

# *Stratégie de Prévention des infections de cathéters*

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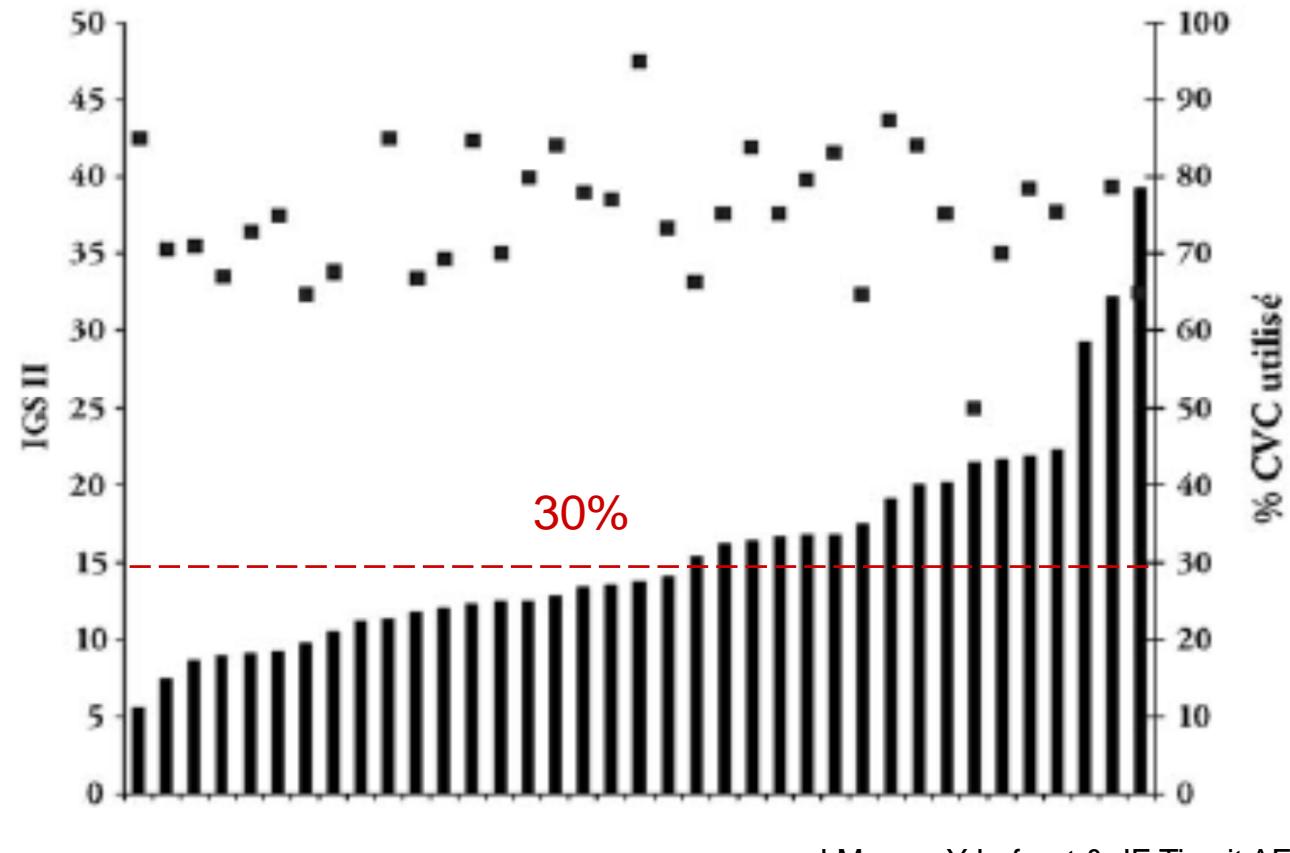
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# Taux d'utilisation des CVC en réanimation, CUB-Réa 2001

