Le rôle de l'Anesthésiste –Réanimateur dans la prévention de la transmission croisée

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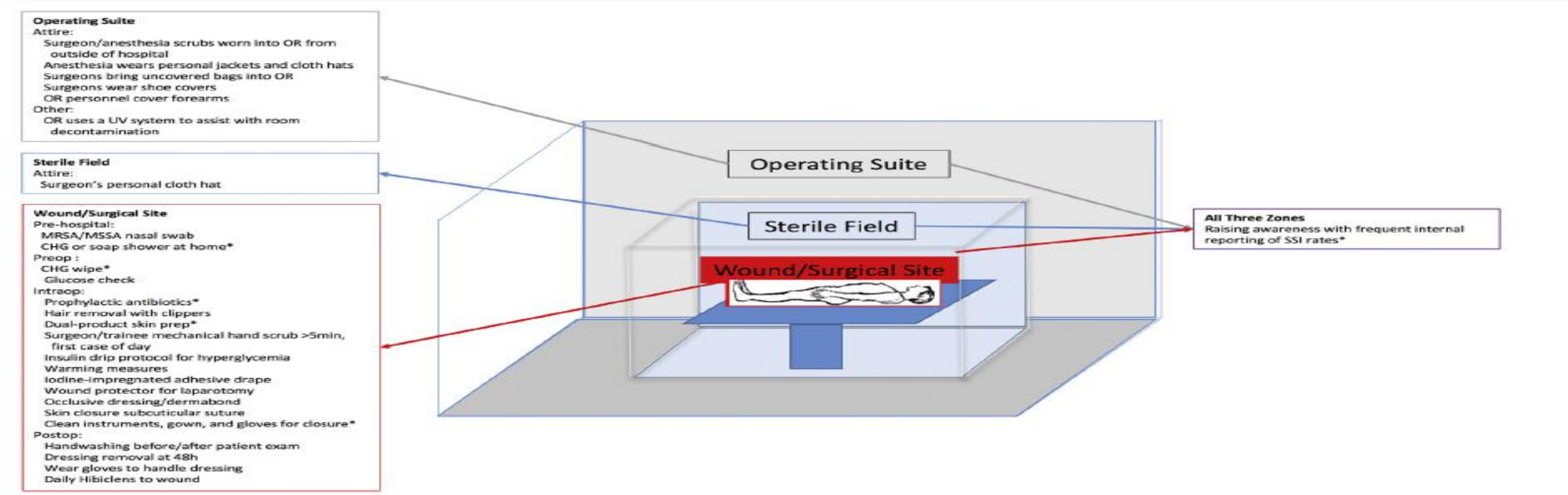
Multi-Institution Analysis of Infection Control Practices Identifies the Subset Associated with Best Surgical Site Infection Performance: A Texas Alliance for Surgical Quality Collaborative Project

Catherine H Davis, MD, MPH, Lillian S Kao, MD, MS, FACS, Jason B Fleming, MD, FACS, Thomas A Aloia, MD, FACS, for the Texas Alliance for Surgical Quality Collaborative

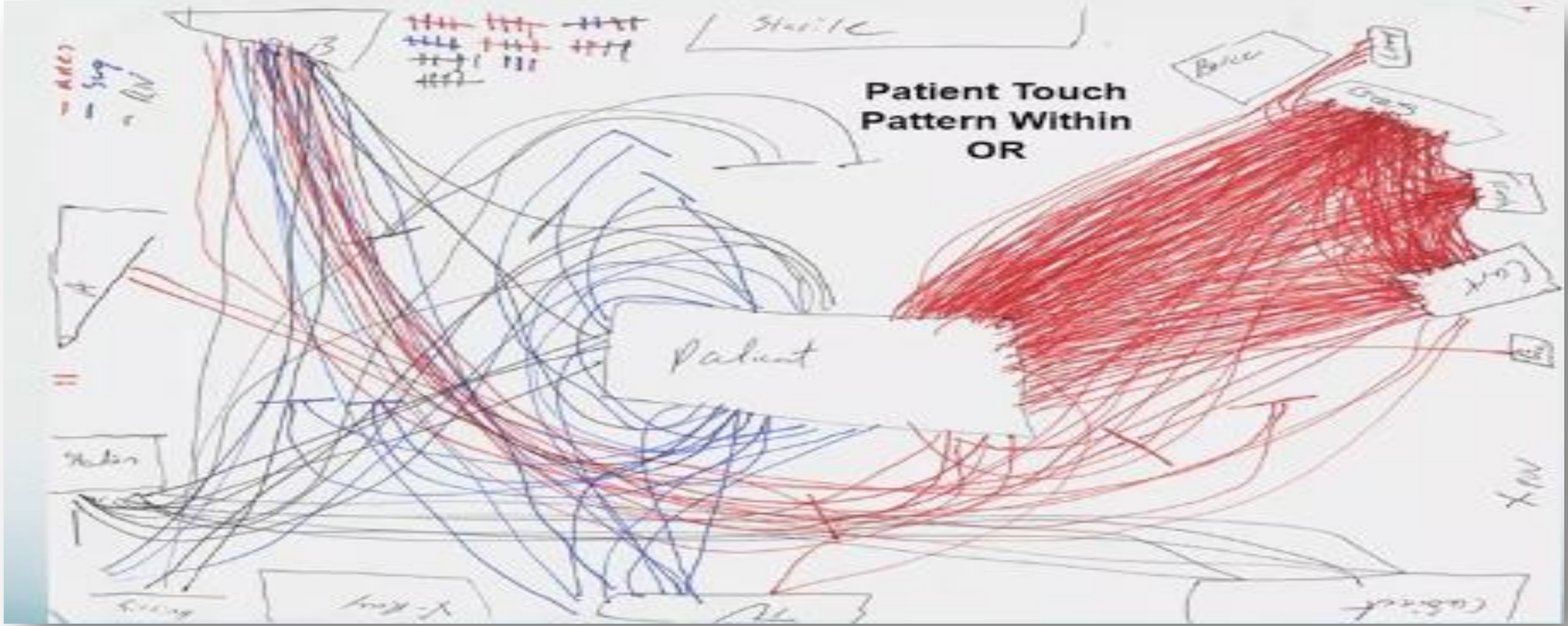
J Am Coll Surg 2017



This analysis suggests that the subset of ICPs that focus on perioperative patient skin and wound hygiene and transparent display of SSI data, not operating room attire policies, correlated with SSI rates.

Un jour en salle d'opération!

Les contacts avec le patient au cours d'une intervention: AR, IDE, Chirurgien



Fecal Patina in the Anesthesia Work Area

L. Silvia Munoz-Price, MD, PhD,* and Robert A. Weinstein, MD†

The anaesthetists' role in perioperative infection control: what is the action plan?

Randy W. Loftus* and Javier H. Campos

BJA 2019

Improved intravascular catheter design and handling

Improved hand hygiene compliance

Improved environmental cleaning

Perioperative patient decolonisation

In conclusion, anaesthetists are well positioned as leaders in patient safety to reduce perioperative bacterial contamination below clinically relevant thresholds. Our success will undoubtedly reduce HAIs and associated antibiotic use, and thwart the evolution of bacterial pathogens towards increasing acquisition of resistance and virulence traits. Our first steps should be to utilise the evidence-based tools and guidelines outlined above to generate sustained, perioperative improvements in intravascular catheter design and handling, improved hand hygiene compliance, improved environmental cleaning, and perioperative patient decolonisation.

Video observation to map hand contact and bacterial transmission in operating rooms

American Journal of Infection Control 42 (2014) 698-701

John Rowlands MD [a], Mark P. Yeager MD [b,*], Michael Beach MD, PhD [c],
Hetal M. Patel BS [a], Bridget C. Huysman BA [a], Randy W. Loftus MD [a]

Fig 1. View of anesthesia work environment from the video recording camera.

