



One Step Further:
The Pursuit of Excellence in Critical Care

UNIVERSITY HOSPITAL FUNDACION SANTA FE DE BOGOTA, COLOMBIA



SY28

ICU's WITH BETTER OUTCOMES: How Do You Do It?

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INTRODUCTION 1

- ▣ ICU dynamic organizations
 - ▣ Most complex environments of health care facilities.
 - ▣ Expanded the past two decades.
 - ▣ Are vital component of modern health care.
 - ▣ Assess and improve systems and processes.



INTRODUCTION 2

- ▣ ICU dynamic organizations
 - ▣ Patients in ICU could spend some time during their final year of life.
 - ▣ 1/5 of them die there.
 - ▣ Dissatisfaction is common between relatives and friends.
 - ▣ The economic costs are very high.
 - ▣ ICU utilization is increasing rapidly.



ICU PERFORMANCE 1

- ▣ ICU problems
 - ▣ Good level of care.
 - ▣ Poor outcomes.
 - ▣ Inappropriated medical interventions (medical errors).
 - ▣ Iatrogenic complications.
 - ▣ Poor communication, problems solving among ICU staff.
 - ▣ Variation in practice



ICU PERFORMANCE 2

- Operacional concept of ICU performance
 - How well performs.
 - Requires quantitation: indexes.
 - Essencial principles:
 1. Evaluated parameters that span the ICU performance
 2. Performance relevant measures.



DOMAINS – MEASURES OF ICU PERFORMANCE

Medical outcomes: Survival – complications rates, medical errors, symptom control.

Economic outcomes: Resource consumption: ICU hospital, cost – effectiveness of care.

Psychosocial and ethical outcomes: Quality of life patient-family satisfaction

Institutional outcomes: Staff satisfaction effectiveness of ICU bed utilization, efficiency of processes/procedures/functions.



HOW DO WE DO IT?

20 beds ICU:

Staff: 1 chairman.

22 certified intensivist.

60 ICU specialists nurses.

6 physiotherapists.

2 nutricionists.

Education program: Academic critical care 4 year program. (6 per year).

▣ **Joint Commission Accreditation – Since 2012**



▣ **Johns Hopkins Academic Agreement**



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OUTCOMES RELATED TO STRUCTURES ON PROCESSES

- ✓ **Open vs *Closed* ICU.**
- ✓ **24-h intensivist presence.**
- ✓ **Use of a daily goals sheet/patient.**
- ✓ **Formation of a ventilator team.**
- ✓ **Availability of step-down care unit.**
- ✓ **Nurse/patient ratio infection control processes.**
- ✓ **Family visiting 24-h.**
- ✓ **Palliative and end-of-life care.**



QUALITY INDICATORS

Structure:

- ✓ **Availability of intensivists:**
One intensivist per 10 beds/8 hours, including weekends.
- ✓ **Patient-to-nurse:**
One nurse per 1-2 beds dependent complexity.
- ✓ **Measurement of patient/family satisfaction:**
Analysis of each registration of patient/family satisfaction or complaint .