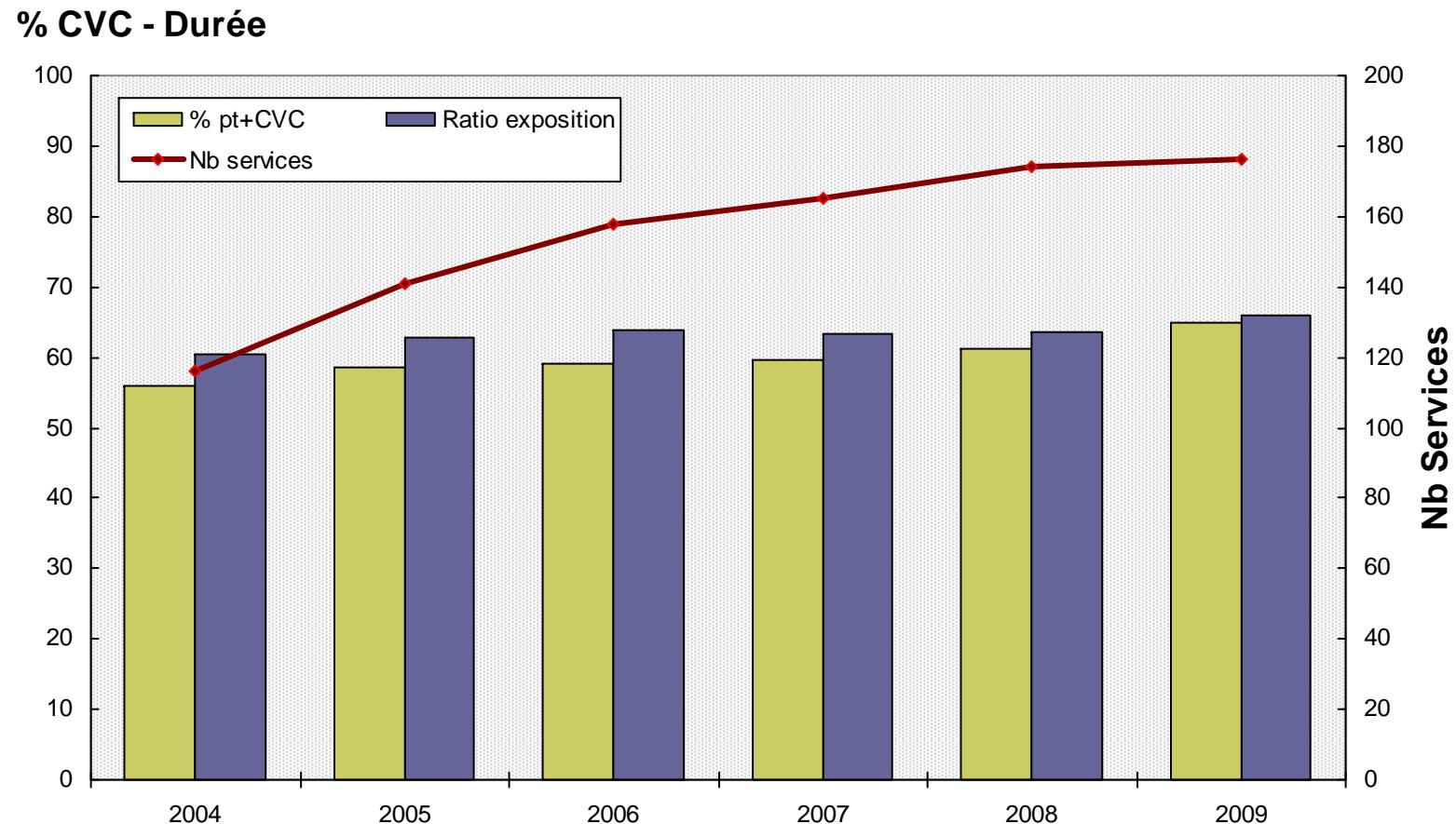


J.Merrer, Y Lefrant & JF Timsit AFAR 2005

*REACAT 2007: 60% patients hosp>2J, durée d'exposition: 10j*

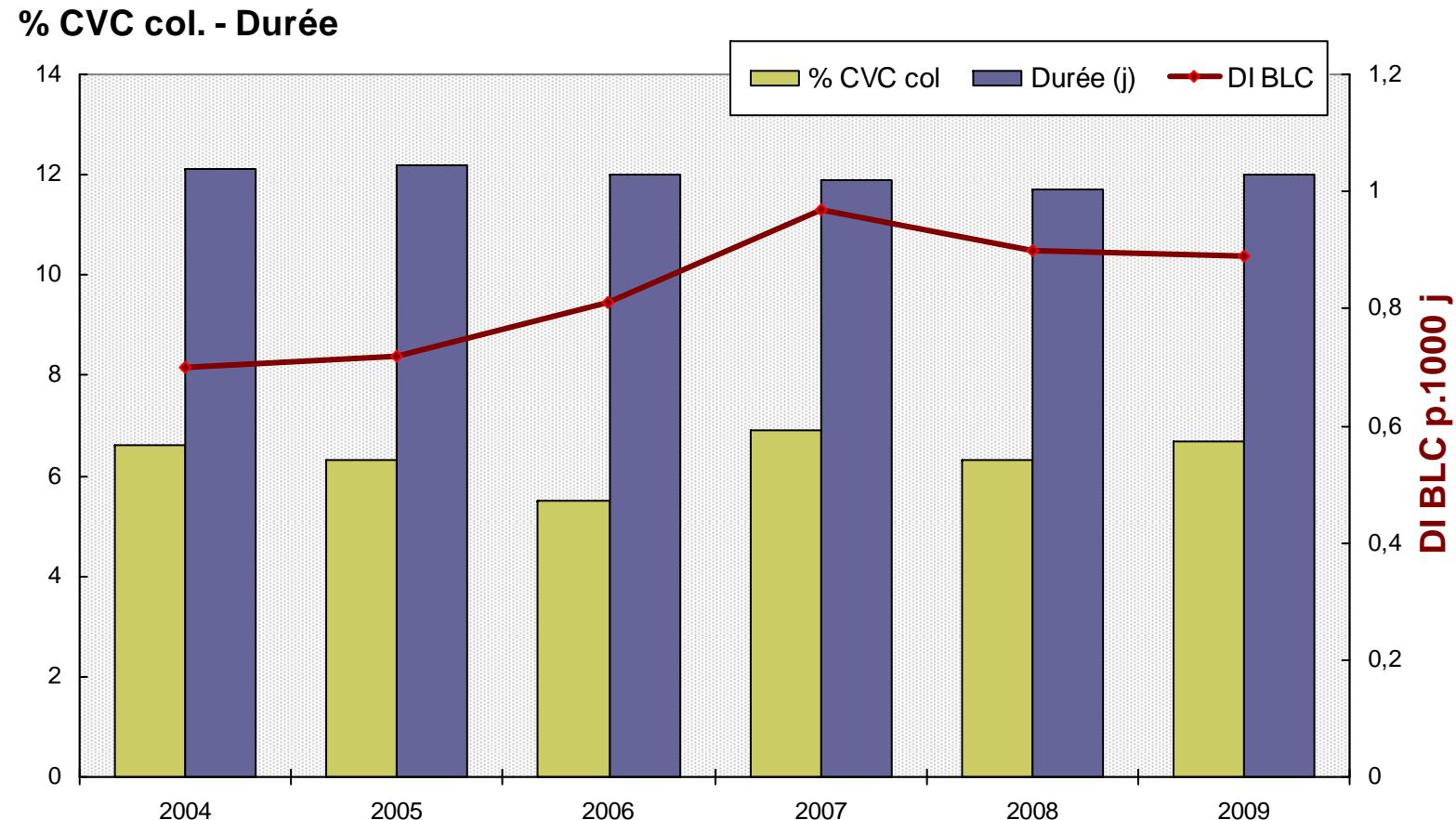
# Données REA-RAISIN, 2004 – 2009

## Utilisation des CVC en réanimation

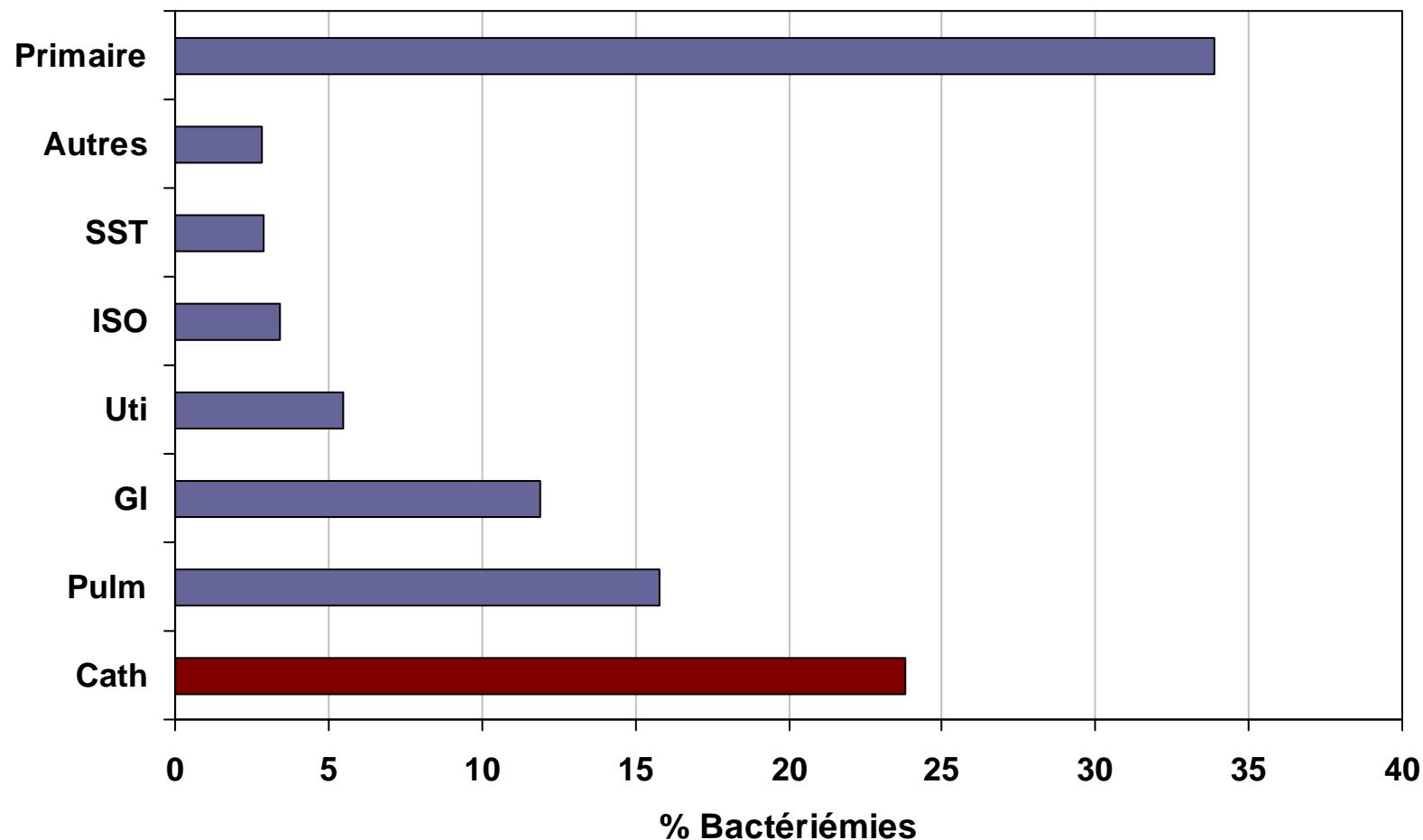


# Données REA-RAISIN, 2004 – 2009

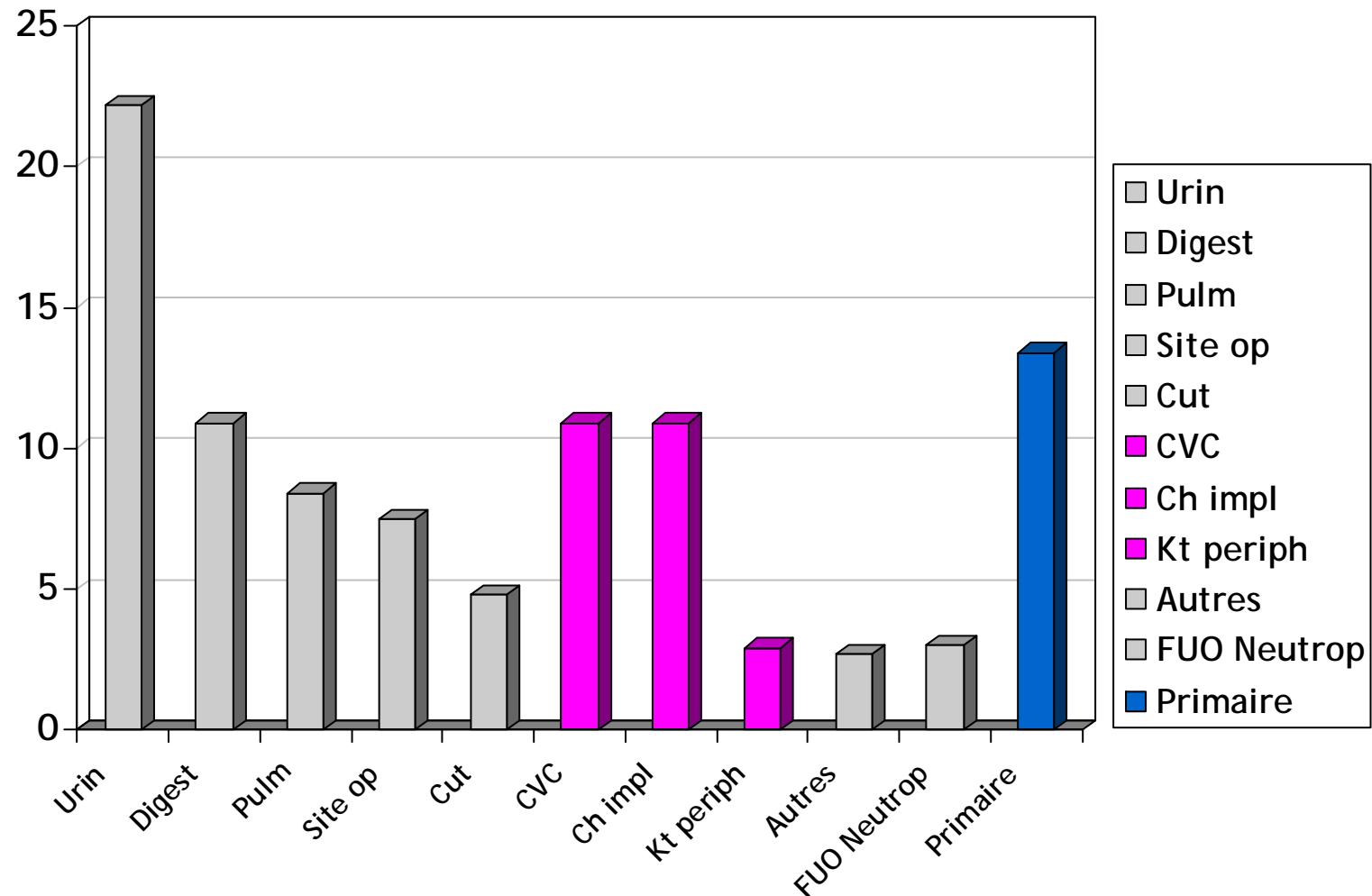
## Indicateurs infection des CVC en réanimation



