



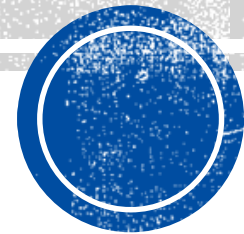
1^{er} au 3 juin 2022

XXXII^e Congrès National de la Société
Française d'Hygiène Hospitalière

ACCÈS VASCULAIRES

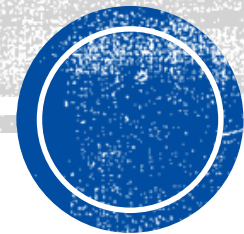
BEST OF LITTÉRATURE

Yolène CARRE – IDE EOH CHU Bordeaux





ANTISEPSIE




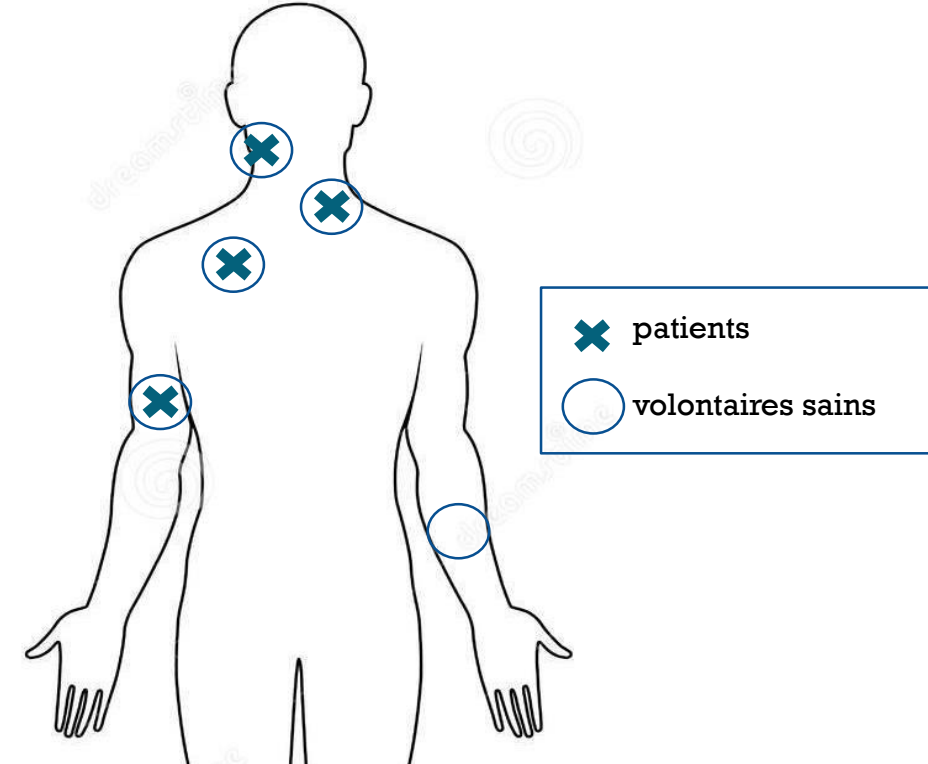
COLONISATION CUTANÉE



- Journal of Infection Prevention – 2019
- Etude observationnelle - Australie
- **Objectif :**
 - Mesurer la colonisation cutanée sur des sites de pose de KT
 - Effet pansement sur colonisation cutanée
- **Prélèvements :** Ecouvillonnage cutané
 - 48 patients (24 service de médecine/chirurgie & 24 USI)
 - Durée séjour 10j (7-17)
 - 10 volontaires sains
- **Résultats :**
 - Colonisation cutanée significativement plus élevée ⇒ Milieu cou, base du cou et avant bras
 - Pas de différence de colonisation entre patient et volontaires sains
 - Colonisation sous le pansement transparente inférieure (non significatif) vs extérieur pansement.

Evaluation of Skin Colonisation And Placement of vascular access device Exit sites (ESCAPE Study)

Nancy L Moureau¹ , Nicole Marsh², Li Zhang³, Michelle J Bauer³, Emily Larsen³, Gabor Mihala⁴, Amanda Corley^{3,5}, India Lye^{3,5}, Marie Cooke³ and Claire M Rickard^{3,6}



CHOIX ATS

- The Lancet – juillet 2021
- Etude Randomisée contrôlée
- France – 9 établissements public et 1 privé
 - 8 établissements adultes et 2 pédiatriques
- **Objectif :**
 - Comparaison Cloraprep vs Betadine Alcoolique multidose
 - Comparaison 2 montages : Nexiva + Maxplus vs Insyte Autoguard + prolongateur 3 voies



