PREVENCIÓN DE INFECCIONES ASOCIADAS AL CUIDADO DE LA SALUD

PAPEL DE LA CLORHEXIDINA

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Infecciones Asociadas al Cuidado de la Salud (HAI) 1

- Infección Nosocomial = HAI
  - CDC: Condición que resulta de una reacción adversa a la presencia de un agente infeccioso o sus toxinas que ocurre en un paciente hospitalizado y no estaba presente o en incubación a la admisión.
- 5-10% de los pacientes
  - 2 millones de pacientes año (EUA)

Mayhall. Hosp Epidemiol Infec Control. 4 ed. 2012

Infecciones Asociadas al Cuidado de la Salud (HAI) 2

- Incrementa morbilidad, mortalidad, tiempo de hospitalización y costos asociados a la atención en salud.

  EUA
  - 90.000 a 100.000 muertes año
  - 28 a 45 billones de dólares año
  - Pensilvania 2007
    - Mortalidad: 12,2 vs 2%
    - Estancia: 19,7 vs 3 dias
    - Costos: 191.800 vs 35.100 dolares

Mayhall. Hosp Epidemiol Infec Control. 4 ed. 2012

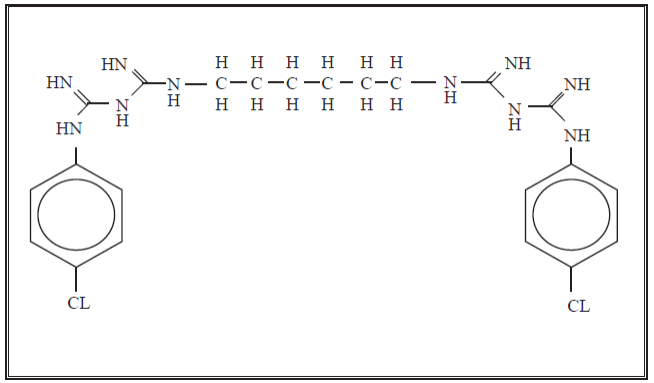
Infecciones Asociadas al Cuidado de la Salud (HAI) 3

- Mayor mortalidad (66%)
  - Bacteriemia asociada a CVC
  - Neumonía nosocomial
- Umscheid y cols 2010
  - Prevención
    - ITU asociada a catéter 65 a 70%
    - Bacteriemia asociada a dispositivo 65%
    - Neumonía asociada al ventilador 55%
    - Infección de sitio operatorio 45%

Mayhall. Hosp Epidemiol Infec Control. 4 ed. 2012

Clorhexidina

- 1954: Inglaterra
- Bisbiguanida cationica
- Digluconato (sal): solubilidad
- Actividad antimicrobiana:
  - Disrupción de membrana citoplasmática
  - Alteración del equilibrio osmótico
  - Precipitación del contenido celular



Espectro antimicrobiano de antisépticos

Compuesto	Gram (+)	Gram (-)	M Tb	Hongos	Virus	Esporas*
Alcohol	E	E	B	B	B	N
Clorhexidina	E	B	P	A	B	N
Yodoforos	E	B	B	B	B	N

E = Excelente, B = Buena, A = Aceptable, P = Pobre, N = Ninguna, MTb = Micobacterium tuberculosis

* Información obtenida de Guideline for Hand Hygiene in Health-Care Settings [2]

Infect Control Hosp Epidemiol 1999;20:250–278.

Características de los antisépticos

Compuesto	Mecanismo de Acción	Efecto Residual	Inactivación por material orgánico*	Inicio de acción	Toxicidad*
Alcohol	Desnaturalización de las proteínas	Ninguno	Intermedio	Muy rápido	Produce resequedad. Es volatil. Es inflamable
Clorhexidina	Disrupción de la membrana celular	Prolongado	Mínimo	Intermedio	Ototoxicidad. Queratitis. Dermatitis
Yodoforos	Oxidación/ Sustitución	Mínimo	Marcado	Intermedio	Absorción a través de la piel con posible toxicidad sistémica. Dermatitis de contacto

* Información obtenida de Guideline for Hand Hygiene in Health-Care Settings [2]

Infect Control Hosp Epidemiol 1999;20:250–278.

Seguridad de la corhexidina

- Dermatitis de contacto
- Hipersensibilidad y anafilaxia (casos esporádicos)
- No contacto ocular con preparaciones de concentración superior al 1 % (conjuntivitis y lesión corneal)
- No en cirugías que involucren el oído medio o interno, ya que es ototóxica.

Infectio. 2011; 15(2): 98-107

1.Infección de sitio operatorio

- Según el CDC ocupan el segundo puesto en frecuencia en reportes de infección nosocomial (ITU).
  - 20% de las infecciones nosocomiales
- Se presentan hasta en el 2-5% de todos las QX
  - 300 a 500.000 infecciones año (EUA)
- Incrementan 2 a 5 veces costos hospitalarios

Infect Control Hosp Epidemiol 1999;20:250-78.
Infect Control Hosp Epidemiol 2010; 31:1219-29

Infección de sitio operatorio (2)

- ISO como indicador de calidad
  - SCIP (Surgical Care Improvement Projects)
  - Limitar el pago del excedente de ciertas ISOs (mediastinitis y ciertas infecciones ortopedicas)

Mayhall. Hosp Epidemiol Infec Control. 4 ed. 2012

Guideline for Prevention of Surgical Site Infection, 1999

Alicia J. Mangram, MD; Teresa C. Horan, MPH, CIC; Michele L. Pearson, MD; Leah Christine Silver, BS; William R. Jarvis, MD;
The Hospital Infection Control Practices Advisory Committee

RECOMMENDATIONS

1. Preoperative

a. Preparation of the patient

- 8. Thoroughly wash and clean at and around the incision site to remove gross contamination before performing antiseptic skin preparation. *Category IB*
- **9. Use an appropriate antiseptic agent for skin preparation. Such as alcohol (70–92%), corhexidine in alcohol base(4–2 o 0,5%) or iodine-iodophors.** ***Category IB***
- 10. Apply preoperative antiseptic skin preparation in concentric circles moving toward the periphery. The prepared area must be large enough to extend the incision or create new incisions or drain sites, if necessary. *Category II*

Infect Control Hosp Epidemiol 1999;20:250–278.

