

El problema no resuelto del catéter vascular

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1.000.000 días/año pacientes con
CVC

5.000-8.000 BRC anuales

**400-600 muertes (10%)
directamente relacionadas
con la BRC**

6000 Euros

7 días más de hospitalización por
BRC

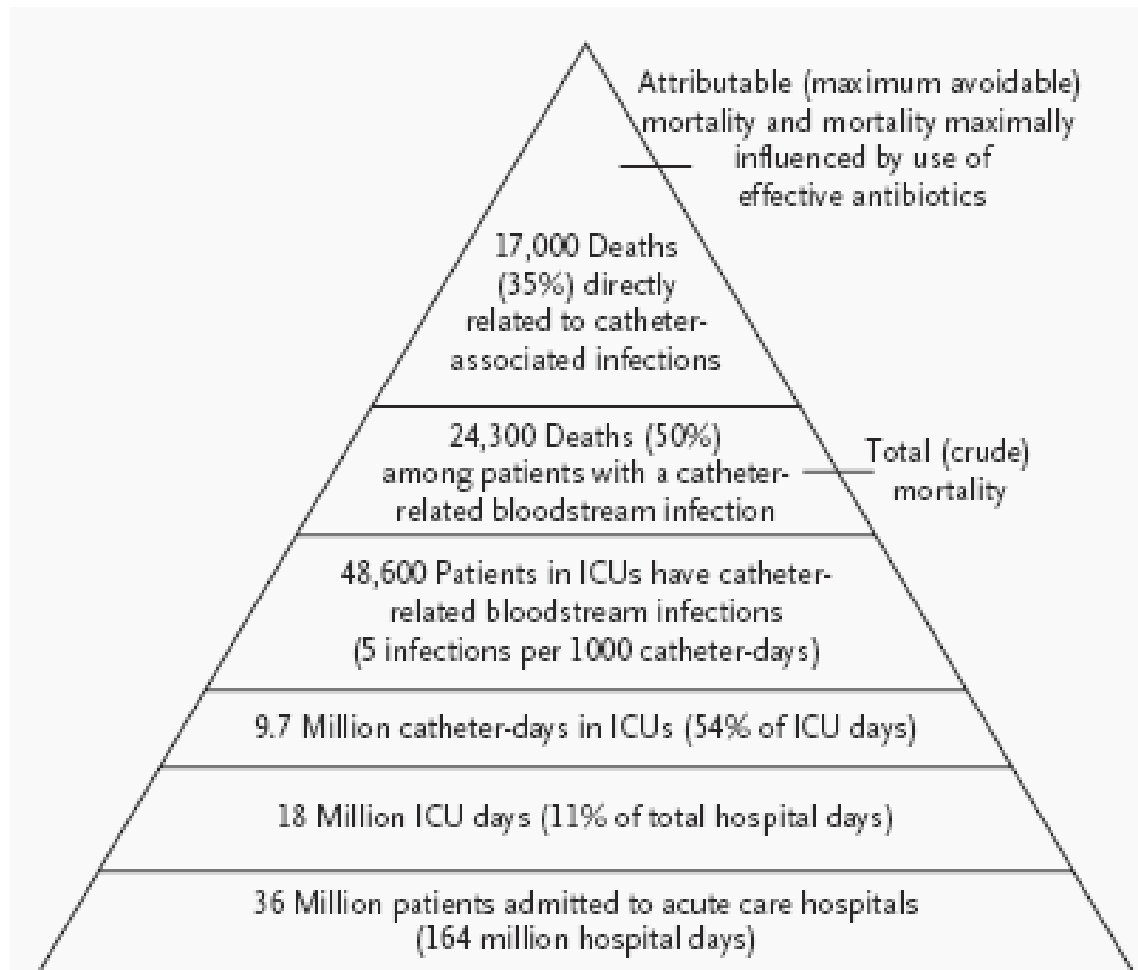


Figure 1. Annual Patient Stays in the 6000 Acute Care Hospitals and Associated ICUs in the United States.

About half the days patients spend in ICUs (ICU days) are associated with the use of a central venous catheter and therefore with a risk of subsequent bloodstream infection (five infections per 1000 catheter-days).

U.S. ATTACKED

HIJACKED JETS DESTROY TWIN TOWERS AND HIT PENTAGON IN DAY OF TERROR

A CREEPING HORROR

Buildings Burn and Fall as Onlookers Search for Elusive Safety

By N. R. KLEINFELD

It kept getting worse. The horror arrived in episodic bursts of chilling disbelief, signified first by trembling floors, sharp eruptions, cracked windows. There was the actual unfathomable realization of a gaping, flaming hole in first one of the tall towers, and then the same thing all over again in its twin. There was the merciless sight of bodies helplessly tumbling out, some of them in flames.

Finally, the mighty towers themselves were reduced to nothing. Dense plumes of smoke raced through the downtown avenues, coursing between the buildings, shaped like tornadoes on their sides.

Every sound was cause for alarm. A plane appeared overhead. Was another one coming? No, it was a fighter jet. But was it friend or enemy? People scrambled for their lives, but they didn't know where to go. Should they go north, south, east, west? Stay outside, go indoors? People hid beneath cars and each other. Some contemplated jumping into the river.

For those trying to flee the very epicenters of the collapsing World Trade Center towers, the most harrowing thought of all finally dawned on them: nowhere was safe.

For several panic-stricken hours yesterday morning, people in Lower Manhattan witnessed the inexplicable, the incomprehensible, the unthinkable. "I don't know what the gates of hell look like, but it's got to be like this," said John Maloney, a security director for an Internet firm in the trade center. "I'm a combat veteran, Vietnam, and I never saw anything like this."

The first warnings were small ones. Blocks away, Jim Farmer, a film composer, was having breakfast at a small restaurant on West Broadway. He heard the sound of a jet. An odd sound — too loud, it seemed, to be

Continued on Page A7

A Somber Bush Says Terrorism Cannot Prevail



President Vows to Exact Punishment for 'Evil'

By SERGE SCHMEMMANN

Hijackers rammed jetliners into each of New York's World Trade Center towers yesterday, toppling both in a hellish storm of ash, glass, smoke and leaping victims, while a third jetliner crashed into the Pentagon in Virginia. There was no official count, but President Bush said thousands had perished, and in the immediate aftermath the calamity was already being ranked the worst and most audacious terror attack in American history.

The attacks seemed carefully coordinated. The hijacked planes were all en route to California, and therefore gorged with fuel, and their departures were spaced within an hour and 40 minutes. The first, American Airlines Flight 11, a Boeing 767 out of Boston for Los Angeles, crashed into the north tower at 8:48 a.m. Eighteen minutes later, United Airlines Flight 175, also headed from Boston to Los Angeles, plowed into the south tower.

Then an American Airlines Boeing 757, Flight 77, left Washington's Dulles International Airport bound for Los Angeles, but instead hit the western part of the Pentagon, the military headquarters where 24,000 people work, at 9:40 a.m. Finally, United Airlines Flight 93, a Boeing 737 flying from Newark to San Francisco, crashed near Pittsburgh, raising the possibility that its hijackers had failed in whatever their mission was.

There were indications that the hijackers on at least two of the planes were armed with knives. Attorney General John Ashcroft told reporters in the evening that the suspects on Flight 11 were armed that way. And Barbara Olson, a television commentator who was traveling on American Flight 77, managed to reach her husband, Solicitor General Theodore Olson, by cell phone and to tell him that the hijackers were armed with knives and a box cutter.

In all, 266 people perished in the four planes and several score more were known dead elsewhere. Numerous firefighters, police officers and other rescue workers who responded to the initial disaster in Lower Manhattan were killed or injured when the buildings collapsed. Hundreds were treated for cuts, broken bones, burns and smoke inhalation.

But the real carnage was concealed for now by the twisted, smoking, ash-choked carcasses of the twin towers, in which thousands of people used to work on a weekday. The collapse of the towers caused another World Trade Center building to fall 7 hours later, and several