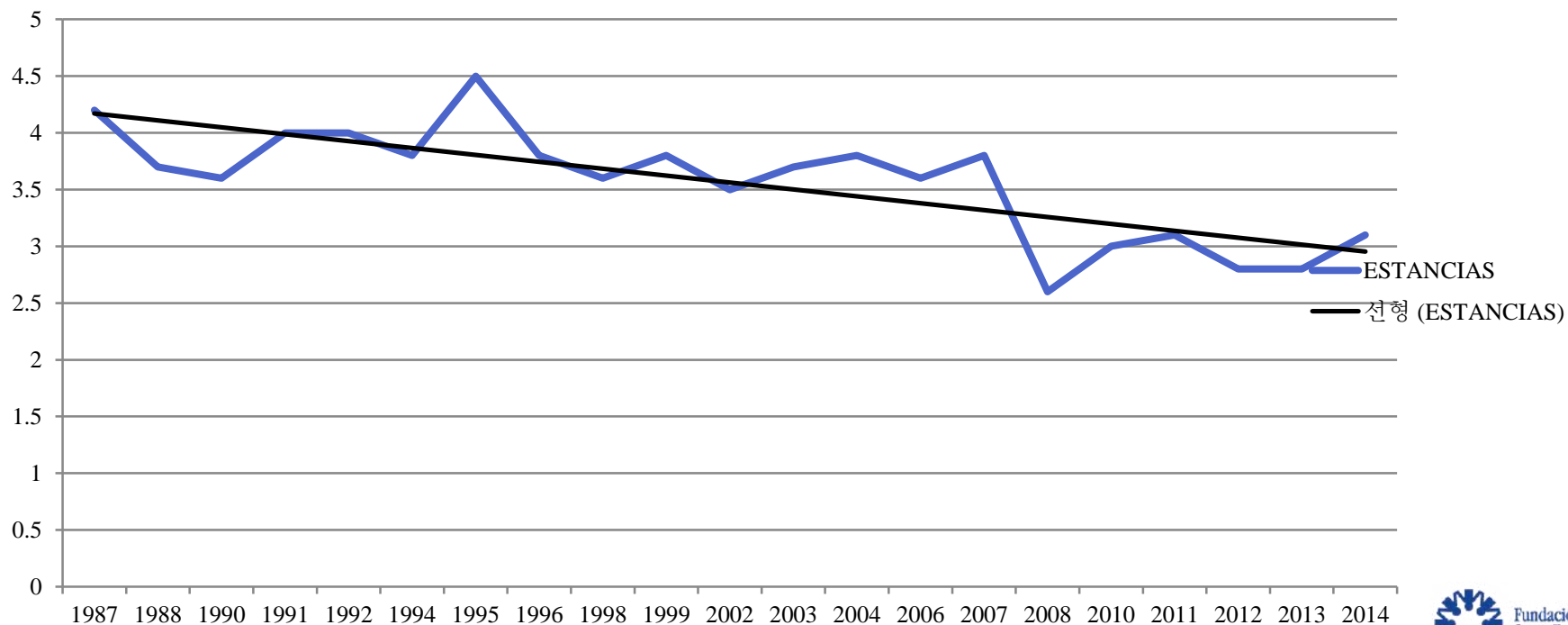
QUALITY INDICATORS - PROCESS

✓ Occupance rate:

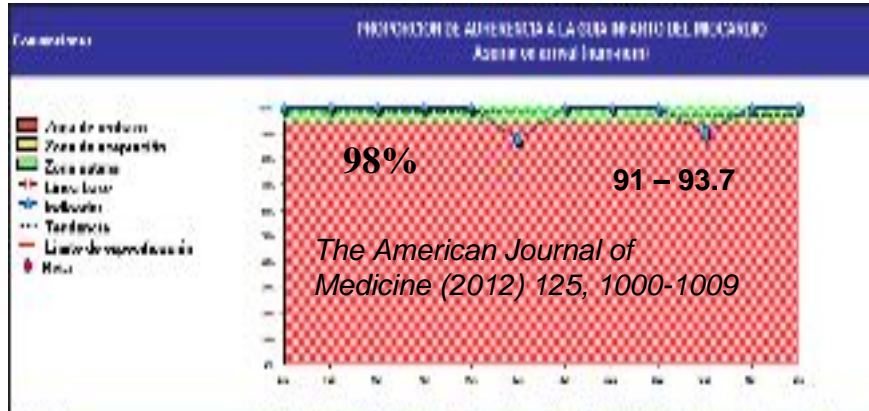
Year:	2010	2011	2012	2013	2014
	83%	82%	79%	82%	85%

✓ Length of stay:

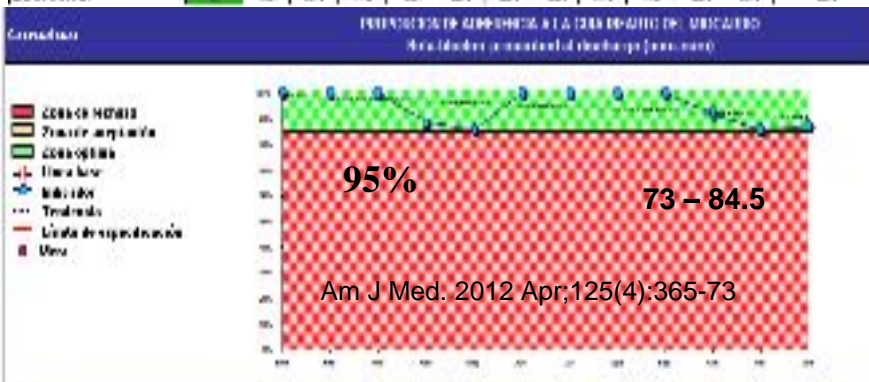
Year	2010	2011	2012	2013	2014
ICU Days of stay (mean)	3.7	3.6	3.5	3	3.4