# Distribution des Bactériémies



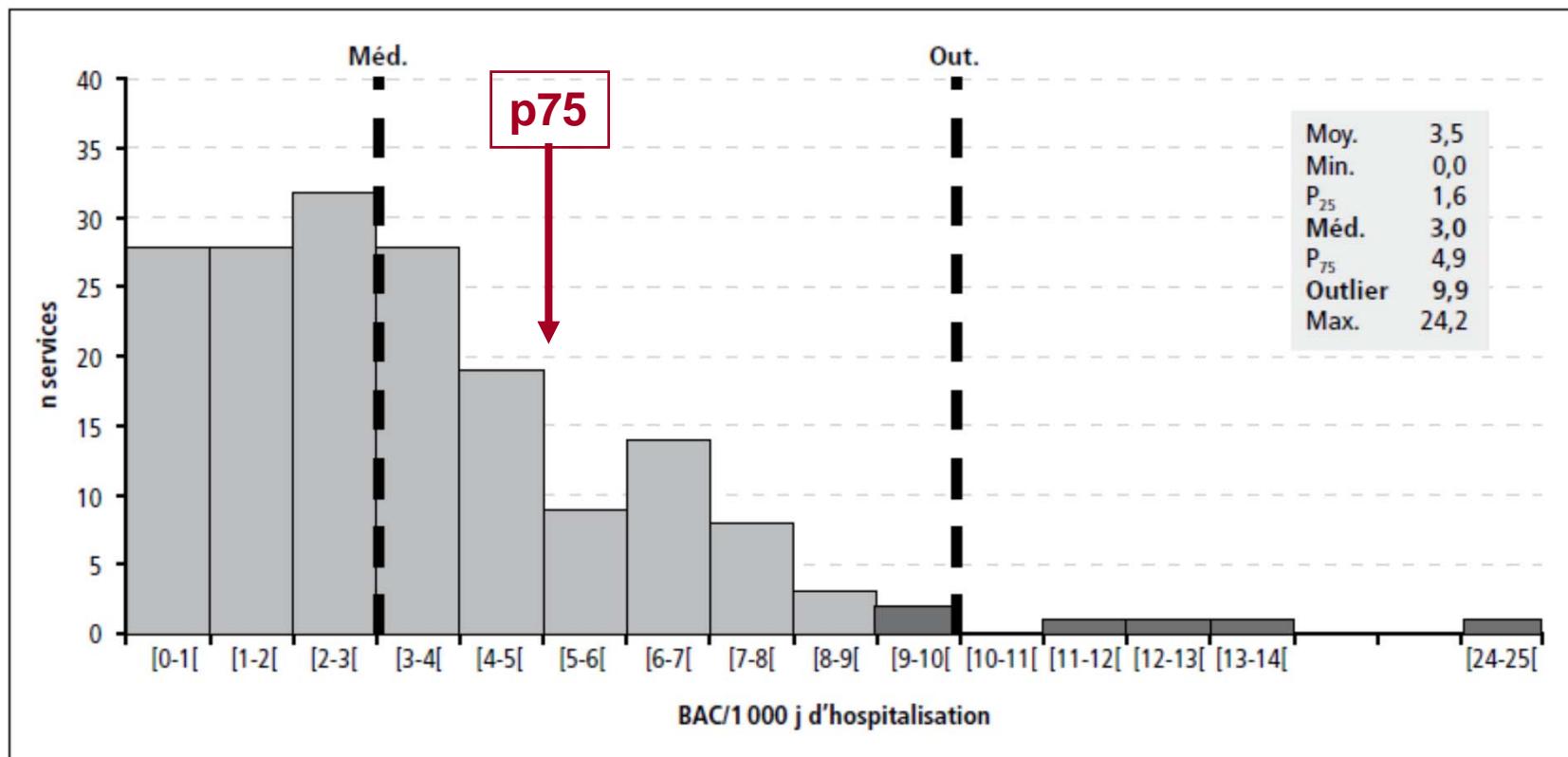
# Bactériémies nosocomiales: sources



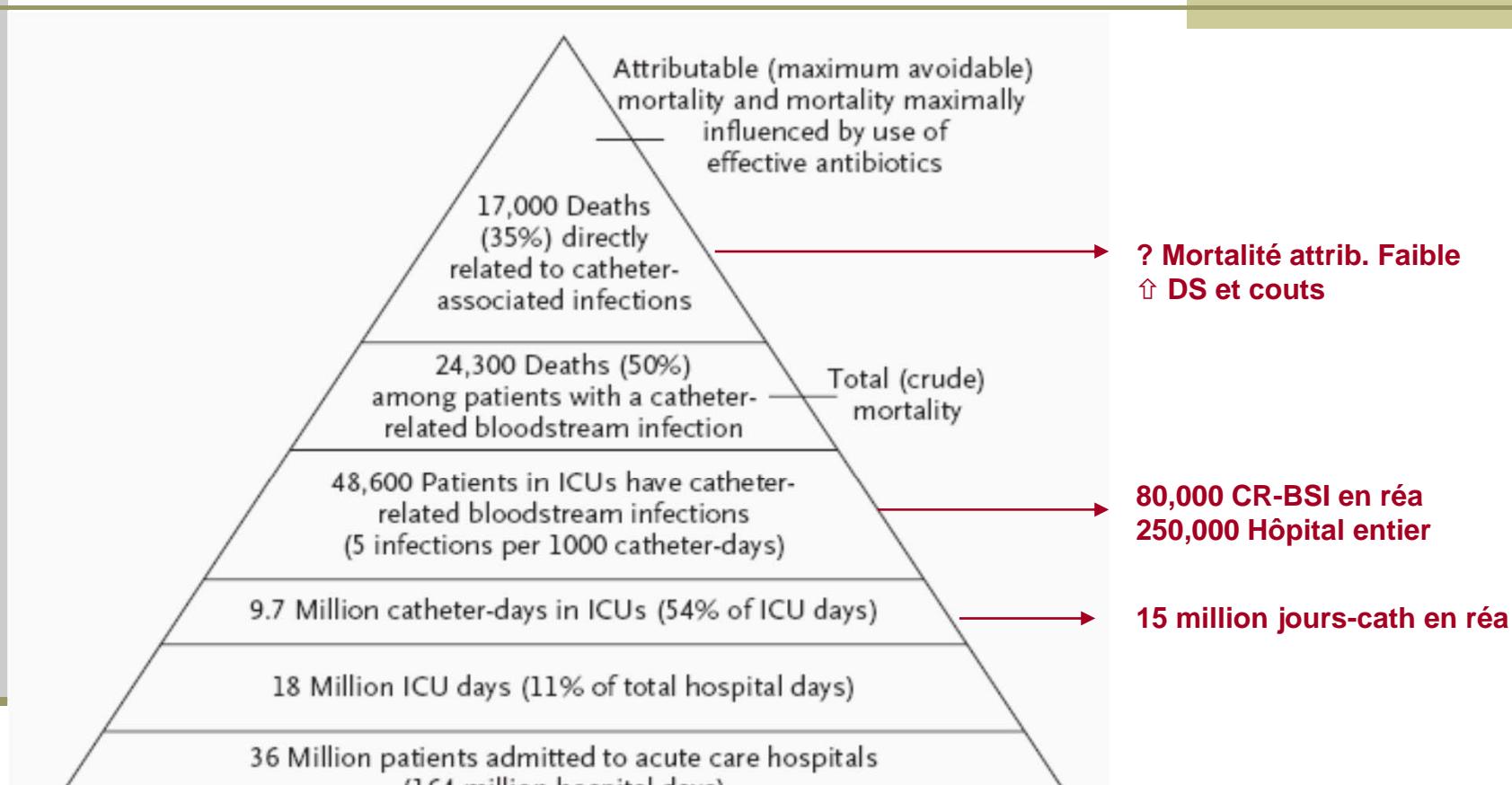
Réseau RAISIN Bactériémies 2007

# Des taux parfois bien trop élevés...

Distribution des services selon le taux de bactériémies/1 000 j de séjour en réanimation



# Conséquences des infections de cathétters



**Figure 1. Annual Patient Stays in the 6000 Acute Care Hospitals and Associated ICUs in the United States.**  
(Mermel L. *Ann Intern Med* 2000)

RP. Wenzel & MB. Edmond, *NEJM* 2006; 355 (26): 2781-83.