Continued on Page A4

Awaiting the Aftershocks

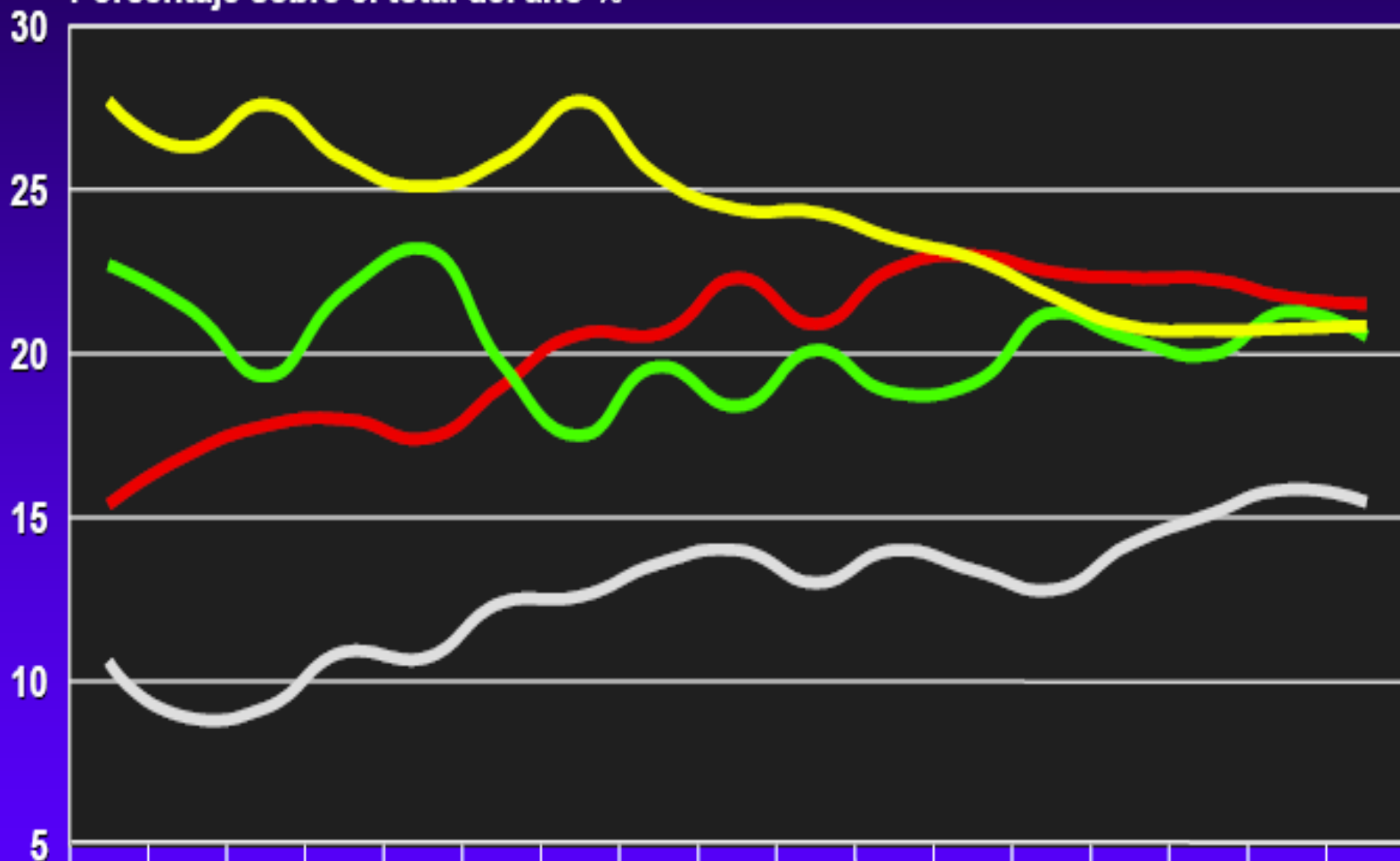
Washington and Nation Plunge Into Fight With Enemy Hard to Identify and Punish



Early morning on the New York Times

SECOND PLANE United Airlines Flight 175 nearing the trade center's south tower.

Porcentaje sobre el total del año %



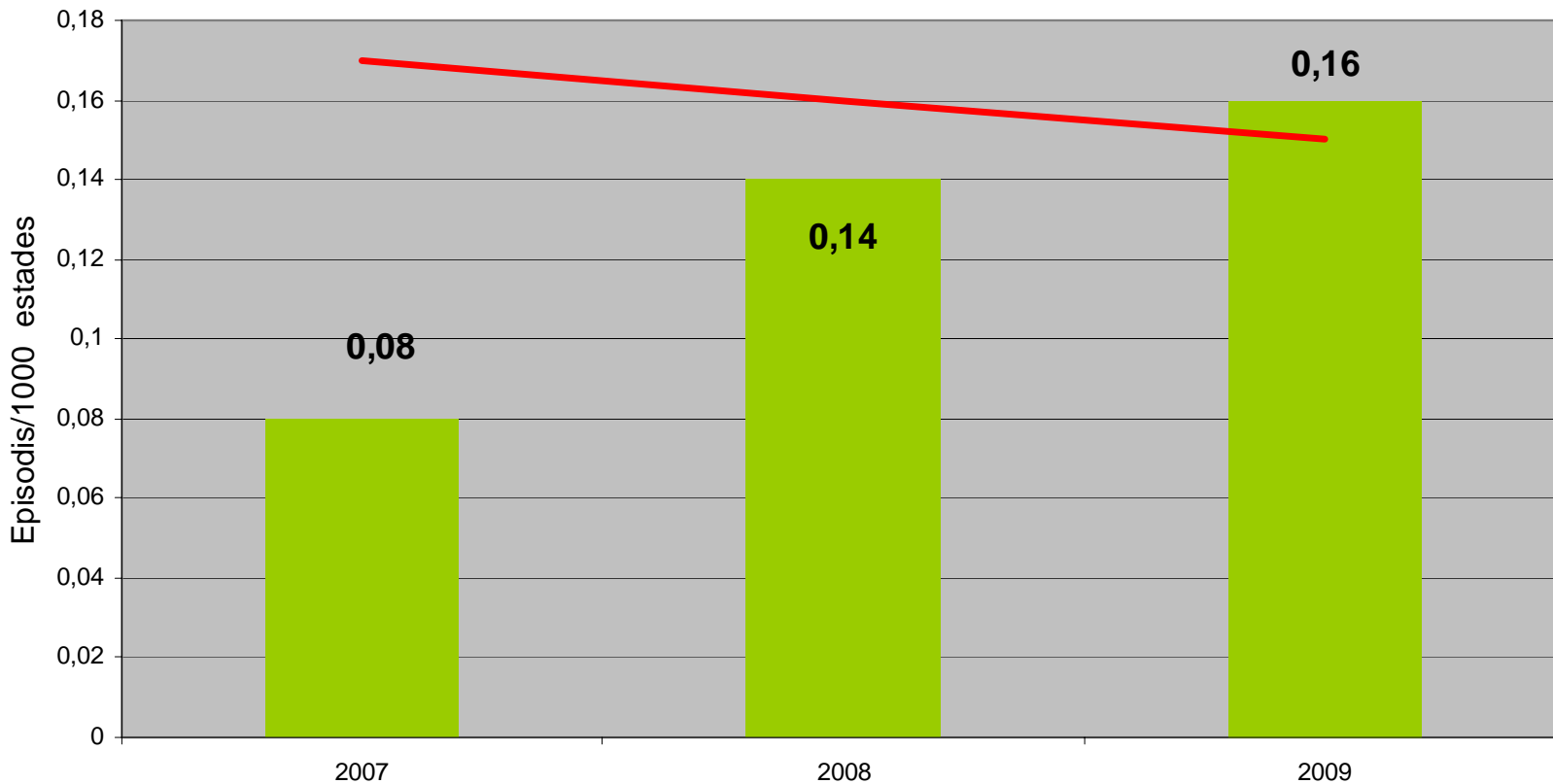
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
--	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

Urinarias	27,7	26,3	27,6	25,9	25,1	25,9	27,7	25,4	24,4	24,3	23,5	22,9	21,7	20,8	20,7	20,8	20,9
Quirúrgicas	22,7	21,4	19,3	21,9	23,2	19,7	17,5	19,6	18,4	20,1	18,8	19,1	21,2	20,4	20	21,3	20,5
Respiratorias	15,4	16,9	17,8	18	17,4	19	20,6	20,6	22,3	20,9	22,6	23	22,5	22,3	22,3	21,7	21,5
Bacteriemias	10,6	8,9	9,2	10,9	10,7	12,4	12,6	13,6	14	13	14	13,4	12,8	14,2	15,1	15,9	15,5

ESTUDIO DE PREVALENCIA DE LAS INFECCIONES NOSOCOMIALES EN ESPAÑA EPINE 1990-2006.

Sociedad Española de Medicina Preventiva, Salud Pública e Higiene (SEMPSPH). 2007

Incidenca de bacterièmia per infecció de catèter venós central (CVC)



Hospitals 200-500 camas —
H Mataró ■



Clinical epidemiology and outcomes of peripheral venous catheter-related bloodstream infections at a university-affiliated hospital

M. Pujol^{a,b,*}, A. Hornero^b, M. Saballs^{a,b}, M.J. Argerich^b, R. Verdaguer^c,
M. Císnal^c, C. Peña^{a,b}, J. Ariza^{a,b}, F. Gudiol^a

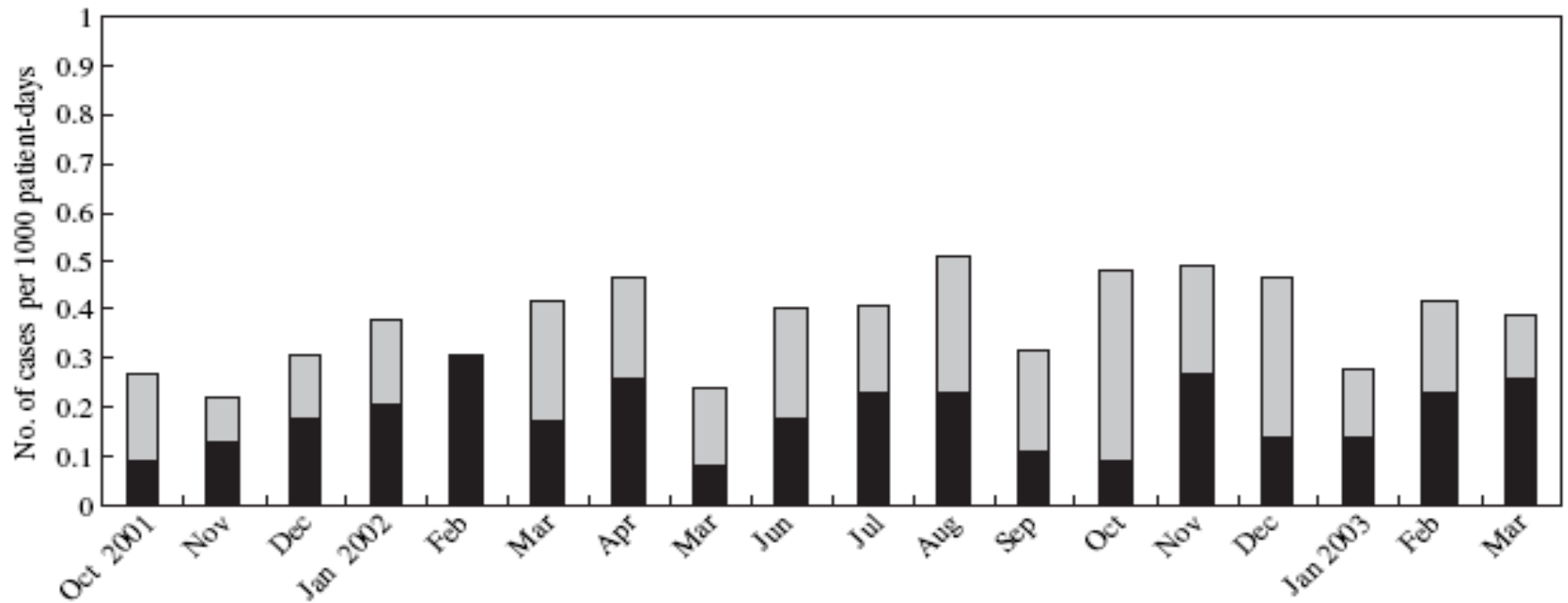


Figure 2 Monthly rate of peripheral vascular catheter-related bloodstream infections (light shading) and central venous catheter-related bloodstream infections (dark shading).