CDC/NHSN surveillance definition of health care–associated infection and criteria for specific types of infections in the acute care setting

Teresa C. Horan, MPH, Mary Andrus, RN, BA, CIC, and Margaret A. Dudeck, MPH
Atlanta, Georgia

- Superficial: <30 días
- Profunda y órgano espacio: <30 días o 1 año si hay implante

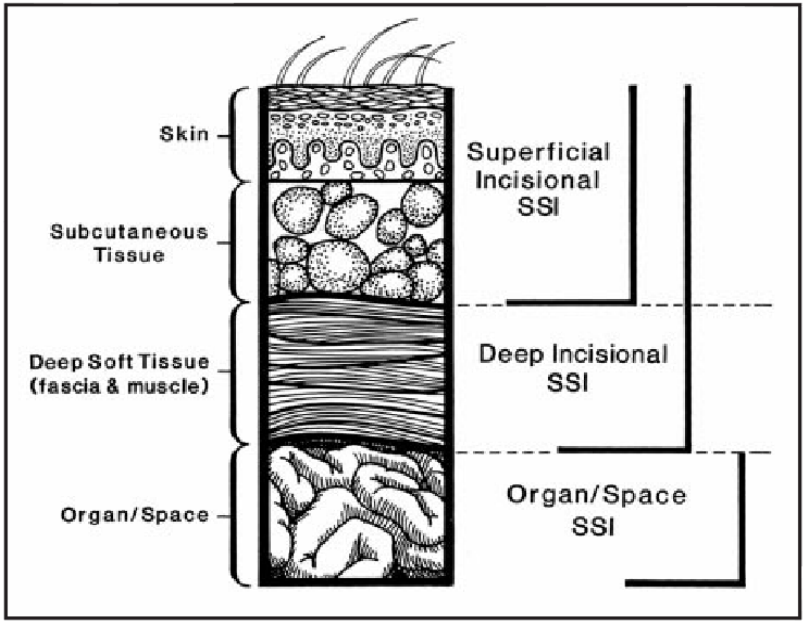


FIGURE. Cross-section of abdominal wall depicting CDC classifications of surgical site infection.[22]

Am J Infect Control 2008;36:309–32.

Chlorhexidine–Alcohol versus Povidone–Iodine for Surgical-Site Antisepsis

Rabih O. Darouiche, M.D., Matthew J. Wall, Jr., M.D., Kamal M.F. Itani, M.D.,

- EUA: Multicentrico, Prospectivo, aleatorizado,
- > 18 años, Qx limpia contaminada
- 813 pacientes: (391 Clorh y 422 Iodo povidona)

N Engl J Med 2010;362:18-26

Table 1. Baseline Characteristics of the Patients (Intention-to-Treat Population).*

Characteristic	Chlorhexidine–Alcohol (N=409)	Povidone–Iodine (N=440)	P Value
Male sex (%)	58.9	55.9	0.40
Age (yr)	53.3±14.6	52.9±14.2	0.87
Systemic antibiotics			
Initiated preoperatively (%)	100	100	>0.99
Duration of preoperative administration (days)			
Mean	1.1±1.2	1.1±0.8	>0.99
Range	1–20	1–11	
Received postoperatively (%)	51.7	48.9	0.41
Duration of surgery (hr)	3.0±1.5	3.0±1.5	>0.99
Abdominal surgery (%)	72.6	70.0	0.41
Colorectal	45.5	43.4	0.58
Biliary	10.8	12.3	0.52
Small intestinal	10.0	7.7	0.28
Gastroesophageal	6.4	6.6	0.89
Nonabdominal surgery (%)	27.4	30.0	0.41
Thoracic	10.8	13.0	0.34
Gynecologic	10.3	9.1	0.56
Urologic	6.4	8.0	0.42
Preoperative shower (%)	26.7	27.0	0.94
With 4% chlorhexidine gluconate (%)	16.1	18.9	0.32
With 10% povidone–iodine (%)	7.3	5.2	0.26
With 0.6% triclocarban soap bar (%)	3.2	3.0	>0.99

* Plus–minus values are means ±SD.

N Engl J Med 2010;362:18-26

Table 2. Proportion of Patients with Surgical-Site Infection, According to Type of Infection (Intention-to-Treat Population).

Type of Infection	Chlorhexidine–Alcohol (N = 409)	Povidone–Iodine (N = 440)	Relative Risk (95% CI)*	P Value†
	no. (%)			
Any surgical-site infection	39 (9.5)	71 (16.1)	0.59 (0.41–0.85)	0.004
Superficial incisional infection	17 (4.2)	38 (8.6)	0.48 (0.28–0.84)	0.008
Deep incisional infection	4 (1.0)	13 (3.0)	0.33 (0.11–1.01)	0.05
Organ-space infection	18 (4.4)	20 (4.5)	0.97 (0.52–1.80)	>0.99
Sepsis from surgical-site infection	11 (2.7)	19 (4.3)	0.62 (0.30–1.29)	0.26

* Relative risks are for chlorhexidine–alcohol as compared with povidone–iodine. The 95% confidence intervals were calculated with the use of asymptotic standard-error estimates.
† P values are based on Fisher's exact test.