# Etudes cas-témoins: Mortalité attribuable aux Bactériémies associées aux CVC

	Pittet	Renaud	Digiovine	Soufir	Laupland
Service	1 SICU	28 ICUs	1 MICU	2 ICUs	4 ICUs
année	1988-90	1998	1994-96	1990-95	2000-03
Nb cas / pts	97 / 4,002	111 / 2,170	68 / 3,003	42 / 3,587	160 / 4,473
Nb Cas-témoins	86 / 86	96 / 96	68 / 68	38 / 75	144 / 144
Mortalité attribuable %					
Bact. Nosocomiale	35 [25-45]	35.4 [23-48]	-	-	-
BLC	-	11.5	4.4	29	16 [5.9-26]
RRa	-	1.4	1.33	1.3	1.6
Nb BLC	40	26	68	38	144

« *Catheter-related bloodstream infections (CRBSI) independently increase hospital costs and length of stay, but have not been shown to independently increase mortality.* » (CDC 2011)

# A Compendium of Strategies to Prevent Healthcare-Associated Infections in Acute Care Hospitals

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S22 INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY OCTOBER 2008, VOL. 29, SUPPLEMENT 1

SUPPLEMENT ARTICLE: SHEA/IDSA PRACTICE RECOMMENDATION

## Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals

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Recommendations SHEA / IDSA 2008

# Recommandations SHEA/IDSA 2008 (I)

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## I. Recommandations de base pour la prévention et la surveillance des BLC: *pratiques recommandées pour tous les hôpitaux et dans tous les services*

1. Former les personnels impliqués dans la pose, les soins, et l'entretien des VVC sur les risques et la prévention des ILC (A-II).
2. Lors de la pose:
  1. Utiliser une checklist pour s'assurer de l'observance des bonnes pratiques (B II)
  2. Effectuer une hygiène des mains avant l'insertion ou la manipulation des cathéters (B-II).
  3. Éviter d'utiliser la voie fémorale pour l'accès veineux central chez les adultes (surtout obèses) (A-I).
  4. Utiliser un chariot ou un kit de pose complet (B-II).
  5. Prendre des précautions d'asepsie chirurgicale lors de l'insertion (A-I).
  6. Utiliser un antiseptique à base de chlorhexidine pour la préparation cutanée (A-I).

# Recommandations SHEA/IDSA 2008 (II)

## 3. Entretien après la pose

1. Désinfecter les robinets, connecteurs, et sites d'injection avant toute manipulation et injection (B-II).
2. Enlever tous les cathéters dès qu'ils ne sont plus indispensables (A-II).
3. changer les pansements transparents et désinfecter le site d'insertion avec une solution à la chlorhexidine **tous les 5 à 7 jours** (ou plus si le pansement est souillé ou décollé) (A-I).
4. Remplacer les **tubulures** (en l'absence d'utilisation pour transfusion ou PDS, d'administration de solution lipidique) au moins **tous les 4 jours** (A-II).
5. Effectuer une **surveillance** des ILC avec feedback des taux (B-II).
6. Utiliser une pommade antibiotique sur le site d'insertion des **cathéters d'hémodialyse (chronique)** chez les patients ayant des infections récidivantes à *S.aureus* (A-I).

# Prévention des Infections de CVC par une asepsie chirurgicale à l'insertion ("maximal sterile barriers")

## Essai randomisé, hdj oncologie

	Control (n=167)	MSB (n=178)	P
Durée cathétérisme, j (extr.)	67 (2-100)	70 (2-100)	0.3
Kt Multilumière, %	41	34	0.24
Site sous-clavier, n (%)	123 (74%)	135 (76%)	0.5
Colonisation CVC, %	7.2	2.3*	0.04
<b>Bactériémie, n</b>	<b>6</b>	<b>1</b>	
<b>densité d'incidence/1000 j</b>	<b>0.5</b>	<b>0.08**</b>	0.06

\* RR [95% CI] = 0.32 [0.10- 0.96]

\*\* RR [95% CI] = 0.16 [0.02- 1.31]

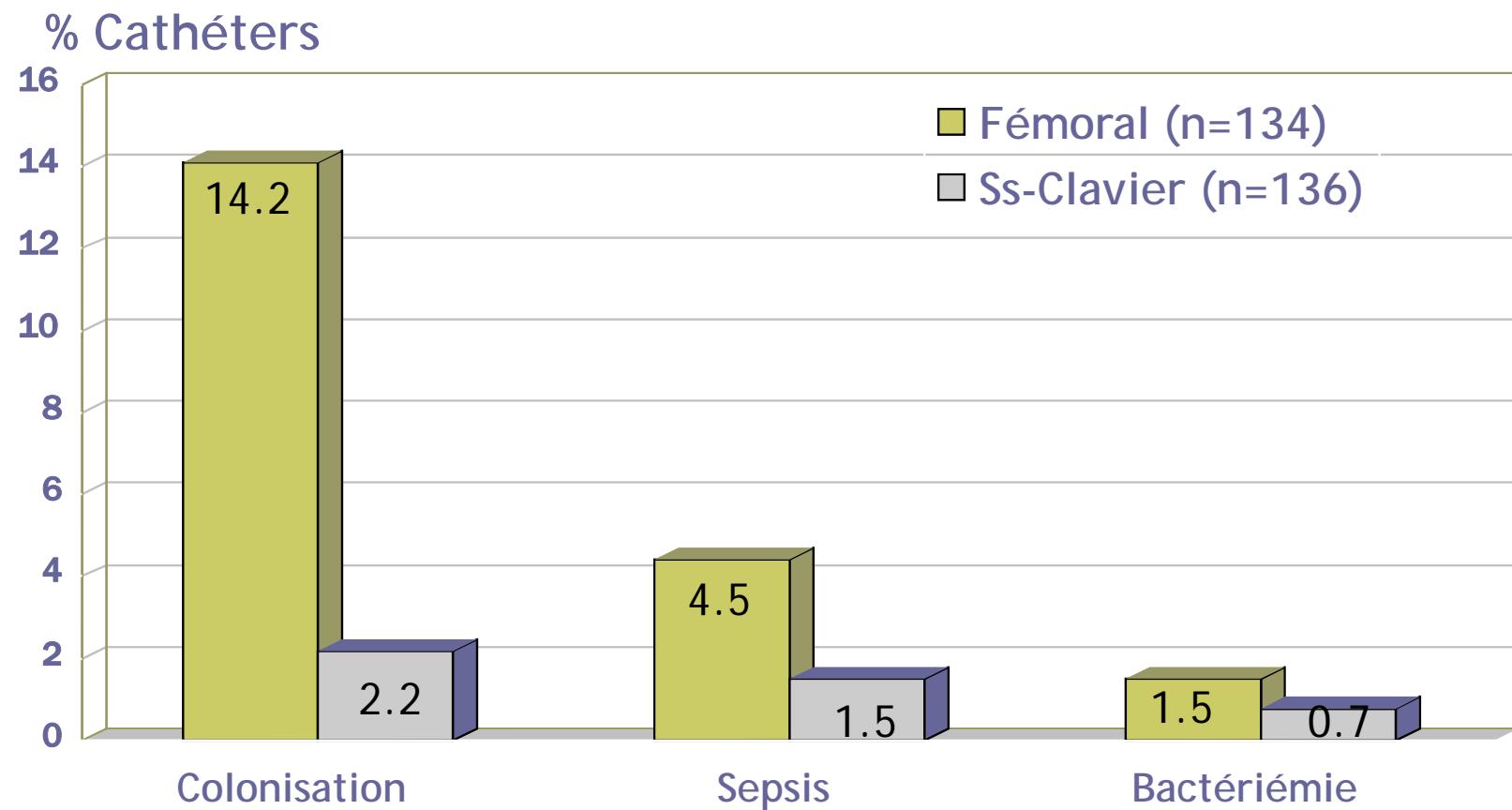
Raad et al, ICHE 1994; 15: 231-38

# Prévention des Infections de CVC par une asepsie chirurgicale à l'insertion ("MSB"): Méta-analyse

Auteur, année	Contexte	Type d'étude	No. CVC	Risque d'Infection
Mermel, 1991	Réa Bloc	Observ.	86 (Réa) 211 (Bloc)	RR : 0,48 (0,19-0,91)
Raad, 1994	Oncologie	RCT	176 / 167	RR : 0,16 (0,02-1,31) (BLC)
Sherertz, 2000	Réa et SSC	Avant/ après	2009 / 3093	RR: 0.72 4,51 vs 3,23 p. 1000 j-Kt