Cuestiones por resolver...

- Monitorización. ¿Por qué monitorizar?
- Prevención
- Diagnóstico
- Tratamiento

¿Porqué monitorizar?

Journal of Hospital Infection (2009) 72, 97–103



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www.elsevierhealth.com/journals/jhin

REVIEW

Epidemiology, medical outcomes and costs of catheter-related bloodstream infections in intensive care units of four European countries: literature- and registry-based estimates

E. Tacconelli ^a, G. Smith ^b, K. Hieke ^c, A. Lafuma ^{d,*}, P. Bastide ^e

¿Porqué monitorizar?

Table I Key results for the four European countries

	France	Germany	Italy	UK
Total population 2005 ^a (millions)	60.2	82.5	57.5	59.8
No. of implanted central venous and arterial catheters in ICUs	1 000 000	1 750 000	490 000	210 000
Incidence rate of CRBSIs (per 1000 catheter days)	1.23	1.5	2.0	4.2
No. of CRBSIs per year	14 400	8400	8500	8940
Estimate of mortality related to CRBSI	1580	1000–1300	1500	NA
Additional LOS per CRBSI episode (in days)	9.5–14	4.8–7.2 (modelled)	12.7	1.9–4.0 (modelled)
No. of ICU days due to CRBSIs per year	136 700–201 475	40 000–60 000	109 220	15 960–33 600
Additional cost per CRBSI episode	€7,730–€11,380	€4,200	€13,030	£2,949–£6,209 (€4,392–€9,251)
Annual costs related to CRBSIs (€ million) for the healthcare systems	100.0–130.0	59.6–78.1	81.6	£19.1–£36.2 (€28.5–€53.9)

ICU, intensive care unit; CRBSI, catheter-related bloodstream infections; LOS, length of stay.

^a Data from Organisation for Economic Co-operation and Development(OECD).

Journal of Hospital Infection (2009) 72, 97–103

¿Porqué monitorizar?...Para resolver problemas

Impact of a prevention strategy targeting hand hygiene and catheter care on the incidence of catheter-related bloodstream infections*

Walter Zingg, MD; Alexander Imhof, MD; Marco Maggiorini, MD; Reto Stocker, MD; Emanuela Keller, MD; Christian Ruef, MD

	Baseline	Intervention	<i>p</i>
CVCs	974	1015	—
Catheter days (total)	6200	7279	—
Catheter days (median, range)	5 (1–39)	6 (1–44)	<0.001
CRBSI	24	7	<0.001
CRBSI/1000 CVC days	3.9	1.0	<0.001
Subclavian location ^a	494	477	0.10
Jugular location ^a	370	398	0.56
Femoral location ^a	110	139	0.10
Catheter type: CVC	626	673	0.34
Catheter type: pulmonary CVC	211	175	0.01
Catheter type: other type	137	167	0.14
Lumen 1 ^a	100	121	0.21
Lumen >1 ^a	868	878	0.21
Insertion in the emergency room ^a	39	31	0.25
Insertion in the operating room ^a	644	636	0.11
Insertion in the ICU ^a	290	347	0.03

CVC, central venous catheter; CRBSI, central venous catheter-related bloodstream infection; ICU, intensive care unit.

^aMissing data: location: 1 missing data in the intervention period; lumen: 6 missing data in the baseline period, 16 missing data in the intervention period; insertion: 1 missing data in the baseline period, 1 missing data in the intervention period.

10 ay

Original

F. Esteve et al / *Enferm Infecc Microbiol Clin.* 2009;27(10):561-565

Impacto de un programa de prevención de la bacteriemia relacionada con el

Evolución de la incidencia de la bacteriemia relacionada con el catéter

	2000	2001	2002	2003	2004
Episodios de BRC	50	20	12	13	10
Días de catéter vascular (incluido el arterial)	3.760	3.922	3.364	3.423	3.113
Tasa de BRC por 1.000 días de catéter	13,3	5,1	3,57	3,79	3,21

BRC: bacteriemia relacionada con el catéter.

conexiones

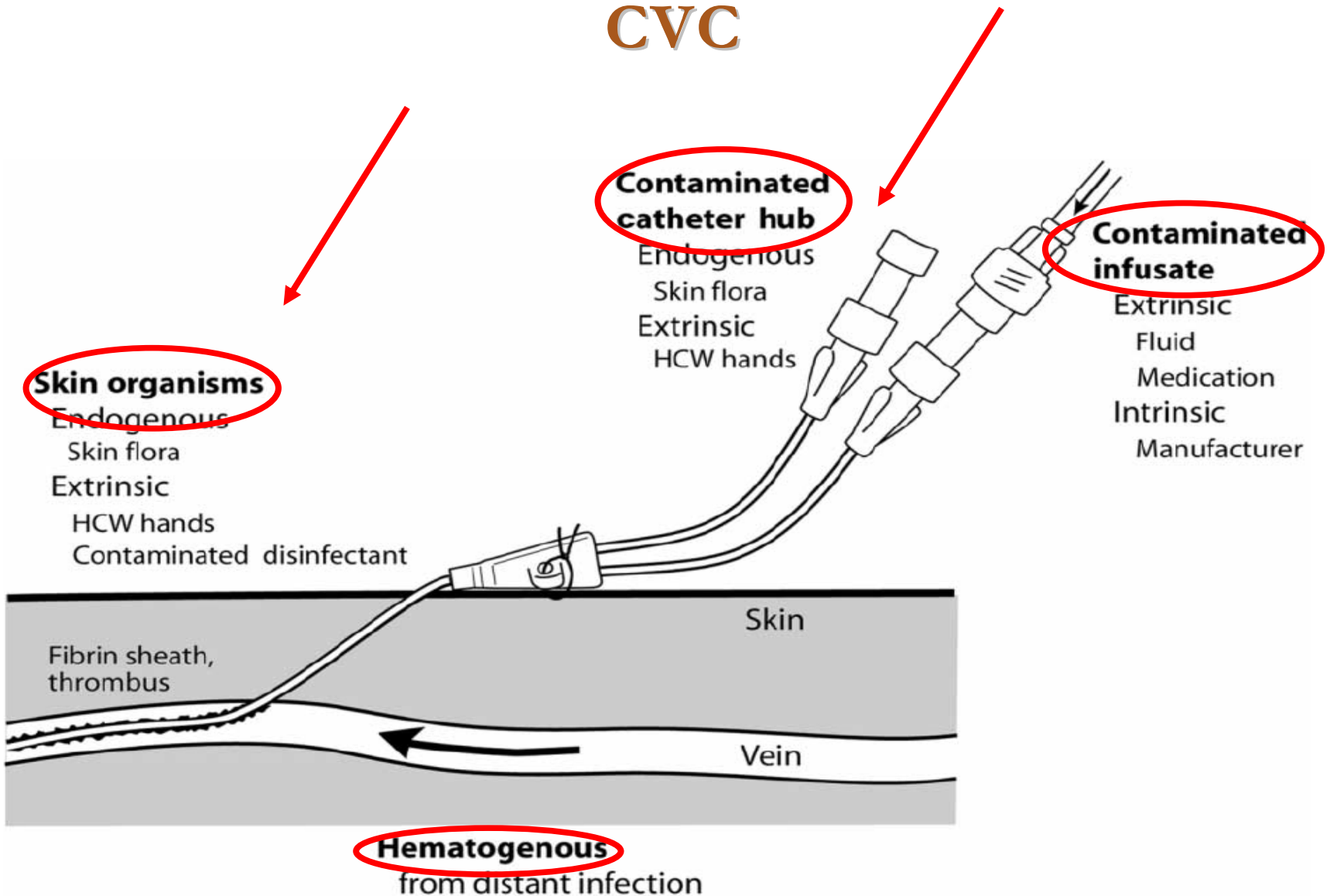
72 h. Todos los procedimientos en condiciones estériles

se sospecha de una

Retirada del catéter si éste no es necesario

BRC: bacteriemia relacionada con el catéter.

¿Qué monitorizar?. Focos de infección de CVC



¿Cómo monitorizar?

■ INCIDENCIA Y CARACTERÍSTICAS CLÍNICAS DE LA INFECCIÓN POR CATÉTER VENOSO CENTRAL EN UN HOSPITAL GENERAL BÁSICO UTILIZANDO DOS MÉTODOS DE DETECCIÓN DIFERENTES.

■ Método A.

- Seguimiento prospectivo de los catéteres colocados a los pacientes durante un año. Registro de datos clínicos y microbiológicos de pacientes y catéteres.

Referido al total de días de riesgo

■ Método B

- Registro de las bacteriemias a partir del dato de hemocultivo positivo.

Referido al total de estancias hospitalarias en ese periodo.

