Erros de medicação – agindo e prevenindo de forma efetiva

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The most important messages…

- Medication safety is comprised of 2 major areas:
  - adverse events due to pharmacology
  - adverse events due to error
- Preventing HARM is the primary goal of all medication safety programs
- We have an ethical duty to to minimize harm

Over the last 30 years in my pharmacy practice, I was there when…

- a young pharmacy student dispensed the wrong blood pressure medicine
- a patient almost received an intra-ocular injection prepared from crushed tablets

Over the last 30 years in my pharmacy practice, I was there when…

- a pharmacy prepared a massively toxic chemotherapy dose for the same patient twice in the same hour
- a 4 year old boy died after receiving a chemotherapy medication that was not prescribed for him

Over the last 30 years in my pharmacy practice, I was there when…

- a newborn infant died from a parenteral nutrition overdose
- ….and then 3 months later, another infant received an overdose of parenteral nutrition, AND LIVED

In your practice, you probably know similar stories…

As professionals, we often know about the errors and mistakes in health care – either our own errors or those by our colleagues.

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My personal story….

- I am responsible for the clinical care I deliver to patients – for example reading about and understanding new drugs, new diseases, and new diagnostic tests.
- In addition, it has been very important to me to study and understand the many reasons why errors occurs and how we should change our practice to improve safety.
- Today, I would like to talk with you about some of the things that I've learned.

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Lesson 1.1

We have difficulty defining safety and errors

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Lesson 1.2

and….

We have difficulty knowing if we are safer today than before?

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- Error - failure of a planned action that is good
  - For example: Pharmacist mistakenly dispenses 1000mM KCL in an intravenous solution instead of 100mM KCL
- Error - designing the wrong plan
  - For example: a patient receives warfarin without anyone checking the patient's coagulation labs

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- Adverse Reaction – unwanted health effect

For example

- Medication induced skin reactions
- Medication induced laboratory tests abnormalities
- Medication induced organ damage

….and all other unwanted clinical effects

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NEWER TERMINOLOGY

- Adverse Event, preventable (medication error)
- Adverse Event, non-preventable
- Potential Adverse Events are errors that have happened, but the error is detected and stopped before it causes a problem in the patient.

For pharmacists…

Many pharmaceutical care interventions are potential adverse events that would have caused an adverse reaction if the error had not been corrected.

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Reportable Adverse Events
are
those events that must be reported to the hospital or to a regulatory agency according to policy or regulations

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Reportable Adverse Events are usually
Serious, Rare, New or Preventable

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Lesson 2

We have difficulty knowing
if, when, and how
to report errors and safety concerns

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Does your hospital have a policy on reporting safety problems?

- Is it an error ….if a pharmacist stops a problem before the prescription is dispensed?
- Does your policy describe when errors should be reported (for example, what time period)?
- Does your error reporting systems have multiple paper forms or difficult to use computer screens?

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Does your hospital have a policy on reporting safety problems?

- Many professionals are not trained in how to report errors. It's not as easy as you might think!
- Do you report errors that do not cause adverse patient effects?
- Do you analyze the data to know the cause of errors and reactions?

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Lesson 3

We have difficulty recognizing the high risk conditions (errors are more likely to occur).

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When do errors occur?

- Errors are not random events nor evenly distributed
- Errors often occur when there are transitions in care.
  - Admission or discharge
  - Transfer to new location in hospital
  - Before and after a surgery
  - Change of medical team
- Errors are more likely with new technology, new medications, new procedures
- Errors may be more dangerous with high alert medications

High alert medications

High-alert medications pose a high risk of patient harm or death if involved in a medication error.

- Morphine
- Anticoagulants
- Insulin
- Chemotherapy
- Potassium
- Parenteral nutrition and lipids

Preventing errors and harm with high alert medications

- Safety measures
  - Checklists
  - Double-checks
  - Tall-man lettering
    - hydroMORPHone and hydroCODone

Lesson 4

We have difficulty measuring and analyzing error data

Measuring and analyzing error data is not easy!