N Engl J Med 2010;362:18–26

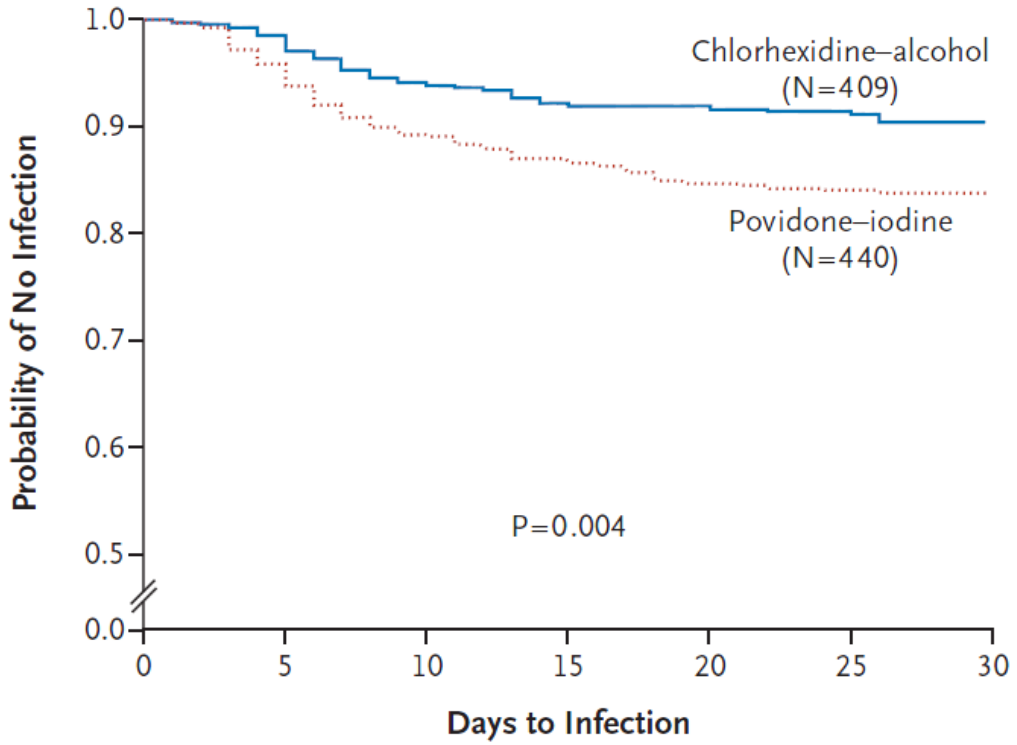


Figure 2. Kaplan–Meier Curves for Freedom from Surgical-Site Infection (Intention-to-Treat Population).

Patients who received chlorhexidine–alcohol were significantly more likely to remain free from surgical-site infection than were those who received povidone–iodine (P=0.004 by the log-rank test). In the chlorhexidine–alcohol group, 39 patients had events (9.5%) and data from 370 patients (90.5%) were censored; in the povidone–iodine group, 71 patients had events (16.1%) and data from 369 patients (83.9%) were censored.

N Engl J Med 2010;362:18–26

Conclusión

- La limpieza preoperatoria de la piel con clorhexidina en superior al uso de Iodo povidona en la prevención de infección de sitio operatorio en qxs limpias contaminadas.
- RRR: 49%
- NNT: 17

N Engl J Med 2010;362:18-26

Chlorhexidine and Alcohol Versus Povidone-Iodine for Antisepsis in Gynecological Surgery

Ishai Levin, M.D., Jonia Amer-Alshiek, M.D., Amiram Avni, M.D., Joseph B. Lessing, M.D., Abed Satel, B.Sc., R.N., and Benny Almog, M.D.

- Israel: Monocentrico, retrospectivo tipo cohorte
  - Lis Maternity Hospital, Tel-Aviv University.
- Qx ginecologica electiva
  - Qx limpia contaminada
- 2008 cambio en protocolo de antisepsis
  - G 1(Iodopovidona): 2007: 145 ptes
  - G 2(clorhexidina): 2009 Ener a Agost: 111 ptes

J Womens Health 20:3, 2011

Table 1. Patient Characteristics and Risk Factors for Surgical Site Infections

Characteristic	*Group 1 povidone-iodine*	*Group 2 chlorhexidine and alcohol*	p *value*
Age, years ± SD	52.9 ± 15.1	51.2 ± 14.3	0.371
Weight (kg ± SD)	69.7 ± 15.8	69.5 ± 15.0	0.931
Additional characteristics			
Hypertension (%)	35.9	27.9	0.225
NIDDM (%)	12.4	8.1	0.309
Obesity (%)	38.6	36.9	0.796
Smoking (%)	24.8	16.2	0.122
Ischemic heart disease (%)	4.1	3.6	1.000
MI (%)	4.1	1.8	0.472
Immunodeficiency (%)	15.9	12.7	0.591
Previous chemotherapy (%)	6.9	7.2	1.000
Cut type			
Low transverse	53.5	48.2	0.356
Longitudinal	40.3	48.2	
Both	6.2	3.6	
Presence of drain (%)	31.9	27.0	0.338
Tension sutures (%)	7.6	9.0	0.819

MI, myocardial infarction; NIDDM, noninsulin-dependent diabetes mellitus; SD, standard deviation.

J Womens Health 20:3, 2011

TABLE 2. SURGICAL SITE COMPLICATIONS

	Number of patients (%)			
	Superficial incisional SSI	*Deep incisional SSI*	*Organ/Space SSI*	*Total*
Group 1 Povidone-iodine $n = 145$	10 (6.9)	10 (6.9)	1 (0.7)	21 (14.6)
Group 2 Chlorhexidine and alcohol $n = 111$	3 (2.7)	2 (1.8)	0 (0)	5 (4.5)

Complications as defined by the Centers for Disease Control and Prevention.[2]
SSI, surgical site infection.

- p:0.011
- El riesgo de desarrollar ISO con el uso de yodoforo vs Clorhexidina es 3 veces mayor
  - (OR 3.2, IC 95% 1.13–9.30).

J Womens Health 20:3, 2011

Systematic review and meta-analysis of preoperative antisepsis with chlorhexidine *versus* povidone–iodine in clean-contaminated surgery

A. Noorani[1], N. Rabey[3], S. R. Walsh[1] and R. J. Davies[2]

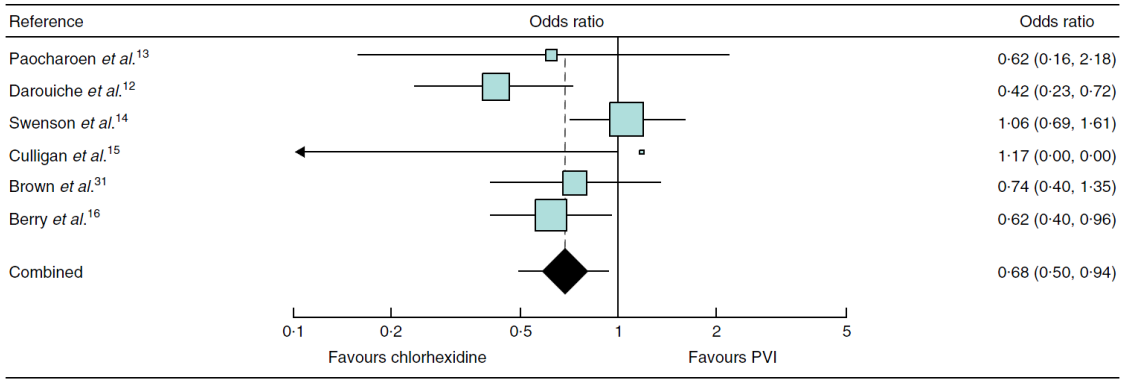


Fig. 2 Forest plot comparing the incidence of surgical-site infection following skin preparation with chlorhexidine *versus* povidone–iodine (PVI). The meta-analysis was done using a random-effects model. Odds ratios are shown with 95 per cent confidence intervals. The vertical dashed line represents the summary estimate