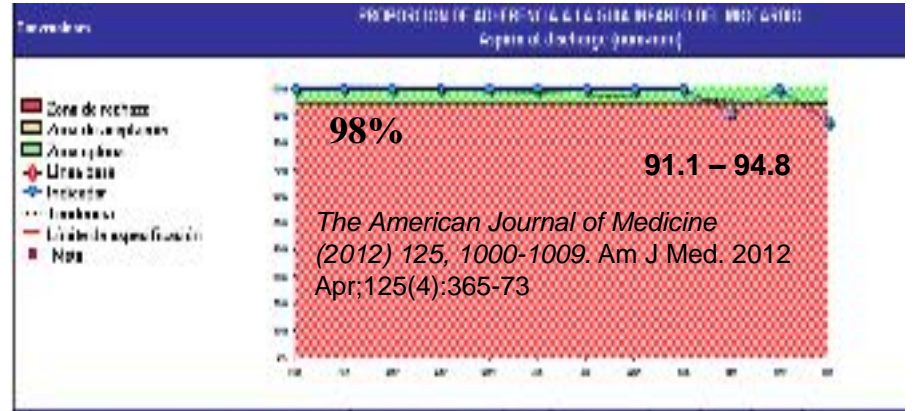
QUALITY INDICATORS – PROCESS- MIOCARDIAL INFARCTION



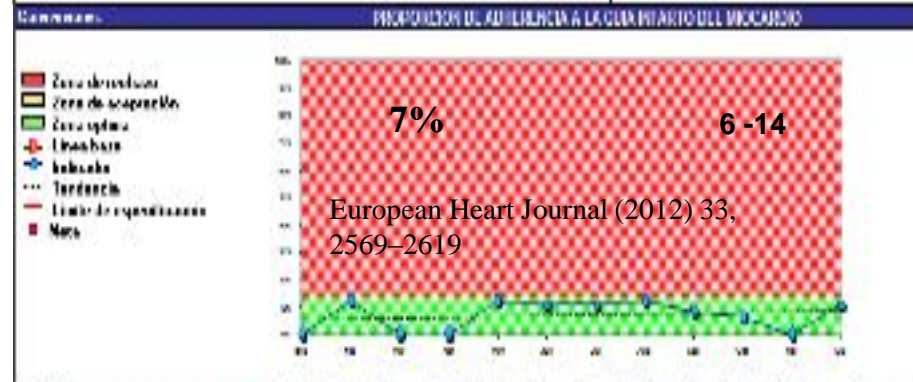
Concepto	Dic	Nov	Oct	Sep	Ago	Jul	Jun	May	Abr	Mar	Feb	Ene
Límite superior	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
PROPORCIÓN DE ADHERENCIA CLÍNICA	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%
Protección superior a 10 días	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
INDICADOR	91	92	93	94	95	96	97	98	99	100	100	100
Límite inferior	91	92	93	94	95	96	97	98	99	100	100	100



Concepto	Dic	Nov	Oct	Sep	Ago	Jul	Jun	May	Abr	Mar	Feb	Ene
Límite superior	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
PROPORCIÓN DE ADHERENCIA CLÍNICA	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%
Protección superior a 10 días	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
INDICADOR	73	74	75	76	77	78	79	80	81	82	83	84
Límite inferior	73	74	75	76	77	78	79	80	81	82	83	84



Concepto	Dic	Nov	Oct	Sep	Ago	Jul	Jun	May	Abr	Mar	Feb	Ene
Límite superior	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
PROPORCIÓN DE ADHERENCIA CLÍNICA	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%
Protección superior a 10 días	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
INDICADOR	91.1	91.2	91.3	91.4	91.5	91.6	91.7	91.8	91.9	92	92.1	92.2
Límite inferior	91.1	91.2	91.3	91.4	91.5	91.6	91.7	91.8	91.9	92	92.1	92.2



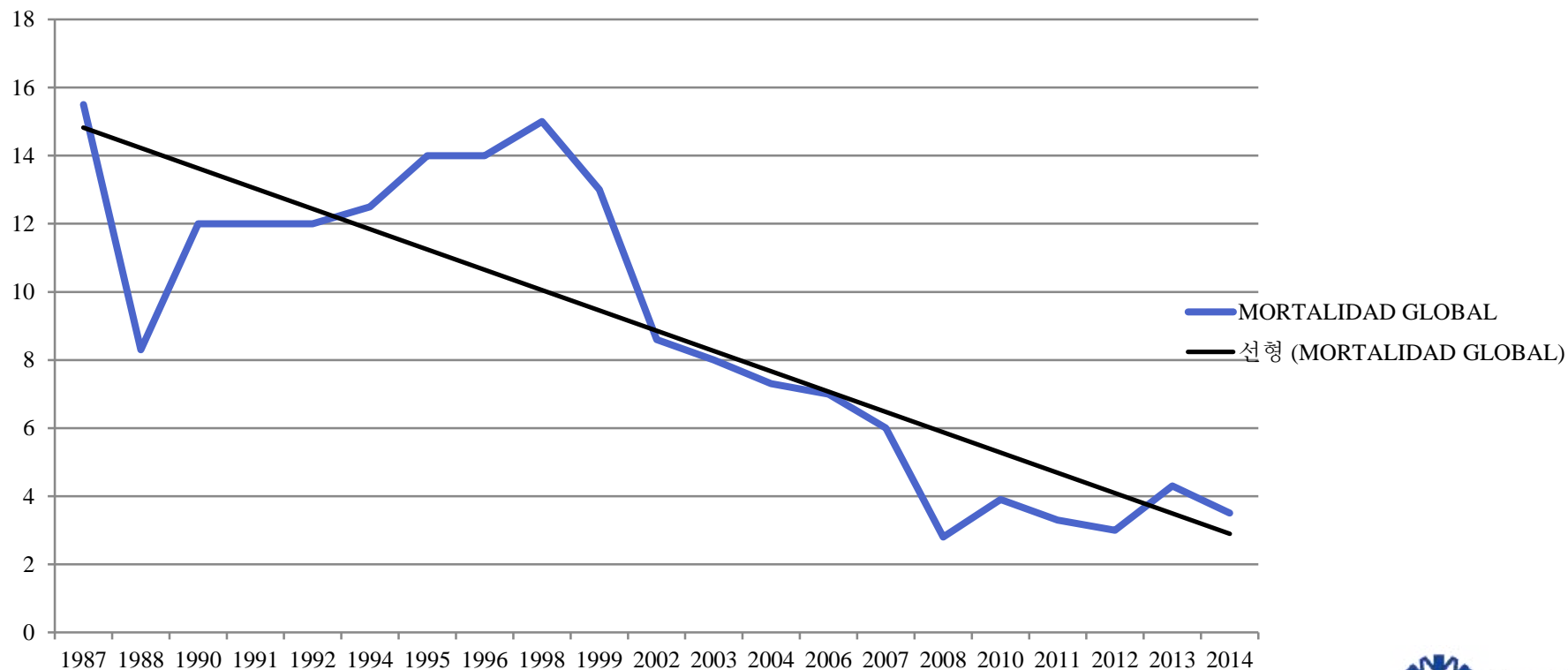
Concepto	Dic	Nov	Oct	Sep	Ago	Jul	Jun	May	Abr	Mar	Feb	Ene
Límite superior	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
PROPORCIÓN DE ADHERENCIA CLÍNICA	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Protección superior a 10 días	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
INDICADOR	6	6	6	6	6	6	6	6	6	6	6	6
Límite inferior	6	6	6	6	6	6	6	6	6	6	6	6