- **Conclusions auteurs :**
 - Chlorexidine permet une meilleure protection des complications infectieuses liées aux CVP que la PVPI
 - Nexiva + Maxplus permet augmenter durée maintien CVP sans complication

Chlorhexidine plus alcohol versus povidone iodine plus alcohol, combined or not with innovative devices, for prevention of short-term peripheral venous catheter infection and failure (CLEAN 3 study): an investigator-initiated, open-label, single centre, randomised-controlled, two-by-two factorial trial

*Jérémy Guenezan, Nicolas Marjanovic, Bertrand Drugeon, Rodérick O'Neill, Evelyne Liuu, France Roblot, Paola Palazzo, Vanessa Bironneau, Frederique Prevost, Julie Paul, Maxime Pichon, Matthieu Boisson, Denis Frasca, Olivier Mimoz, on behalf of the CLEAN-3 trial investigators**



CHOIX ATS

Chlorhexidine plus alcohol versus povidone iodine plus alcohol, combined or not with innovative devices, for prevention of short-term peripheral venous catheter infection

Financement : Becton Dickinson

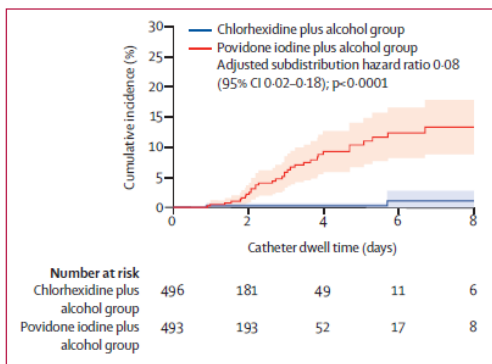


Figure 2: Cumulative incidence and adjusted subdistribution hazard ratio for catheter-related infectious complications by antiseptic group allocation

« Complications infectieuses » : principalement colonisation cathéters

Lien entre colonisation KT et infection ??

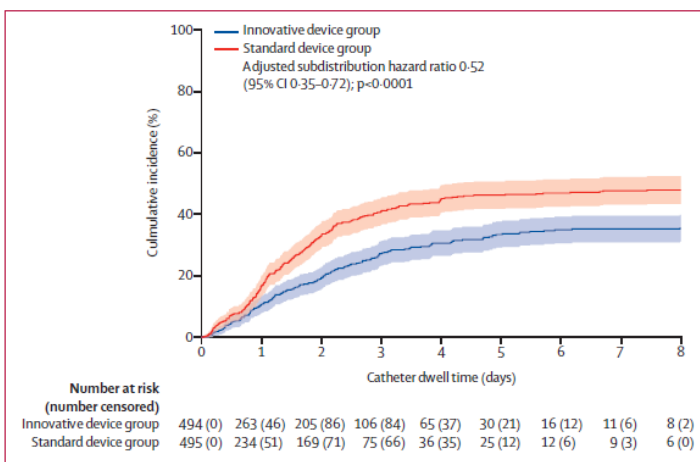


Figure 3: Cumulative incidence and adjusted subdistribution hazard ratio for catheter removal due to catheter failure by device group allocation

Intérêt montage innovant pour durée de maintien cathéter ?

Motif retrait non exhaustif : proportion retrait pour fin ttt ? Seulement « incident ».

