MEDICATION ERRORS
Detección y mejora continua de la calidad

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MEDICATION ERROR

"A preventable event that may cause or lead a inappropriate medication use or patient harm while the medication in the control of the health care professional, patient or consumer...

Coordinating Council on Medication Error Reporting and Prevention. The U.S.P. Convention. 1997.

MEDICATION ERROR

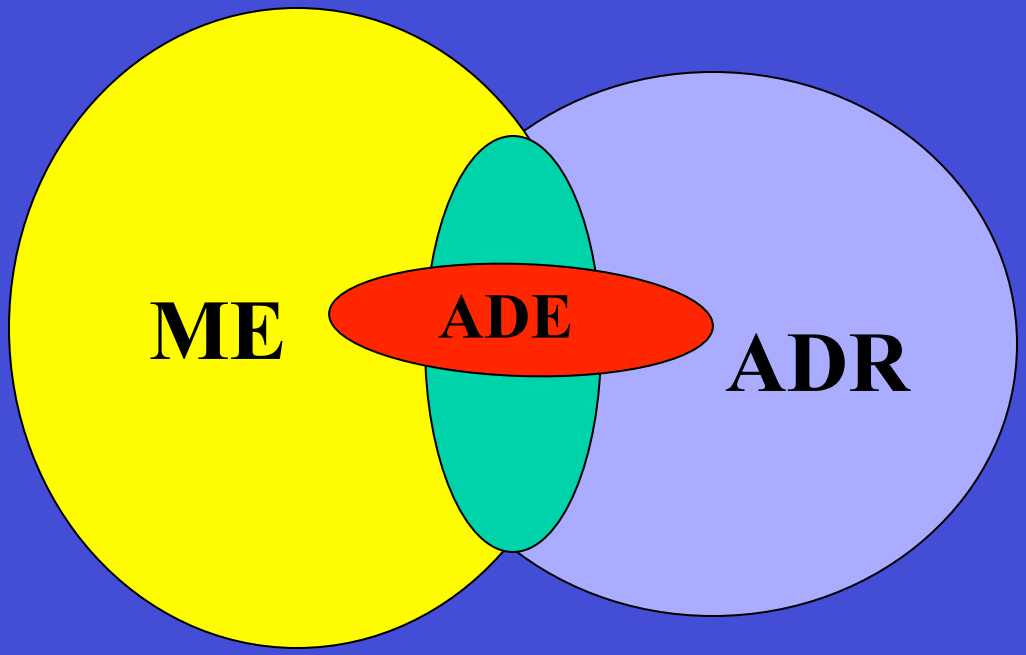
"...Such events may be related to professional practice, health care products, procedures and systems, including prescribing; order communication;...

MEDICATION ERROR

...product labelling, packaging, and nomenclature; compounding; dispensing; distribution; administration; education; monitoring, and use”

Coordinating Council on Medication Error Reporting and Prevention. The U.S.P. Convention. 1997.

Drug misadventures



Causes of medication errors

The more serious errors occur because of multiple failures in the system

Smetzer JL, Cohen MR. Hosp Pharm. 1998; 33: 640.

Causes of medication errors

Pharmaceutical industry, health authorities, hospital managers

physicians, pharmacists, nurses, patients

Lacasa C et al. Errores de medicación. Prevención, diagnóstico y tratamiento. 2001, Ed. EASO.

Critical units for medication errors in hospitals

- Intensive Care Units
- Surgery Room
- SALA DE PARTOS
- Emergency Room

Types of medication errors

ASHP. Am J Hosp Pharm. 1993; 50: 306

- **Omission**
- **Time**
- **Unauthorised drug**
- **Dose**
- **Presentation**
- **Drug preparation**
- **Administration technique**
- **Deteriorated drug**
- **Patient non-compliance**

Severity levels

The National Coordinating Council for Medication Error Reporting and Prevention. Am J Health-Syst. 1996; 53:23844

No error

A: Circumstances or events with the capacity to cause error

Error, no harm

B: Medication no reach the patient

C: It reached the patient without harm

D: Patient monitoring but no patient harm

Severity levels

The National Coordinating Council for Medication Error Reporting and Prevention. Am J Health-Syst. 1996; 53:23844

Error, harm

E: Treatment and caused temporary patient harm

F: Hospitalisation (and temporary harm)

G: Permanent patient injury

H: Near-death event

Error, death

I: Patient death

Sentinel events

Joint Commission
Enero 1995-16 de Marzo 2000

798

Death 79%

Tipos acontecimientos centinela

Joint Commission

	(%)
Suicides	19,4
Medication errors	14,3
Surgery complications	10,7
Lugar erróneo cirugía	8,0
Retraso tratamiento	5,0
Caída paciente	4,4

Detection techniques Hospital de Barcelona

Work multidisciplinary group (monthly meetings)

Physician 2
Nurses 8
Pharmacists 2

Detection techniques

✓Communication

- Medication error tracking form

✓Disguised observation

- Multidisciplinary group
- 800 observations/year
- Independent observers
- Administration data collection sheet