Adherence : 93%

MANAGEMENT

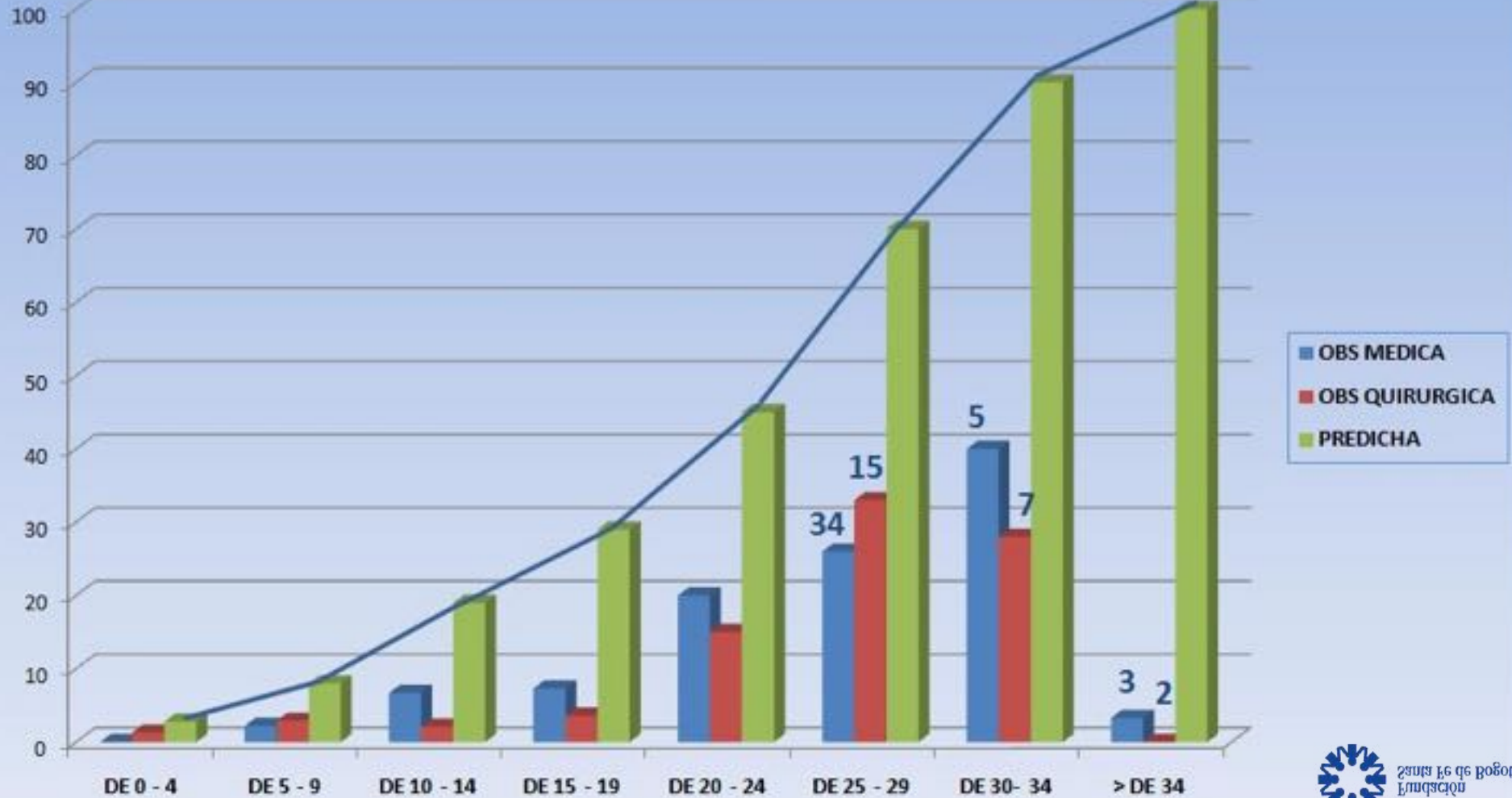
	2010	2011	2012	2013	2014
Mortality :	86/2116	89/2059	65/2084	93/2147	101/2001
Mortality >24 horas:	74	85	55	73	72
% Mortality :	3,3%	4.1%	3.0%	4.3%	3.5%