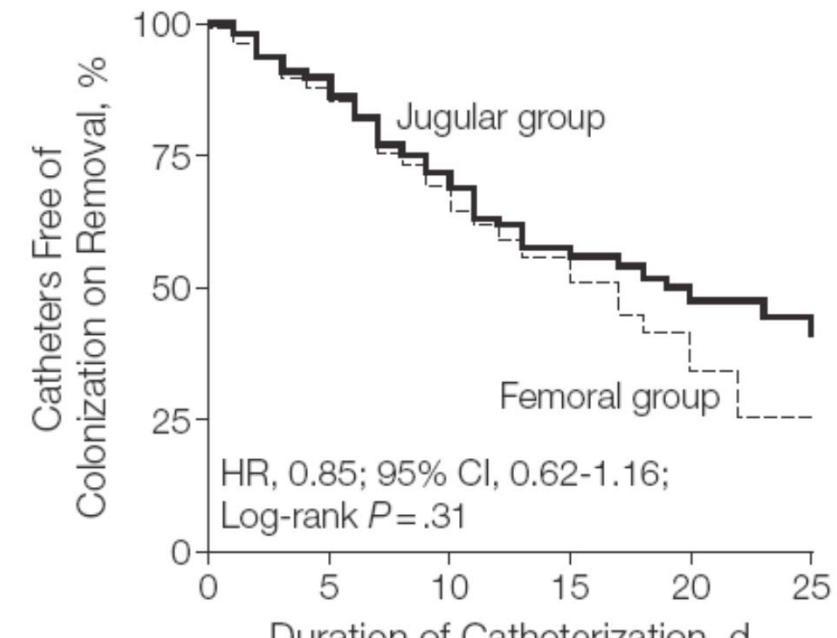
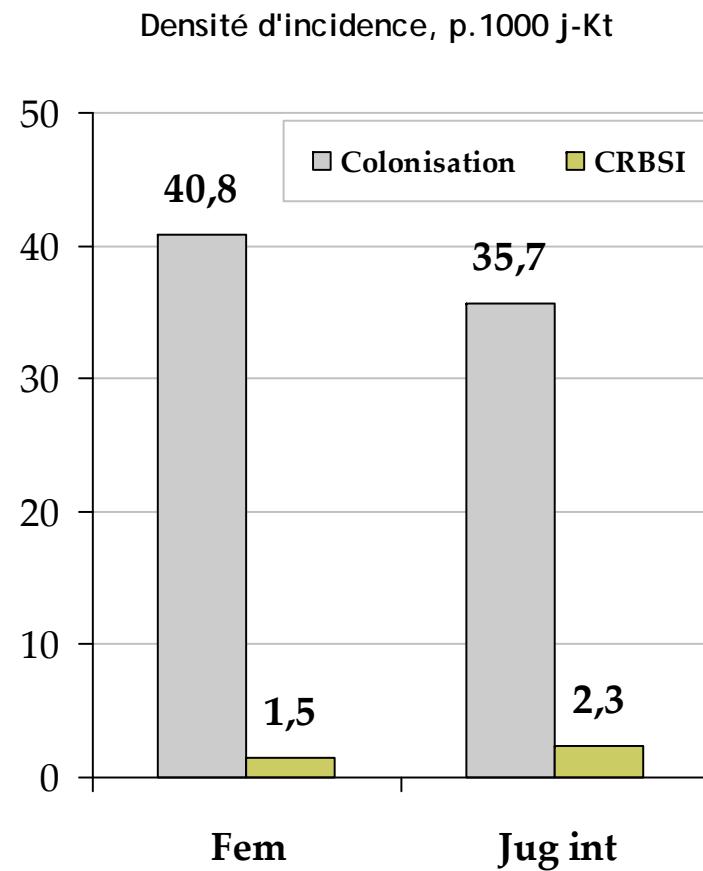
*KH. Hu et al, AJIC 2004; 32: 142-46.*

# Eviter le site fémoral: Complications Infectieuses du Cathéterisme Fémoral vs. Sous-clavier ...



Merrer et al, *JAMA* 2001; 286: 700-07.

# Site Fémoral ou Jugulaire pour les Cathéters d'hémodialyse

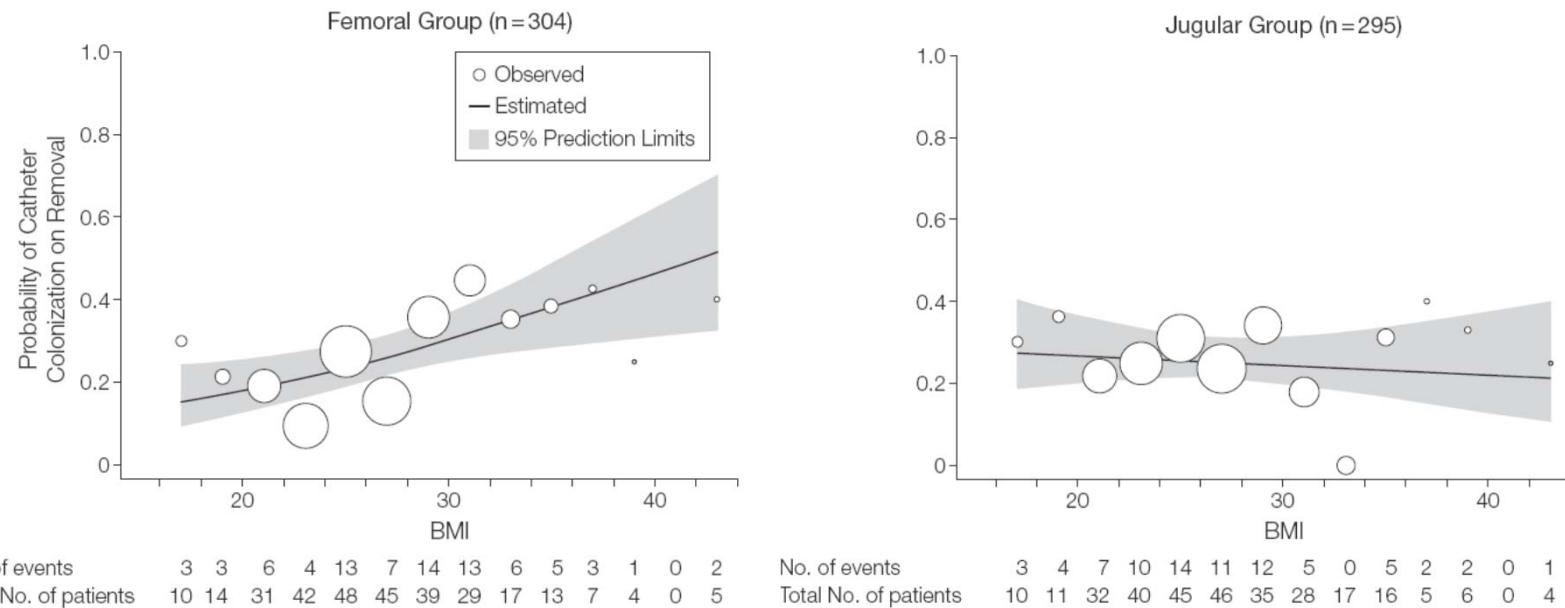


No. at risk

Femoral group	324	176	71	23	11
Jugular group	313	178	75	34	22

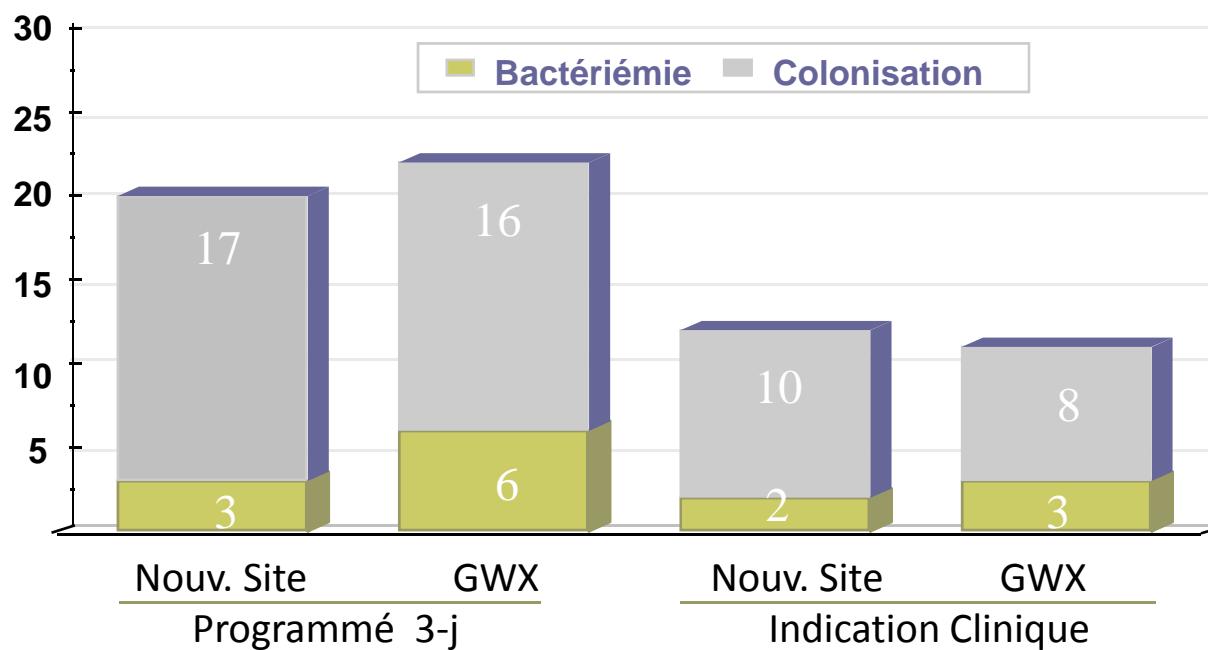
JJ. Parienti & al, JAMA 2008; 299: 2413-22.

# ...surtout chez les obèses: Le risque associé au cathétérisme fémoral augmente avec l'IMC



JJ. Parienti & al, *JAMA* 2008; 299: 2413-22.