	Entire population (n=989)	Antiseptic groups		Adjusted relative risk	Device groups		Adjusted relative risk
		CHG group (n=496)	PVI group (n=493)		Innovation group (n=494)	Standard group (n=495)	
Infectious complications							
Catheter colonisation*	74/846 (9%)	4/431 (1%)	70/415 (17%)	0.06 (0.05 to 0.06)	42/431 (10%)	32/415 (8%)	1.11 (0.77 to 1.67)
Local infection	6 (1%)	0	6 (1%)	0.45 (0.26 to 0.99)	2 (<1%)	4 (1%)	0.48 (0.34 to 1.43)
Catheter-related bloodstream infections	0	0	0	..	0	0	..
All-causes bloodstream infections	21 (2%)	8 (2%)	13 (3%)	0.59 (0.40 to 1.07)	9 (2%)	12 (2%)	0.71 (0.48 to 1.43)
Non-infectious complications							
Infiltration	153 (16%)	79 (16%)	74 (15%)	1.07 (0.83 to 1.43)	71 (14%)	82 (17%)	0.71 (0.50 to 1.43)
Occlusion	64 (7%)	36 (7%)	28 (6%)	1.11 (0.48 to 1.91)	20 (4%)	44 (9%)	0.48 (0.32 to 0.98)
Dislodgment	161 (16%)	73 (15%)	88 (18%)	0.83 (0.67 to 1.67)	67 (14%)	94 (19%)	0.63 (0.53 to 0.91)
Phlebitis	23 (2%)	8 (2%)	15 (3%)	0.48 (0.34 to 1.03)	12 (2%)	11 (2%)	1.01 (0.45 to 2.33)
Patient-related outcomes							
	0 (0 to 2)	0 (0 to 2)	0 (0 to 2)	..	0 (0 to 2)	0 (0 to 2)	..
	0 (0 to 2)	0 (0 to 2)	0 (0 to 2)	..	0 (0 to 2)	0 (0 to 2)	..
	9 (8 to 10)	9 (8 to 10)	10 (8 to 10)	-1 (-2 to 0)†	10 (8 to 10)	9 (8 to 10)	1 (0 to 1)†
	16 (2%)	9 (2%)	7 (1%)	1.06 (0.77 to 1.35)	8 (2%)	8 (2%)	0.91 (0.83 to 1.11)
	0	0	0	..	0	0	..
	6 (3 to 11)	6 (3 to 11)	6 (3 to 10)	0 (-1 to 0)†	6 (3 to 11)	6 (3 to 11)	0 (-1 to 0)†

(%), n/N (%), or [95% CI]. CHG=2% alcoholic chlorhexidine. PVI=5% alcoholic povidone iodine. Complications are described twice, once in the antiseptic groups columns and once in the device groups columns. * Only 846 catheter tips were cultured. † These are adjusted mean difference.

Table 3: Secondary outcomes

A l'exception colonisation KT, IC comprend la valeur 1

TECHNIQUE APPLICATION ATS



- Journal of infection – 2019
- Etude Randomisée - France
- **Objectif**
 - Evaluer le nombre de MO avant/après application ATS selon 2 méthodes : escargot / aller-retour
- **Méthode**
 - Ecouvillonnage cutané
 - Avant bras
 - 132 volontaires sains
- **Résultats**
 - Pas de différence de réduction MO entre les 2 techniques après 30 sec séchage
 - Pas de corrélation entre type de vêtement et colonisation
 - Pas de corrélation entre délai depuis la douche et colonisation

Randomized study of antiseptic application technique in healthy volunteers before vascular access insertion (TApAS trial)

Yolène Carre^{a,*}, Bertrand Moal^b, Christine Germain^b, Eric Frison^b, Marielle Dubreuil^c, Céline Chansel^d, Valérie Berger^e, Hélène Boulestreau^a, Agnès Lasheras-Bauduin^a, Anne-Marie Rogues^{a,c}