MORTALITY



PREDICTED vs OBSERVED DEATH RATES

Knaus WA, Crit Care Med 1985



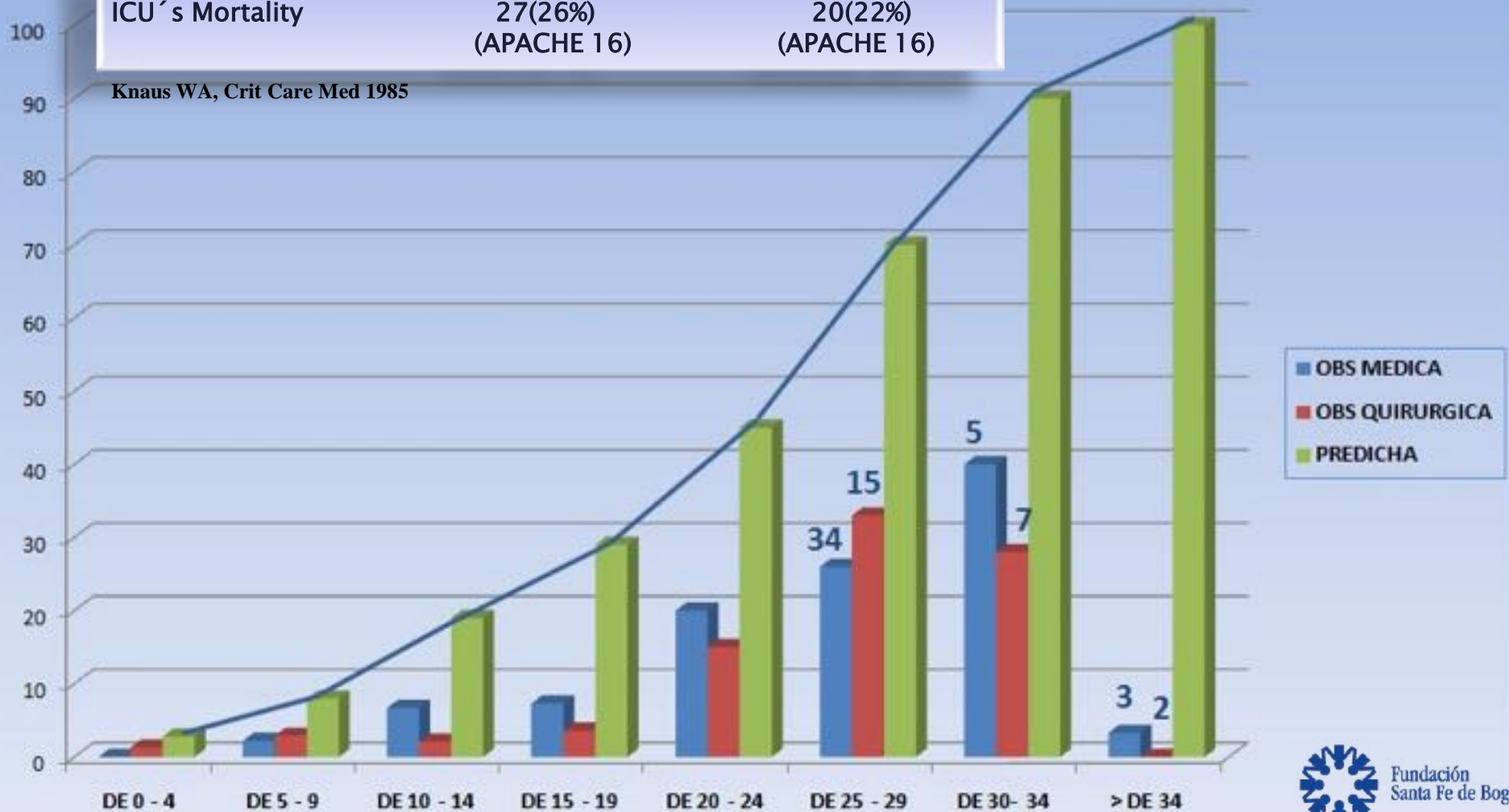
PREDICTED vs OBSERVED DEATH RATES

2013	UCIM	UCIQ