- ISO: 145 (5.7 %) 2529 ptes Clorhexidina vs 198 (7.9%) 2502 ptes Iodopovidona (OR: 0.68 IC 95% 0.5-0.94; *P = 0.019)*

Br J Surg 2010; 97: 1614-1620

Systematic Review and Cost Analysis Comparing Use of Chlorhexidine with Use of Iodine for Preoperative Skin Antisepsis to Prevent Surgical Site Infection

Ingi Lee, MD, MSCE; Rajender K. Agarwal, MD, MPH; Bruce Y. Lee, MD, MBA; Neil O. Fishman, MD; Craig A. Umscheid, MD, MSCE

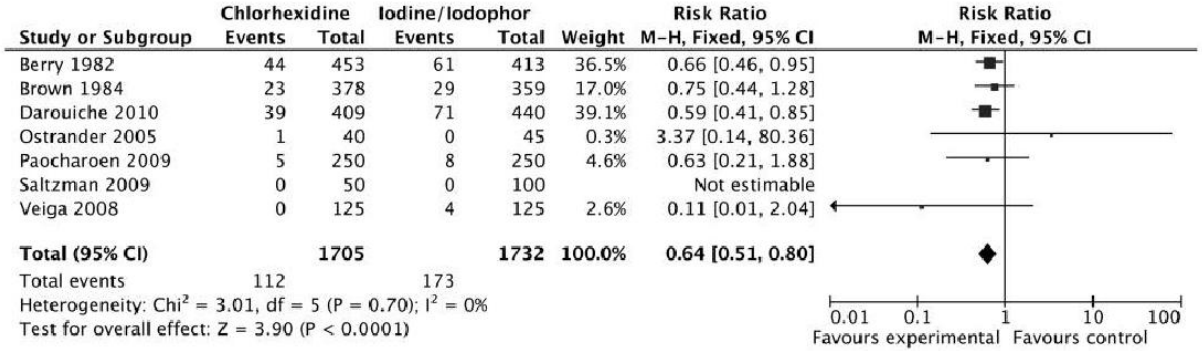


FIGURE 3. Meta-analysis of 7 studies that evaluated use of chlorhexidine, compared with use of iodine, for preoperative skin antisepsis with surgical site infection as the outcome.

Infect Control Hosp Epidemiol 2010; 31:1219–29

- El uso de clorhexidina
  - Se asocia a 36% de reducción el numero de ISO
  - Resulta en ahorros netos de US$ 16 a US$ 26 por caso quirúrgico y de US$ 349.904 a US$ 568.594 por año para el hospital.

Infect Control Hosp Epidemiol 2010; 31:1219-29

Baño preqx?

GUIDELINE FOR PREVENTION OF SURGICAL SITE INFECTION, 1999

Alicia J. Mangram, MD; Teresa C. Horan, MPH, CIC; Michele L. Pearson, MD; Leah Christine Silver, BS; William R. Jarvis, MD;
The Hospital Infection Control Practices Advisory Committee

- Prescribe preoperative showers-baths with an antiseptic agent the night before and the morning of the operation. *Category IB*

Infect Control Hosp Epidemiol 1999;20:250-278.

THE COCHRANE COLLABORATION®

Analysis 01.01. Comparison 01 Chlorhexidine 4% versus placebo, Outcome 01 Surgical site infection

Review: Preoperative bathing or showering with skin antiseptics to prevent surgical site infection

Comparison: 01 Chlorhexidine 4% versus placebo

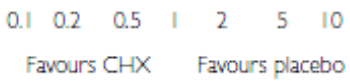
Outcome: 01 Surgical site infection

Study	Chlorhexidine n/N	Placebo n/N	Relative Risk (Fixed) 95% CI	Weight (%)	Relative Risk (Fixed) 95% CI
Byrne 1992	256/1754	272/1735		70.3	0.93 [0.80, 1.09]
Hayek 1987	62/689	83/700		21.2	0.76 [0.56, 1.04]
Rotter 1988	37/1413	33/1400		8.5	1.11 [0.70, 1.77]
Total (95% CI)	3856	3835		100.0	0.91 [0.80, 1.04]

Total events: 355 (Chlorhexidine), 388 (Placebo)

Test for heterogeneity chi-square=2.10 df=2 p=0.35 I =4.6%

Test for overall effect z=1.38 p=0.2



Cochrane Database Syst Rev. 2007;2:CD004985

Economic Value of Dispensing Home-Based Preoperative Chlorhexidine Bathing Cloths to Prevent Surgical Site Infection

Rachel R. Bailey, PhD, MPH;[1,2,3] Dianna R. Stuckey;[1,2,3] Bryan A. Norman, PhD;[4] Andrew P. Duggan;[4]
Kristina M. Bacon, MPH;[1,2,3] Diana L. Connor, MPH;[1,2,3] Ingi Lee, MD, MSCE;[5,6]
Robert R. Muder, MD;[7] Bruce Y. Lee, MD, MBA[1,2,3]

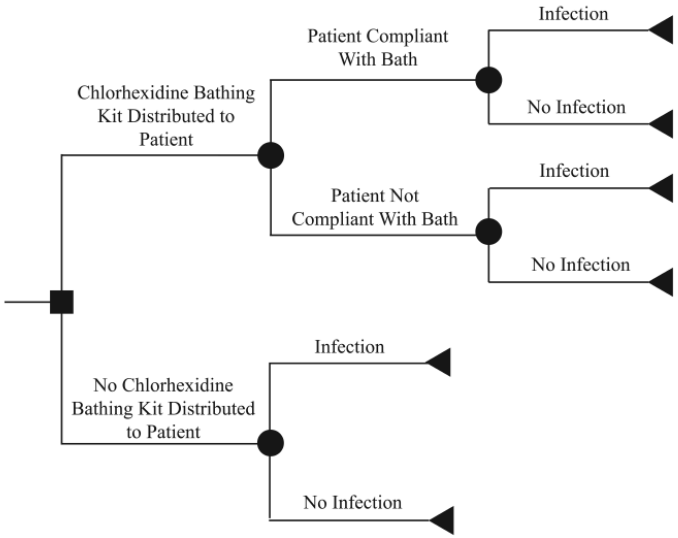


FIGURE 1. Model structure for deciding whether to distribute chlorhexidine bathing cloth kits to study patients.