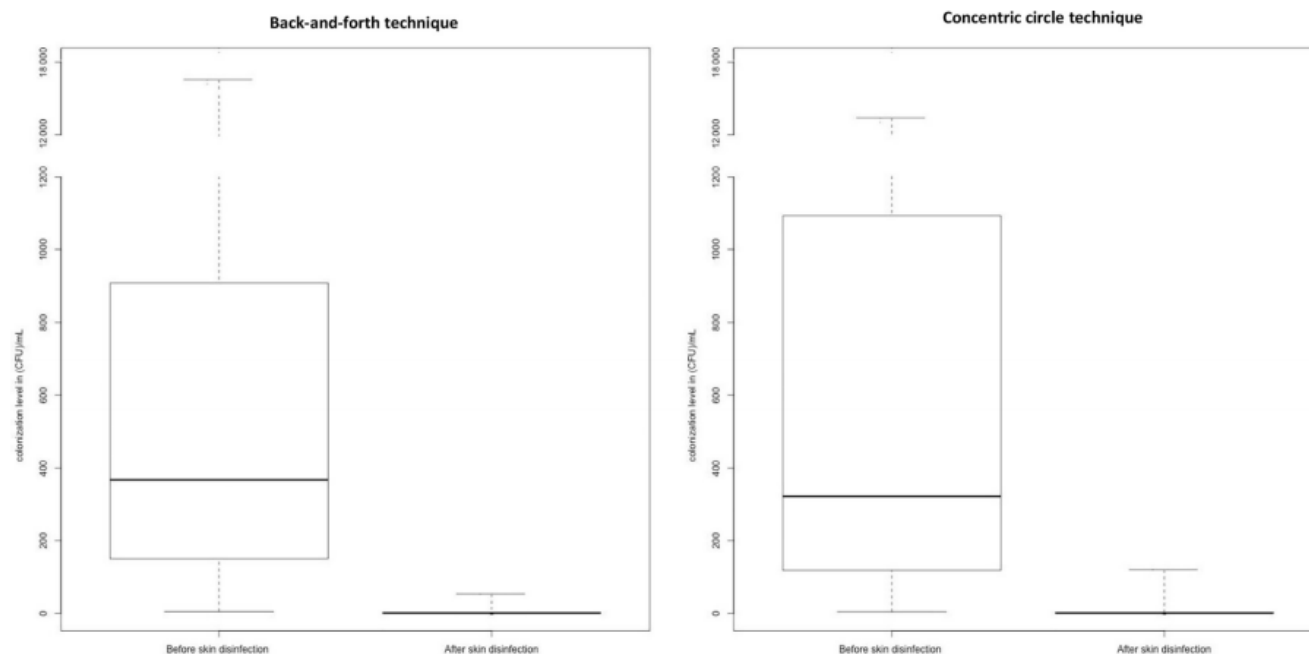


Fig. 6. cutaneous colonization before and after antiseptic application depending on application technique (concentric circle or back-and-forth) - TApAS trial.

Table 4

Bacterial growth before arm skin disinfection depending on sleeve fabric and length - TApAS trial.

Variable (log ₁₀ FCU/ml)	Coton	Synthetic fabric	Other fabric	Short sleeve	All
Initial sample					
N (m.d.)	68 (2)	137 (5)	11 (1)	40 (0)	256 (8)
Mean (SD)	2,78 (0,9)	2,66 (0,9)	2,73 (0,9)	2,54 (0,5)	2,67 (0,8)
m.d. = Mean Deviation; % = percentage; SD = Standard Deviation					





LIGNE DE PERFUSION



Insights on catheter-related bloodstream infections: a prospective observational study on the catheter colonization and multidrug resistance

M. Pinto^a, V. Borges^a, M. Nascimento^b, F. Martins^c, M.A. Pessanha^d, I. Faria^d, J. Rodrigues^e, R. Matias^e, J.P. Gomes^a, L. Jordao^{b,*}

- Journal Hospital Infection – 2022
- Etude transversale observationnelle.
 - Multicentrique - Lisbonne
 - Mars 2017 - Fev 2020
- **Objectif**
 - Identifier MO responsable BLC
 - Identifier la colonisation des KT CVC
- **Méthode**
 - Hémoculture et culture CVC
 - Séquençage génomique : comparaison génotype ST sur les différents prélèvements du patient



Insights on catheter-related bloodstream infections: a prospective observational study on the catheter colonization and multidrug resistance

M. Pinto^a, V. Borges^a, M. Nascimento^b, F. Martins^c, M.A. Pessanha^d, I. Faria^d, J. Rodrigues^e, R. Matias^e, J.P. Gomes^a, L. Jordao^{b,*}

Résultats

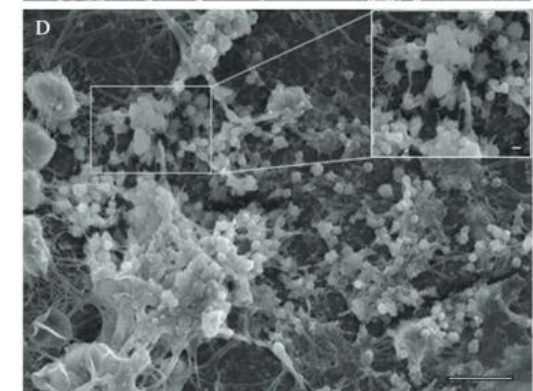
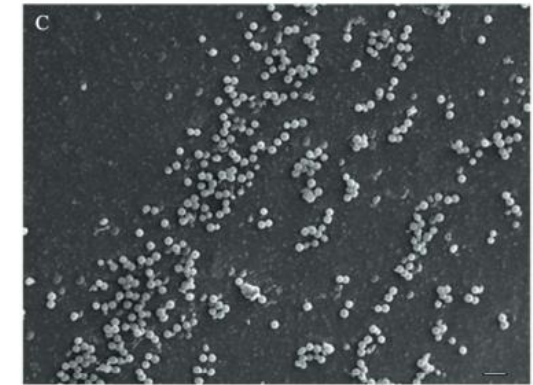
- MO responsable de BLC ⇒ Staphylococcus
- Correspondance génétique des paires hémoc/culture CVC
 - 19/20 paires *S.epidermidis*
 - 15/15 paires *S. aureus*
- Génotype ST
 - 10/19 ST différentes sur les *S.epidermidis*
 - Dont 2 identifiées dans 2/3 établissements
 - Et 1 identifiée chez 2 patients différents du même établissement
 - 15/15 ST différentes sur les *S. aureus*
- Biofilm (culture 35 CVC)
 - Présence de biofilm sur 17/35
 - Surface endoluminale ++
 - Pas de corrélation entre biofilm CVC et BLC ⇒ $X^2 = 0,305$; $p=0,581$