# Changer systématiquement les cathéters?

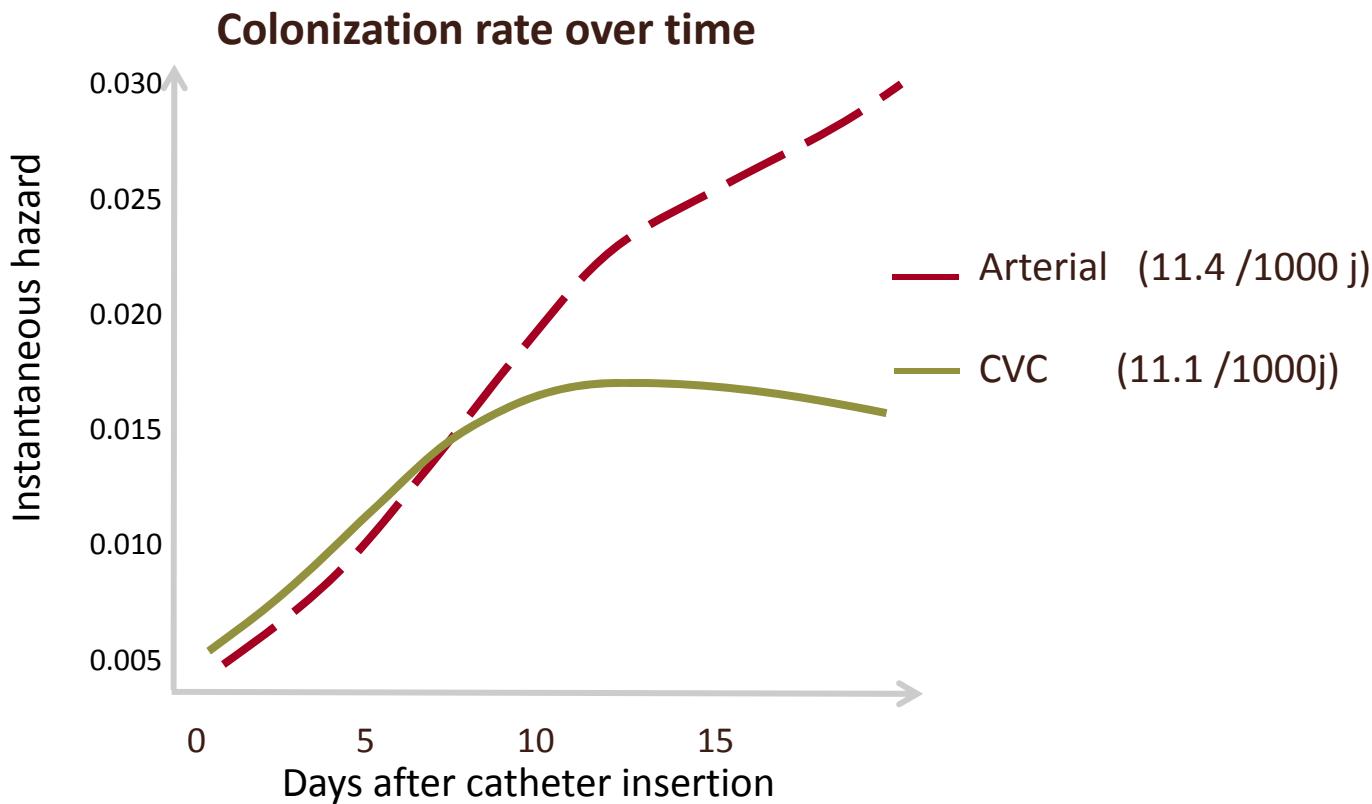


Cobb et al, NEJM  
1992; 327: 1062-68

- Changement tous les 3 jours vs. tous les 7 jours ou si besoin (4 études) :
  - Colonisation: RR 0.87 (0.65-1.16)
  - Bactériémies: RR 0.89 (0.41-1.91)

D. Cook et al - Crit Care Med 1997 25:1417

# Risque différentiel des CVC et CArt



*Number of catheters at risk*

Arterial	1617	877	260	118
CVC	1915	1257	497	263

JC Lucet & al, Crit Care Med 2010

# Recommandations SHEA/IDSA 2008 (III)

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## II. **Approches complémentaires pour la prévention des ILC:** *recommandées dans les unités et/ou populations chez qui la surveillance ou l'appréciation des facteurs de risque suggèrent une efficacité insuffisante des mesures générales de prévention.*

1. Effectuer une **toilette quotidienne à la chlorhexidine** des malades de réanimation (B-II).
2. Utiliser des **cathéters imprégnés d'antiseptiques** (adultes) (A-I).
3. Utiliser des **compresses imprégnées d'antiseptique** pour le pansement du site d'insertion des CVC (pt >2 mois) (B-I).
4. Utiliser des **verrous antibiotiques** chez les malades à haut risque (A-I).

## III. **Non recommandés**

1. Prophylaxie antibiotique à la pose des CVC (tunnelisés ou non)
2. Remplacement à intervalles prédéfinis des cathéters veineux centraux ou artériels (A-I).
3. Connecteurs antiseptiques à valve (sauf étude préalable du rapport bénéfice/risques et formation assurée du personnel)

# The new CDC/HICPAC Guideline (2011)

[www.cdc.gov/hicpac/BSI/BSI-guidelines-2011.html](http://www.cdc.gov/hicpac/BSI/BSI-guidelines-2011.html)

Quoi de neuf?

# Objectifs de la politique de prévention

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- The goal of an effective prevention program should be the **elimination of CRBSI from all patient-care areas.**
- « The goal ... is to reduce the rate to **as low as feasible** given the specific patient population being served, the universal presence of microorganisms in the human environment, and the **limitations of current strategies and technologies.** »

# Nouvelles Recommandations CDC 2011

- *Points majeurs de la politique de prévention, à mettre en exergue:*
  - 1) enseignement et formation des personnels qui posent et entretiennent les cathéters;
  - 2) technique d'asepsie chirurgicale ('max. sterile barrier precautions') lors de la pose des CVC;
  - 3) désinfection de la peau par une solution de chlorhexidine alcoolique >0.5%;
  - 4) ne pas remplacer les CVC à intervalle prédéfini;
  - 5) utiliser des cathéters imprégnés d'antiseptiques/ antibiotiques pour les CVC de courte durée et/ou une éponge imprégnée de chlorhexidine si le taux d'infection reste élevé malgré l'observance des mesures précédentes;
  - Mettre en place un programme d'amélioration des pratiques incluant des multi-interventions (*bundled strategies*), associées à la mesure et diffusion des taux d'observance de l'ensemble de leurs composants, pour suivre l'amélioration de la qualité et des performances.

# I - Education, training & staffing

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1. Educate healthcare personnel regarding the indications for intravascular catheter use, proper procedures for the insertion and maintenance of intravascular catheters, and appropriate infection control measures to prevent intravascular catheter-related infections [1A].
2. Periodically assess knowledge of and adherence to guidelines for all personnel involved in the insertion and maintenance of intravascular catheters [1A].
3. Designate only trained personnel who demonstrate competence for the insertion and maintenance of peripheral and central intravascular catheters. [1A].
4. Ensure appropriate nursing staff levels in ICUs... Observational studies suggest that a higher proportion of "pool nurses" or an elevated patient-to-nurse ratio is associated with CRBSI in ICUs [1B].

## II - Selection of Catheters & Sites

### Peripheral - Midline

1. In adults, use an **upper-extremity site** for catheter insertion. Replace a catheter inserted in a lower extremity site to an upper extremity site as soon as possible [II].
2. Select catheters on the basis of the **intended purpose and duration of use**, known infectious and non-infectious complications and experience of individual catheter operators [1B].
3. **Avoid the use of steel needles** for the administration of fluids and medication that might cause tissue necrosis if extravasation occurs [1A].
4. Use a **midline catheter or peripherally inserted central catheter (PICC)**, instead of a short peripheral catheter, when the **duration of IV therapy will likely > 6 days** [II]
5. Evaluate the catheter insertion site daily by palpation through the dressing to discern tenderness and by inspection if a transparent dressing is in use. **Gauze and opaque dressings should not be removed if the patient has no clinical signs of infection.** If the patient has local tenderness or other signs of possible CRBSI, an opaque dressing should be removed and the site inspected visually [II].
6. Remove peripheral venous catheters if the patient develops signs of phlebitis (warmth, tenderness, erythema or palpable venous cord), infection, or a malfunctioning catheter [1B].

## II - Selection of Catheters & Sites

### CVC (1)

1. Weigh the risks and benefits of placing a central venous device at a recommended site to reduce infectious complications against the risk for mechanical complications [1A].
2. Avoid using the femoral vein for central venous access in adult patients [1A].
3. Use a subclavian site, rather than a jugular or a femoral site, in adult patients to minimize infection risk for nontunneled CVC placement [1B].
4. No recommendation can be made for a preferred site of insertion to minimize infection risk for a tunneled CVC (Unresolved issue)
5. Avoid the subclavian site in hemodialysis patients and patients with advanced kidney disease, to avoid subclavian vein stenosis [1A].
6. Use a fistula or graft in patients with chronic renal failure instead of a CVC for permanent access for dialysis [1A].

## II - Selection of Catheters & Sites

### CVC (2)

7. Use ultrasound guidance (if available) to place CVCs to reduce the number of cannulation attempts and mechanical complications. Ultrasound guidance should only be used by those fully trained in its technique. [1B].
8. Use a CVC with the minimum number of ports or lumens essential for the management of the patient [1B].
9. No recommendation can be made regarding the use of a designated lumen for parenteral nutrition (Unresolved issue).
10. **Promptly remove any intravascular catheter that is no longer essential [1A].**
11. When adherence to aseptic technique cannot be ensured (i.e catheters inserted during a medical emergency), replace the catheter as soon as possible, i.e, within 48 hours [1B].