Overall compliance rates for hand hygiene (HH) (expressed as number of observed HH events relative to total observed opportunities) during 5 surgical cases requiring general anesthesia

Procedure	Observed HH events	Observed HH opportunities	Compliance rate (%)
Open repair of forearm fracture	4	174	2.3
Lumbar disc excision	7	226	3.1
Metacarpal pin placement	5	185	2.7
Hardware removal from ankle	6	167	3.6
Repair nasal septal deviation	6	200	3
Mean			2.9
Standard error of the mean			0.2

Hand-hygiene practices in the operating theatre: an observational study

BJA

A. C. Krediet[1], C. J. Kalkman[1*], M. J. Bonten[2], A. C. M. Gigengack[3] and P. Barach[1]

Table 1 Interactions between members of staff and patients or OT (operating theatre) implements. Data are presented as *n* (%), per group

Perioperative staff	Patient contact without prior hand hygiene			Potential contamination of OR implements			Total
	>5 times	1–5 times	0 times	>5 times	1–5 times	0 times	
Anaesthesiologist	37 (95%)	2 (5%)	0 (0%)	35 (90%)	1 (3%)	0 (0%)	39
Anaesthesia nurse	33 (94%)	0 (0%)	0 (0%)	35 (100%)	0 (100%)	0 (0%)	35
Surgeon	19 (37%)	17 (32%)	14 (27%)	18 (35%)	27 (52%)	7 (13%)	52
Surgical nurse	1 (2%)	19 (29%)	45 (69%)	18 (28%)	22 (34%)	14 (22%)	65
Medical student	0 (0%)	17 (57%)	13 (43%)	0 (0%)	16 (53%)	14 (47%)	30

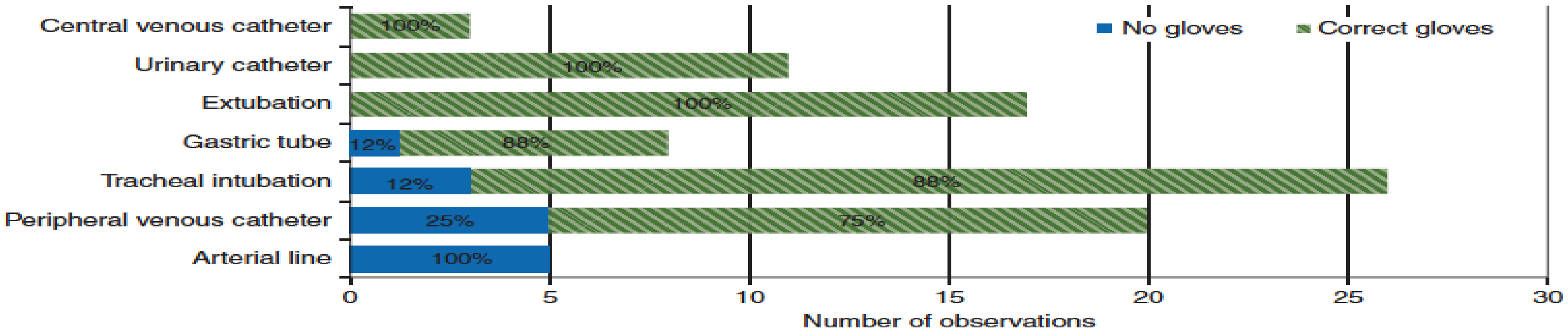


Fig 3 Usage of gloves (sterile and non-sterile depending on the procedure) for each invasive procedure.

Hand Hygiene Knowledge and Perceptions Among Anesthesia Providers

Anesth Analg 2015;120:837–43

Patrick G. Fernandez, MD,* Randy W. Loftus, MD,* Thomas M. Dodds, MD,*
Matthew D. Koff, MS, MD,* Sundara Reddy, MD,† Stephen O. Heard, MD,‡
Michael L. Beach, MD, PhD,* Mark P. Yeager, MD,* and Jeremiah R. Brown, MS, PhD§

Table 3. Measured Knowledge Regarding WHO Opportunity-Based Hand Hygiene

Opportunity	Correct N	Incorrect N	Percent guidelines[6]
Placing a peripheral IV catheter (aseptic task)	658	137	82.77
After intubation (exposure to secretions)	521	274	65.53
After adjusting OR bed height (exposure to environment)	167	628	21.01
Before a preoperative exam (before patient contact)	638	157	80.25
After palpating a pulse (after patient contact)	310	485	38.99

Table 4. Mixed-Effects Logistics Regression Model for Incomplete Knowledge (*N* = 761)

Covariate	OR	95% confidence interval	*P* value
I wash after contact with the environment	0.23	0.15–0.37	<0.001
I can influence my colleagues	0.43	0.27–0.68	<0.001
I disinfect my environment	0.55	0.35–0.82	0.004
I intend to adhere to guidelines	0.56	0.36–0.86	0.008

Les recommandations OMS qui protègent

CONCLUSIONS: Anesthesia provider knowledge deficits around to hand hygiene guidelines occur frequently and are often due to failure to recognize opportunities for hand hygiene after prior contact with contaminated patient and environmental reservoirs.

Interactions between anesthesiologists and the environment while providing anesthesia care in the operating room

American Journal of Infection Control 41 (2013) 922-4

L. Silvia Munoz-Price MD[a,b,c,d,*], David A. Lubarsky MD, MBA[b], Kristopher L. Arheart EdD[c], Guillermo Prado PhD[c], Timothy Cleary PhD[e], Yovanit Fajardo-Aquino MD[d], Dennise DePascale MT[d], Scott Eber MD[b], Philip Carling MD[f], David J. Birnbach MD, MPH[b,c]

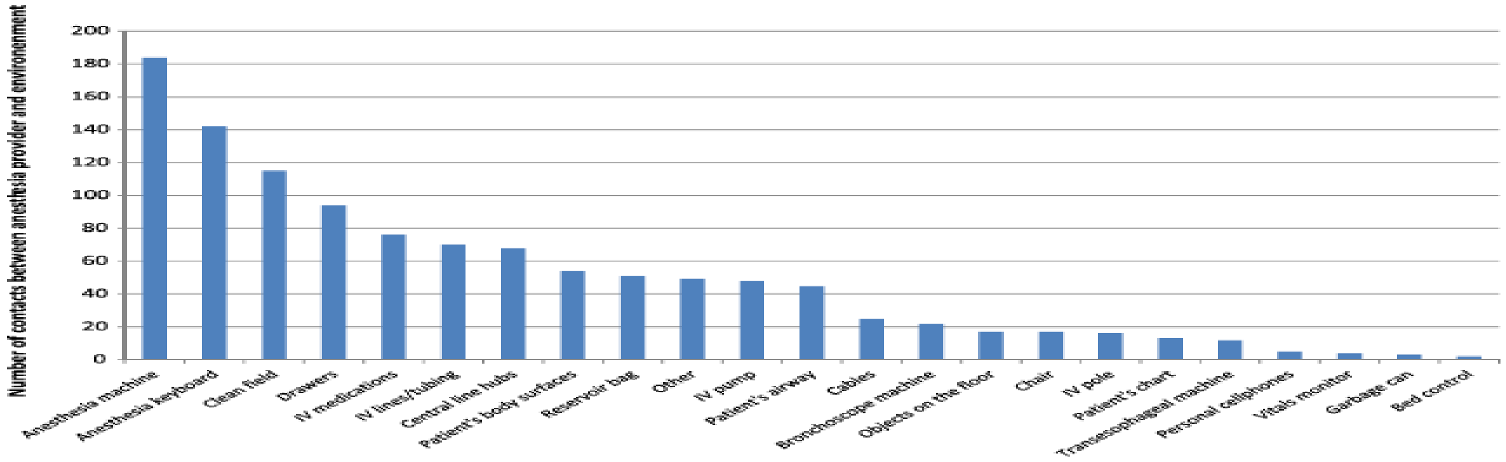


Fig 1. Number of contacts between anesthesia personnel and environment.

We describe 1,132 contacts between anesthesiologists and the operating room. Objects most commonly touched included anesthesia machines and keyboards. Only 13 hand hygiene events were witnessed during 8 hours of observations. Line insertions, bronchoscopies, or blood exposures were not followed by hand hygiene. Stopcocks were accessed 66 times and only disinfected on 10 (15%) of these occasions.