# Patients	146	94
ICU's Mortality	31(21%) (APACHE 20)	25(27%) (APACHE 18)

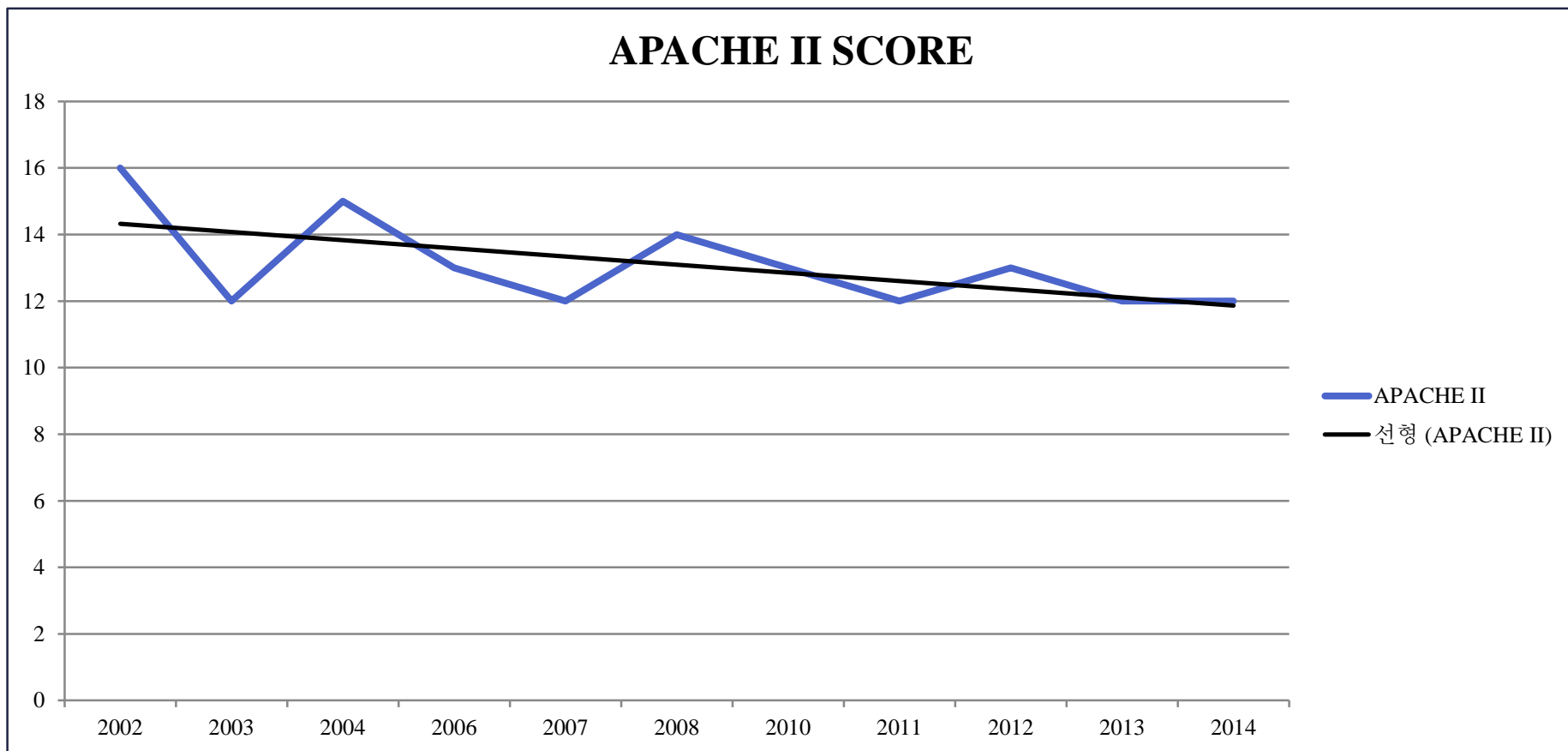
2014	UCIM	UCIQ
# Patients	95	87
ICU's Mortality	27(26%) (APACHE 16)	20(22%) (APACHE 16)