# III – Hand hygiene and asepsis

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1. Perform hand hygiene procedures, either by washing hands with conventional soap and water or with alcohol-based hand rubs (ABHR). Hand hygiene should be performed before and after palpating catheter insertion sites as well as before and after inserting, replacing, accessing, repairing, or dressing an iv. catheter. Palpation of the insertion site should not be performed after the application of antiseptic, unless aseptic technique is maintained [1B].
2. Maintain aseptic technique for the insertion and care of iv. catheters [1B].
3. Wear clean gloves, rather than sterile gloves, for the insertion of peripheral intravascular catheters, if the access site is not touched after the application of skin antiseptics [1C].
4. Sterile gloves should be worn for the insertion of arterial, central, and midline catheters [1A].
5. Use new sterile gloves before handling the new catheter when guidewire exchanges are performed. [II]
6. Wear either clean or sterile gloves when changing the dressing on iv. catheters. [1C]

## IV – Maximal sterile barrier precautions

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1. Use maximal sterile barrier precautions, including the use of a cap, mask, sterile gown, sterile gloves, and a sterile full body drape, for the insertion of CVCs, PICCs, or guidewire exchange [1B].
2. Use a sterile sleeve to protect pulmonary artery catheters during insertion [1B].

# V - Skin preparation

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1. Prepare **clean skin with an antiseptic** (70% alcohol, tincture of iodine, or alcoholic chlorhexidine gluconate solution) before peripheral venous catheter insertion [1B].
2. Prepare **clean skin with a >0.5% chlorhexidine - alcohol preparation** before CVC 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 [1A].
3. No comparison has been made between using chlorhexidine preparations with alcohol and povidone-iodine in alcohol to prepare clean skin (Unresolved issue).
4. No recommendation can be made for the safety or efficacy of chlorhexidine in infants aged <2 months (Unresolved issue).
5. Antiseptics should be allowed to dry according to the manufacturer's recommendation prior to placing the catheter [1B].

# VI - Catheter site dressings (1)

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1. Use either sterile gauze or sterile, transparent, semipermeable dressing to cover the catheter site [1A].
2. If the patient is diaphoretic or if the site is bleeding or oozing, use a gauze dressing until this is resolved [II].
3. Replace catheter site dressing if the dressing becomes damp, loosened, or visibly soiled [1B].
4. Do not use topical antibiotic ointment or creams on insertion sites, **except for dialysis catheters**, because of their potential to promote fungal infections and antimicrobial resistance [1B].
5. Do not submerge the catheter or catheter site in water. Showering should be permitted if precautions can be taken to reduce the likelihood of introducing organisms into the catheter (e.g., if the catheter and connecting device are protected with an impermeable cover during the shower) [1B].

# Catheter site dressings (2)

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6. Replace dressings used on short-term CVC sites **every 2 days for gauze dressings.** [II]
7. Replace dressings used on short-term CVC sites **at least every 7 days for transparent dressings**, except in those pediatric patients in which the risk for dislodging the catheter may outweigh the benefit of changing the dressing [1B].
8. Replace transparent dressings used on tunneled or implanted CVC sites no more than once per week (unless the dressing is soiled or loose), until the insertion site has healed. [II]
9. No recommendation can be made regarding the necessity for any dressing on well-healed exit sites of long-term cuffed and tunneled CVCs (Unresolved issue)
10. Ensure that catheter site care is compatible with the catheter material [1B].
11. Use a sterile sleeve for all pulmonary artery catheters [1B].

# Catheter site dressings (3)

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12. Use a chlorhexidine-impregnated sponge dressing for temporary short-term catheters in patients older than 2 months of age if the CLABSI rate is not decreasing despite adherence to basic prevention measures, including education and training, appropriate use of chlorhexidine for skin antisepsis, and MSB [1B].
13. No recommendation is made for other types of chlorhexidine dressings (Unresolved issue).
14. Monitor the catheter sites visually when changing the dressing or by palpation through an intact dressing on a regular basis, depending on the clinical situation of the individual patient. If patients have tenderness at the insertion site, fever without obvious source, or other manifestations suggesting local or bloodstream infection, the dressing should be removed to allow thorough examination of the site [1B].
15. Encourage patients to report any changes in their catheter site or any new discomfort to their provider. [II]

# VII – Additional preventive measures

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## 1. Patient Cleansing

- Use a 2% chlorhexidine wash for daily skin cleansing to reduce CRBSI [II].

## 2. Catheter Securement Devices

- Use a sutureless securement device to reduce the risk of infection for intravascular catheters [II].

## 3. Antimicrobial/Antiseptic Impregnated Catheters and Cuffs

- Use a chlorhexidine/silver sulfadiazine or minocycline/rifampin - impregnated CVC in patients whose catheter is expected to remain in place >5 days if, after successful implementation of a comprehensive strategy to reduce rates of CLABSI, the CLABSI rate is not decreasing. The comprehensive strategy should include at least the following three components: educating persons who insert and maintain catheters, use of maximal sterile barrier precautions, and a >0.5% chlorhexidine preparation with alcohol for skin antisepsis during CVC insertion [1A].

## 4. Antibiotic Lock Prophylaxis, Antimicrobial Catheter Flush and Catheter Lock Prophylaxis

- Use prophylactic antimicrobial lock solution in patients with long term catheters who have a history of multiple CRBSI despite optimal maximal adherence to aseptic technique [II].

## VIII – Replacement of catheters

### (1) Peripheral catheters

1. There is *no need to replace peripheral catheters more frequently than every 72-96 hours* to reduce risk of infection and phlebitis in adults [1B].
2. No recommendation is made regarding replacement of peripheral catheters **in adults only when clinically indicated (Unresolved issue)**.
3. Replace peripheral catheters in children *only when clinically indicated* [1B].
4. Replace midline catheters only when there is a specific indication [II].

## VIII – Replacement of catheters (2) CVC, PICC, Hemodialysis

1. Do not routinely replace CVCs, PICCs, hemodialysis catheters, or pulmonary artery catheters to prevent catheter-related infections. [IB].
2. 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 [II].
3. Do not use guidewire exchanges routinely for non-tunneled catheters to prevent infection [1B].
4. Do not use guidewire exchanges to replace a non-tunneled catheter suspected of infection [1B].
5. Use a guidewire exchange to replace a malfunctioning non-tunneled catheter if no evidence of infection is present [1B].
6. Use new sterile gloves before handling the new catheter when guidewire exchange is performed [II].

# IX - Peripheral Arterial Catheters and Pressure Monitoring Devices (1)

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1. In adults, use of the **radial, brachial or dorsalis pedis sites** is preferred over the femoral or axillary sites of insertion to reduce the risk of infection [1B].
2. In *children*, the brachial site should **not** be used. The radial, dorsalis pedis, and posterior tibial sites are preferred over the femoral or axillary sites of insertion [II].
3. A minimum of a cap, mask, sterile gloves and a small sterile fenestrated drape should be used during peripheral arterial catheter insertion [1B].
4. **During axillary or femoral artery catheter insertion, maximal sterile barriers precautions should be used [II].**
5. Replace arterial catheters **only when there is a clinical indication** [II].
6. Remove the arterial catheter as soon as it is no longer needed [II].
7. Do not routinely replace arterial catheters to prevent catheter-related infections [II].

# IX - Peripheral Arterial Catheters and Pressure Monitoring Devices (2)

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1. Use disposable, rather than reusable, transducer assemblies when possible [1B].
2. Replace disposable or reusable transducers at **96-hour intervals**. Replace other components of the system (including the tubing, continuous-flush device, and flush solution) at the time the transducer is replaced [1B].
3. Keep all components of the pressure monitoring system (including calibration devices and flush solution) sterile [1A].
4. **Minimize the number of manipulations of and entries into the pressure monitoring system.** Use a closed flush system (i.e, continuous flush), rather than an open system (i.e, one that requires a syringe and stopcock), to maintain the patency of the pressure monitoring catheters [II].
5. When the pressure monitoring system is accessed through a diaphragm, rather than a stopcock, *scrub the diaphragm with an appropriate antiseptic before accessing the system* [1A].
6. Do not administer dextrose-containing solutions or parenteral nutrition fluids through the pressure monitoring circuit [1A]. Category IA
7. Sterilize reusable transducers according to the manufacturers' instructions if the use of disposable transducers is not feasible [1A].

# X – Replacement of administration sets

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1. In patients not receiving blood, blood products or fat emulsions, replace administration sets *that are continuously used*, including secondary sets and add-on devices, no more frequently than at 96-hour intervals, [177] but at least every 7 days [1A].
2. No recommendation can be made regarding the frequency for replacing *intermittently used* administration sets (Unresolved issue).
3. No recommendation can be made regarding the frequency for replacing needles to access implantable ports (Unresolved issue).
4. Replace tubing used to administer blood, blood products, or fat emulsions within 24 hours of initiating the infusion [1B].
5. Replace tubing used to administer propofol infusions every 6 or 12 hours, when the vial is changed, per the manufacturer's recommendation (FDA website Medwatch) [1A].
6. No recommendation can be made regarding the length of time a needle used to access implanted ports can remain in place (Unresolved issue).