Communication method

Goal: To gather information on hazards in the system for causing serious harm

Communication method

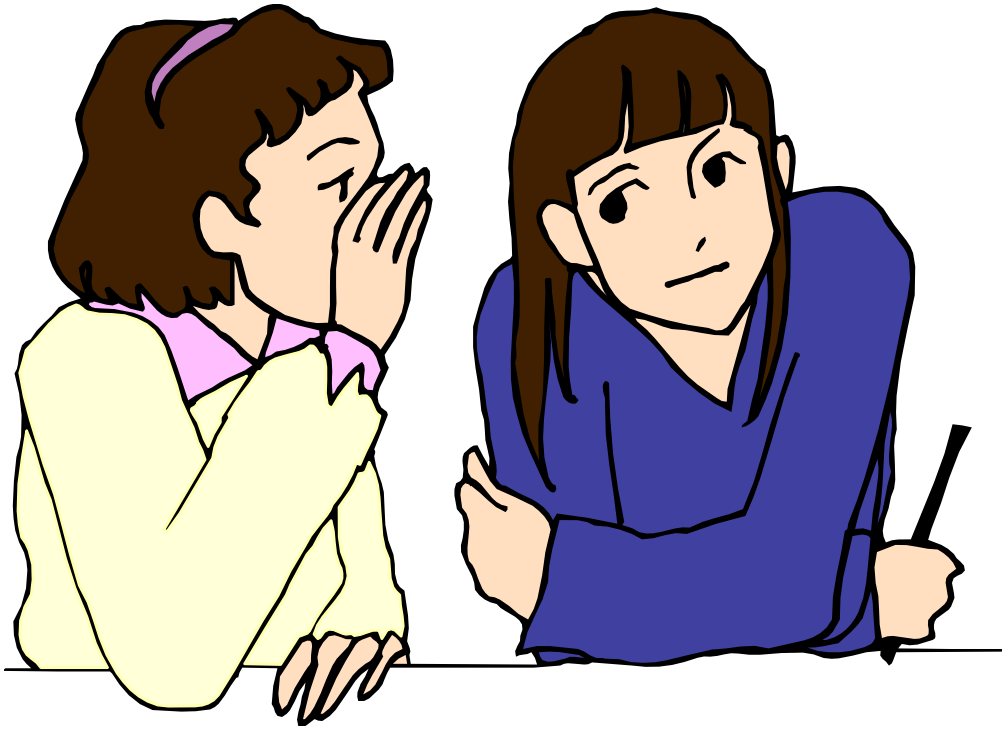
- Voluntary
- Non punitive culture
- Do not blame the person who made the mistake

“Medical errors produce an emotional impact which make the objective analysis of their cause (so necessary toa correct them) very difficult”

Leape L. JAMA 1994; 1851-1857


!!Que horror!!!
!!Me equivoqué en la dosis!!

¿Comunicar el error sin miedo?



Communication method

- Medication error tracking form
- Registration for analysis
- Continuous feedback about changes

Communication method
More severe errors:

- Analysis with implied personnel
- Proposal measures for improving
- Report to the managers

Potential barriers to medication errors reporting

- **Disagreement over error**
- **Reporting effort**
- **Fear**
- **Administrative response**

Wakefield DS et al. Am J Med Qual. 1999; 14:81-8

Observation method

Not significantly affect the MAE rate:

Observation of nurses

Nor the tactful interventions to prevent serious errors

Dean B and Barber N. Am J Health-Syst Pharm 2001; 58:54-58.

Drug distribution system
Hospital de Barcelona

- ✓ Computerised unit dose
  - Computerised prescription 54% of orders
  - Medication administration record
- ✓ Stock in wards with bar code identification

