

FIGURE 2

### COMPARISON OF SSI PREVENTION GUIDELINES 2016-2017

The four most recent evidence-based SSI prevention guidelines come from the CDC, the Wisconsin Division of Public Health, the World Health Organization, and the American College of Surgeons/ Surgical Infection Society.

*Green shading highlights where these guidelines concur.*

#### KEY

CDC: **IA, IB, IC, II, NR** (no recommendation); with **IA** as strongest recommendation.

Wisconsin DPH: **Yes** means support, **No** means don't support, and **NR**; with **Yes** as strongest.

WHO: **Strong, Conditional**, and **NR**; with **Strong** as strongest.

ACS/SIS: **Yes** means support, **No** means don't support, and **NR**; with **Yes** as strongest.

Intervention	Details and rationale	2016-2017 Evidence-Based SSI Guidelines			
		CDC HICPAC	Wisconsin DPH	WHO	ACS/SIS
Surgical hand scrub	Scrub with either alcohol-based brushless product or antimicrobial solution with brush, to reduce resident and transient hand flora.			Strong	
Surgical team attire	Wear long sleeves, masks, gloves to cover all skin and hair to reduce shedding of skin scales, hair, and respiratory aerosols to reduce risk of wound contamination.				Yes
	Double-glove for surgeon to reduce risk of migration of bacterial through microperforations			NR	Yes
OR air quality	Consistent engineering controls (positive pressure, 20 ACH, humidity, temperature, HEPA) and traffic control to reduce risk of implant contamination		Yes	Yes	
	Laminar air flow			NR	
Blood loss prevention	Eliminate the immunosuppressive effect of blood transfusion	NR	Balanced approach		
Glycemic control	Improve tissue granulocytic cell function and wound healing by maintaining a mean perioperative blood glucose level >200 mg/dl in diabetic and nondiabetic surgical patients	IA	Yes, alternative H <sub>1c</sub> <6.7	Conditional	Yes
Normothermia	Diminish blood loss, increase O <sub>2</sub> tissue perfusion	IA	Yes	Conditional	Yes
Nutritional support	Enhance nutritional status with oral or enteral multiple nutrient-enhanced nutritional formulas.			Conditional	
Prophylactic antibiotic (PAB)	PAB for clean contaminated, contaminated and dirty cases, in addition to high-risk clean cases within 60 minutes prior to incision to ensure bactericidal concentration of the agents is established in the serum and tissues when the incision is made	IB	Yes	Strong (within 120 minutes of incision)	Yes
	Adjust the PAB dose based on the patient's weight in obese and morbidly obese patients	IB	Yes		Yes
	Re-dose for prolonged cases to ensure adequate tissue concentration	NR	Yes		Yes
	Administer NO further doses after incision is closed	IA	Yes	Strong	Yes
Oral antibiotic / mechanical bowel prep	Bowel prep prior to colorectal surgical procedures both oral antibiotic and mechanical to reduce wound contamination		Yes	Strong	Yes
Pre-op patient bathing	For reduction of resident and transient skin flora	IB	Yes	Conditional	No
	With bland soap	IB		Conditional	
	With CHG		Yes		

Intervention	Details and rationale	2016-2017 Evidence-Based SSI Guidelines			
		CDC HICPAC	Wisconsin DPH	WHO	ACS/SIS
Nasal screening and decolonization	Pre-op nasal screen for MSSA, MRSA		Yes	Strong	Ortho and cardiac
	Mupirocin x 5 days		Yes	Strong	Yes
	Antiseptic (alcohol or PVI) immediately pre-op		Yes		
Hair removal by clipping	Remove hair only when necessary—and by clipper vs. razor			Strong	Yes
Alcohol-based skin antiseptic agent	Use skin prep containing alcohol plus PVI or CHG	IA	Yes	Strong	Yes
	Alcohol plus iodine or alcohol plus CHG	IA			Yes
	Alcohol plus iodine				
	Alcohol plus CHG				
Mucous membrane surgical prep	Prep mucous membranes (e.g., genital) to ensure bactericidal effect		Yes		
	CHG				
	PVI				
Supplemental O <sub>2</sub>	For patients with normal pulmonary function undergoing general anesthesia with endotracheal intubation, administer an increased fraction of inspired oxygen (FIO <sub>2</sub> ) both intraoperatively and post-extubation in the immediate postoperative period. To optimize tissue oxygen delivery, maintain perioperative normothermia and adequate volume replacement; data strongest for colorectal surgery.	IA	Yes	Strong	Yes
Minimally invasive surgery	To minimal incision size and reduced operative time		Yes		
Wound edge protector	To protect subcuticular tissue from contamination for abdominal procedures		Yes	Conditional	Yes
Surgical irrigation prior to closure	To eliminate any contaminants introduced during case		Yes		
	Antiseptic (PVI, chlorhexidine) irrigation	II (PVI)	Yes, PVI – 0.85%; CHG – 0.05%	Conditional	
	Antibiotic irrigation	NR		Do not use	Do not use
Sterile glove change prior to wound closure	To reduce risk of wound contamination, for colorectal, selective OB/GYN, orthopedic and other device-related procedures		Yes	NR	Yes
Dedicated sterile instrument tray for wound closure	To reduce wound contamination, for colorectal, selective OB/GYN, orthopedic and other device related procedures to reduce risk of instrument contamination for fascia and skin closure		Yes	NR	Yes
Antimicrobial (triclosan) sutures	To reduce SSI risk in selective surgical patients	II	Yes, multiple evidence-based meta-analysis documents as IA	Yes, use for the prevention of SSI regardless of surgical procedure	Yes, clean and clean-contaminated abdominal procedures
Aseptic post-op dressing	To reduce post-operative contamination of wound prior to wound edges healing	NR	Yes	Conditional	
	Aseptic		Yes		
	Antiseptic-impregnated			Do not use	
	Negative-pressure wound dressing			Conditional	Yes

Sources: Centers for Disease Control and Prevention<sup>5</sup>, Wisconsin Division of Public Health<sup>6</sup>, World Health Organization<sup>7</sup>, American College of Surgeons/Surgical Infection Society<sup>8</sup>