Sepsis por catéter

Hospital de Mataró

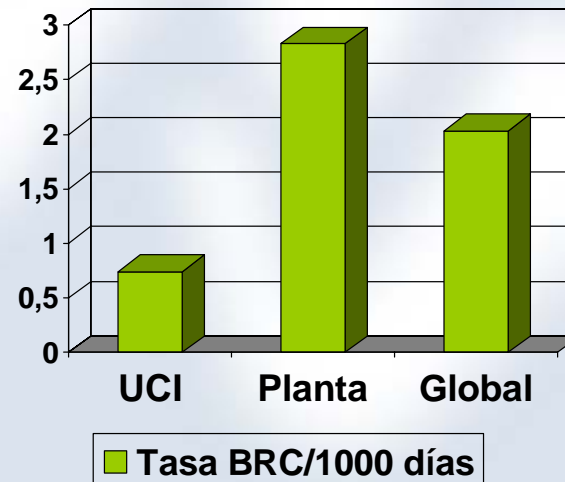
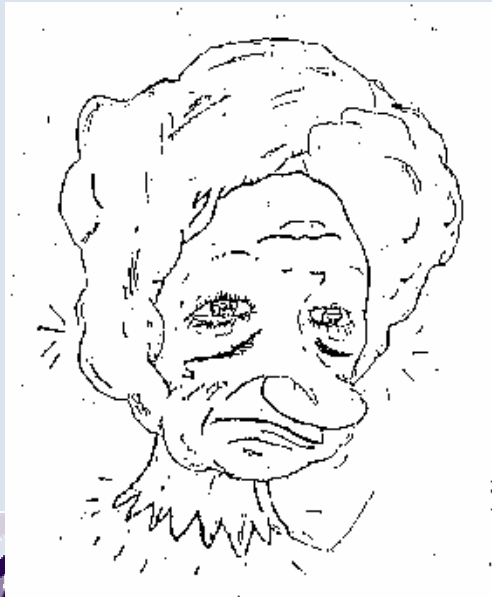
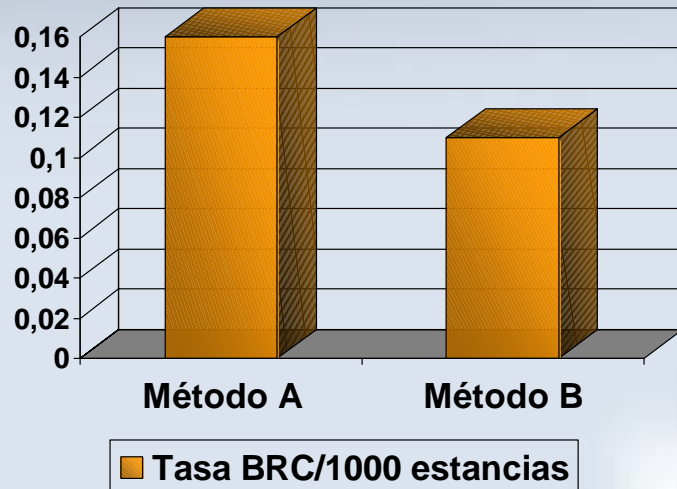
■ Método A

- 878 catéteres, 704 pacientes
- 57% pacientes quirúrgicos
- Total días de cateterización 7357
- Duración media de los catéteres no infectados fue de 8.15 días
- Duración media de los catéteres infectados fue de 18 días (p NS)

Episodio	Microorganismo	Hemocultivo	Cultivo catéter	Tipo IC	Método A	Método B
1	<i>S. epidermidis</i>	+	+	Sepsis	+	+
2	ECN	+	+	Sepsis	+	+
3	ECN	+	+	Sepsis	+	+
4	<i>S epidermidis</i>	+	+	Sepsis	+	+
5	<i>S warnerii</i>	+	+	Sepsis	+	+
6	ECN	+	+	Sepsis	+	+
7	<i>S epidermidis</i>	+	+	Sepsis	+	+
8	<i>S epidermidis</i>	+	+	Sepsis	+	+
9	<i>Serratia marcescens</i>	+	+	Sepsis	+	-
10	<i>S epidermidis</i>	+	+	Sepsis	+	-
11	ECN	+	+	Sepsis	+	-
12	<i>S epidermidis</i>	+	+	Sepsis	+	-
13	<i>K pneumoniae</i>	+	+	Sepsis	+	+
14	<i>Morganella morganii</i>	+	+	Sepsis	+	+
15	ECN	+	+	Sepsis	+	+
16	ECN	-	+	Catéter Infectado	+	-
17	ECN	-	+	Catéter Infectado	+	-
18	<i>Enterobacter cloacae</i>	-	+	Catéter Infectado	+	-
19	ECN	-	+	Catéter Infectado	+	-
20	ECN	NR	+	Catéter Infectado	+	-
21	ECN	NR	+	Catéter Infectado	+	-
22	<i>S epidermidis</i>	NR	+	Catéter infectado	+	-

Listado de episodios de infección de catéter, microorganismo, HC, cultivo de catéter, tipo de IC y método de detección.
 +: cultivo positivo; -: cultivo negativo; ECN: estafilococo coagulasa negativo; NR: no realizado.

Sepsis por catéter Hospital de Mataró



The Risk of Bloodstream Infection in Adults With Different Intravascular Devices

Catéter periférico	0,1%	0,5 por 1000 d.
Drum	2,4%	2,1 por 1000 d
Catéteres venosos centrales	4,4%	2,7 por 1000 d.
Catéteres tunelizados	22,5%	1,6 por 1000 d.
Ports	3,6 %	0,1 por 1000 d.
Catéter arterial	0,8%	1,7 por 1000 d.

10 años

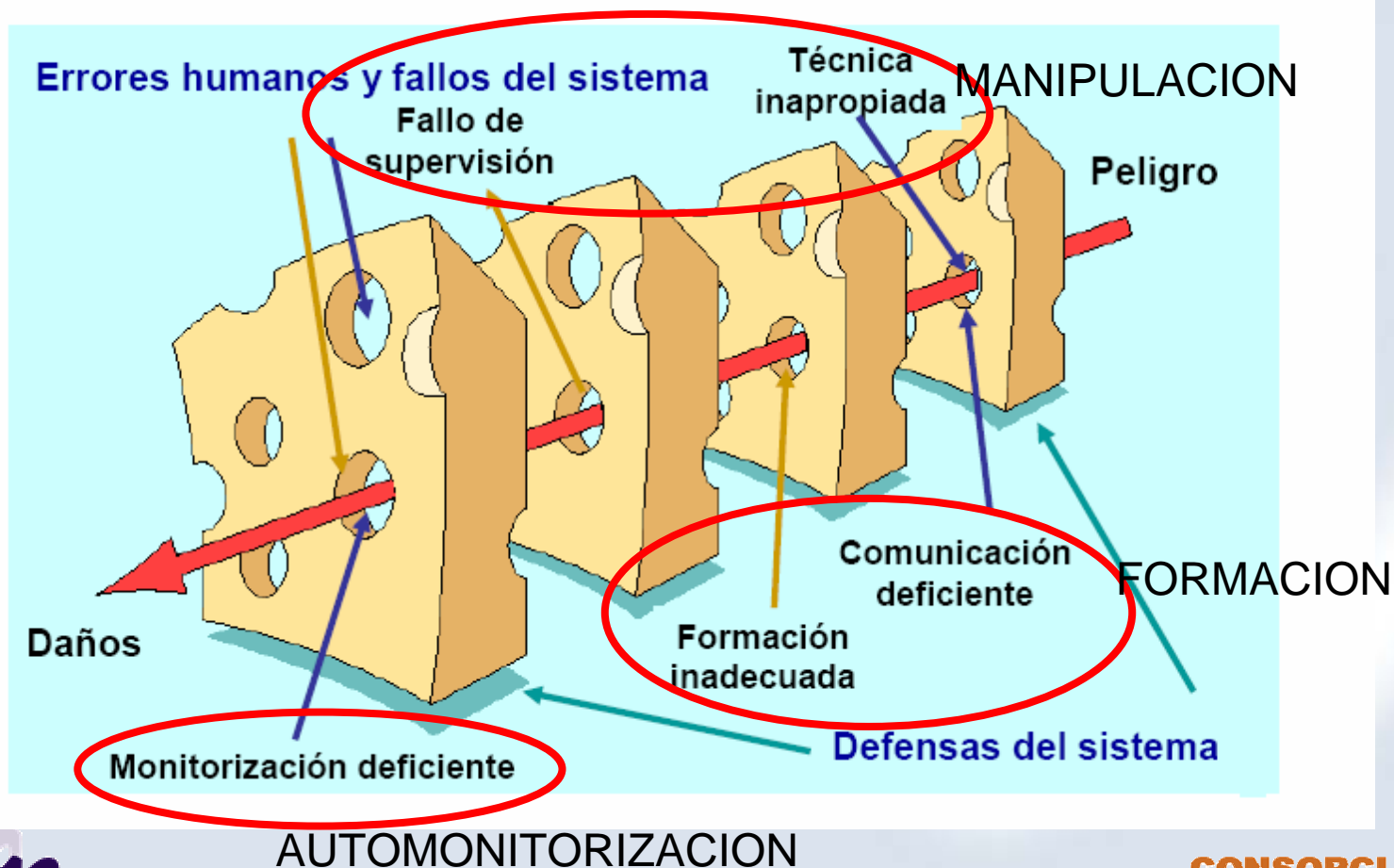
Cuestiones por resolver...

- Monitorización. ¿Por qué monitorizar?
- **Prevención**
- Diagnóstico
- Tratamiento

Cuestiones por resolver...

Relacionadas con prevención

Modelo de Reason: el modelo del queso suizo en la producción del daño



10 anys



Guidelines for the Prevention of Intravascular Catheter-Related Infections

Category

I. Health-care worker education and training

- A. Educate health-care workers on procedures for infection control measures
- B. Assess knowledge of intravascular catheter-related infections
- C. Ensure appropriate use of catheters

- 3. Allow the antiseptic to dry before insertion.
- 4. Do not apply ointment or dressing during dressing changes.