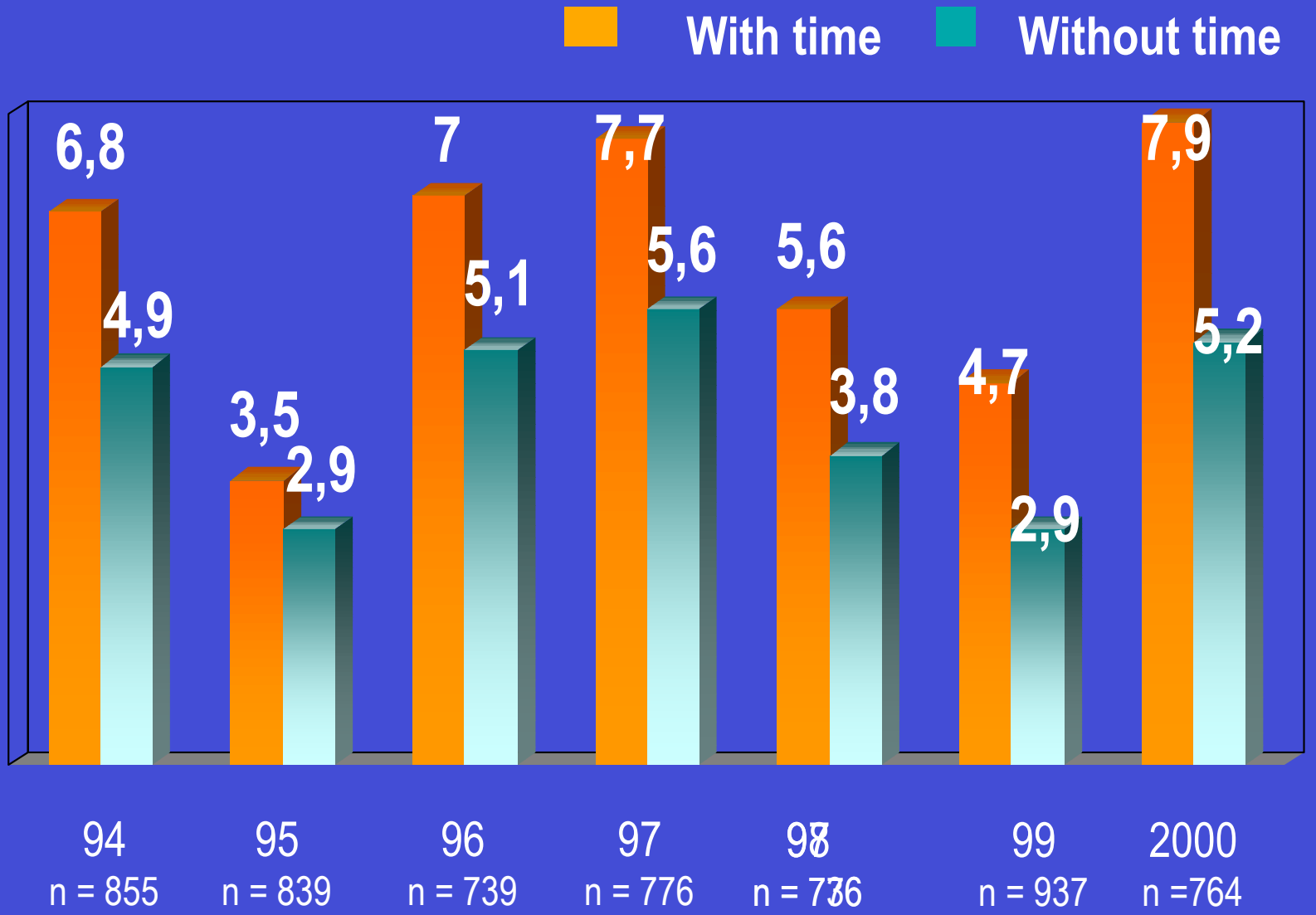
Observation method

	1994	1995	1996
Observations	855	839	734
Errors	57	30	52
(NS >C)	(3)	(0)	(0)
Error rate(%)			
With time	6.8	3.5	7
Without time	4.9	2.9	5.1

Observation method

	1997	1998	1999	2000
Observations	776	737	937	764
Errors	58	41	44	61
(NS >C)	(0)	(0)	(0)	(0)
Error rate (%)				
- con hora	7.7	5.6	4.7	7.9
- sin hora	5.6	3.8	2,9	5.2

Error rate (%) evolution in Hospital de Barcelona



Results: Communication method

	95	96	97	98	99	2000
%	0,002	0,006	0,02	0,02	0,025	0,029
n errors	9	28	90	88	111	133
(severity >C)	(6)	(13)	(46)	(28)	(33)	(48)

Prevention of Medication Errors

- Reduced reliance on memory
- Improved access to information
- Computerised physician order entry
- Filters to avoid errors
- Standardised processes
- Training to avoid errors
- Patient and family implication in the medication control

Computerised physician order entry

It disminishes error rates:

51.4%

Lacasa C et al. Rev Cal Asist 1998; 13: 92-99.

81.2%

Bates DW et al. J Am Md Assoc. 1999; 6: 313-21.

Medication cart-filling accuracy

	Error rate
Before cart review	1.74%
After cart review	0.78%

Garcia M, Lacasa C et al. Congreso SEFH. Pamplona, 1999.

Medication cart-filling accuracy

	Error rate
Manual system	0.84%
After cart review	0.64%

Klein EG et al. Am J Hosp Pharm. 1994; 51: 1193-1196.

Bioethical implications

- To recognise the mistake
- To inform suitable the patient
- To demythologise the safety of the medical performances

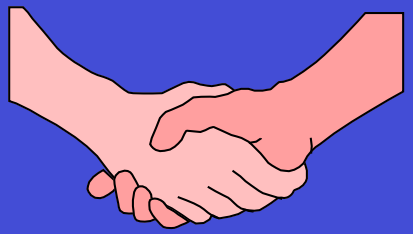
Bioethical implications

The citizens must know that any medical performance implies a risk that is necessary to know and take up office

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¡Gracias por su atención!