The Use of a Novel Technology to Study Dynamics of Pathogen Transmission in the Operating Room

David J. Birnbach, MD, MPH,*|| Lisa F. Rosen, MA,† Maureen Fitzpatrick, MSN, ARNP-BC,†
Philip Carling, MD, MPH,‡ and L. Silvia Munoz-Price, MD, PhD§||¶

Anesth Analg 2015;120:844–7

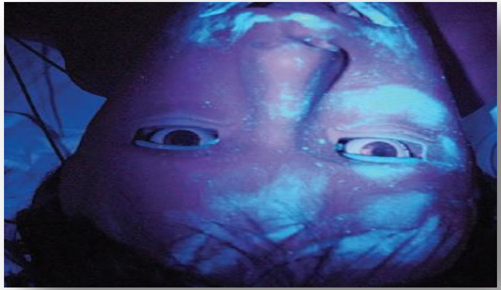


Table 2. Locations Which Were Contaminated in 100% of Scenarios
• Laryngoscope handle and blade
• Head of bed
• Eyes
• Nose
• Forehead
• Oxygen mask
• Reservoir bag
• Anesthesia machine surface
• Oxygen valve
• Anesthesia circuit
• Anesthesia cart
• IV hub
• Drape/ether screen

The Dynamics and Implications of Bacterial Transmission Events Arising from the Anesthesia Work Area

Randy W. Loftus, MD,* Matthew D. Koff, MS, MD,* and David J. Birnbach, MD, MPH†

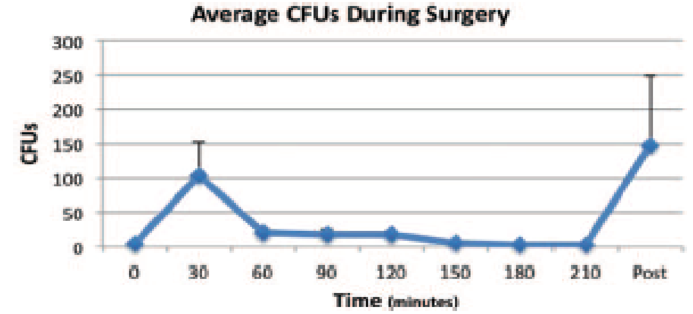
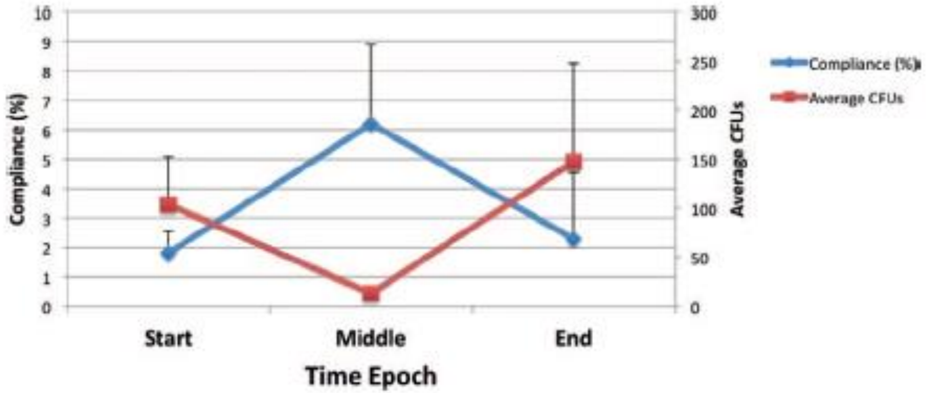


Figure 3. Bacterial contamination of the anesthesia environment reaches a peak during the 2 busiest phases of anesthesia care, induction and emergence of anesthesia. CFUs = colony-forming units.

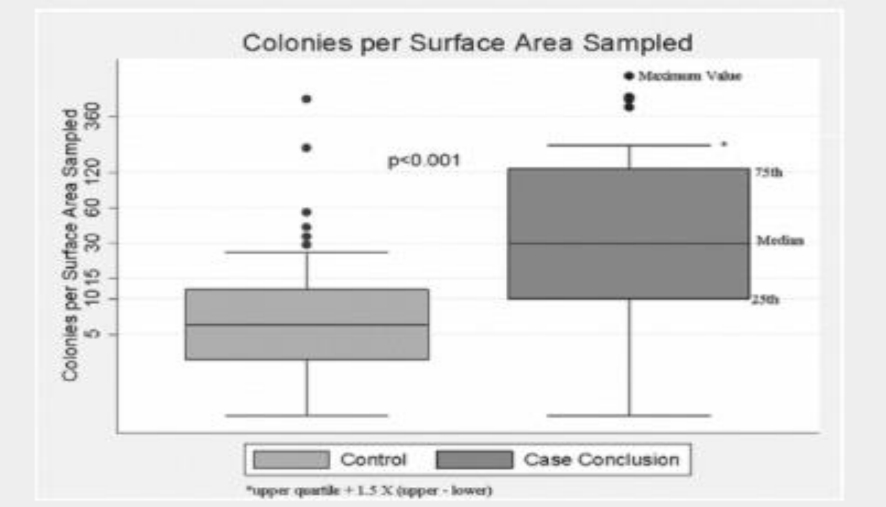


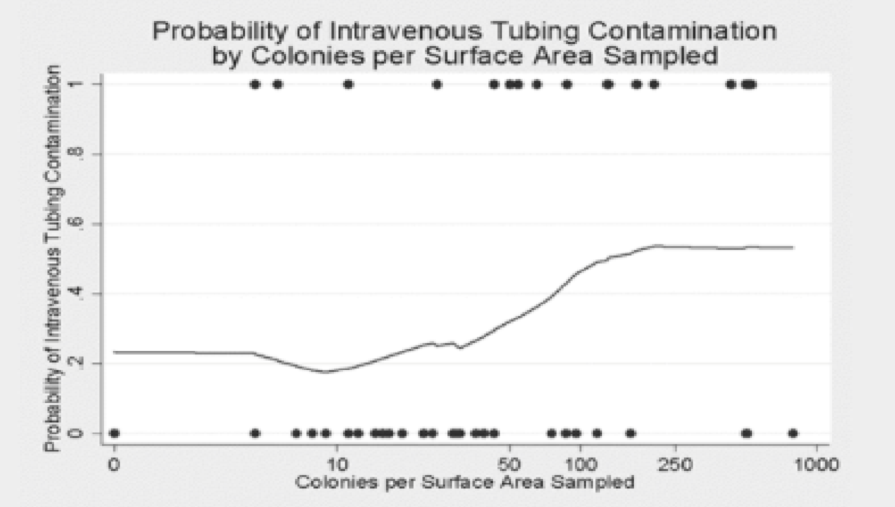
Health care–associated infections are a hospital-wide concern associated with a significant increase in patient morbidity, mortality, and health care costs. Bacterial transmission in the anesthesia work area of the operating room environment is a root cause of 30-day postoperative infections affecting as many as 16% of patients undergoing surgery. A better understanding of anesthesia-related bacterial transmission dynamics may help to generate improvements in intraoperative infection control and improve patient safety. (Anesth Analg 2015;120:853–60)

Transmission of Pathogenic Bacterial Organisms in the Anesthesia Work Area

Anesthesiology 9 2008, Vol.109, 399-407

Randy W. Loftus, M.D.; Matthew D. Koff, M.D.; Corey C. Burchman, M.D.;
Joseph D. Schwartzman, M.D.; Valerie Thorum, M.T. (A.S.C.P.); et al





« We hypothesized that intraoperative bacterial contamination of the anesthesia work area was associated with contamination of peripheral intravenous stopcock sets, partially explaining the association of general anesthesia with the development of nosocomial infections. »

Investigating the impact of clinical anaesthetic practice on bacterial contamination of intravenous fluids and drugs

Journal of Hospital Infection 90 (2015) 70–74

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[a] *Department of Clinical Microbiology, Nottingham University Hospitals NHS Trust, Nottingham, UK*
[b] *Antimicrobial Resistance and Healthcare Associated Infection Reference Unit, Public Health England, London, UK*
[c] *Anaesthesia and Critical Care, Division of Clinical Neuroscience, University of Nottingham, Nottingham, UK*

Risk factors associated with contamination of syringe contents

Risk factor	Odds ratio	95% Confidence interval	*P*-value
Emergency/urgent case	4.50	1.37–14.8	0.01
Hand hygiene that deviated from handwashing/alcohol gel followed by new gloves when drawing up drugs	2.89	0.75–11.10	0.11
Needles not used when drawing up drugs and flushes	2.42	0.75–7.79	0.13
Multiple boluses of drugs or flushes administered from some syringes	1.22	0.31–4.80	0.77
Syringe not capped between uses when administering multiple boluses of drug from same syringe	1.75	0.42–7.26	0.43
Cannula not inserted in theatre	1.95	0.36–10.5	0.43
Hand hygiene that deviated from handwashing/alcohol gel followed by new gloves before accessing three-way tap	0.35	0.10–1.19	0.08
Three-way tap not capped between uses	0.89	0.26–3.11	0.85

Cultures from the external surface of syringe tips and syringe contents were positive in 46% and 15% of cases, respectively. The same bacterial species was cultured from both ventilator and syringe in 13% of cases, and was also detected in the IV fluid administration set in two cases.

Multiple Reservoirs Contribute to Intraoperative Bacterial Transmission

Anesth Analg 2012;114:1236–48

Randy W. Loftus, MD,* Jeremiah R. Brown, PhD, MS,† Matthew D. Koff, MD, MS,* Sundara Reddy, MD,‡ Stephen O. Heard, MD,§ Hetal M. Patel, BS, MLT,* Patrick G. Fernandez, MD,* Michael L. Beach, MD,* Howard L. Corwin, MD,‖ Jens T. Jensen, MS,* David Kispert, BA,* Bridget Huysman, BA,* Thomas M. Dodds, MD,* Kathryn L. Ruoff, PhD,¶ and Mark P. Yeager, MD*

Stopcock contamination was detected in **23%** (126 out of 548) of cases with 14 between-case and 30 within-case transmission events confirmed.