II. Surveillance

- A. Monitor the catheter site depending on the site, fever without other source, or removal to all
- B. Encourage patient to report new discomfort.
- C. Record the catheter site standardized form
- D. Do not routinely replace catheters

VII. Catheter-site dressing

- A. Use either sterile gauze or transparent adhesive dressings for CVC sites
- B. Tunnelled CVC sites
- C. If the patient is diaphoretic, transparent, semi-permeable dressings should be replaced
- D. Replace catheter-site dressings
- E. Change dressings at least once per week for individual patients
- F. Do not use topical antibiotics on catheters because of Central Venous Catheter and Pediatric Patient
- G. Do not submerge the catheter in water to reduce the risk of infection

III. Hand hygiene

- A. Observe proper hand hygiene containing soap and water before and after accessing, repairing, or performing other procedures
- B. Use of gloves do not substitute for hand hygiene

VIII. Selection and use of catheters

- A. Select the catheter, port, and site (infectious and noninfectious)
- B. Promptly remove any catheter that is no longer needed
- C. Do not routinely replace catheters because of the incidence of infection
- D. Replace peripheral venous catheters (e.g., phlebitis and infiltration)
- E. When adherence to aseptic technique is not possible (e.g., medical emergency), replace the catheter
- F. Use clinical judgment (e.g., do not routinely replace venous catheters if the site is unlikely to be the source of infection)
- G. Replace any short-term catheters
- H. Replace all CVCs if the site is unlikely to be the source of infection
- I. Do not use guidewires for catheter-related infections

IV. Aseptic technique

- A. Maintain aseptic technique
- B. Wear clean or sterile gloves and use sterile gloves if a nonsterile site is not touched after arterial and central venous catheter insertion
- C. Wear clean or sterile gloves and use sterile gloves if a nonsterile site is not touched after arterial and central venous catheter insertion

V. Catheter insertion

- A. Do not routinely replace catheters

VI. Catheter-site care

- A. Cutaneous antiseptics
 1. Disinfect site before insertion. All iodophor, or
 2. No recommendation can be made for the use of chlorhexidine sponge dressings to reduce the incidence of infection.

IV. Maximal sterile barrier precautions during catheter insertion

- A. Use aseptic technique including the use of a cap, mask, sterile gown, sterile gloves, and a large sterile drape, for the insertion of CVCs (including PICCs) or guidewire exchange.
- B. Use a sterile sleeve to protect pulmonary artery catheters during insertion.

V. Replacement of catheter

- A. Do not routinely replace CVCs, PICCs, hemodialysis catheters, or pulmonary artery catheters to prevent catheter-related infections.
- B. Do not remove CVCs or PICCs on the basis of fever alone. Use clinical judgment regarding the appropriateness of removing the catheter if infection is evidenced elsewhere or if a noninfectious cause of fever is suspected.
- C. Guidewire exchange
 1. Do not use guidewire exchanges routinely for nontunneled catheters to prevent infection.
 2. Use a guidewire exchange to replace a malfunctioning nontunneled catheter if no evidence of infection is present.
 3. Use a new set of sterile gloves before handling the new catheter when guidewire exchanges are performed.

VI. Catheter and catheter-site care

- A. General Measures: Designate one port exclusively for hyperalimentation if a multilumen catheter is used to administer parenteral nutrition.
- B. Antibiotic Lock Solutions: Do not routinely use antibiotic lock solutions to prevent CRBSIs. Use prophylactic antibiotic lock solution only in special circumstances (e.g., in treating a patient with a long-term tunneled catheter or port who has a history of multiple CRBSIs despite optimal maximal adherence to aseptic technique).
- C. Catheter-site dressing regimens
 1. Replace the catheter-site dressing when it becomes damp, loosened, or soiled or when inspection of the site is necessary.
 2. Replace dressings used on short-term CVC sites every 2 days for gauze dressings and at least every 7 days for transparent dressings, except in those pediatric patients in which the risk for dislodging the catheter outweighs the benefit of changing the dressing.
 3. Replace dressings used on tunneled or implanted CVC sites no more than once per week, until the insertion site has healed.
 4. No recommendation can be made regarding the necessity for any dressing on well-healed exit sites of long-term tunneled and implanted CVCs.
- D. No recommendation can be made for the use of chlorhexidine sponge dressings to reduce the incidence of infection.
- E. Do not use chlorhexidine sponge dressings in neonates aged <7 days or of gestational age <28 weeks.
- F. No recommendation can be made for the use of sutureless securement devices.
- G. Ensure that catheter-site care is compatible with the catheter material.
- H. Use a sterile sleeve for all pulmonary artery catheters.

Category

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10 days

Table 2. General recommendations for the prevention of intravascular device

Guidelines for the Prevention of Catheter-Related Infections

- technique, and maintenance of IVDs
- Surveillance
 - Routinely monitor institutional rates of IVDR BSI
 - Determine rates of CVC-related BSI, using standardized definitions and denote CVC-days
- At insertion
 - Use aseptic technique
 - Wash hands before insertion or manipulation of any IVD
 - Wear clean or sterile gloves during insertion or manipulation of noncentral IV
 - Use maximal barrier precautions (mask, cap, long-sleeved sterile gown, sterile drape) during insertion of CVCs
 - Use dedicated intravenous-device teams strongly recommended
 - Use cutaneous antiseptics (chlorhexidine is preferred; however, an iodophor, solution of iodine, or 70% alcohol are also acceptable)
 - Use of sterile gauze or a sterile semipermeable polyurethane film dressing
 - Use of systemic antibiotics at insertion strongly discouraged
- Maintenance
 - Remove IVDs as soon as their use is no longer essential
 - Monitor the IVD site on regular basis—ideally, daily
 - Change dressing of CVC insertion site at least weekly
 - Use of topical antibiotic ointments not recommended
 - Perform systemic anticoagulation with low-dose warfarin (1 mg daily) for patients with long-term contraindication
 - Replace PIVCs every 96 h
 - Replace administration sets every 96 h, unless lipid-containing admixture or blood products given; administration sets should be replaced every 24 h
- Technology
 - Consider use of chlorhexidine-impregnated sponge dressing for adolescent and adult patients with cuffed CVCs or arterial catheters expected to remain in place for ≥4 days
 - If, after consistent application of basic infection-control precautions, the institutional rate of IV for short-term CVCs (i.e., ≥3.3 BSIs per 1000 IVD-days), consider the use of a CVC coated with rifampin)

Rec.

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An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU

Peter Pronovost, M.D., Ph.D., Dale Needham, M.D., Ph.D., Sean Berenholtz, M.D., David Sinopoli, M.P.H., M.B.A., Haitao Chu, M.D., Ph.D., Sara Cosgrove, M.D., Bryan Sexton, Ph.D., Robert Hyzy, M.D., Robert Welsh, M.D., Gary Roth, M.D., Joseph Bander, M.D., John Kepros, M.D., and Christine Goeschel, R.N., M.P.A.

Appendix A

Catheter-Related Blood Stream Infections (CR-BSI) FACT SHEET

Bottom line

- CR-BSIs are associated with increased morbidity, mortality and costs of care.
- CR-BSIs are a preventable complication that causes as many as 11 deaths every day in the U.S.
- The following interventions decrease the risk for CR-BSIs:

- Appropriate hand hygiene,
- Use of chlorhexidine for skin preparation,
- Use of full-barrier precautions during central venous catheter insertion,
- Subclavian vein placement as the preferred site, and
- Removing unnecessary central venous catheters.

Conferecia de Consenso Infecciones por Catéter SEIMC-SEMICYUC

Borrado

Conclusiones de la reunión en infección

SEIMC (DR. J. AR A. RODRÍGUEZ NORIEGA/ E. FERNÁNDEZ MONDÉJAR)

Med Intensiva

Toledo, 17 y 18 de octubre de 2006 Hotel Beatriz

Cuestiones por resolver...

Relacionadas con prevención

COLOCACION ESTERIL

EVITAR FEMORALES



**STOP
BRC**

MANEJO HIGIENICO

DISMINUIR N° LUCES

SUPRIMIR LIPIDOS
PRECOZMENTE

RETIRADA PRECOZ
DE LOS CATETERES

**Prevención de la Bacteriemia
relacionada con Catéter en UCI**

10 años

SeMicyuc
LOS PROFESIONALES DEL ENFERMO CRÍTICO

**CONSORCI SANITARI
DEL MARESME**

Catheter-related Blood Stream Infection Care Team Checklist

Feature Art

Eliminat
intensive

Sean M. Bere
Deborah Hobs
Shelley Milan
Haya R. Rubir

Purpose: To work as a team to decrease patient harm from catheter-related blood stream infections
When: During all central venous or central arterial line insertions or re-wires
By whom: Bedside nurse

014-2020

n the

1. Today's date _____ / _____ / _____
month day year
2. Procedure: New line Rewire
3. Is the procedure: Elective Emergent
4.

	Yes	No	Don't know
Before the procedure, did the housestaff:			
Wash hands (chlorhexidine or soap) immediately prior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sterilize procedure site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drape entire patient in a sterile fashion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
During the procedure, did the housestaff:			
Use sterile gloves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use hat, mask and sterile gown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintain a sterile field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did all personnel assisting with procedure follow the above precautions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After the procedure:			
Was a sterile dressing applied to the site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

rs, MD, PhD;

a

óptimo

1.
2.
3.
4.
5.