- Incluso con un cumplimiento de 50%, la estrategia reduce costos y produce desenlaces adecuados

Infect Control Hosp Epidemiol 2011;32(5):465-471

Descolonización de portadores asintomáticos de S. aureus?

Preventing Surgical-Site Infections in Nasal Carriers of *Staphylococcus aureus*

Lonneke G.M. Bode, M.D., Jan A.J.W. Kluytmans, M.D., Ph.D., Heiman F.L. Wertheim, M.D., Ph.D., Diana Bogaers, I.C.P., Christina M.J.E. Vandenbroucke-Grauls, M.D., Ph.D., Robert Roosendaal, Ph.D., Annet Troelstra, M.D., Ph.D., Adrienne T.A. Box, B.A.Sc., Andreas Voss, M.D., Ph.D., Ingeborg van der Tweel, Ph.D., Alex van Belkum, Ph.D., Henri A. Verbrugh, M.D., Ph.D., and Margreet C. Vos, M.D., Ph.D.

- Multicentrico, aleatorizado, controlado con placebo.
- Identificación de portador con PCR

N Engl J Med 2010;362:9-17.

Table 2. Relative Risk of Hospital-Acquired *Staphylococcus aureus* Infection and Characteristics of Infections (Intention-to-Treat Analysis).

Variable	Mupirocin–Chlorhexidine (N = 504)	Placebo (N = 413)	Relative Risk (95% CI)*
	no. (%)		
S. aureus infection	17 (3.4)	32 (7.7)	0.42 (0.23–0.75)
Source of infection†			
Endogenous	12 (2.4)	25 (6.1)	0.39 (0.20–0.77)
Exogenous	4 (0.8)	6 (1.5)	0.55 (0.16–1.92)
Unknown	1 (0.2)	1 (0.2)	
Localization of infection			
Deep surgical site‡	4 (0.9)	16 (4.4)	0.21 (0.07–0.62)
Superficial surgical site‡	7 (1.6)	13 (3.5)	0.45 (0.18–1.11)
Lower respiratory tract	2 (0.4)	2 (0.5)	0.82 (0.12–5.78)
Urinary tract	1 (0.2)	0	
Bacteremia	1 (0.2)	1 (0.2)	
Soft tissue	2 (0.4)	0	

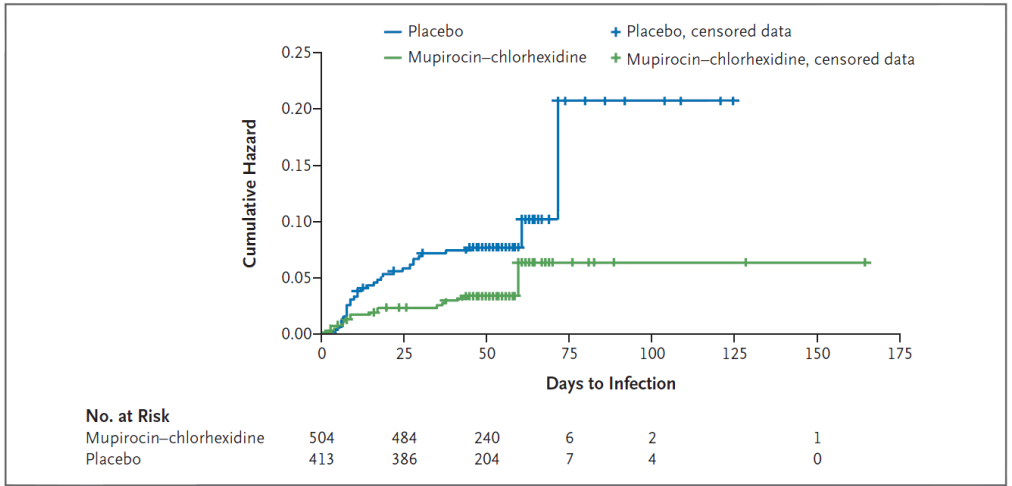


Figure 3. Kaplan–Meier Curves Showing Cumulative Hazard of Hospital-Acquired *Staphylococcus aureus* Infection in the Study Groups.

Data were censored at the end of the follow-up period or at the time of death.

N Engl J Med 2010;362:9–17.

2.Bacteriemia asociada a CVC

- Tasa de mortalidad atribuible de 12 % a 25 %
- Prolongación de la hospitalización por 10 a 40 días
- Costos marginales para el sistema de salud de hasta US$ 35.000 por episodio
  - El CMS (Center for Medicaid and Medicare Services) no paga el exceso de costos asociado a bacteriemia por CVC.

Infectio. 2011; 15(2): 98-107
Mayhall. Hosp Epidemiol Infec Control. 4 ed. 2012

Guidelines for the Prevention of Intravascular Catheter-Related Infections, 2011

Naomi P. O'Grady, M.D.[1], Mary Alexander, R.N.[2], Lillian A. Burns, M.T., M.P.H., C.I.C.[3], E. Patchen Dellinger, M.D.[4], Jeffery Garland, M.D., S.M.[5], Stephen O. Heard, M.D.[6], Pamela A. Lipsett, M.D.[7], Henry Masur, M.D.[1], Leonard A. Mermel, D.O., Sc.M.[8], Michele L. Pearson, M.D.[9], Issam I. Raad, M.D.[10], Adrienne Randolph, M.D., M.Sc.[11], Mark E. Rupp, M.D.[12], Sanjay Saint, M.D., M.P.H.[13] and the Healthcare Infection Control Practices Advisory Committee (HICPAC)[14].