Table 5. Multivariable Analysis of Risk Factors for Health Care–Associated Infections

Contaminated stopcock	Odds ratio	95% confidence interval	P value
Site 0[a]	14.06	2.72–72.77	0.002
ASA	2.61	1.39–4.86	0.003
SENIC	1.87	1.12–3.12	0.017
Discharge other	6.48	1.01–41.65	0.049
Site 2[a]	1.53	.254–9.22	0.641
Age	1.01	.982–1.03	0.553
Gender	0.66	.304–1.42	0.287
Case 2	2.20	.992–4.88	0.052
Contaminated stopcock	0.68	.289–1.63	0.396
Duration	1.19	.890–1.58	0.244
Comorbidity	0.39	.149–1.03	0.057
Origin	0.84	.292–2.38	0.737
Discharge floor	1.19	.504–2.85	0.681
Discharge ICU	0.82	.072–9.38	0.875
Square root HDEs	0.99	.643–1.52	0.964
Procedure			
Orthopedics	0.74	.249–2.20	0.593
General abdominal	0.78	.288–2.07	0.613
Gynecological	0.76	.224–2.59	0.665
Ear/nose/throat	0.23	.047–1.14	0.071

Table 6. Multivariable Analysis of Risk Factors for Mortality

Contaminated stopcock	Odds ratio	95% confidence interval	P value
Site 0[a]	0.01	.000–.389	0.014
Site 2[a]	0.00	.000–.425	0.021
ASA	74.1	4.94–1112.15	0.002
Contaminated stopcock	58.5	2.32–1477.02	0.014
Age	0.97	.893–1.05	0.415
Gender	1.55	.112–21.45	0.742
Case 2	0.80	.053–12.17	0.875
SENIC	1.12	.292–4.29	0.868
Case duration	0.51	.183–1.42	0.199
Comorbidity	5.28	.240–116.29	0.291
Origin	0.87	.182–4.19	0.866
Discharge floor	0.48	.035–6.65	0.588
Square root HDEs	6.53	.958–44.61	0.055
Procedure			
Orthopedics	1.15	.017–76.48	0.949
General abdominal	26.2	.925–742.8	0.056
Ear/nose/throat	10.0	.245–408.9	0.224

CONCLUSIONS: Bacterial contamination of patients, provider hands, and the environment contributes to stopcock transmission events, but the surrounding patient environment is the most likely source. Stopcock contamination is associated with increased patient mortality. Patient and provider bacterial reservoirs contribute to 30-day postoperative infections.

Hand Contamination of Anesthesia Providers Is an Important Risk Factor for Intraoperative Bacterial Transmission

Randy W. Loftus, MD,* Matthew K. Muffly, MD,* Jeremiah R. Brown, PhD, MS,* Michael L. Beach MD, PhD,* Matthew D. Koff, MD,* Howard L. Corwin, MD,* Stephen D. Surgenor, MD,* Kathryn B. Kirkland, MD,* and Mark P. Yeager, MD*

Anesth Analg 2011;112:98–105

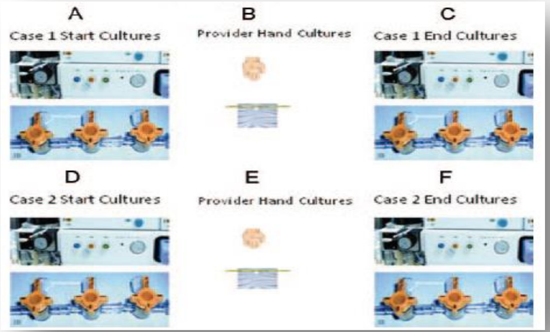


Table 2. Baseline Provider Hand Contamination[a]

Organism	Providers *N*/total (%)
MRSA	12/164 (7%)
MSSA	18/164 (11%)
VRE	4/164 (2%)
Enterococcus (non-VRE)	1/164 (0.6%)
Staph other	164/164 (100%)
Micrococcus	110/64 (67%)
Corynobacterium	14/164 (9%)
Streptococcus	128/164 (78%)
Gram negative[b]	81/164 (49%)

Table 3. Evidence for Intraoperative Transmission of Bacterial Pathogens from Anesthesia Provider Hands to the Anesthesia Environment and Patient IV Catheters

	Case 1			Case 2			
	Before case 1	End case 1		Before case 2		End case 2	
	Provider hands (site B)	Stopcock	Machine APL/D	Machine APL/D	Provider hands (site E)	Stopcock	Machine APL/D
Direction of transmission →							
Organism							
Micro	Attending		X				
S. epi	Attending	X					
S. hae	Attending	X					
S. epi	Attending	X					
S. epi	Attending				Attending[a]		
S. epi	Attending		X			X	X
Micro	Attending		X			X	
S. epi	Attending		X	X			X
Strep	Resident	X					X
Pseudo	Attending						
Pseudo	Resident		X				X
Micro	Resident	X		X		X	X
MRSA	Resident		X	X	Attending[a]		X
MSSA	Resident		X				X
S. auric	CRNA		X	X			
Micro	CRNA			X	Attending[a]		X
S. epi	CRNA			X			
Micro					CRNA[a]	X	X

Transmission Dynamics of Gram-Negative Bacterial Pathogens in the Anesthesia Work Area

Anesth Analg 2015;120:819–26

Randy W. Loftus, MD,* Jeremiah R. Brown, MS, PhD,† Hetal M. Patel, BS,* Matthew D. Koff, MD, MS,*
Jens T. Jensen, MS,* Sundara Reddy, MD,‡ Kathryn L. Ruoff, PhD,* Stephen O. Heard, MD,§
Thomas M. Dodds, MD,* Michael L. Beach, MD,* and Mark P. Yeager, MD*

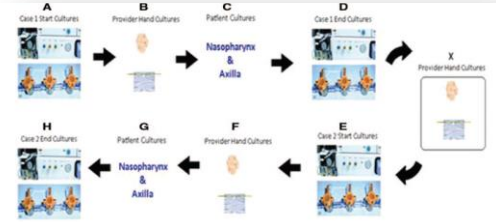


Table 3. Mode of Transmission for Frequently Encountered Gram-Negative Genera

Mode transmission	*Acinetobacter* (*N* = 327)	*Enterobacter* (*N* = 111)	*Brevundimonas* (*N* = 117)	*Moraxella* (*N* = 61)	*Pseudomonas* (*N* = 151)	Total number of isolates (*N* = 767)	*P* value,[a] Fisher exact test	*P* value,[b] binomial
	All isolates							
	N TE	N TE	N TE	N TE	N TE	N (%) TE	0.004	0.176
Within-case	15	6	14	1	5	41 (5.2)		
Between-case	20	12	2	4	16	54 (7.0)		
	Excluding duplicates							
Mode transmission	***Acinetobacter* (*N* = 321)**	***Enterobacter* (*N* = 107)**	***Brevundimonas* (*N* = 109)**	***Moraxella* (*N* = 61)**	***Pseudomonas* (*N* = 150)**	**Total number of isolates (*N* = 748)**	***P* value,[a] Fisher exact test**	***P* value,[b] binomial**
	N TE	N TE	N TE	N TE	N TE	N (%) TE	0.096	0.036
Within-case	11	4	7	1	5	28 (3.7)		
Between-case	18	9	1	4	15	47 (6.3)		

CONCLUSIONS: Between- and within-case AWE gram-negative bacterial transmission occurs frequently and is linked by pulsed-field gel electrophoresis to 30-day postoperative infections. Provider hands are less likely than contaminated environmental or patient skin surfaces to serve as the reservoir of origin for transmission events.

Microbial growth in propofol formulations with disodium edetate and the influence of venous access system dead space*

Anaesthesia, 2007, **62**, pages 575–580

T. Fukada[1] and M. Ozaki[2]

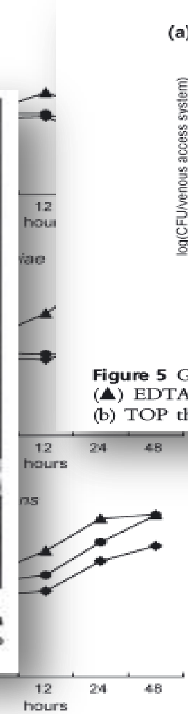


Figure 4 Growth curves of six bacteria incubated at 22.5 °C in propofol with (●) or without (▲) EDTA, or saline (◆). †p < 0.05 compared with saline; §p < 0.05 compared with propofol with EDTA.