10 days

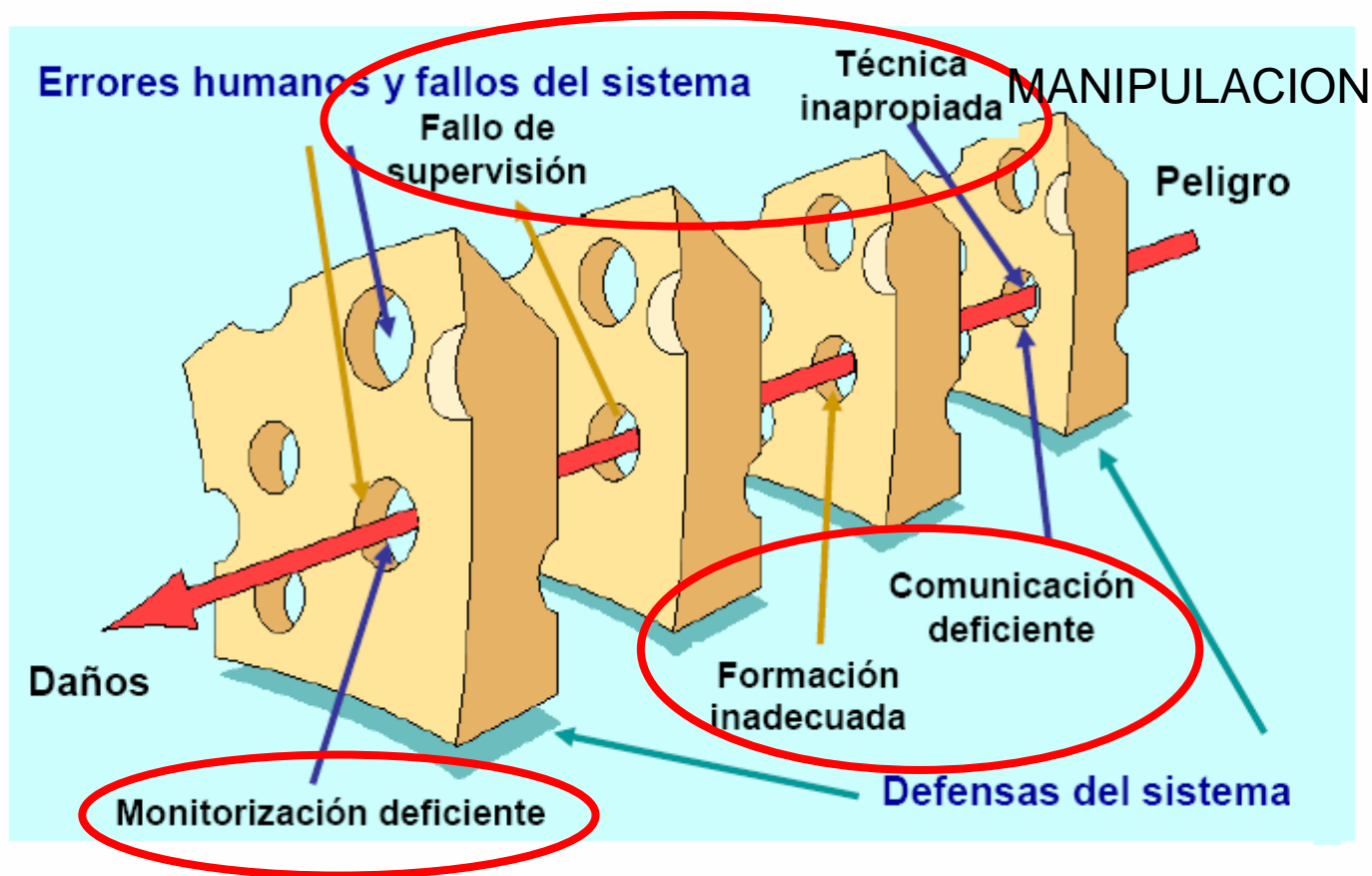
Please return completed form to the designated location in your ICU.

CONSORCI SANITARI
DEL MAREMME

Cuestiones por resolver...

Relacionadas con prevención

Modelo de Reason: el modelo del queso suizo en la producción del daño



10 años

Cuestiones por resolver...

Relacionadas con prevención. Manipulación

■ Manipulación

- Tiempo de cateterización
- Número de manipulaciones.
- Soluciones lipídicas y NPT.
- Conectores desinfectables
- Desinfección previa a la manipulación



Manipulación. Conectores desinfectables.



Appendix A

FDA SAFETY ALERT:

Needlestick and Other Risks from Hypodermic Needles on Secondary I.V. Administration Sets - Piggyback and Intermittent I.V.

April 16, 1992

To Hospital Administrators, Directors of Nursing, Risk Managers, and Infection Control Directors:
This is to alert you to the risk of needlestick injuries from the use of hypodermic needles as a connection between two pieces of intravenous (I.V.) equipment.^{1,2,3} The use of exposed hypodermic needles on I.V. administration sets or the use of syringes to access I.V. administration set ports or injection sites are unnecessary and should be avoided. Hypodermic needles should only be used in situations where there is a need to penetrate the skin.

- **Un conector seguro debería:**
 - **Reducir el riesgo de accidentes por punción**
 - **Minimizar el tiempo de manipulación.**
 - **Permitir una manipulación aséptica del sistema**

Resistance to the migration of microorganisms of a needle-free disinfectable connector

Juan C. Yébenes, MD, PhD,^a Rafael Martínez, MD, PhD,^a Mateu Serra-Prat, MD, MPH,^b Goretti Sauca, MD,^c Josep A. Capdevila, MD, PhD,^d Xavier Balanzó, MD, PhD,^a and Mercedes Palomar, MD, PhD^e
Barcelona, Spain

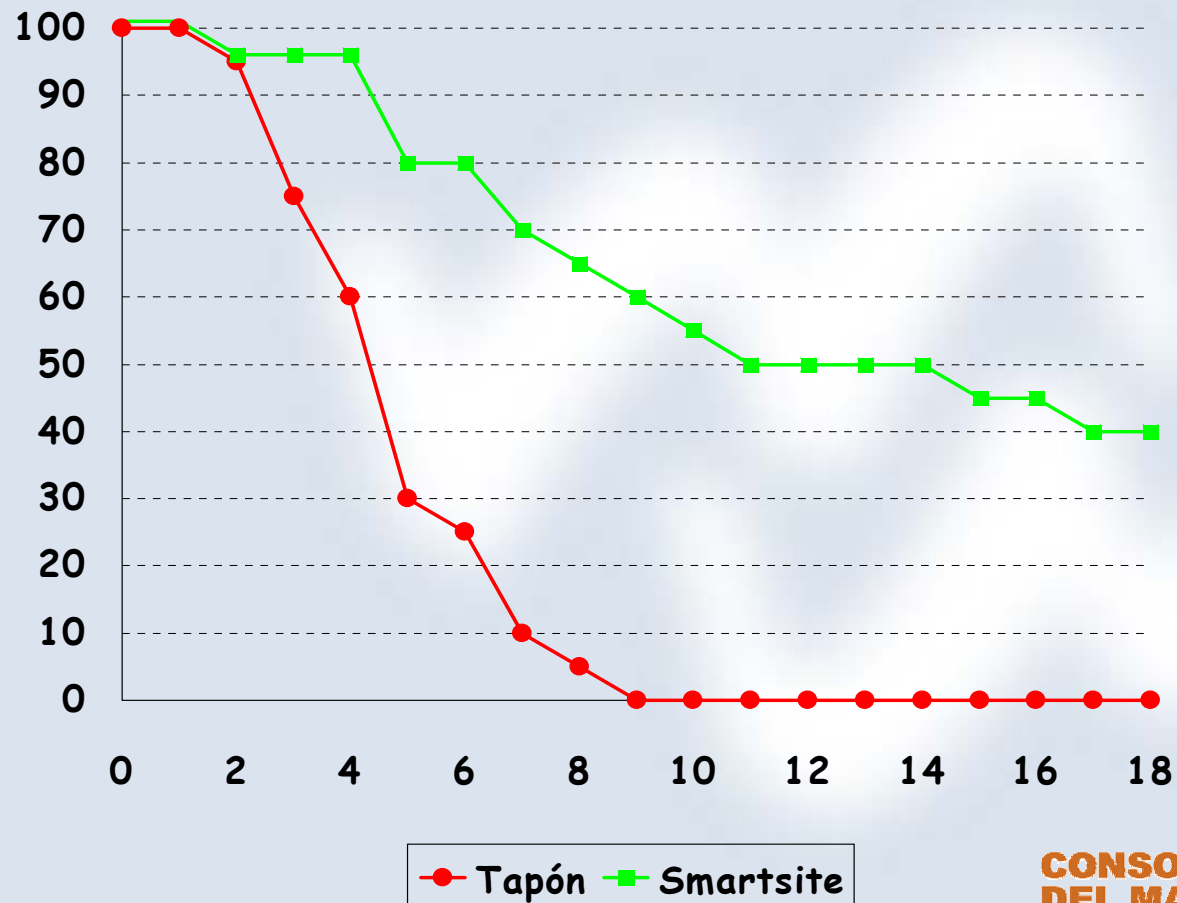
AJIC 2003;31(8): 462-464



10 days

Resistance to the migration of microorganisms of a needle-free disinfectable connector

Juan C. Yébenes, MD, PhD,^a Rafael Martínez, MD, PhD,^a Mateu Serra-Prat, MD, MPH,^b Goretti Sauca, MD,^c Josep A. Capdevila, MD, PhD,^d Xavier Balanzó, MD, PhD,^a and Mercedes Palomar, MD, PhD^e
Barcelona, Spain



10 anys

CONSORCI SANITARI
DEL MARESME

A needleless closed system device (CLAVE) protects from intravascular catheter tip and hub colonization: a prospective randomized study[☆]

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P. Martín Rabadán^a, C. Sánchez^a, E. Bastida^b





A needleless closed system device (CLAVE) protects from intravascular catheter tip and hub colonization: a prospective randomized study[☆]