Skin Preparation

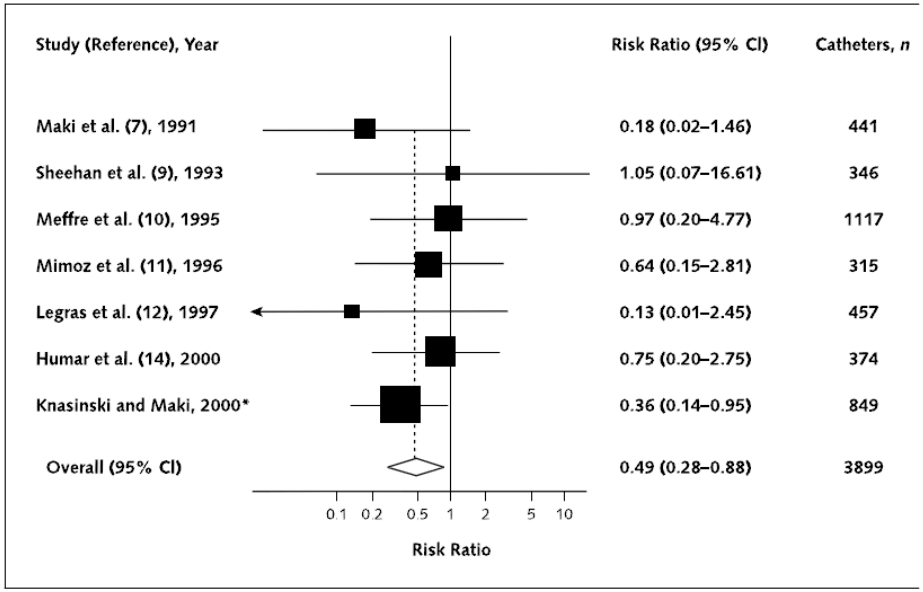
- **Prepare clean skin with a ≥0.5% chlorhexidine preparation with alcohol before central venous catheter** and peripheral arterial catheter insertion and during dressing changes. If there is a contraindication to chlorhexidine, tincture of iodine, an iodophor, or 70% alcohol can be used as alternatives [82, 83]. Category IA

http://www.cdc.gov/hicpac/pubs.html

Chlorhexidine Compared with Povidone-Iodine Solution for Vascular Catheter–Site Care: A Meta-Analysis

Nathorn Chaiyakunapruk, PharmD, PhD; David L. Veenstra, PharmD, PhD; Benjamin A. Lipsky, MD; and Sanjay Saint, MD, MPH

Figure 2. Analysis of catheter-related bloodstream infection in studies comparing chlorhexidine gluconate and povidone-iodine solutions for care of vascular catheter sites.



The diamond indicates the summary risk ratio and 95% CI. Studies are ordered chronologically. The size of squares is proportional to the reciprocal of the variance of the studies. For the test for heterogeneity of treatment effect, $P > 0.2$. *Knasinski V, Maki DG. A prospective, randomized, controlled trial of 1% chlorhexidine 75% alcohol vs. 10% povidone iodine for cutaneous disinfection and follow-up site care with central venous and arterial catheters [Presented paper]. San Diego: National Association of Vascular Access Network Conference; 2000.

Ann Intern Med. 2002;136:792-801.

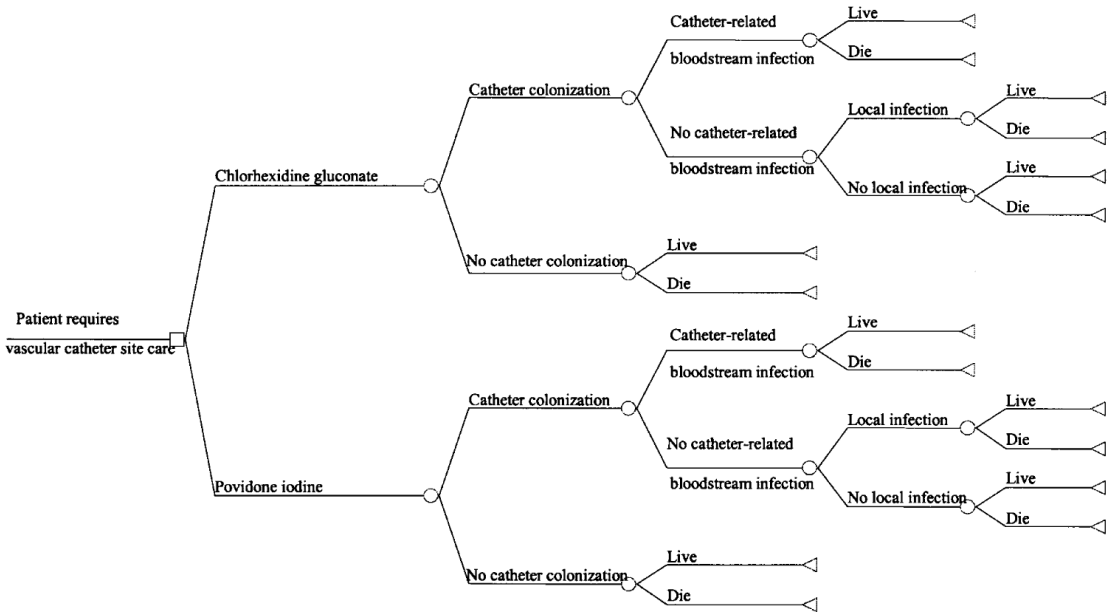
- Por cada 1000 desinfecciones del sitio de inserción de un CVC con corhexidina en comparación con yodopovidona se previenen
  - 71 episodios de colonización
  - **11 episodios de bacteriemia**

Ann Intern Med. 2002;136:792-801.

Vascular Catheter Site Care: The Clinical and Economic Benefits of Chlorhexidine Gluconate Compared with Povidone Iodine

Nathorn Chaiyakunapruk,[1,8] David L. Veenstra,[1] Benjamin A. Lipsky,[2,4] Sean D. Sullivan,[1,3] and Sanjay Saint[5,6,7]

[1]Pharmaceutical Outcomes Research and Policy Program, Department of Pharmacy, [2]School of Medicine, and [3]Department of Health Services, University of Washington, and [4]Veterans Affairs Puget Sound Health Care System, Seattle; [5]Ann Arbor Veterans Affairs Medical Center, [6]Department of Internal Medicine, University of Michigan, and [7]Patient Safety Enhancement Program, University of Michigan Health System, Ann Arbor; and [8]Department of Pharmacy Practice, Naresuan University, Pitsanuloak, Thailand



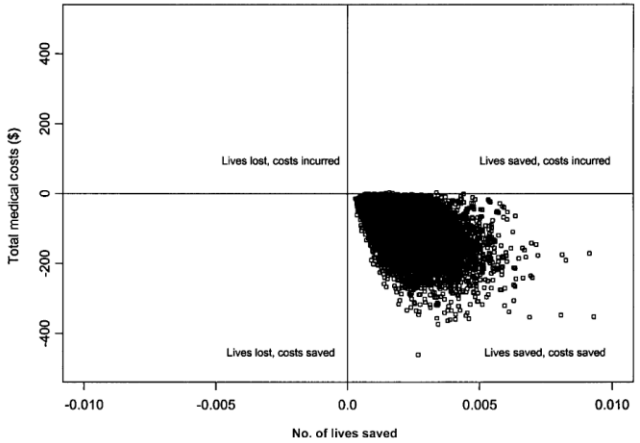


Figure 3. Probabilistic sensitivity analysis of the use of chlorhexidine gluconate, compared with povidone iodine, for central vascular catheter site care. All chances of the results of use of chlorhexidine gluconate for vascular catheter site care, compared with povidone iodine, are shown. Each dot, generated from a simulation using probabilistic sensitivity analysis technique, represents a chance of the outcome falling into 1 of the quadrants.