Mechanical Ventilation

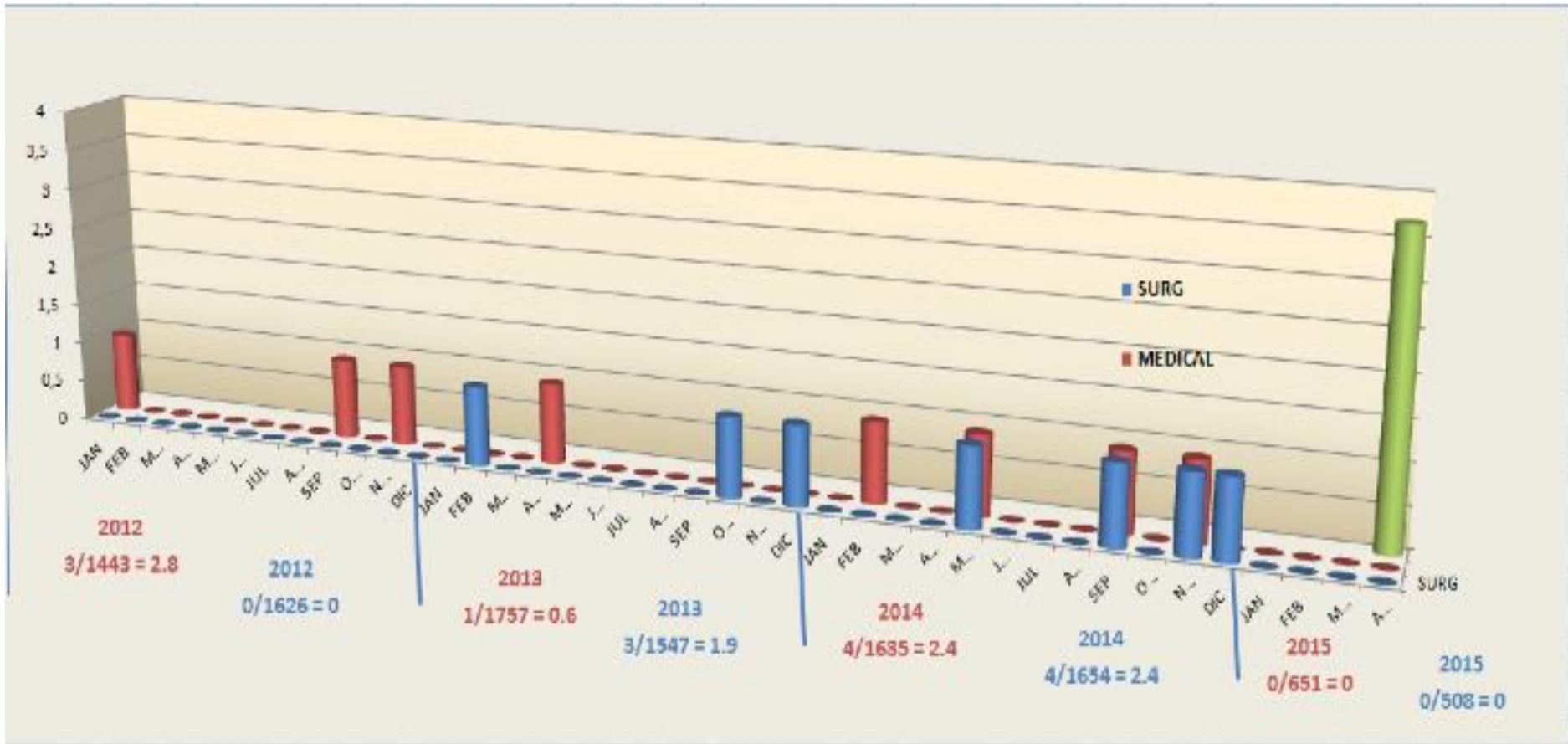
Knaus WA, Crit Care Med 1985



APACHE II SCORE - OUTCOME



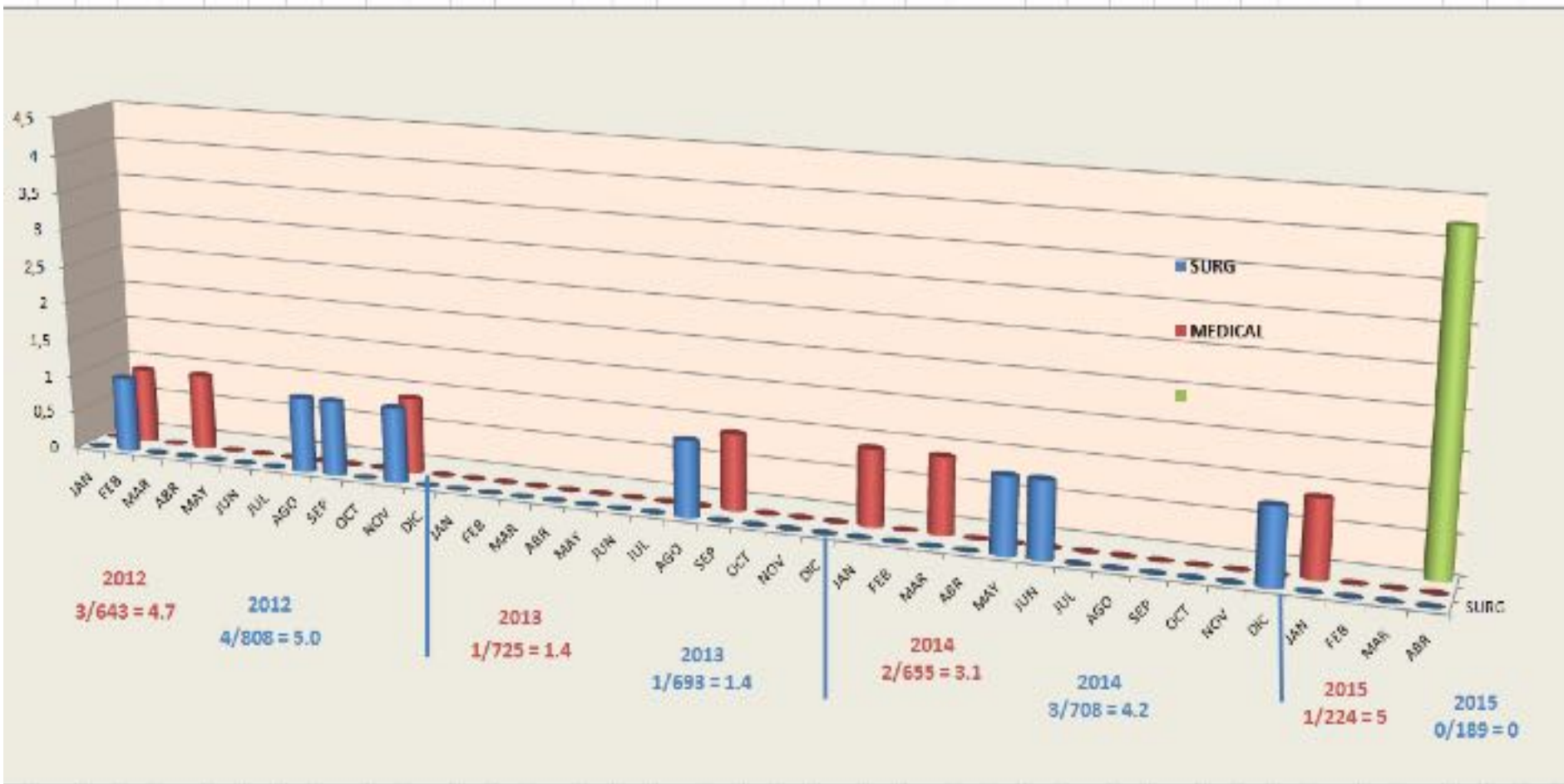
CENTRAL CATHETER INFECTIONS x 1000 SURGICAL-MEDICAL PATIENTS



Medical major teaching: 3.7 ITS-AC X 1000



VENTILATOR ASSOCIATED PNEUMONIA RATE x 1000 SURGICAL-MEDICAL PATIENTS



Medical major teaching: 4.2 ventilator associated rate x 1000



