



# Quality Healthcare and Patient Safety

Enrique Ruelas. MD, MPA, MHSc  
Secretary

## Quality Healthcare and Patient Safety

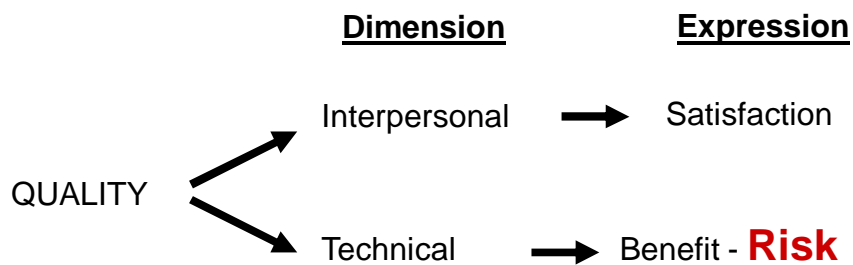


- **Quality and Safety**
- **Why is it important?**
- **International Priorities**
- **What to do?**
- **Conclusions**

## • Quality and Safety

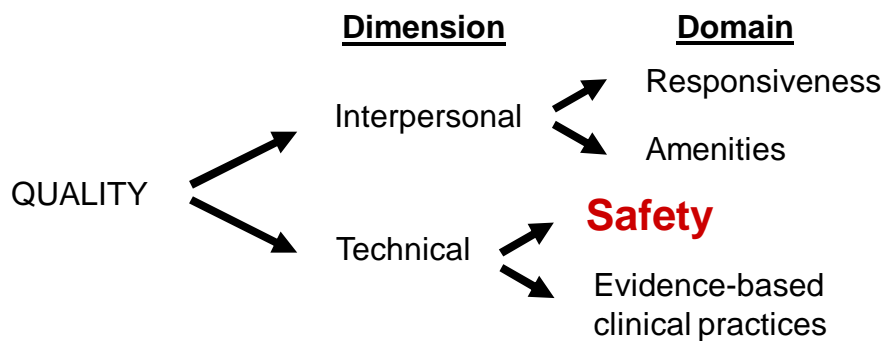
- Why is it important?
- International Priorities
- What to do?
- Conclusions

## QUALITY DIMENSIONS AND EXPRESSION



A. Donabedian

## QUALITY DIMENSIONS AND DOMAINS



E. Ruelas

- Quality and Safety
- **Why is it important?**
- Priorities
- What to do?
- Conclusions

## Exposed Falibility

- 1999: Institute of Medicine:
  - Book: “To Err is Human: Building a safer health system”
- Between 44,000 and 98,000 americans die annually due to preventable medical errors.

### In Mexico, it has been found...

Mortality rate in Mexico, 1995 (per 100,000 habs.)

Disease	Number	Rate
Cardiovascular	63,609	69.4
Cancer	48,222	52.6
Accidents	35,567	38.0
Diabetes Mellitus	33,316	36.4
<b>Nosocomial infections</b>	<b>33,000</b>	<b>35.1</b>
Stroke	23,400	25.5
Hepatic diseases	21,245	23.2
Pneumonia, influenza	19,717	21.5
Homicide, violence	15,615	17.0
<b>Nosocomial bacteremias</b>	<b>13,200</b>	<b>14.1</b>

Source: Dirección General de Epidemiología.  
SSA

**PROPHYLACTIC ANTIBIOTICS IN SURGERY  
IMSS**

396 surgical patients

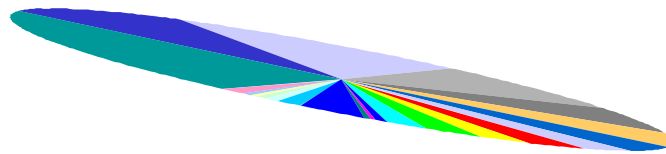


136 without prophylaxis

260 with prophylaxis

Baridò et al J Chemotherapy, 2001; 13:73

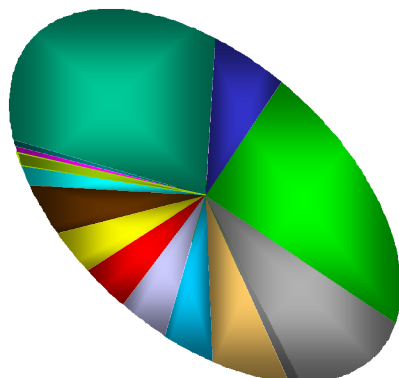
**260 Prescriptions  
22 Prophylactic Antibiotics Prescribed**