Table 1

Distribution of catheter-related bloodstream infections (CRBSIs) and aetiological agents by hospital

Aetiological agent(s)	CRBSIs			
	Hospital A	Hospital B	Hospital C	Overall
<i>S. aureus</i>	6 (40 %)	4 (28.5%)	4 (13.8%)	14 (24.1%)
<i>S. epidermidis</i>	3 (20%)	5 (35.7%)	13 (44.8%)	21 (36.2%)
<i>S. haemolyticus</i>		1 (7.1%)		1 (1.7%)
<i>K. pneumoniae</i>	3 (20%)	1 (7.1%)	6 (20.7%)	10 (17.2%)
<i>P. aeruginosa</i>			2 (6.9%)	2 (3.4%)
<i>Enterococcus faecalis</i>	1 (6.7%)			1 (1.7%)
<i>Serratia marcescens</i>	1 (6.7%)			1 (1.7%)
<i>Candida glabrata</i>			1 (3.4%)	1 (1.7%)
<i>Candida parapsilosis</i>		2 (14.3%)	1 (3.4%)	3 (5.1%)
<i>K. pneumoniae, S. epidermidis</i>			1 (3.4%)	1 (1.7%)
<i>S. marcescens, E. faecalis</i>		1 (6.7%)		1 (1.7%)
<i>S. marcescens, P. aeruginosa</i>	1 (6.7%)			1 (1.7%)
<i>E. cloacae, C. parapsilosis</i>			1 (3.4%)	1 (1.7%)
Total	15 (25.9%)	14 (24.1%)	29 (50.0%)	58 (100%)

Surface extraluminale



Surface endoluminale



CAPUCHONS IMPREGNES

Antiseptic barrier caps in central line-associated bloodstream infections: A systematic review and meta-analysis

Sofía Tejada ^{a,b,1,*}, Marta Leal-dos-Santos ^{c,1}, Yolanda Peña-López ^{a,d}, Stijn Blot ^{e,f}, Emine Alp ^g, Jordi Rello ^{a,b,h}

- European Journal of Internal Medicine – 2022
- Revue systématique et Meta-analyse.
- **Objectif** : évaluer l'intérêt des capuchons imprégnés vs désinfection manuelle dans la prévention des BLC

▪ Méthode

- PRISMA
- 2011-2021

Table 1
Main characteristics of included studies.

Study	Location	Type of study	Control Length, months	Type	Intervention Length, months	Type	Type of Line
Inchingolo 2018 [21]	Italy	RCT	9	2% CHG wipe	9	Alcohol impregnated cap (Curo)®	CVAD and PICC
Rickard 2021 [30]	Australia	RCT	1	70% alcohol wipe + 2% CHG in 70% IPA	1	Alcohol impregnated cap (SwabCap)	CVAD
Wright 2013 [29]	USA	Non-RCT	3–6	70% alcohol wipe	6	Alcohol impregnated cap (SwabCap)	CVAD and PICC
Ramirez 2012 [26]	USA	Pre/post interventional study	12	70% alcohol wipe	12	Alcohol impregnated cap (Curo)®	CVAD
Sweet 2012 [28]	USA	Pre/post interventional study	12	70% alcohol wipe	6	Alcohol impregnated cap (Curo)®	CVAD and PICC
DeVries 2014 [19]	USA	Pre/post interventional study	21	70% alcohol wipe	21	Alcohol impregnated cap (SwabCap)	CVAD and PICC
Merrill 2014 [24]	USA	Pre/post interventional study	12	70% alcohol wipe	12	Alcohol impregnated cap (Curo)®	CVAD
Stango 2014 [27]	USA	Pre/post interventional study	21	70% alcohol wipe	21	Alcohol impregnated cap (SwabCap)	CVAD and PICC
Kamboj 2015 [22]	USA	Pre/post interventional study	16	70% alcohol wipe	16	Alcohol impregnated cap	CVAD
Cameron-Watson 2016 [17]	UK	Pre/post interventional study	6	70% alcohol wipe	6	Alcohol impregnated cap (Curo)®	CVAD, PICC, PIV, arterial catheter ¹
Pavia and Mazza 2016 [25]	USA	Pre/post interventional study	18	70% alcohol wipe	3	Alcohol impregnated cap	CVAD
Martino 2017 [23]	USA	Pre/post interventional study	6	70% alcohol wipe	24	Alcohol impregnated cap (Curo)®	CVAD
Cooney 2020 [18]	USA	Pre/post interventional study	60	CHG or 70% alcohol wipe	60	Alcohol impregnated cap	CVAD
Helder 2020 [20]	Netherlands	Pre/post interventional study	24	70% alcohol + 10% IPA wipes	12	Alcohol impregnated cap (Curo)®	CVAD, PICC and PIV ²