	CLAVE (N = 865)	COS (N = 909)	P
Type of catheter			0.164
Swan-Ganz	187 (21.6%)	192 (21.1%)	
Jugular central line	186 (21.5%)	187 (20.6%)	
Subclavian central line	20 (2.3%)	31 (3.4%)	
Femoral central line	9 (1.0%)	11 (1.2%)	
Radial-humeral arterial line	209 (24.2%)	203 (22.3%)	
Femoral arterial line	5 (0.6%)	11 (1.2%)	
Peripheral	249 (28.8%)	274 (30.1%)	
Use of the catheters			0.621
Medication (fluid or drug therapy)	436 (50.4%)	466 (51.3%)	
Parenteral nutrition	18 (2.1%)	27 (3%)	
Haemodynamic monitoring	400 (46.2%)	404 (44.4%)	
Haemofiltration	11 (1.3%)	12 (1.3%)	
Mean days of catheter exposure (catheter-days)	8.9 ± 11.1	10.7 ± 15.9	0.22
Number of dressing changes (median ± SD)	2.36 ± 3.3	2.67 ± 3.7	0.061
Cause of withdrawal			0.273
End of therapy	681 (78.7%)	685 (75.4%)	
Suspicion of infection	53 (6.1%)	75 (8.3%)	
Dysfunction	56 (6.5%)	62 (6.8%)	
Others	75 (8.7%)	87 (9.6%)	
Tip colonization	94 (10.9%)	156 (17.2%)	0.0001
Density per 1000 catheter-days	59.2	83.6	0.003
Density per 100 days of ICU stay	92.8	123	0.0002
Episodes of CRBSI	6 (3.4%)	11 ^a (6.3%)	0.22
Cumulative incidence/100 catheters	0.72	1.21	1
Density per 1000 catheter-days	3.78	5.89	0.4
Catheters with surveillance cultures	279 (32.3%)	324 (35.6%)	0.133
Skin colonization	66 (23.7%)	110 (33.9%)	0.002
Density per 1000 catheter-days	41.5	58.9	0.038
Hub colonization	12 (4.3%)	46 (14.2%)	0.0001
Density per 1000 catheter-days	7.5	24.6	0.0017

¿Cual es el punto débil de los conectores sin aguja?





10 anys

**CONSORCI SANITARI
DEL MARESME**

INCREASED BLOODSTREAM INFECTION RATES IN SURGICAL PATIENTS ASSOCIATED WITH VARIATION FROM RECOMMENDED USE AND CARE FOLLOWING IMPLEMENTATION OF A NEEDLELESS DEVICE

Susan Temporado Cookson, MD; Melanie Ihrig, DVM; Edward M. O'Mara, MD;
Mark Denny, MBA, CIC; Helen Volk, RN, CIC; Shailen N. Banerjee, PhD;
Alan I. Hartstein, MD; William R. Jarvis, MD

ABSTRACT

OBJECTIVE: To determine if an apparent increase in bloodstream infections (BSIs) in patients with central venous catheters (CVCs) was associated with the implementation of a needleless access device.

DESIGN: Retrospective cohort study using a derived CVC-days factor for estimating appropriate denominator data.

SETTING: A 350-bed urban, acute, tertiary-care hospital.

METHODS: BSI surveillance data were obtained, and high-risk areas for BSIs were determined. A random 5% sample of medical records was used to estimate CVC days, and a cohort study was conducted to compare BSI rates before and during needleless device use. A survey was conducted of nursing needleless-device practices.

RESULTS: The surgical intensive-care unit (SICU), the medical intensive-care unit, and the solid organ trans-

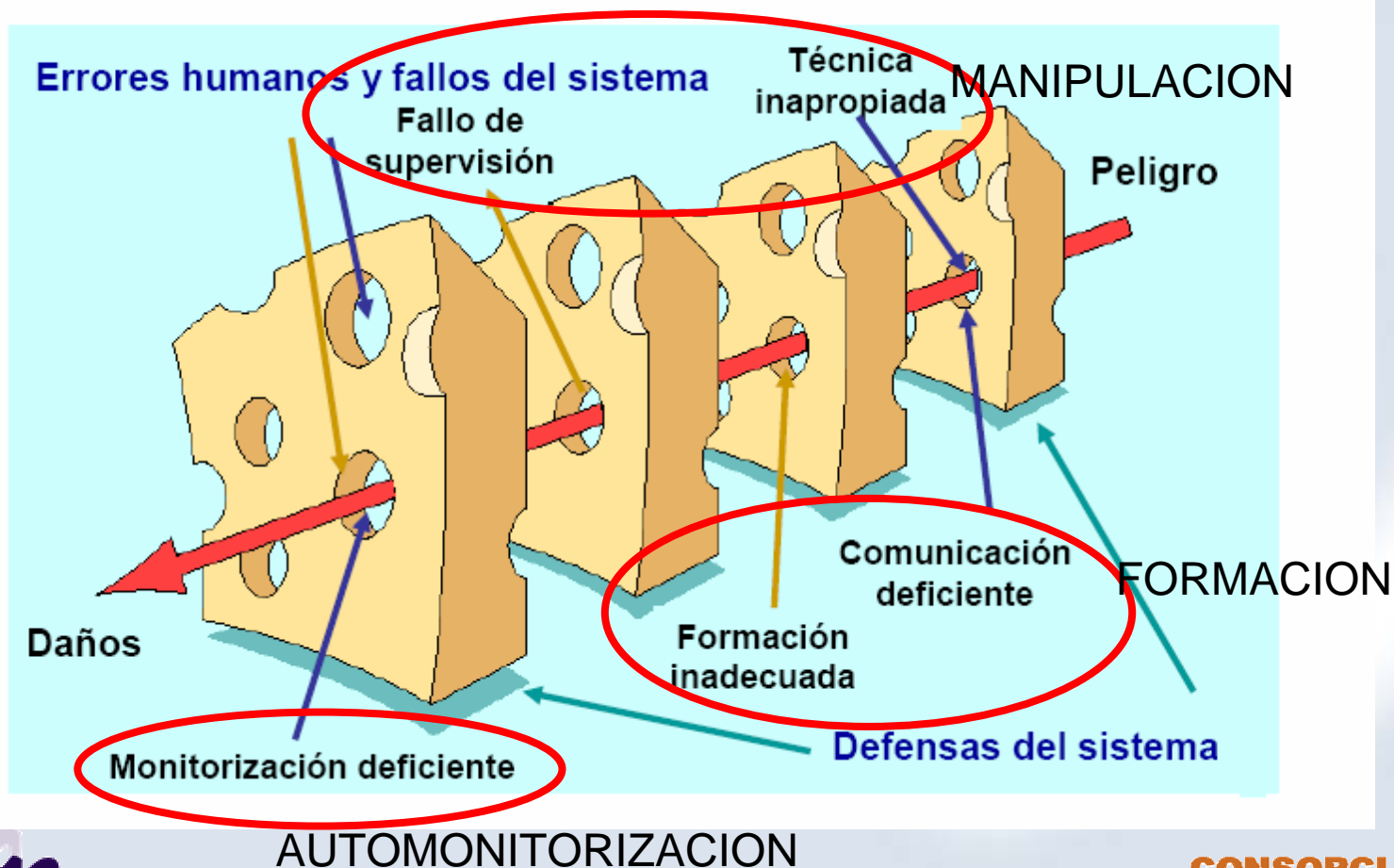
plant unit (OTU) were identified as high-risk units. Using existing surveillance BSI data and the estimated CVC days, the catheter-related BSI rates in the high-risk surgical patients were significantly higher during the needleless-device period compared with the preneedleless-device period (SICU, 9.4 vs 5.0/1,000 CVC days; OTU, 13.6 vs 2.2/1,000 CVC days). A survey of the nurses revealed that 60% to 70% were maintaining the needleless devices correctly.

CONCLUSION: We observed a significant increase in the BSI rate in two surgical units, SICU and OTU, associated with introduction of a needleless device. This increase occurred shortly after the needleless device was implemented and was associated with nurses' unfamiliarity with the device, and needleless-device use and care practices different from the manufacturer's recommendations. (*Infect Control Hosp Epidemiol* 1998;19:23-27).

Cuestiones por resolver...

Relacionadas con prevención

Modelo de Reason: el modelo del queso suizo en la producción del daño



10 años

Automonitorización



■ Datos BRC UCI Hospital de Mataró
2007-2009



A Randomized and Prospective Study of 3 Procedures for the Diagnosis of Catheter-Related Bloodstream Infection without Catheter Withdrawal

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Clinical Infectious Diseases 2007;44:920–6

Table 3. Comparison of the validity values (95% CI) of 3 techniques for the detection of catheter-related bloodstream infection.

Measure	Semiquantitative superficial cultures ^{a,b}	Differential quantitative blood cultures ^{a,c}	Differential time to positivity ^{b,c}
Sensitivity	78.6 (59.0–91.7)	71.4 (51.3–86.8)	96.4 (81.7–99.9)
Specificity	92.0 (87.0–95.6)	97.7 (94.3–99.4)	90.3 (85.0–94.3)
Positive predictive value	61.1 (43.5–76.9)	83.3 (62.6–95.3)	61.4 (45.5–75.6)
Negative predictive value	96.4 (92.4–98.7)	95.6 (91.4–98.1)	99.4 (96.6–99.9)
Accuracy	90.2 (85.3–93.9)	94.1 (90.0–96.9)	91.2 (86.4–94.7)

NOTE. $P < .05$ was considered to be statistically significant.

^a P values for the comparison of validity values between semiquantitative superficial cultures and differential quantitative blood cultures were: sensitivity, .75; specificity, .01; positive predictive value, .09; negative predictive value, .79; and accuracy, .15.

^b P values for the comparison of validity values between semiquantitative superficial cultures and differential time to positivity were: sensitivity, .13; specificity, .61; positive predictive value, .99; negative predictive value, .12; and accuracy, .83.

^c P values for the comparison of validity values between differential quantitative blood cultures and differential time to positivity were: sensitivity, .04; specificity, $< .001$; positive predictive value, .10; negative predictive value, .04; and accuracy, .29.