- |                     |                |               |                |
|---------------------|----------------|---------------|----------------|
| Cephotaxime         | Cephalotine    | Amikacin      | Cephtazidime   |
| Dicloxacilin        | Penicillina SC | Ciprofloxacin | Cloramphenicol |
| Tmt+ Smz            | Peflacin       | Cephuroxime   | Tetracyclin    |
| Clindamycin         | Neomycin       | Cephtriaxone  | Vancomycin     |
| Metronidazol        | Ampicillin     | Oxacilin      | Cephalexin     |
| Procaine Penicillin | Erythromycin   |               |                |

Baridò et al J Chemotherapy, 2001; 13:73

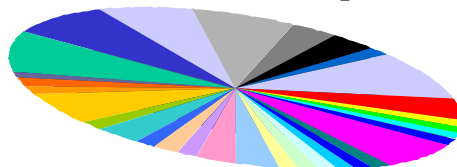
**Prescription of 1 prophylactic antibiotic  
15 different antibiotics**



- cephotaxime
- amikacin
- cephalotine
- cephtazidime
- metronidazol
- dicloxacilin
- aqueous penicillin
- cloramphenicol
- ciprofloxacín
- ampicillin
- tmp+smx
- peflacin
- cephuroxime
- tetracycline
- oxacillin

Baridò et al J Chemotherapy, 2001; 13:73

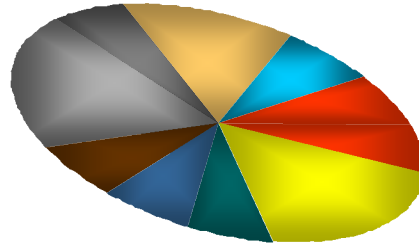
**2 prophylactic antibiotics prescribed  
32 combinations // 68 patients**



- |                               |                            |                           |                                 |
|-------------------------------|----------------------------|---------------------------|---------------------------------|
| ■ amikacin+cephotaxime        | ■ amikacin+clindamicina    | ■ amikacin+dicloxacilin   | ■ amikacin+aqueous penicillin   |
| ■ amikacin+metro              | ■ amikacin+cephalotine     | ■ amikacin+cephtazidime   | ■ cephotaxime+metronidazol      |
| ■ cephotaxime+ciprofloxacín   | ■ cephotaxime+peflacin     | ■ cephotaxime+aqueous per | ■ cephotaxime+tmp+sulfa         |
| ■ cephotaximeclindamicina     | ■ cephtazidime+metronidazo | ■ cephtazidime+peflacin   | ■ cephtazidime+ciprofloxacín    |
| ■ cephtazidime+keflex         | ■ cephtazidime+vancomicina | ■ ampicillin+metronidazol | ■ Ampicillin+aqueous penicillin |
| ■ cephalotine+cephtriaxone    | ■ metronidazol+peflacin    | ■ metronidazol+neomycin   | ■ metronidazol+tmp+sulfa        |
| ■ aqueous+procainic penicilli | ■ cipro+cephalotine        | ■ cipro+cephtriaxone      | ■ clora+dicloxacilin            |
| ■ clora+tmt+sulfa             | ■ dicloxacilin+cipro       | ■ dicloxa+cephalotine     | ■ cephtazidime+cephotaxime      |

Baridò et al J Chemotherapy, 2001; 13:73

**3 prophylactic antibiotics prescribed  
10 combinations // 15 patients**



- amikacin+metronidazol+aqueous penicillin
- amikacin+cephotaxime+metronidazol
- amikacin+cephotaxime+clindamicina
- amikacin+metronidazol+penicilinaacuosa
- cephotaxime+eritromicina+neomycin
- amikacin+ampicillin+clindamicina
- amikacin+cephotaxime+cephalotina
- amikacin+clindamicina+aqueous penicillin
- ampicillin+clindamicina+aqueous penicillin

