVE  
FOR HUMANITY**