Meta-Analysis: Methods for Diagnosing Intravascular Device–Related Bloodstream Infection

Nasla Safdar, MD, MS; Jason P. Fine, PhD; and Dennis G. Maki, MD

The key findings of our analysis are that with short-term IVDs, quantitative or semi-quantitative culture of the catheter combined with 2 blood cultures (1 drawn percutaneously from a peripheral vein and 1 through the suspect catheter) will allow accurate diagnosis of IVD-related bloodstream infection. Qualitative cultures of catheter segments should no longer be used because this method has poor specificity. With long-term IVDs, paired quantitative blood culture is the most accurate diagnostic method; however, paired (qualitative) conventional blood culture using differential time to positivity provides comparable sensitivity and acceptable specificity, at no increased cost. The

Trattamento



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Outcome of patients in the two study groups: daptomycin versus vancomycin. A.-M. Chaftari et al. / International Journal of Antimicrobial Agents xxx (2010) xxx–xxx

Outcome	Daptomycin (N = 38)	Vancomycin (N = 40)	P-value
Symptom resolution within 48 h from starting using antibiotic ^a	28/37 (76)	20/38 (53)	0.04
Symptom resolution within 7 days from starting using antibiotic ^a	33/37 (89)	33/38 (87)	0.99
Microbiological resolution within 48 h from starting using antibiotic ^b	29/37 (78)	11/32 (34)	<0.001
Microbiological resolution within 7 days from starting using antibiotic ^b	34/37 (92)	27/32 (84)	0.46
Length of hospital stay from date of bacteraemia (days) [median (range)]	8 (2–53)	9 (2–52)	0.68
Late infection-related complications	0 (0)	1 (3)	>0.99
Relapse ^c	3/37 (8)	0/38 (0)	0.12
Infection-related death ^d	1/38 (3)	1/39 (3)	>0.99
Overall response ^e	25/37 (68)	11/34 (32)	0.003

^a 'Antibiotic' means the antibiotic being studied, i.e. vancomycin for patients in the vancomycin group and daptomycin for patients in the daptomycin group, which is not necessarily the first antibiotic that patients used. One patient in the daptomycin group and two patients in the vancomycin group were excluded from these analyses because the date of symptom resolution was missing.

^b One patient in the daptomycin group and eight patients in the vancomycin group were excluded from the analysis because the date of microbiological eradication was unknown.

^c One patient in the daptomycin group and two patients in the vancomycin group had microbiological failure and were excluded from the relapse analysis.

^d In the vancomycin group, one patient was excluded from the analysis because the cause of death was unknown.

^e Overall response = symptom resolution within 3 days (since using antibiotic) + microbiological resolution within 3 days + no infection-related death + no infection-related late complications + no relapse. In the daptomycin group, the date of symptom resolution was unknown in one patient. In the vancomycin group, the date of microbiological eradication was missing in six patients who were excluded from this analysis.



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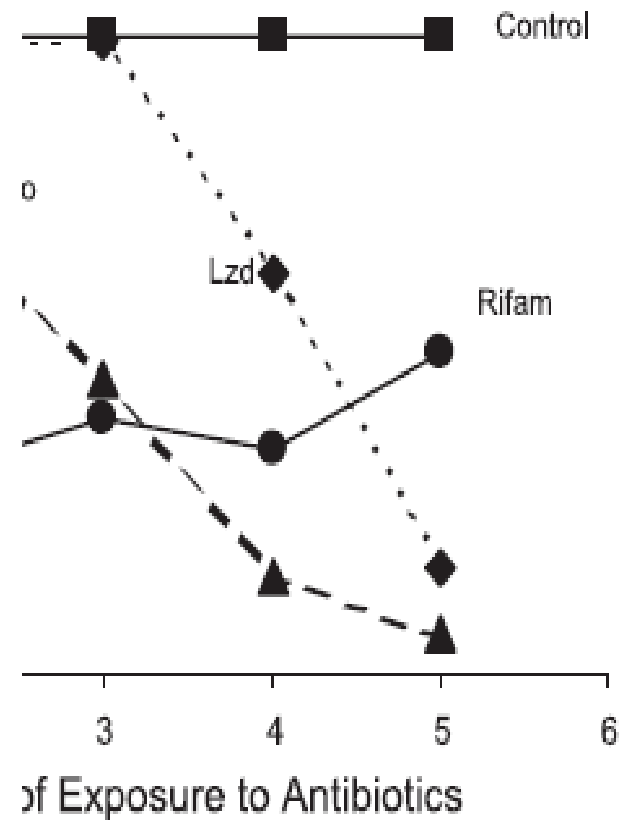
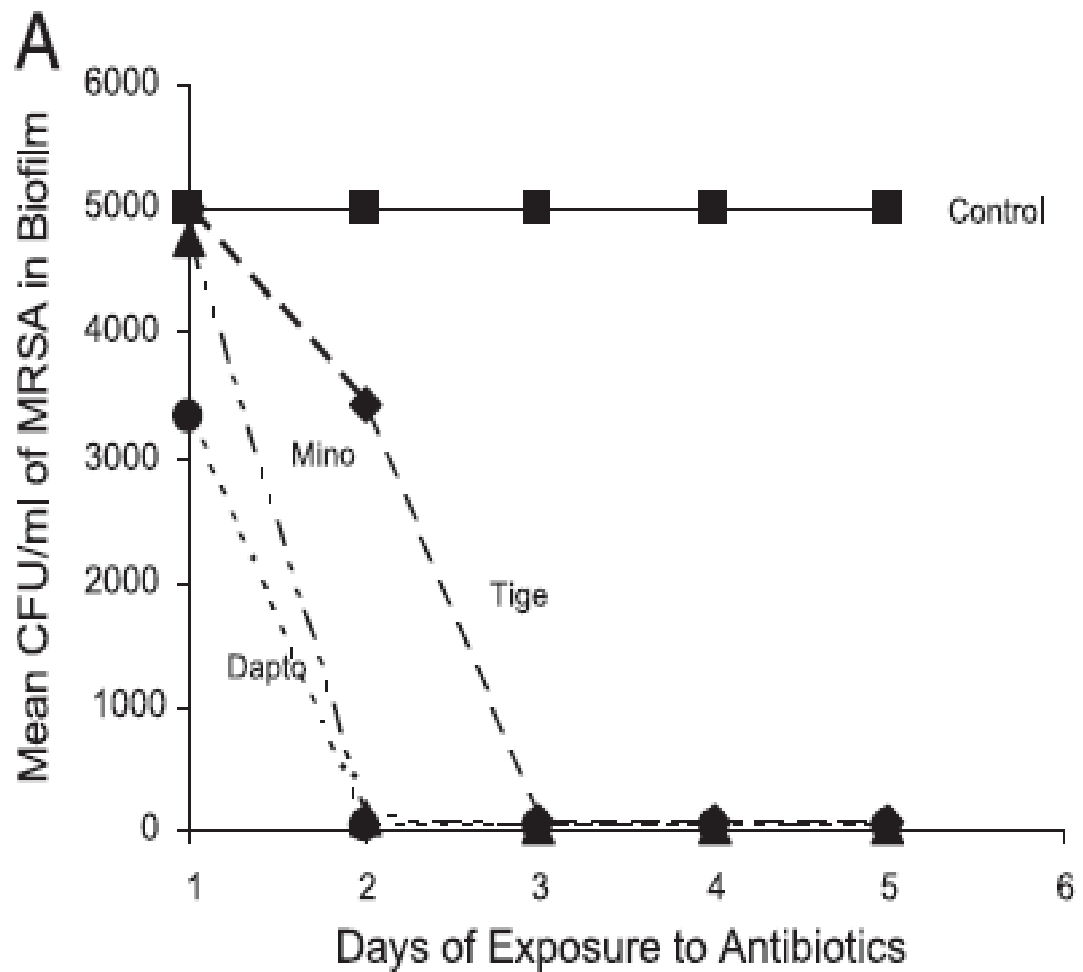
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Comparative Activities of Daptomycin, Linezolid, and Tigecycline against Catheter-Related Methicillin-Resistant *Staphylococcus* Bacteremic Isolates Embedded in Biofilm[▽]

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Conclusiones

- La infección de catéter es un problema de importancia constante con morbimortalidad importante.
- Existen métodos eficaces de monitorización y prevención
- Formación del personal sanitario para concienciación del problema.
- Diagnóstico sin retirada del dispositivo.
- Nuevas opciones terapéuticas



Muchas Gracias.

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Otras cuestiones por resolver...

Relacionadas con el diagnóstico

- ¿ETE negativo es necesario para mantener el tto solo 2 semanas en pacientes sin dispositivos intravasculares con resolución rápida de la clínica de bacteriemia por *S. aureus*?
- Estrategias de tratamiento hasta la obtención de resultados:
 - ¿Recambio sobre guía del catéter?
 - ¿Retirada y nueva inserción en otro punto?
 - “Wait and see”?
- Método roll-plate vs. sonicación para dx

Otras cuestiones por resolver...

Relacionadas con el tratamiento

- Valor real y duración adecuada de la antibiotic-lock therapy como terapia adyuvante además del tto atb sistémico?
- ¿Se puede evitar el tto en pacientes con infección de catéter por ECN con bajo riesgo de complicaciones y en los que presentan mejoría clínica clara después de retirar el catéter?
- ¿Cual es la duración adecuada del tratamiento cuando no se retira el catéter infectado?
- Estrategias de tratamiento en pacientes con HC de catéter positivos pero HC percutáneos negativos.

Otras cuestiones por resolver...

Relacionadas con monitorización y prevención

- Relevancia clínica de cultivar y/o informar catéteres colonizados en pacientes sin bacteriemia
- Deben realizarse siempre HC de control después de una pauta de tratamiento completa?