# XI – Needleless iv Catheter system

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1. Change the needleless components at least as frequently as the administration set [II].
2. Change needleless connectors no more frequently than every 72 hours or according to manufacturers' recommendations for the purpose of reducing infection rates [II].
3. Ensure that all components of the system are compatible to minimize leaks and breaks in the system [II].
4. Minimize contamination risk by scrubbing the access port with an appropriate antiseptic (chlorhexidine, povidone iodine, an iodophor, or 70% alcohol) and accessing the port only with sterile devices [1A].
5. Use a needleless system to access IV tubing [1C].
6. When needleless systems are used, a split septum valve may be preferred over some mechanical valves due to increased risk of infection with the mechanical valves [II].

## XII – Performance Improvement

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- Use hospital-specific or collaborative-based performance improvement initiatives in which **multifaceted strategies are "bundled" together to improve compliance** with evidence-based recommended practices [Category IB ].

# La check-list HAS CVC

Groupe de travail : HAS et représentation des sociétés savantes et organisations professionnelles d'anesthésie, réanimation, chirurgie vasculaire, néphrologie, hématologie, oncologie, nutrition parentérale, d'infectiologie et d'hygiène hospitalière

# La Check-list de l'HAS (1)

## A – Informations de base

<b>Identification du patient</b> <i>Etiquette du patient ou Nom, Prénom Date de naissance</i>	Date : ..... <b>Lieu de mise en place :</b> ..... ..... <b>Urgence</b> OUI <input type="checkbox"/> NON <input type="checkbox"/>	<b>Opérateur</b> Nom .....  Si junior, encadré par..... <b>Check-list renseignée par</b> .....
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### Type de matériel

- CVC
- CVC tunnelisé
- CVC Dialyse
- CVC bioactif
- Chambre implantable
- Autres (PICC...)

### Voie d'abord vasculaire

(Autres renseignements utiles)

# La Check-list HAS (2)

## B - Avant / Pendant la pose

Avant la mise en place	Pendant la mise en place
• Identité du patient vérifiée OUI <input type="checkbox"/> NON <input type="checkbox"/>	• <b>Procédures d'hygiène</b>
• Patient / famille informé OUI <input type="checkbox"/> NON <input type="checkbox"/>	- Détersior/désinfection avec antiseptique alcoolique OUI <input type="checkbox"/> NON <input type="checkbox"/>
• <b>Evaluation des risques</b> <i>( Risque hémorragique, allergie, contre-indications anatomique ou pathologique )</i>	- Conditions d'asepsie chirurgicale OUI <input type="checkbox"/> NON <input type="checkbox"/>
• Choix argumenté du site d'insertion OUI <input type="checkbox"/> NON <input type="checkbox"/>	• <b>Vérifications per opératoires des matériels</b>
• Choix concerté du matériel OUI <input type="checkbox"/> NON <input type="checkbox"/>	➢ <b>Mécanique</b> - Solidité des connexions OUI <input type="checkbox"/> NON <input type="checkbox"/> - Etanchéité du système OUI <input type="checkbox"/> NON <input type="checkbox"/>
• Préparation cutanée appropriée OUI <input type="checkbox"/> NON <input type="checkbox"/>	➢ <b>Positionnelle</b> - Extrémité du cathéter OUI <input type="checkbox"/> NON <input type="checkbox"/>
• Monitorage approprié OUI <input type="checkbox"/> NON <input type="checkbox"/>	➢ <b>Fonctionnelle</b> - Reflux sanguin OUI <input type="checkbox"/> NON <input type="checkbox"/> - Système perméable OUI <input type="checkbox"/> NON <input type="checkbox"/>
• Vérification du matériel <i>(Date de péremption, intégrité de l'emballage)</i>	• <b>Vérification de la fixation du dispositif</b> OUI <input type="checkbox"/> NON <input type="checkbox"/>
• Echographie OUI <input type="checkbox"/> NON <input type="checkbox"/>	• <b>Pose d'un pansement occlusif</b> OUI <input type="checkbox"/> NON <input type="checkbox"/>
	• <b>Si utilisation différée, fermeture du dispositif</b> , en accord avec la procédure locale OUI <input type="checkbox"/> NON <input type="checkbox"/>

# Check-list HAS

## C - Après la pose

## Après la mise en place

- **Contrôle CVC/DV**
    - Position du CVC vérifiée OUI  NON
    - Recherche de complication. OUI  NON
  - **Traçabilité / compte rendu** OUI  NON   
*(Matériel, technique, nombre de ponctions, incident).*
  - **Prescriptions pour le suivi après pose** OUI  NON
  - **Documents remis au patient** OUI  NON

**Commentaire (en cas de réponse négative):**

CETTE CHECK-LIST N'EST PAS EXHAUSTIVE (ET CE D'AUTANT QU'ELLE CONCERNE DIFFÉRENTES SPÉCIALITÉS ET MODES D'UTILISATION DES ABORDS VASCULAIRES CENTRAUX), C'EST POURQUOI **TOUTES MODIFICATIONS SONT ENCOURAGÉES POUR S'ADAPTER AUX PRATIQUES SPÉCIFIQUES DE VOTRE SPÉCIALITÉ OU DE VOTRE ÉTABLISSEMENT**. NÉANMOINS, SELON L'AVIS DU GROUPE DE TRAVAIL, TOUTE GRILLE COMPORTANT UNE RÉDUCTION OU UN ÉLARGISSEMENT DES CRITÈRES VÉRIFIÉS **DEVRAIT COMPORTER TOUS LES ITEMS EN ROUGE**.

# Les objectifs quantifiés nationaux pour 2013

- Objectif principal: Améliorer la prévention des infections associées aux actes invasifs
  - 1. *le taux d'incidence\* des bactériémies associées aux cathéters veineux centraux (CVC) en réanimation (p. 1000 jours d'exposition) a diminué d'un quart [base: REA RAISIN 2008]*
    - En 2012, l'incidence des bactériémies associées aux CVC en réanimation reste inférieure à 1/1000 jours-catheters
  - 2. l'incidence des ISO pour 100 interventions cibles à faible risque (NNIS 0-1) en chirurgie programmée a diminué de 25%
  - 3. l'incidence des AES pour 100 admissions dans les EtS a baissé de 25%

*The US Dept HHS HAI Plan targets a 50% decrease in the rate of BSIs among patients with central lines within 5 years, including in non-ICU settings.*

# Mission impossible ?

## Mieux que Pronovost !?

- une incidence globale croissante depuis 2004

Incidence globale	2004	2005	2006	2007
Incidence BLC /1000 J cvc	0,70	0,72	0,81	0,97

- un P75 qui augmente aussi

Distribution des services selon le taux de BLC / 1000 JH de 2004 à 2007

Année	N serv	Moy.	+/-ds	Min.	P25	Méd.	P75	Max.
2007	165	0,97	1,40	0,00	0,00	0,47	1,50	8,23
2006	158	0,89	1,42	0,00	0,00	0,00	1,45	9,07
2005	151	0,68	1,31	0,00	0,00	0,00	1,04	6,27
2004	133	0,84	1,60	0,00	0,00	0,00	1,16	10,53

Objectif = équivaut à retrouver le niveau de 2004 !



A. Savey, CCSE

# CVC en dehors des réanimations

Characteristic	Wards	ICUs
Patients with CVCs, <sup>a</sup> %		
Estimate 1 [12]     USA	24	55
Estimate 2 [20]     Germany	5	69
CVC insertion site, % [12]		
Femoral	3	14
Internal jugular	17	33
Subclavian	61	47
Peripherally inserted	20	6
CVC types, % [12]		
Nontunneled	33	74
Peripherally inserted, tunneled, or totally implanted	67	26
Duration of CVC use, median days (IQR) [13]	6 (3–15) <sup>b</sup> 8 (4–14) <sup>c</sup>	3 (2–6)
Pooled mean CVC utilization ratio <sup>d</sup> [11]		
Medical-surgical units	0.16	0.39–0.59
Medical units	0.20	0.45–0.61
Surgical units	0.20	0.59
Pooled mean CLABSI rate, cases per 1000 CLDs <sup>e</sup> [11]		
Medical-surgical units	1.2	1.5–2.1
Medical units	1.5	1.9–2.6
Surgical units	1.4	2.3

# CVC en dehors des réanimations

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- As successes are being realized in preventing CABSIs in ICUs, it is now recognized that a substantial number of these infections occur outside the ICU.
- it will be necessary to delineate effective CVC maintenance bundles,
- However, as rates of CABI have decreased over the past decade, studying novel interventions to reduce these infections has become more challenging.
- Given the low infection rates that have been achieved in ICUs when recommended prevention methods have been instituted, substantial effort now needs to be focused not only on evaluating these interventions further but on expanding strategies to promote adherence to proven interventions, particularly in non-ICU settings.

AJ. Kallen, PR. Patel & NP. O'Grady. Preventing Catheter-Related Bloodstream Infections outside the Intensive Care Unit: Expanding Prevention to New Settings. CID 2010; 51: 335-41.

# Conclusions

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- Un ensemble limité de méthodes « basiques » sont d'efficacité reconnue pour réduire sensiblement le taux des infections de cathéters veineux centraux
- La surveillance, la révision périodique et la mise à jour des **procédures** et la **formation des personnels** sont essentielles
- Ainsi que la vérification de **l'observance des pratiques** et de l'application des recommandations (check-list, audits)
- Si le taux d'infection reste « élevé » malgré l'**application correcte (et vérifiée) des méthodes efficaces**, ou dans des **groupes particuliers à haut risque**, il est possible de recourir aux:
  - Cathéters imprégnés d'antimicrobiens
  - Patch imprégné d'antiseptiques