Figure 6 Demonstration of migration of propofol, remaining in the dead space of the venous access system entry port, up into the syringe.

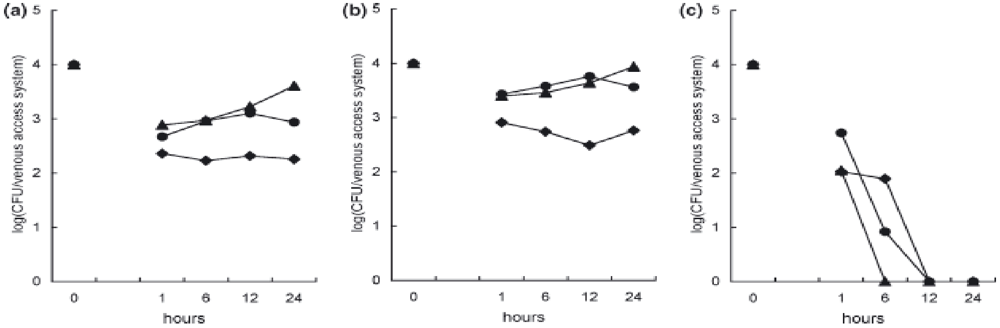


Figure 5 Growth curves of MRSA remaining in three types of venous access systems after injection of propofol with (●) or without (▲) EDTA, or saline (◆) through the injection port and infusing the line with Ringer's acetate: (a) TOP three-way stopcock; (b) TOP three-way stopcock + Interlink injection site; (c) Planecta system.

Leaving More Than Your Fingerprint on the Intravenous Line: A Prospective Study on Propofol Anesthesia and Implications of Stopcock Contamination

Devon C. Cole, MD,* Tezcan Ozrazgat Baslanti, PhD,* Nikolaus L. Gravenstein, BS,† and Nikolaus Gravenstein, MD*

Anesth Analg 2015;120:861–7

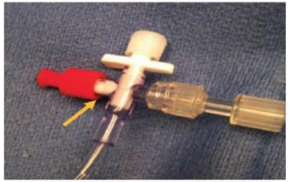


Figure 1. Visible white propofol (arrow) in IV extension set stopcock dead space after routine anesthesia care.

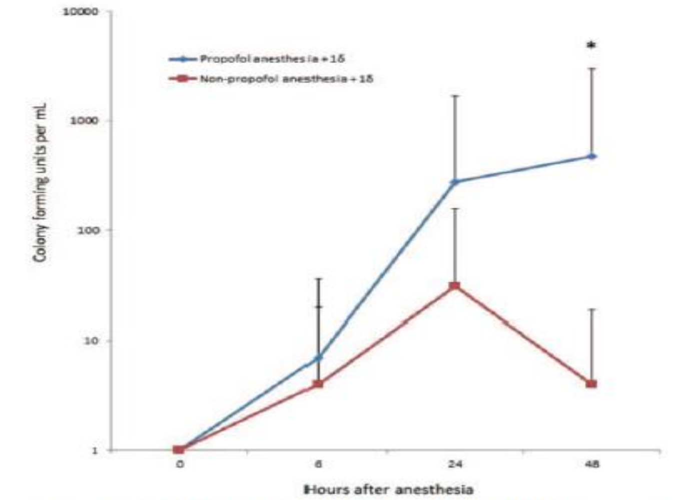


Figure 3. Growth of all samples in average colony forming units per milliliter at respective holding times plus 1 SD (1δ). *P = 0.0008.

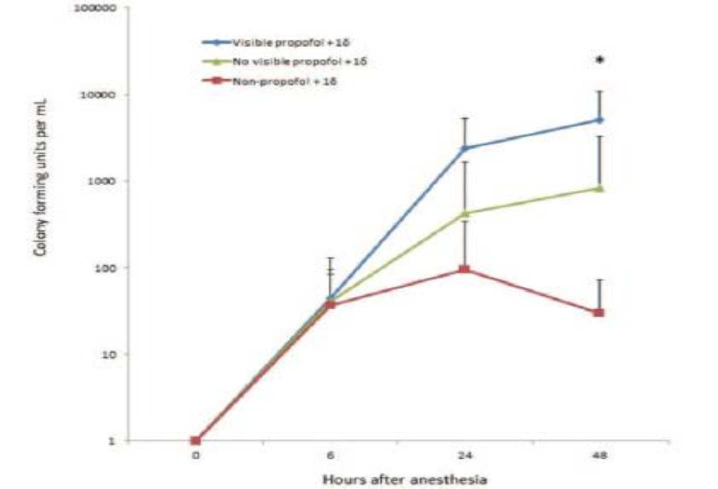


Figure 4. All samples with (+) bacterial growth in average colony forming units per milliliter at respective holding times plus 1 SD (1δ). *P = 0.03 visible vs nonvisible vs non.

CONCLUSIONS: There is a covert incidence and degree of IV stopcock bacterial contamination during anesthesia which is aggravated by propofol anesthetic. Propofol anesthesia may increase risk for postoperative infection because of bacterial growth in IV stopcock dead spaces.

Double Gloves: A Randomized Trial to Evaluate a Simple Strategy to Reduce Contamination in the Operating Room

David J. Birnbach, MD, MPH,*† Lisa F. Rosen, MA,* Maureen Fitzpatrick, MSN, ARNP-BC,*
Philip Carling, MD, MPH,‡ Kristopher L. Arheart, EdD,† and L. Silvia Munoz-Price, MD, PhD*†

Anesth Analg 2015;120:848–52

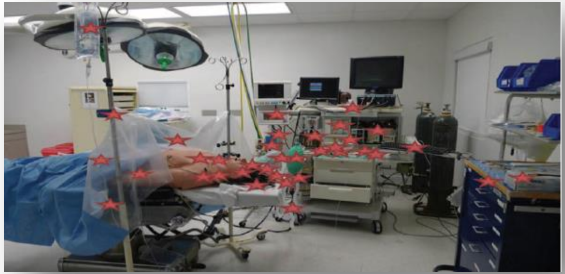


Table 1. Presence of Ultraviolet Markers Based on the Use of Single Versus Double Gloves at the Time of Intubation

	Single glove, *n* = 11		Double gloves, *n* = 11		
Location	UV positive	%	UV positive	%	*P*
Towel on anesth mach	11	100	2	18.2	<0.001
Reservoir bag	9	81.8	1	9.1	0.002
Suction tubing	8	72.7	0	0	0.001
Oxygen valve	7	63.6	1	9.1	0.024
Stethoscope	6	54.6	0	0	0.012
IV hub	5	45.5	0	0	0.035
Volatile agent gauge	4	36.4	0	0	0.090
Keyboard	4	36.4	0	0	0.090
Box of gloves	3	27.3	0	0	0.214
OR door handle	3	27.3	0	0	0.214

A New Approach to Pathogen Containment in the Operating Room: Sheathing the Laryngoscope After Intubation

David J. Birnbach, MD, MPH,* Lisa F. Rosen, MA,* Maureen Fitzpatrick, MSN, ARNP-BC,*
Philip Carling, MD,† Kristopher L. Arheart, EdD,‡ and L. Silvia Munoz-Price, MD, PhD§

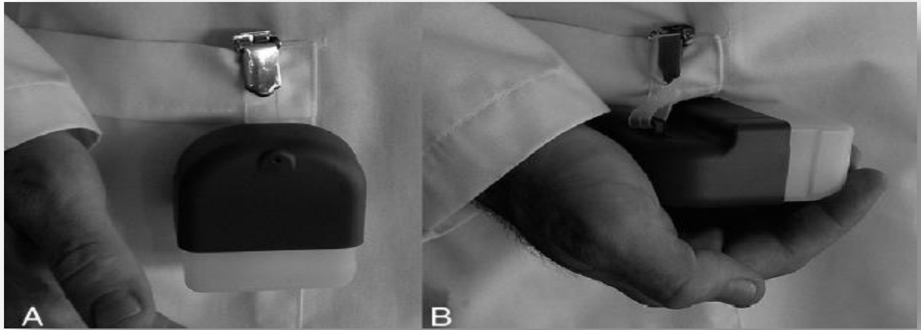
Anesth Analg 2015;121:1209–14

RESULTS: Of the 7 sites on the patient, ultraviolet light detected contamination on an average of 5.7 (95% confidence interval, 4.4–7.2) sites under the single-glove condition, 2.1 (1.5–3.1) sites with double gloves, and 0.4 (0.2–1.0) sites with double gloves with sheathing. All 3 conditions were significantly different from one another at $P < 0.001$. Of the 18 environmental sites, ultraviolet light detected fluorescence on an average of 13.2 (95% confidence interval, 11.3–15.6) sites under the single-glove condition, 3.5 (2.6–4.7) with double gloves, and 0.5 (0.2–1.0) with double gloves with sheathing. Again, all 3 conditions were significantly different from one another at $P < 0.001$.