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BLADDER CATHETER ASSOCIATED INFECTION x 1000 SURGICAL-MEDICAL PATIENTS

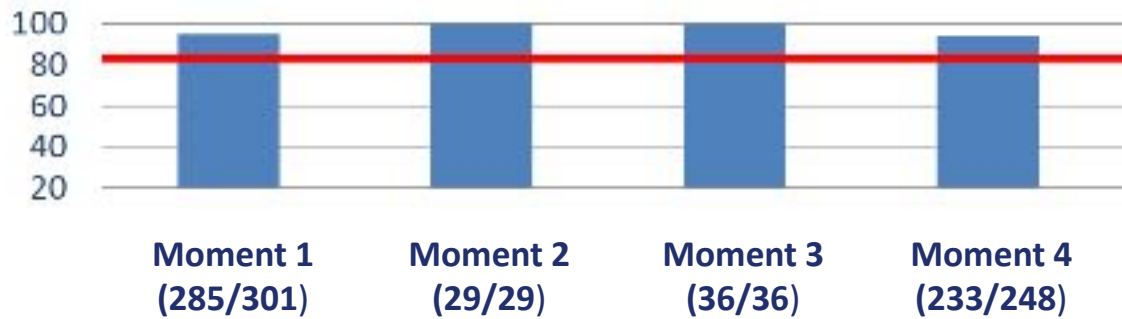


Medical major teaching: 6.5 bladder catheter associated infection x 1000

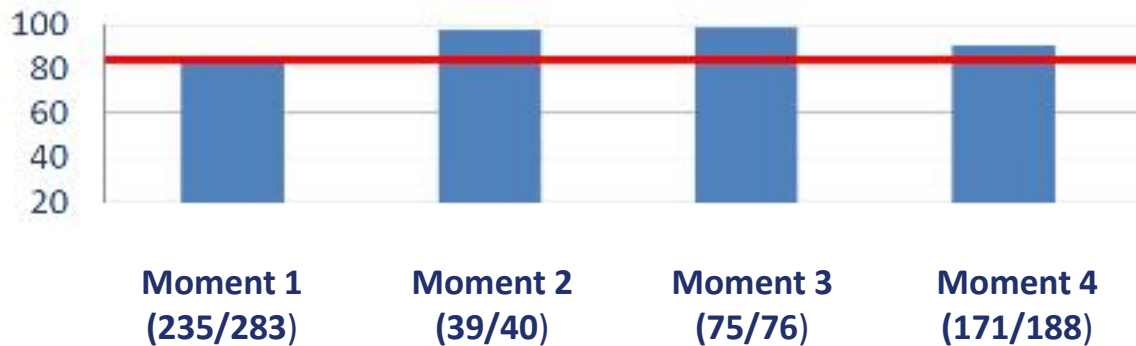


HAND HYGIENE COMPLIANCE

UCIQ



UCIM



INTENSIVE CARE UNITS WITH GOOD OUTCOMES

OUR PEOPLE!!!



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