

Maximal barrier precautions

Langkawi

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Maximal barrier precautions

- During central venous catheter insertion are the same as for any other surgical procedure that carries a risk of infection.

Who needs to be dressed in maximal barrier precautions?

- The operator
- The assistant
- Anyone else who crosses the sterile field
- NOT people in the same room who are not involved with the procedure

Maximal barrier precautions

- use of cap, mask, sterile gloves and long-sleeved gowns by the operator and those assisting
- cap should cover all hair
- mask should cover the nose and mouth tightly
- patient covered with large sterile drape (to ensure sterile field and that the catheter is not exposed to contamination)

Table one: Odds ratio for infection without maximal barrier precautions

Author/date	Design	Catheter	Odds Ratio for infection w/o MBR
Mermel	Prospective	Swan-Ganz	2.2 (p<0.03)
1991	Cross-sectional		
Raad	Prospective	Central	6.3 (p<0.03)
1994	Randomized		

Mermel LA et al. *Am J Med* 1991(91);3B:197S-205S.

Raad II et al. *Infect Control Hosp Epidemiol* 1994;15:231-238.

To improve compliance to maximal barrier precautions

Central catheter insertion cart

- standardised cart to contain all supplies required for maximal barrier precautions
- cart can be rolled to the patient's room
- cart is stocked every 4 hrs from the ICU supply room

Berenholtz et al. NEJM 2004; 32(10), 2014-2020

To improve compliance to maximal barrier precautions



To improve compliance to maximal barrier precautions

Insertion cart/ trays

- Available and on-hand supplies v. gathering supplies
- Drive Compliance
- Consistent Technique
- Less risk of breaking sterile field
- Time

To improve compliance to maximal barrier precautions

Table 2. Physicians' Perceived Need for Full-Size Sterile Drapes and Other Sterile Measures during Insertion of Central Venous Catheters in Six Intensive Care Units and One Associated Step-Down Unit, in Relation to June 1996 Infection Control Course

Variable	Physicians Who Completed Surveys	Need for Full Drapes	Need for Towels	Need for Povidone-Iodine	Need for Gowns	Need for Gloves	Need for Masks
	<i>n</i>	← % →					
8 months before the course	140*	22	94	99	72	100	74
Immediately before the course	109†	33‡	88‡	97	80	96	82‡
Immediately after the course	109†	99‡	25‡	99	98	99	98‡
6 months after the course	109†	73‡	53‡	96	82	98	91

* Physicians completing their first through fifth postgraduate years (PGY-1 through PGY-5), fellows, and faculty who inserted catheters in intensive care units.

† PGY-1 physicians participating in the course.

‡ The difference between precourse and postcourse scores was significant ($P < 0.01$).

To improve compliance to maximal barrier precautions

- Clinician educational process
improvement

**Knowing is not enough;
we must apply**

**Willing is not enough;
we must do**

Goethe