Reduction in Intraoperative Bacterial Contamination of Peripheral Intravenous Tubing Through the Use of a Novel Device

Anesthesiology 2009; 110:978–85

Matthew D. Koff, M.D., Randy W. Loftus, M.D.,† Corey C. Burchman, M.D.,‡ Joseph D. Schwartzman, M.D.,§*
*Megan E. Read, M.T. (A.S.C.P.),|| Elliot S. Henry, B.S.,# Michael L. Beach, M.D., Ph.D.***



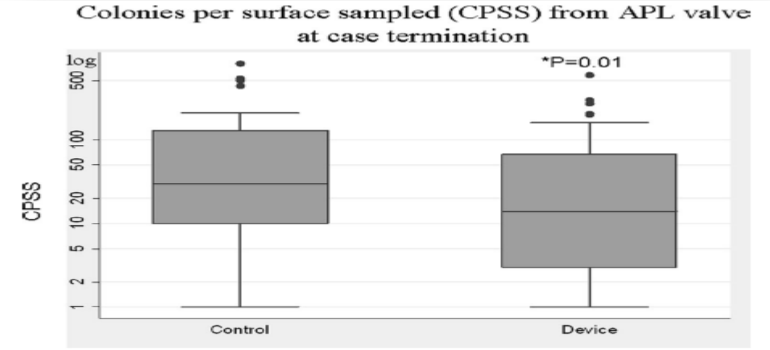


Fig. 3. Box plot of colonies per surface sampled (CPSS) recovered from the anesthesia machine at case termination in the before group (control) and after group (device) (P = 0.01). APL = anesthesia pressure-limiting valve. * indicates statistical significance.

Binary Variables	Percent	Count	Percent	Count	Odds Ratio	95% CI	P Value
Stopcock positive	7.5	4	32.8	20	0.17*	(0.06 to 0.51)	< 0.01
Nosocomial infection	3.8	2	17.2	10	0.19*	(0.00 to 0.81)	0.02
Death	0.0	0	3.4	2	0.00	(0.00 to 2.09)	0.17

Frequency of Hand Decontamination of Intraoperative Providers and Reduction of Postoperative Healthcare-Associated Infections: A Randomized Clinical Trial of a Novel Hand Hygiene System

Infect Control Hosp Epidemiol 2016;1–8

Matthew D. Koff, MD;[1] Jeremiah R. Brown, MS, PhD;[2] Emily J. Marshall, MS;[2] A. James O'Malley, MS, PhD;[2] Jens T. Jensen, MS;[3] Stephen O. Heard, MD;[4] Karen Longtine, RN, BS, CCRC;[4] Melissa O'Neill, RN, BS, CCRC;[4] Jaclyn Longtine, BA, CCRC;[4] Donna Houston, RN;[3] Cindy Robison, RN;[3] Eric Moulton;[3] Hetal M. Patel, BS;[3] Randy W. Loftus, MD[3]

TABLE 2. Hourly Hand Decontamination Event Summary and Comparison

	Hourly use, mean (SD)		Comparison *P* value	
Variable	Control	Treatment	Conventional	Treatment
Wall-mounted device	0.54 (0.34)	0.34 (0.27)	<.001[a]	
Personalized device	N/A	4.30 (2.90)		<.001[b]

TABLE 4. The Impact of the Novel Hand Hygiene System on 30-Day Postoperative Healthcare-Associated Infections (HAIs)

	Crude			Adjusted[a]		
	OR	*95% CI*	*P value*	*OR*	*95% CI*	*P value*
Any HAI	1.07	(0.82–1.40)	.626	1.05	(0.79–1.39)	.735
Subgroup						
SSI	0.95	(0.63–1.43)	.800	0.96	(0.62–1.46)	.832
HCAP	0.91	(0.40–2.06)	.818	0.74	(0.32–1.77)	.497
UTI	0.99	(0.59–1.65)	.973	0.97	(0.57–1.66)	.916
DOSI	1.99	(0.85–4.67)	.113	2.26	(0.90–5.69)	.082
CDI	0.20	(0.02–1.69)	.139	0.03	(0.0003–3.04)	.139
BSI	0.99	(0.25–3.97)	.990	1.01	(0.21–4.88)	.994
Other	2.49	(0.78–7.95)	.124	3.03	(0.88–10.41)	.079

"Priming" Hand Hygiene Compliance in Clinical Environments

Dominic King
Imperial College London

Health Psychology
2016, Vol. 35, No. 1, 96–101

Ivo Vlaev
University of Warwick

Ruth Everett-Thomas and Maureen Fitzpatrick
University of Miami Miller School of Medicine

Ara Darzi
Imperial College London

David J. Birnbach
University of Miami Miller School of Medicine

Nudges

Number of visitors	Performed hand hygiene	HHC (%)	Control vs. intervention *p*
	Control		
120	18	15.00%	
66 female	13	19.70%	
54 male	5	9.26%	
	Intervention 1—Olfactory prime		
160	75	46.89%	.0001
77 female	40	51.95%	
83 male	35	42.17%	
	Intervention 2—Visual prime		
124 (4 excluded)	26	21.67%	
63	20	33.33%	.038
(3 excluded)	16	38.09%	
42 female 18 male	4	22.22%	
61	6	10.00%	.626
(1 excluded)	5	15.63%	
32 females	1	15.63%	
28 males		3.57%	

Reduction in Intraoperative Bacterial Contamination of Peripheral Intravenous Tubing Through the Use of a Passive Catheter Care System

Randy W. Loftus, MD,* Bryan S. Brindeiro, MD,† David P. Kispert, BA,† Hetal M. Patel, BS,†
Matthew D. Koff, MD,* Jens T. Jensen, MS,† Thomas M. Dodds, MD,† Mark P. Yeager, MD,†
Kathryn L. Ruoff, PhD,‡ John D. Gallagher, MD,† Michael L. Beach, MD, PhD,† and
Jeremiah R. Brown, PhD, MS§

Anesth Analg 2012;115:1315–23

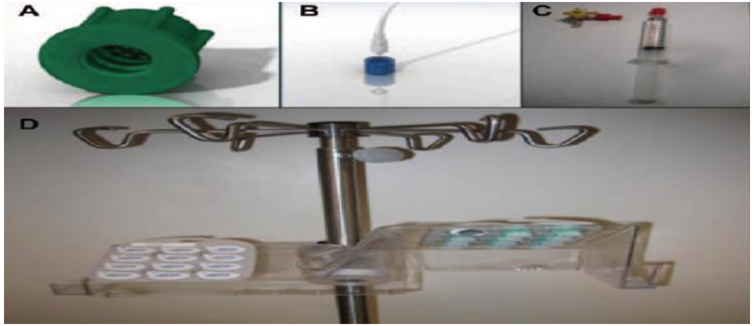


Table 2. Efficacy of the Novel Catheter Care Station in Reducing Lumen Contamination and 30-Day Postoperative Health Care–Associated Infections and Phlebitis

	Unadjusted				Adjusted					
	OR	95% CI	*P* value	Covariate	OR	95% CI	*P* value	OR	95% CI	*P* value
Lumen contamination										
Study arm	0.689	0.488–0.973	0.034	Study arm	0.704	0.493–1.00	0.052	0.703	0.498–0.995	0.047
HCAI/phlebitis										
Study arm	0.638	0.398–1.02	0.062	Study arm	0.589	0.353–0.984	0.04			

Intraoperative use of a passive catheter care station significantly reduced open lumen bacterial contamination and the combined incidence of 30-day postoperative infections and phlebitis.