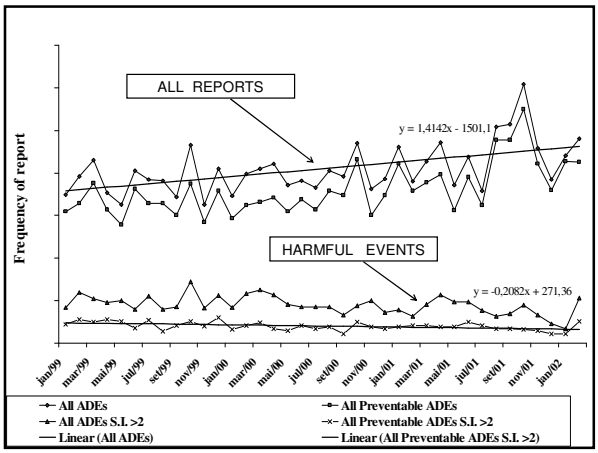
TRUE OR FALSE???

If adverse event rates increase,
there are more problems in your pharmacy
and
everyone should be very worried.

FALSE

Hospitals should take steps to increase reporting rates and the detection of adverse events.

Hospitals should take corrective actions to decrease the amount of HARM from errors.



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Lesson 5

We have much to learn about responding to errors and the culture of safety in our hospitals

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Organizational culture and behaviors

Do we act ETHICALLY after an error?

"What would I want if I were harmed by my treatment?"

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Organizational culture

What are the TRUE cause of errors?

Systems problems OR people problems

Do systems create unsafe conditions that cause errors OR are some people negligent and careless?

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Organizational culture

- For more than 10 years, the experts have shown that systems problems are the most important cause of medication errors.
- However…..not all people believe this!
- How do we know this?
  - Organizations have policies that punish people for errors.
  - Employee evaluation systems give good scores to people who do not have error reports and bad scores to people who have errors reported.
  - Many errors occur, but few errors are reported.
- What do you think?

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Organizational culture

Behaviors that lead to harm – 3 types

- Human error – unintentional mistake
- Known risk – professional makes risky action
- Dangerous – intentional disregard of known or unjustified risk

Organizational culture

A
just culture
tries to balance the need to learn from mistakes and the need to take disciplinary action

Organizational culture

Behaviors – 3 types of organizational actions

- Human error – comfort and console
- Known risk – counsel to change behavior
- Dangerous – discipline and punish

Organizational culture

Just Culture – looks at behaviors

Three important exceptions apply, however.

- Protection is not granted for
  - criminal behavior
  - professional knows and violates safety policies
  - fails to report an injury in a timely manner

Professionals

- A just culture does not lower our professional responsibility or standards
- Professionals should be mentally and physically able to carry out their duties
- Professionals need to identify dangerous situations and respond to these situations

Lesson 6

We have difficulty giving our attention and spending our resources to prevent errors

Planning for safety

- Most safety actions are taken AFTER an error occurs
- Organizations spend large amounts of money after errors occur
- How much time is spent planning for safety BEFORE an error occurs?

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Planning for safety

Examples

- How many times in the last 3 months have you discussed the potential risk of a new medication used in your hospital?
- How many hours of manager time are spent every month planning for safety?
- Is medication safety a specific agenda item during your staff meetings?
- Does your hospital have a patient safety officer?
- Does your hospital leadership make safety rounds with the staff?

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Clinical case

- **MT is a 12 year old male with temporal lobe epilepsy**
- **Significant throat infection treated with penicillin**

PAUSE

What are the pharmaceutical care issues at this point?

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Clinical case

- **MT is a 12 y/o male with temporal lobe epilepsy**
- **Significant throat infection treated with penicillin**

What are the pharmaceutical care issues at this point?

Dose, dosage form, duration, allergies, interactions, patient counseling and follow-up

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Clinical case

- **MT is a 12 y/o male with temporal lobe epilepsy**
- **Significant throat infection treated with penicillin**
- **Macular papular rash on truncal areas after 4 days**

PAUSE

What are the clinical implications at this point in the treatment process?

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Clinical case

- **MT is a 12 year old male with temporal lobe epilepsy**
- **Significant throat infection treated with penicillin**
- **Macular papular rash on truncal areas after 4 days**

What are the clinical implications at this point in the treatment process?

Refer to physician, drug or disease reaction, stop antibiotic, initiate new treatment

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Medication-induced?

Vs

Disease-induced?

Vs

Other?

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Medication-induced?

Vs

Disease-induced?

Vs

Other?