¹number of arterial catheters was not reported. ² PIV results were excluded as it did not constitute a central venous access device

CHG: chlorhexidine gluconate; CVAD: central venous access device; IPA: isopropyl alcohol; PICC: peripherally inserted central catheter; PIV: peripheral intravenous access; RCT: Randomized controlled trial.



Curo®



Swabcap®



Antiseptic barrier caps in central line-associated bloodstream infections: A systematic review and meta-analysis

Sofía Tejada ^{a,b,1,*}, Marta Leal-dos-Santos ^{c,1}, Yolanda Peña-López ^{a,d}, Stijn Blot ^{e,f}, Emine Alp ^g, Jordi Rello ^{a,b,h}

▪ Résultats

▪ Qualité des études incluses

- Etudes observationnelles : 8 qualité modérée, 4 faible qualité
- Etude randomisées contrôlées : 2/2 risque important de biais.

▪ Hétérogénéité +++ des études

- Variabilité des accès vasculaires ne sont pas les mêmes dans les différentes études
- Variabilité des capuchons
- Variabilité des Valves Bidirectionnelles
 - point non abordé dans l'analyse/discussion

▪ Compliance au protocole rarement précisé.

- si disponible il n'est pas toujours précisé pour les deux bras d'étude (contrôle et intervention)

Highlights

- Antiseptic barrier caps appear to be effective in reducing CLABSI.
- ICU patients, adults, and observational studies associated with significant benefit.
- No benefit in children.
- Compliance with antiseptic barrier cap use was high and costs were lower.
- The real-world impact needs to be confirmed by RCTs.



Modérer conclusion des auteurs

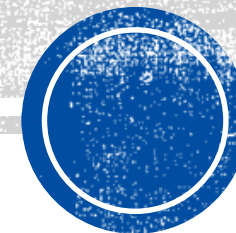


Guide de Mise en Œuvre

Guide de Mise en Œuvre de la Stratégie multimodale de l'OMS
pour la Promotion de l'Hygiène des Mains



**ACTION
MULTIMODALE**



ACTION MULTIMODALE ET KT

- **Essai randomisé par grappe**
 - Multicentrique : 7 Ets Espagne
 - Grappe = service de soin (n=22)
 - Peu de turn-over inter unité pour participer à l'étude
- **Objectif**
 - Évaluer l'efficacité et le coût d'une action multimodale pour la réduction du nombre d'échec de VVP
- **Méthode**
 - Période Janv 2019 – Mars 2020
 - Action multimodale
 - Critère de jugement : échec VVP (= retrait pour complication avant la fin du ttt)

Utilisation plusieurs échelles évaluation CAP, satisfaction, environnement de travail....

**Adaptation de l'intervention
au contexte local selon les résultats**

Multimodal intervention for preventing peripheral intravenous catheter failure in adults (PREBACP): a multicentre, cluster-randomised, controlled trial

Ian Blanco-Mavillard, Joan Ernest de Pedro-Gómez, Miguel Ángel Rodríguez-Calero, Miquel Bennasar-Veny, Gaizka Parra-García, Ismael Fernández-Fernández, Jesús Bujalance-Hoyos, Ana Belén Moya-Suárez, José Luis Cobo-Sánchez, Francisco Ferrer-Cruz, Enrique Castro-Sánchez

Diffusion des information (protocoles, affiches à jour)

- HDM
- Mesures aseptiques (insertion, gestion, retrait KT)

Education

- des professionnels de la santé
elearning et formation présentielle
- des patients (flyers sur les VVP)

Feedback sur les résultats réguliers

Présence de « facilitateurs locaux »

- représentants des patients
- de professionnels de la santé
- IDE chercheurs
- Gestionnaires

ACTION MULTIMOI ET KT



Figure 2: Patients and PIVCs with complete follow-up during the trial, including PIVC failure findings for each cluster
 PIVC=peripheral intravenous catheter.