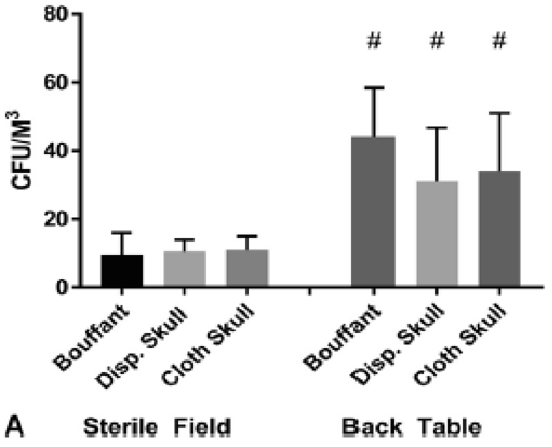
Hats Off: A Study of Different Operating Room Headgear Assessed by Environmental Quality Indicators

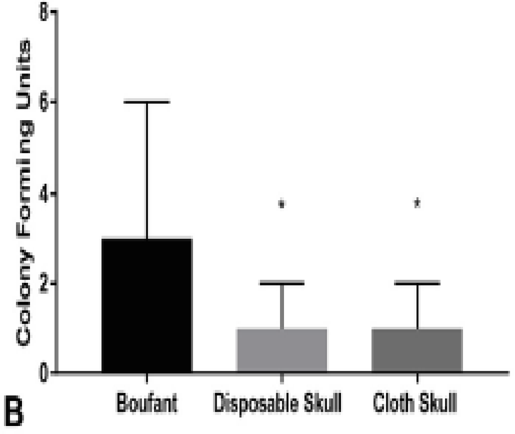
J Am Coll Surg 2017;225:573–581

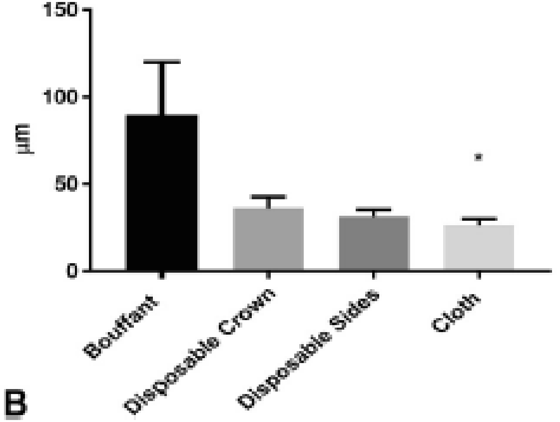
Troy A Markel, MD, FACS, Thomas Gormley, PhD, Damon Greeley, PE, John Ostojic, IH, Angie Wise, MS, Jonathan Rajala, PhD, Rahul Bharadwaj, PhD, Jennifer Wagner, PhD, CIC

Une seule condition: chapeau tissu propre !

Plus perméables, contamination de particules à travers le chapeau plus importante, pores plus larges, perte passive de particules et microbes plus importante







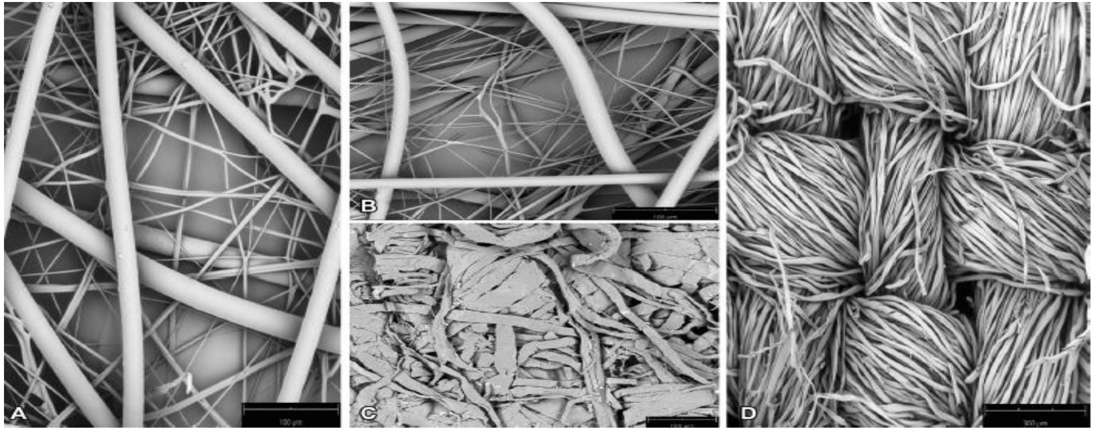


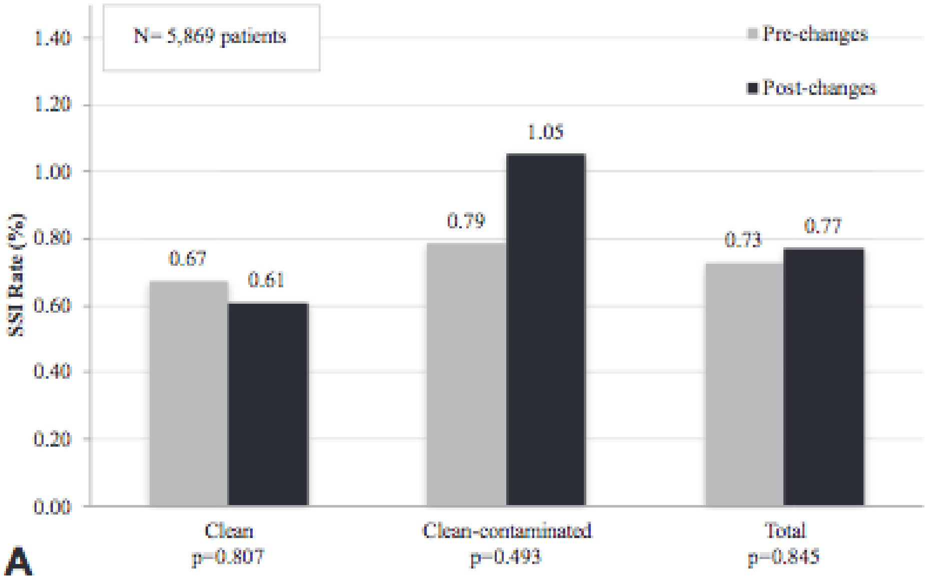
Figure 7. Electron microscopy. (A) Bouffant hats were visually identified with electron microscopy as having fairly porous material. (B) The crown of disposable skull caps also was made of a visually porous material. (C) The sides of the skull caps were visually less porous, as were (D) the cloth skull caps.

Have Recent Modifications of Operating Room Attire Policies Decreased Surgical Site Infections? An American College of Surgeons NSQIP Review of 6,517 Patients

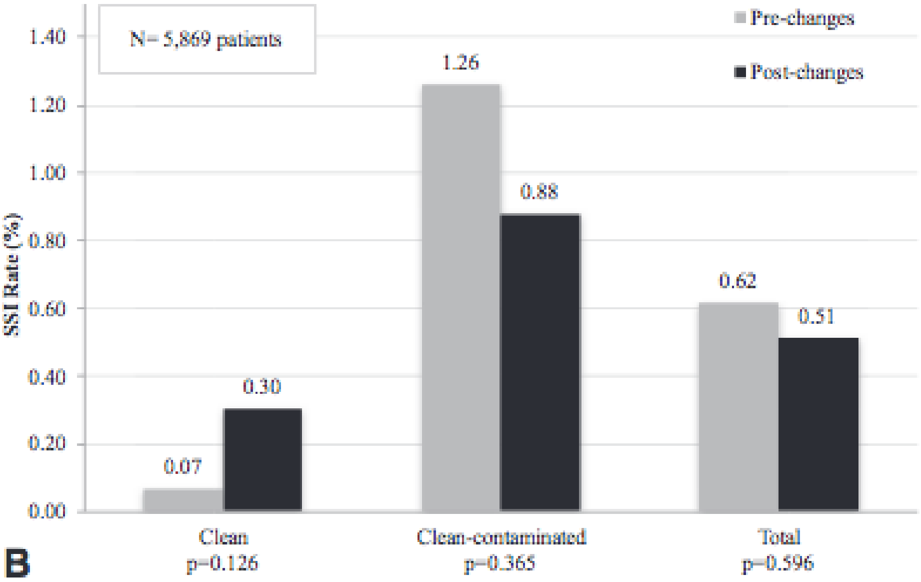
J Am Coll Surg 2018

Sandra M Farach, MD, Kristin N Kelly, MD, Rachel L Farkas, MD, FACS, Daniel T Ruan, MD, FACS, Amy Matroniano, MS, RN, David C Linehan, MD, FACS, Jacob Moalem, MD, FACS