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Clinical case

- MT is a 12 year old male with temporal lobe epilepsy
- Significant throat infection treated with penicillin
- Macular papular rash on truncal areas after 4 days
- Antibiotic is changed to erythromycin; after 2 days his mother reports that her son is confused, falls and cannot attend school because of these symptoms.

PAUSE

What are the pharmaceutical care issues at this point?

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Clinical case

- MT is a 12 y/o male with temporal lobe epilepsy
- Significant throat infection treated with penicillin
- Macular papular rash on truncal areas after 4 days
- Antibiotic is changed to erythromycin; after 2 days his mother reports that her son is confused, falls and cannot attend school because of these symptoms.

What are the pharmaceutical care issues at this point?

Delayed penicillin reaction, new erythromycin reaction, exacerbation of epilepsy, drug-induced toxicity, dispensing error, other error, clinical interventions/management?

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The second adverse event carbamazepine toxicity

Preventable or not?

Erythromycin – Carbamazepine

Drug – Drug Interaction

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Clinical case analysis

- **NOT preventable reaction to penicillin**
  - **Appropriate patient history and allergy screening?**
  - **Missing allergy documentation**
- **PREVENTABLE error resulting in carbamazepine toxicity**
  - **Missed opportunity to detect known drug-drug interaction**
  - **Failure in software systems that detect drug interactions**
  - **Drug knowledge deficit - physician and pharmacist**
- **Documentation and follow-up actions?**
  - **Document penicillin allergy in medical and pharmacy records**
  - **Document drug reaction in medical and pharmacy records**
  - **Report adverse reactions to pharmacovigilance**
  - **Report medication error to pharmacovigilance**

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Case Study

- CV, 42 year old female
- Admitted for hysterectomy
- Meds on admission: oral antidiabetic drugs
- Allergies on admission: penicillin and ibuprofen
- Surgery on hospital day #1
- Post-surgery: insulin, morphine promethazine IV, diphenhydramine IV

Case study

- Following transfer after surgery, patient reported increasing pain
- Ketorolac 30 mg IV now is prescribed
- Nurse calls pharmacy to send ketorolac now
- Prior to meds arriving from pharmacy, nurse "borrows" ketorolac from another patient and administers to patient

Case study

- Ketorolac administered prior to pharmacist check
- Pharmacist arrives on floor to clarify ibuprofen allergy
- Allergy to ibuprofen is noted to be rash, throat swelling and difficulty breathing
- Error report submitted by pharmacist

Case study

- **Report and Analysis**
  - **Type of error:**
    - **Patient allergic to drug**
  - **System failure:**
    - **Allergy defense**

Case study

- **Error report and "first story" analysis**
- **After discussing the event with staff…..**
  - **2 different pharmacists gave conflicting opinions on ibuprofen-ketorolac allergies**
  - **physician wrote for IV ketorolac with documented ibuprofen allergy**
  - **nurse "borrowed" med from another patient's supply**
  - **allergy information incompletely recorded in medical records**

Case study

- **Error report and "second story" analysis**
  - **other patients with ibuprofen allergy received ketorolac in past**
  - **3 drug references did not list ibuprofen allergy as a problem with using ketorolac**
  - **allergy to penicillin and ibuprofen noted on**
    - **Nursing record**
    - **Surgical record**
    - **Pharmacy record**

Case study

- **Error report and "second story" analysis (continued)**
  - **allergy to penicillin ONLY were listed on**
    - **Surgery history form**
    - **Surgery screening form**
    - **Hospital admission form**
  - **no allergies listed**
    - **Anesthesia screening questionnaire**

Case Study

- Medication safety problems identified in this report:
  - **Allergy defense systems**
  - **Knowledge deficits**
  - **Rule violations….but justified?**
  - **Inadequate review of orders prior to administration**
  - **Delays in providing pharmacy services**
  - **Inter-service communications**
  - **Patient information availability**

Potential Outcomes of Case

- **Death**
- **Anaphylaxis, ICU admission, recovery**
- **Moderate allergic reaction, no ICU admission, recovery**
- **No patient effect**

Questions

Should the organizational response be the same regardless of the patient's clinical outcome?

1. Yes
2. No

"Perhaps the most important distinguishing characteristic of high-reliability organisations is a collective preoccupation with the possibility of failure"

- James Reason, Ph.D.

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Perguntas e Debates

Obrigado a todos pela atenção e estou pronto para

perguntas e debates