	Baseline				12 months			
	Intervention group (n=11)	Control group (n=11)	Mean difference (95% CI)	p value	Intervention group (n=11)	Control group (n=11)	Mean difference (95% CI)	p value
Primary outcome: modified intention-to-treat analysis								
PIVC failures	45.30% (1.97)	44.85% (3.02)	0.45% (-1.81 to 2.72)	0.69	37.10% (1.32)	46.49% (2.59)	-9.39% (-11.22 to -7.57)	<0.0001
Relative risk (95% CI)	..	..	..	..	HR 0.81 (0.72 to 0.92)	HR 1.23 (1.09 to 1.39)	..	..
Primary outcome: excluding dislodgement								
PIVC failures	40.28% (4.23)	41.09% (4.54)	-0.80% (-4.70 to 3.10)	0.67	33.47% (2.98)	41.06% (4.62)	-7.59% (-11.05 to -4.13)	<0.0001
Relative risk (95% CI)	..	..	..	..	HR 0.85 (0.75 to 0.96)	HR 1.18 (1.04 to 1.33)	..	..



Flow of adherence to recommendations during the trial.

0-20	21-40	41-60	61-80	81-100
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Flow of process evaluation (adherence of recommendations)

	Intervention									Control								
	% RECs completed	% Patient knowledges related to PIVC	% PIVC adequacy and insertion	% Visual inspection of insertion site	% Dressing type	% Dressing status	% Management of PIVC flushing	% Record of PIVC care	% PIVCs with all REC completed	% RECs completed	% Patient knowledges related to PIVC	% PIVC adequacy and insertion	% Visual inspection of insertion site	% Dressing type	% Dressing status	% Management of PIVC flushing	% Record of PIVC care	% PIVCs with all REC completed
t0 (baseline)	63.9	57.4	54.7	49.4	92.2	57.2	79.5	56.8	7.2	57.7	45.3	54.9	38.8	86.1	45.6	82.7	51	3.9
t1 (1-3 m)	64	56.8	55.3	57.8	88.2	53.8	72.9	63	7.6	59.4	54.2	46.7	43.7	91.9	47.2	80.8	51.5	4.9
t2 (4-6 m)	72	66.7	52.4	71.3	94	66.4	76.5	76.6	13	58	49.4	52.8	45.9	84.9	44.2	77.2	51.4	3.6
t3 (7-9 m)	70	62.2	53.6	64.9	94	60.3	78.4	76.4	10.9	58.7	50.9	49.7	42.2	89.6	46	79.2	53.8	2.9
t4 (10-12 m)	72.9	63.3	54	72.9	97	66.9	79.5	76.8	13.6	60.3	48.2	54.7	49.1	90.3	51.4	74.8	53.7	4.1

t: time period; m: months; REC: Recommendation; PIVC: peripheral intravenous catheter.





COVID



BLC & COVID

- Journal of Hospital infection – 2022
- Etude Rétrospective Monocentrique - Espagne
- **Objectif**
 - Evaluer impact COVID sur incidence BLC
- **Période**
 - Mars – Mai 2019 (pré-pandémie) et 2020 (1^{ère} vague)
- **Résultats**
 - BLC épisode 2019 et 2020 \Rightarrow 24 et 65 (1.98 vs 6.2/1000 admission) ($P < 0.001$)
 - Profil patient
 - 2019 : patient cancérologie
 - 2020 : patient COVID, décubitus ventral ++
 - Type KT
 - 2019 : artériel/tunérisé/CVC (sous clavière)
 - 2020 : CVC (jugulaire)
 - MO
 - 2020 : \uparrow Coag neg staph \Rightarrow dégradation pose et gestion des KT patients COVID

Increase in the frequency of catheter-related bloodstream infections during the COVID-19 pandemic: a plea for control

M.J. Pérez-Granda^{a,b,c,d,*}, C.S. Carrillo^a, P.M. Rabadán^a, M. Valerio^a, M. Olmedo^a, P. Muñoz^{a,b,c,e}, E. Bouza^{a,b,c,e}