Baridò et al J Chemotherapy, 2001; 13:73

**Antibiotic Selection**

Total of Prescriptions 260

Inadequate 180

Adequate 80



on 60%

ion 34%

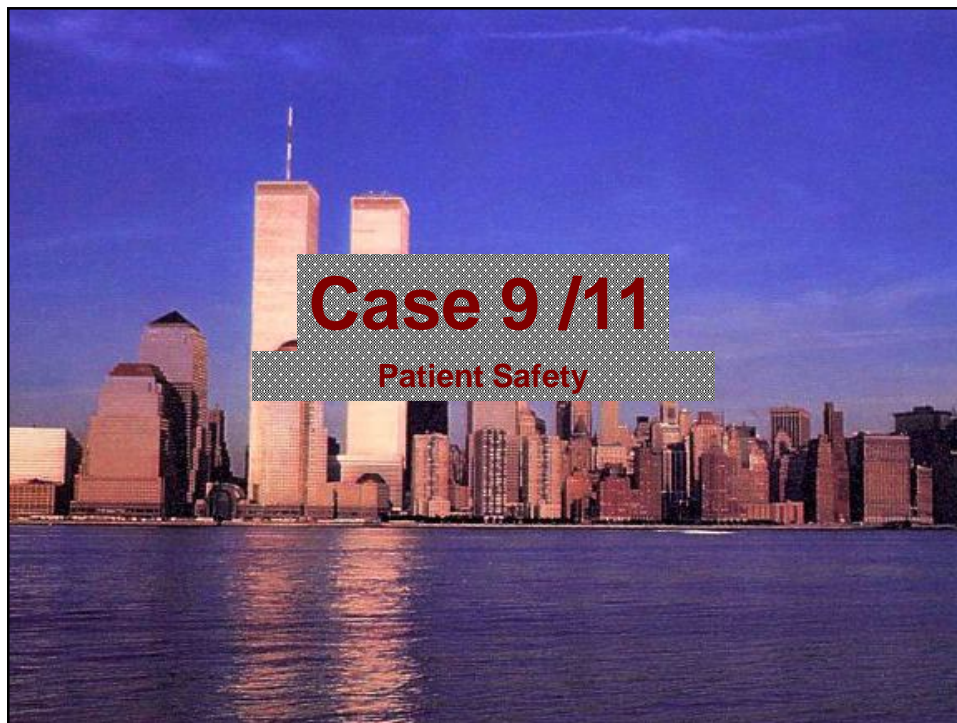
Associated to adverse events 22%

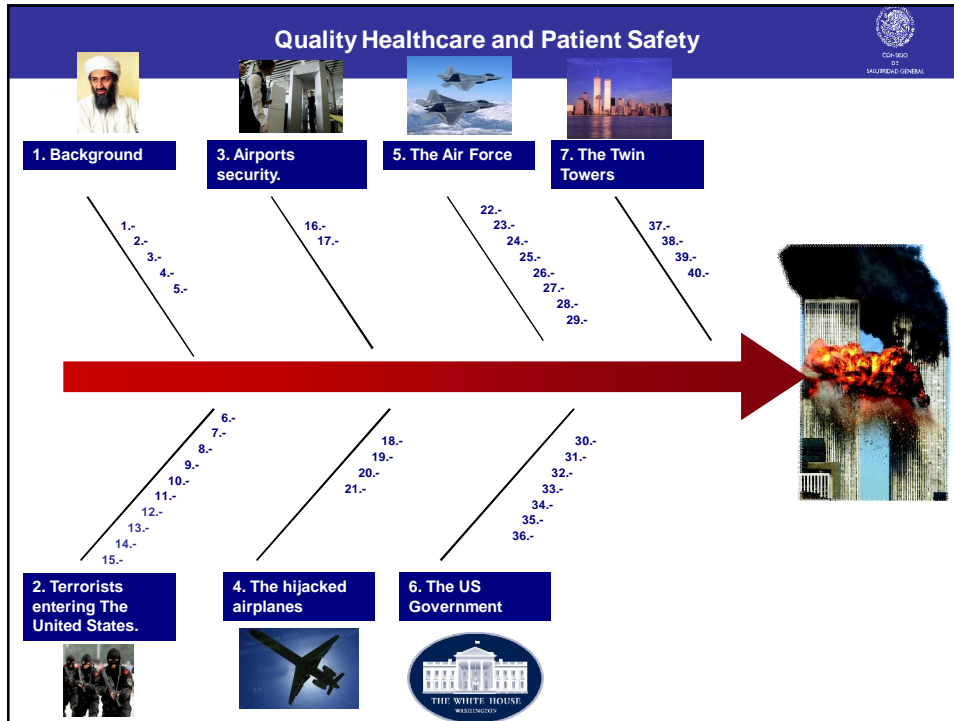
Baridò et al J Chemotherapy, 2001; 13:73

## Adverse events through medical complaints at the National Commission for Medical Arbitration


- 127 cases → 30% adverse events.
- 87% preventable.
- Most vulnerable service: Emergencies Room.
- The truth wasn't told to patients: 60%


Ruelas, E. Tena, C. Sarabia, O. et. al.  
Cirugía y Cirujanos, mayo 2008.