Clin Infect Dis 2003; 37:764–71

3.Neumonía asociada al ventilador

- NN es la tercera infección nosocomial en frecuencia después de ITU
  - 15% de las infecciones nosocomiales y 30% de las infecciones adquiridas en UCI
- Prolonga la estancia hospitalaria en 12,5 días y, la estancia en la unidad de cuidados intensivos, en 10,5 ($p<0,001$)
- Incrementa en promedio los costos totales en salud de US$ 101.660 por paciente
- Aumenta la mortalidad en 13,3 % a 20 %

Infectio. 2011; 15(2): 98-107
http://www.cdc.gov/hicpac/pdf/guidelines/HApneu2003guidelines.pdf

GUIDELINES FOR PREVENTING HEALTH-CARE-ASSOCIATED PNEUMONIA, 2003

Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee

- **3. Prevention or modulation of oropharyngeal colonization**

Chlorhexidine oral rinse

- ***No recommendation can be made for the routine use of an* oral chlorhexidine rinse** for the prevention of health-care associated pneumonia in all postoperative or critically ill patients or other patients at high risk for pneumonia. *UNRESOLVED ISSUE*
- Use an oral chlorhexidine gluconate (0.12%) rinse during the perioperative period on adult patients who undergo cardiac surgery. *CATEGORY II*

http://www.cdc.gov/hicpac/pdf/guidelines/HApneu2003guidelines.pdf

Randomized Controlled Trial and Meta-analysis of Oral Decontamination with 2% Chlorhexidine Solution for the Prevention of Ventilator-Associated Pneumonia

Hutsaya Tantipong, MD; Chantana Morkchareonpong, MD; Songyod Jaiyindee, MD; Visanu Thamlikitkul, MD

TABLE 2. Outcomes for 207 Study Patients Who Received Mechanical Ventilation and Oral Decontamination

Variable	Chlorhexidine group (n = 102)	Normal saline group (n = 105)	P
No. (%) of patients who developed VAP	5 (4.9)	12 (11.4)	.08[a]
No. of cases of VAP per 1,000 ventilator-days, mean	7	21	.04
No. (%) of patients with irritation of oral mucosa	10 (9.8)	1 (0.9)	.001

NOTE. VAP, ventilator-associated pneumonia.

[a] Relative risk, 0.43 (95% confidence interval, 0.16-1.17).

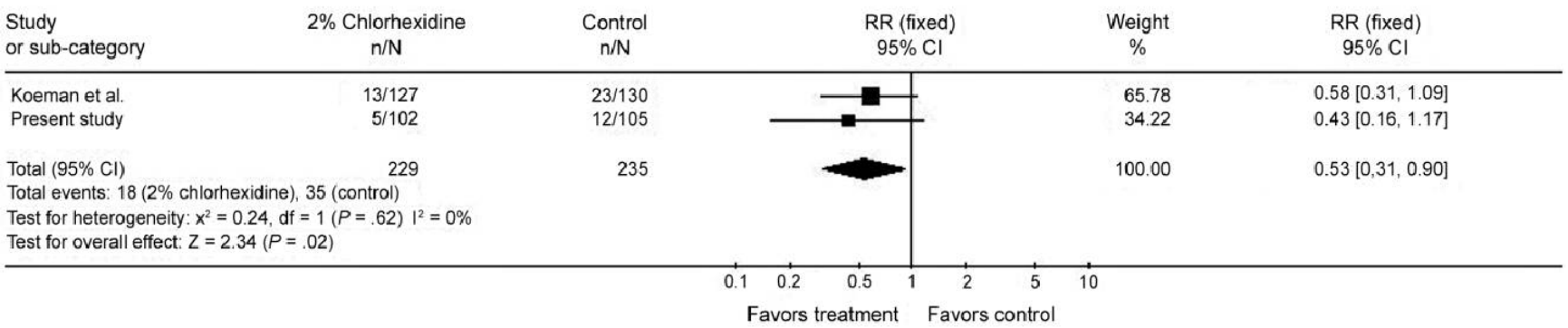
TABLE 1. Demographic and Clinical Characteristics of 207 Study Patients Who Received Mechanical Ventilation and Oral Decontamination

Characteristic	Chlorhexidine group (n = 102)	Normal saline group (n = 105)	P
Age, mean ± SD, years	56.5 ± 20.1	60.3 ± 19.1	.15
Sex			
Male	50 (49.1)	51 (48.6)	.78
Female	52 (50.9)	54 (51.4)	
Ward			
Surgical ICU	50 (49.0)	51 (48.6)	.99
General medical ward	40 (39.2)	42 (40.0)	
Medical ICU	12 (11.8)	12 (11.4)	
Underlying disease			
Yes	75 (73.5)	75 (71.4)	.75
No	27 (26.5)	30 (28.6)	
Reason for endotracheal intubation			
Upper airway obstruction	15 (14.7)	23 (21.9)	.21
Oxygenation failure	66 (64.7)	61 (58.0)	.39
Airway protection	31 (30.4)	40 (38.0)	.30
Secretion obstruction	32 (31.4)	33 (31.4)	.99
Ventilatory failure	45 (44.1)	42 (40.0)	.57
Duration of mechanical ventilation, mean, days	4.5	5.2	.38
Risk factor for VAP			
Prior infection	23 (22.5)	30 (28.6)	.33
Prior antibiotic use	48 (47.0)	60 (57.1)	.16
Bronchodilator use	11 (10.8)	10 (9.5)	.82
Corticosteroid use	9 (8.8)	16 (15.2)	.2
Acid reduction agent use	75 (73.5)	69 (65.7)	.28
Reintubation	5 (4.9)	5 (4.8)	.99
Invasive device(s) present	59 (57.8)	65 (61.9)	.56
Nasogastric tube present	85 (83.3)	86 (81.9)	.99
Thoracoabdominal surgery	29 (28.4)	28 (26.7)	.87
APACHE II score, mean ± SD	16.7 ± 7.9	18.2 ± 8.1	.16

NOTE. Data are no. (%) of patients, unless otherwise indicated. APACHE, Acute Physiology and Chronic Health Evaluation; ICU, intensive care unit; VAP, ventilator associated pneumonia.