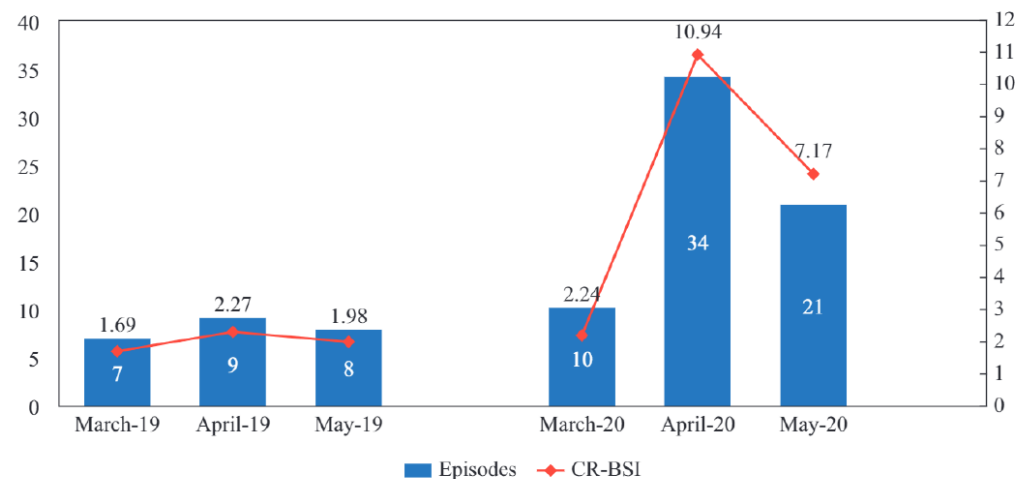


Figure 1. Incidence rate of catheter-related bloodstream infections (CR-BSIs)/1000 admissions during the study periods.

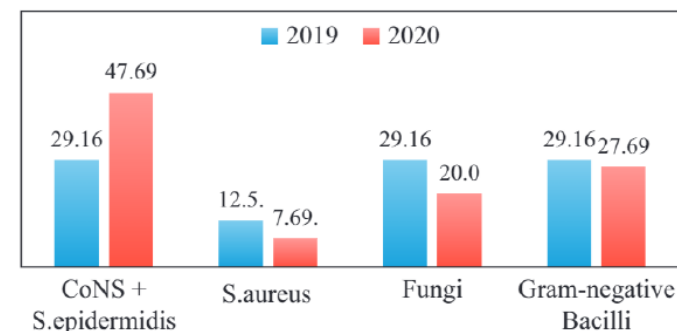


Figure 2. Aetiology of episodes of catheter-related bloodstream infection (CR-BSI). Percentages of micro-organisms causing CR-BSI in 2019 and 2020.





BONUS

Image Courrier Picard –
CHU Amiens



METHODES ETUDES DIV

- BMJ Qual staf– 2019
- DELPHI (3 tours)- International
- **Objectif** Consensus sur un ensemble des données a recueillir dans les recherches DIV



International recommendations for a vascular access minimum dataset: a Delphi consensus-building study

Jessica Schults ^{1,2,3}, Tricia Kleidon ^{2,3}, Vineet Chopra, ⁴ Marie Cooke, ^{1,3} Rebecca Paterson, ³ Amanda J Ullman ^{1,3}, Nicole Marsh, ^{3,5} Gillian Ray-Barruel, ^{1,3,6} Jocelyn Hill, ⁷ İlker Devrim, ⁸ Fredrik Hammarskjöld, ⁹ Mavilde L Pedreira, ¹⁰ Sergio Bertoglio, ¹¹ Gail Egan, ¹² Olivier Mimoz, ¹³ Ton van Boxtel, ¹⁴ Michelle DeVries, ¹⁵ Maria Magalhaes, ¹⁶ Carole Hallam, ¹⁷ Suzanne Oakley, ¹⁸ Claire M Rickard ^{1,3}

Table 3 Vascular access minimum dataset

Patient demographics (n=5)	Insertion items (n=16)	Management items (n=9)	Complication and removal items (n=15)
1. Age	11. Indication	27. Is the device being used?	36. Phlebitis
2. Weight	12. Insertion date and time	28. Site assessment	37. Infiltration and extravasation
3. Gender	13. Number of attempts	29. Lock solution	38. Primary bloodstream infection
4. Diagnostic group	14. Site of insertion	30. Dressing schedule	39. Local infection
5. Patient comorbidities	15. Location of insertion	31. Dressing and securement	40. Dislodgement
Device characteristics (n=5)	16. Inserter designation	32. Blood sampling	41. Thrombosis
6. Device type	17. Technique used	33. Number of other vascular access devices	42. Occlusion
7. Catheter size	18. Technology used	34. Complication identified	43. Internal malposition
8. Catheter length	19. Antisepsis used	35. Use of antithrombotics	44. Fracture
9. Catheter lumen	20. Catheter to vein ratio		45. Catheter-associated skin injury
10. Catheter material	21. Tip position		46. Reason for removal
	22. Tip position confirmation		47. Date time or removal
	23. Pain relief		48. Replacement insertion required
	24. Dressing and securement		49. Length of stay—hospital
	25. Insertion-related adverse event		50. Patient-reported pain/discomfort
	26. Can the patient identify the reason for the device?		



MERCI DE VOTRE ATTENTION