**Quality Healthcare and Patient Safety**



 **1. Background**



- 1.- 1996. Terrorist training camps are identified in Afghanistan. The Pentagon refuse to attack them because "it would be risky".
- 2.- 1998. Bin Laden issues a "Fatuah".
- 3.- 1998. Bombs explode in the US embassies in Dar es Salaam and in Namibia.
- 4.- 1998. Missiles are launched from the Arabic sea to Afghanistan to kill Bin Laden.
- 5.- 2000. Attack to a US war ship in Yemen.

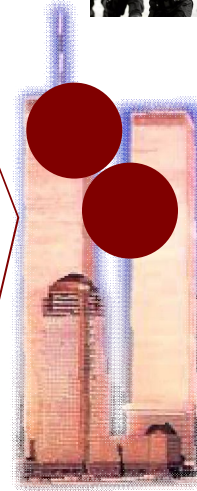




## 2. Terrorists enter the US



- 6. April 2001. Terrorists infiltration with tourist visas.
- 7. 9 out of 19 terrorists had fake documents easily detectable.
- 8. One of them didn't have a photograph in his passport .
- 9. The majority of visa applications were incomplete or had imprecise information.
- 10. Two of the terrorists were known for having participated in the attacks to the embassies.



## 3. Airport safety



- 16. Some of the terrorists passed through security with 4" knives.
- 17. One of the terrorists made the alarm sound twice and he was allowed to go through to the airplane.

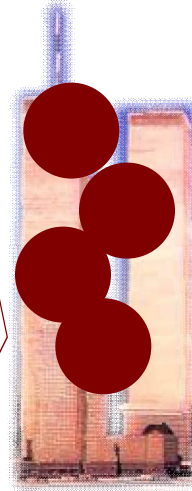




## 4. The hijacked airplanes



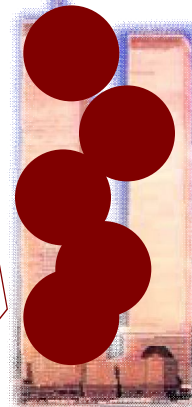
- 19. AA11 crashed Tower 1 at 8:46 a.m.
- 20. UA175 crashed Tower 2 at 9:03 a.m.
- 21. AA77 crashed The Pentagon at 9:37 a.m.
- 22. UA93 was warned at 9:26 and terrorists broke into the cockpit at 9:28. The cabin wasn't locked. The airplane was shot down by passengers.



## 5. The Air Force.



- 26. 7 minutes after AA11 crashed, 2 Air Force planes were looking for it.
- 27. 30 minutes later, there was no report from the Air Force.
- 28. At 9:30 a.m. 2 jets took off from Virginia to Baltimore in a mission to intercept the AA11.
- 29. They had to come back to Baltimore, but they were 150 miles away over the Atlantic Ocean because the instruction was to intercept 2 russian missiles. (The AA77 crashed the Pentagon at 9:27 a.m.)





## 6. The US Government.

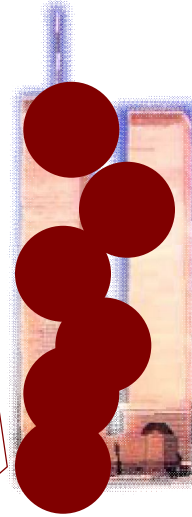


**30.** The White House ignored the CIA Counterterrorism Unit warning for 8 months.

**31.** The “Presidential Daily Brief” from August 6th warned about the attack. Condolezza Rice, who was the National Security advisor, declared that they ruled it out because it didn’t include any “concrete proposals”.

**32.** The central FBI office didn’t have enough translators in arabic.

**33.** Some of the translators sympathized with the terrorists.



## 6. The US Government



**35.** Following the attacks, President Bush had difficulties communicating from Air Force One.

**36.** At 10:02 Vicepresident Cheney ordered to intercept any airplane directed to Washington, DC. It was never transmitted to pilots.





## 7. The Twin Towers.

- 37. It is advised to people in Tower 2 to remain easy.
- 38. No one let people know that stairs were free.
- 39. There was no protocol for rescue.
- 40. The 9/11 didn't have a protocol for such kind of disasters, nor was coordinated by radio with other rescuing agencies.