Aucun effet d’une réglementation stricte sur les tenues



ISO superficielles



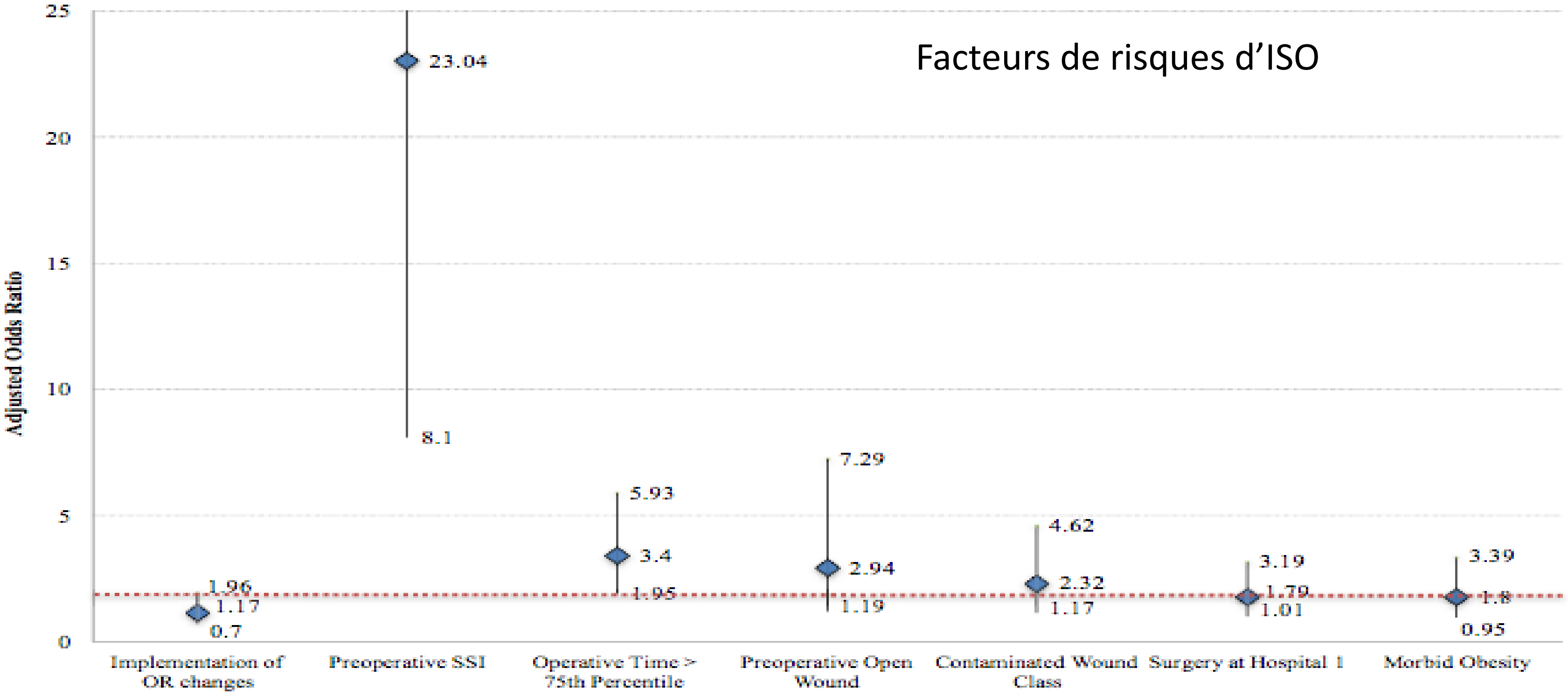
ISO profondes

Have Recent Modifications of Operating Room Attire Policies Decreased Surgical Site Infections? An American College of Surgeons NSQIP Review of 6,517 Patients

J Am Coll Surg 2018

Sandra M Farach, MD, Kristin N Kelly, MD, Rachel L Farkas, MD, FACS, Daniel T Ruan, MD, FACS, Amy Matroniano, MS, RN, David C Linehan, MD, FACS, Jacob Moalem, MD, FACS

Facteurs de risques d'ISO



Infection prevention in the operating room anesthesia work area

L. Silvia Munoz-Price MD, PhD[1], Andrew Bowdle MD, PhD[2], B. Lynn Johnston MD[3], Gonzalo Bearman MD, MPH[4], Bernard C. Camins MD, MSc[5], E. Patchen Dellinger MD[2], Marjorie A. Geisz-Everson PhD, CRNA[6], Galit Holzmann-Pazgal MD[7], Rekha Murthy MD[8], David Pegues MD[9], Richard C. Prielipp MD, MBA, FCCM[10], Zachary A. Rubin MD[11], Joshua Schaffzin MD, PhD[12], Deborah Yokoe MD, MPH[13] and David J. Birnbach MD, MPH[14]

Infection Control & Hospital Epidemiology (2019), **40**, 1–17

SHEA The Society for Healthcare Epidemiology of America

Which activitie
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providers

Should reusable laryngoscopes or video-laryngoscopes be
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laryng

Recomm
that sta
handle
mum)
are replaced with single-use standard direct laryngoscopes or
video-laryngoscopes. Clean blades and handles should be stored

Should anesthesia machines be partially or completely covered with disposable covers to prevent contamination?

Recommendation: Current data are inadequate for the authors to make recommendations regarding the use of disposable covers to prevent contamination of anesthesia machines.

Infection prevention in the operating room anesthesia work area

L. Silvia Munoz-Price MD, PhD[1], Andrew Bowdle MD, PhD[2], B. Lynn Johnston MD[3], Gonzalo Bearman MD, MPH[4], Bernard C. Camins MD, MSc[5], E. Patchen Dellinger MD[2], Marjorie A. Geisz-Everson PhD, CRNA[6], Galit Holzmann-Pazgal MD[7], Rekha Murthy MD[8], David Pegues MD[9], Richard C. Prielipp MD, MBA, FCCM[10], Zachary A. Rubin MD[11], Joshua Schaffzin MD, PhD[12], Deborah Yokoe MD, MPH[13] and David J. Birnbach MD, MPH[14]

SHEA
The Society for Healthcare Epidemiology of America

Infection Control & Hospital Epidemiology (2019), **40**, 1–17

When O… disinfec… work ar…

Recomm… risk of tr… clean an… and anes… hospital… surfaces…

Should inject… the OR be c… caps… caps… scru…

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Recomme… vials' rub… prior to …

Which i… barrier …

Recomme… lary and … sterile ba… tions inc… and using…

What measures should be taken to protect clean supplies in the anesthesia cart from contamination? Should the anesthesia supply cart be cleaned between cases?

Recommendation: The anesthesia supply cart should have its accessible outer surfaces wiped clean between cases. To prevent contamination of communal supplies, anesthesia providers should always perform HH before opening the drawers or bins of the cart and handling the contents of the drawers or bins. Storage

Infection prevention in the operating room anesthesia work area

L. Silvia Munoz-Price MD, PhD[1], Andrew Bowdle MD, PhD[2], B. Lynn Johnston MD[3], Gonzalo Bearman MD, MPH[4], Bernard C. Camins MD, MSc[5], E. Patchen Dellinger MD[2], Marjorie A. Geisz-Everson PhD, CRNA[6], Galit Holzmann-Pazgal MD[7], Rekha Murthy MD[8], David Pegues MD[9], Richard C. Prielipp MD, MBA, FCCM[10], Zachary A. Rubin MD[11], Joshua Schaffzin MD, PhD[12], Deborah Yokoe MD, MPH[13] and David J. Birnbach MD, MPH[14]

Infection Control & Hospital Epidemiology (2019), **40**, 1–17

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How should keybo anesthesia work a contamination?

Recommendation: F fection of comput monitors after each disinfectant consist

Which techni prevention pr

Recommendati and evaluatio adherence, im should include local champic identify clear parency, and s performance.

What is the impact of providing measurement and feedback data on HH?

Recommendation: Facilities should monitor providers' HH performance and give them feedback as part of a comprehensive program to improve and maintain adherence. Insufficient data exist to recommend the routine use of automated, electronic, or video monitoring and feedback, although examples in the literature demonstrate efficacy of such technology.

Anaesthetists and syringe hygiene: getting to the pointy end

Lloyd E. Kwanten

BJA 2019

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Environmental cleaning:

- Environmental contamination of the OT and AWA are important transmission vehicles leading to stopcock contamination by potential pathogenic organisms.[12,14,34] By increasing the quality and frequency of AWA cleaning, the environmental sites that previously had a scale of contamination associated with stopcock (SC) contamination are decreased.[12,35]
- Guidance recommends that specific environmental cleaning regimes and training and skills assessments should be developed. Cleaning strategies should be undertaken between patients to reduce the risk of cross-contamination, with prioritisation given to the frequently touched surfaces. High-risk areas, such as gas control knobs, adjustable pressure limiting (APL) valve, keyboards, touch monitors, reservoir bag, and anaesthesia breathing circuit can become contaminated in more than 90% of cases. This occurs mainly during induction and emergence of anaesthesia, correlating with nadirs in hand hygiene compliance.[16,22,36]

Au final….

On se lave les mains ++++ et on porte un chapeau en tissu car c’est moins de déchets!