Infect Control Hosp Epidemiol 2008; 29:131–136

META-ANALISIS



- NNT: 14

Infect Control Hosp Epidemiol 2008; 29:131-136

Guías de práctica clínica para la prevención de infecciones intrahospitalarias asociadas al uso de dispositivos médicos

Carlos Arturo Álvarez[1], Jorge Alberto Cortés[2], Carlos Hernando Gómez[3], Julián Alfredo Fernández[4], Mónica Patricia Sossa[5], Fabián Beltrán[6], Giovane Mendieta Izquierdo[7], Franco Montufar Andrade[8], Guillermo Ortiz[9], Adriana Padilla[10]

	Estrategias farmacológicas	
R18	No hay recomendación sobre la administración de antibióticos en aerosol [186-187].	**2b**
R19	No hay recomendación sobre la administración de antibióticos nasales [188].	**1b**
R20	No hay recomendación sobre la administración de antibióticos intravenosos solos como profilaxis para la neumonía hospitalaria [189].	**1b**
R21	No hay recomendación sobre el uso de antibióticos tópicos o tópicos más intravenosos [190-192].	**1a**
	Se recomienda usar clorhexidina oral para el enjuague bucal en cada turno [152-155].	**1b/A**
R23	Se debe considerar el uso de yodopovidona oral antiséptica en pacientes con lesión craneana grave [193].	**1b/A**
R24	No hay recomendación sobre el uso de vasoconstrictores nasales para prevenir la sinusitis maxilar [194].	**1b**
R25	Se recomienda la interrrupción diaria o la disminución de la sedación para evitar que sea constante y profunda, y evitar los fármacos que produzcan parálisis y puedan deprimir el reflejo de la tos [177].	**2b/B**
R26	Si se requiere, la profilaxis de úlceras por estrés se puede hacer con antagonistas de H_2 o con sucralfate [195-203].	**1b/A**

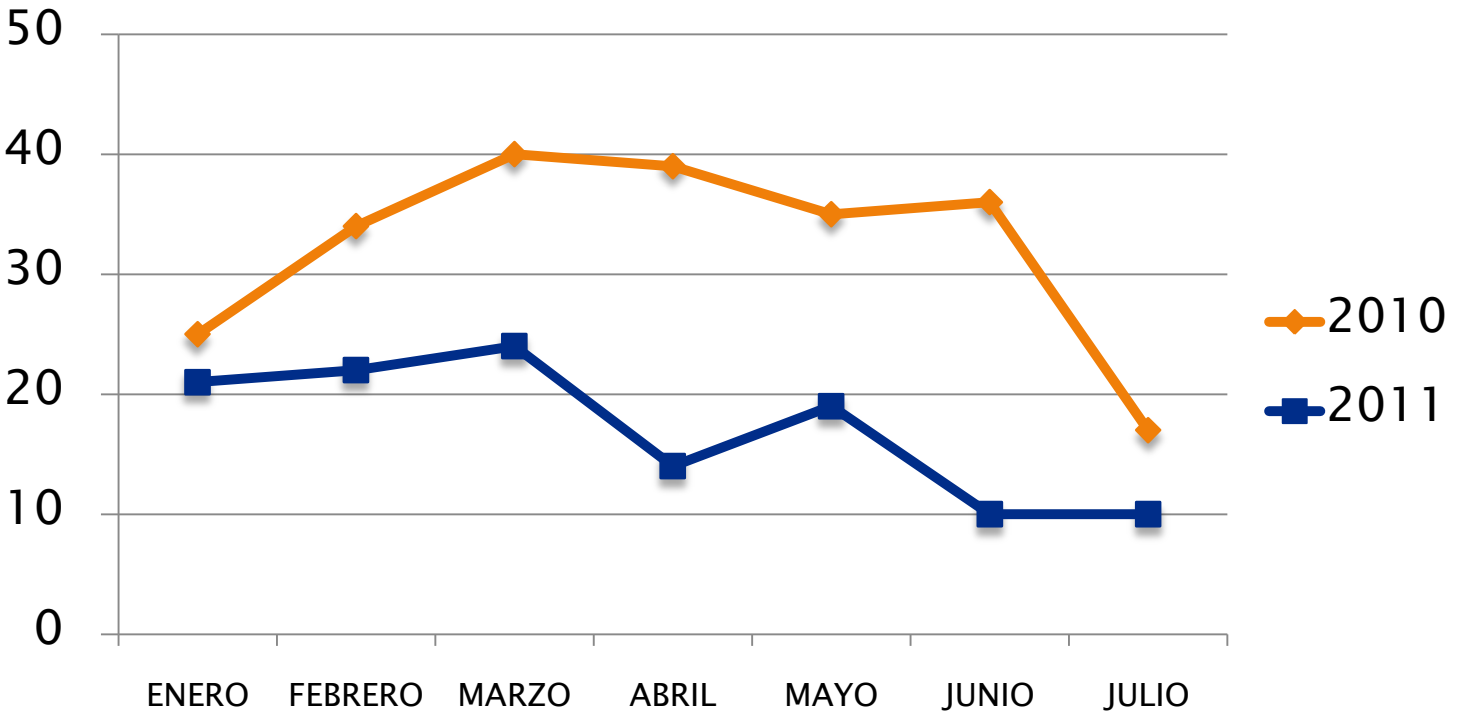
Infectio. 2010; 14(4): 292-308

Infecciones maternas y neonatales

- La descolonización de la vagina y del cuello uterino con clorhexidina
  - No hay reducción de infecciones maternas o neonatales
  - Reducción de la colonización del neonato por estreptococo betahemolíticodel grupo B (p=0,005; RR=0,72; $IC_{95\%}$ 0,56-0,91), pero no de Las tasas de infecciones de inicio tempranocausadas por este microorganismo

Infectio. 2011; 15(2): 98-107

INCIDENCIA DE IIH HOSPITAL ----- PRIMER SEMESTRE 2010-2011B



Conclusiones

- El uso de clorhexidina es un método costo-efectivo en la prevención de infecciones nosocomiales.
  - Se ha demostrado reducción en la incidencia de bacteriemia asociada a CVC, neumonía nosocomial e infección de sitio operatorio
- Es necesario aproxímanos de manera multidisciplinaria ante el problema de la infección nosocomial

Gracias