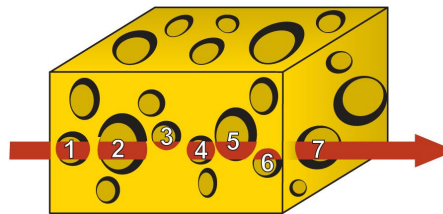


SOURCE: 9/11 COMMISSION

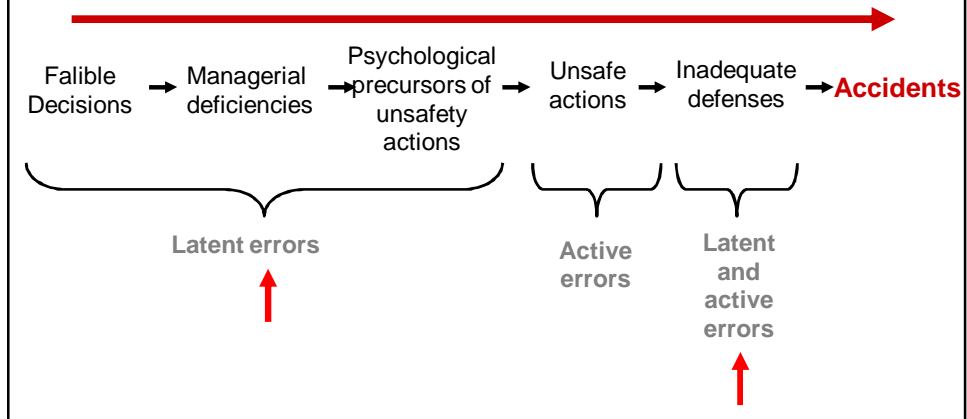
SYNTHESIS: Dr. Enrique Ruelas

- 1. Background
- 2. Enter of the terrorists to the US
- 3. Safety in airports
- 4. The hijacked airplanes
- 5. The Air Force
- 6. The US Government
- 7. The Twin Towers

## CASE 9/11 SWISS CHEESE EFFECT



# ACCIDENTS - CHAIN OF EVENTS -



- Quality and Safety
- Why is it important?
- **International Priorities**
- What to do?
- Conclusions

**Patient Safety  
International Priorities**

**International Steering Committee on Patient Safety – JC- WHO**

1. Patient Identification.
2. Look alike/sound alike.
3. Solutions in high concentrations.
4. Communication during patient hand-overs.
5. Assuring medication accuracy at transitions in care.
6. Right procedure– Right place.

## Patient Safety International Priorities

7. Wrong connections.
8. Central IV lines infections.
9. Pressure ulcers.
10. Inadequate response to the deterioration of patients.
11. Inadequate communication of results of critical studies.
12. Patient falls.

- Quality and Safety
- Why is it important?
- International Priorities
- **What to do?**
- Conclusions

→ ACCIDENTS ARE GENERALLY A RESULT OF A CHAIN OF EVENTS DETONATED BY THE WRONG DESIGN OF A SYSTEM THAT INDUCE TO ERROR OR MAKES IT DIFFICULT TO DETECT IT.

“SAFETY IS A CHARACTERISTIC OF SYSTEMS, NOT OF ITS COMPONENTS”

Cook

→ DESIGNING A SAFETY SYSTEM

VS.

BLAMING INDIVIDUALS

- Quality and Safety
- Why is it important?
- International Priorities
- What to do?
- **Conclusions**



*“But with all my experience, I have never been in a (surgical accident) of any type. In all my years at (the Hospital), I have just seen one patient in a dangerous situation. I have never seen an adverse event, I have never produced one, and I have never found a situation that might become an important error. ”*

**A surgeon?**

**A nurse?**

**A Chief of Service?**

**The Hospital Director?**



*“But with all my experience, I have never been in any kind of accident. In all my years in the sea I have seen only one ship in a difficult situation. I have never seen a shipwreck, and I have never been in a situation that could become a disaster”*

**E. J. Smith, Capitan del RMS Titanic. 1907**

“I have been treated like a king in the last weeks. They have given me whatever I want. I have been so fortunate of being in such a pleasant environment”

**Is it a patient before undergoing a surgical procedure?**

“I have been treated like a king in the last weeks. They have given me whatever I want. I have been so fortunate of being with such a nice family”

**A turkey. Night of December 23rd.**

*The problem of induction. Bertrand Russell.*

- Josefina González, 35 years old , mother of 3 children, programmed to a mielography, who instead of being injected with a dye she was injected with alcohol by error because the recipient was not labelled.
- Outcome: Tetraplejic patient.

### **CONCLUSIONS**

**Every system is perfectly designed to produce what it produces.**

**Any healthcare system can produce harm.**

**Inertia is normally created and should not be tolerated .**

**Any harm is theoretically preventable.**

**It is possible to always to improve.**

**Are we teaching this ?**



CONSEJO  
DE  
SALUBRIDAD GENERAL