中心導管組合式照護之重要性

(The importance of CVC care bundle)

李聰明　台灣感染管制學會理事長
Mackay Memorial Hospital
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Chairman of Infection Control Society of Taiwan

感染管制工作的重要性

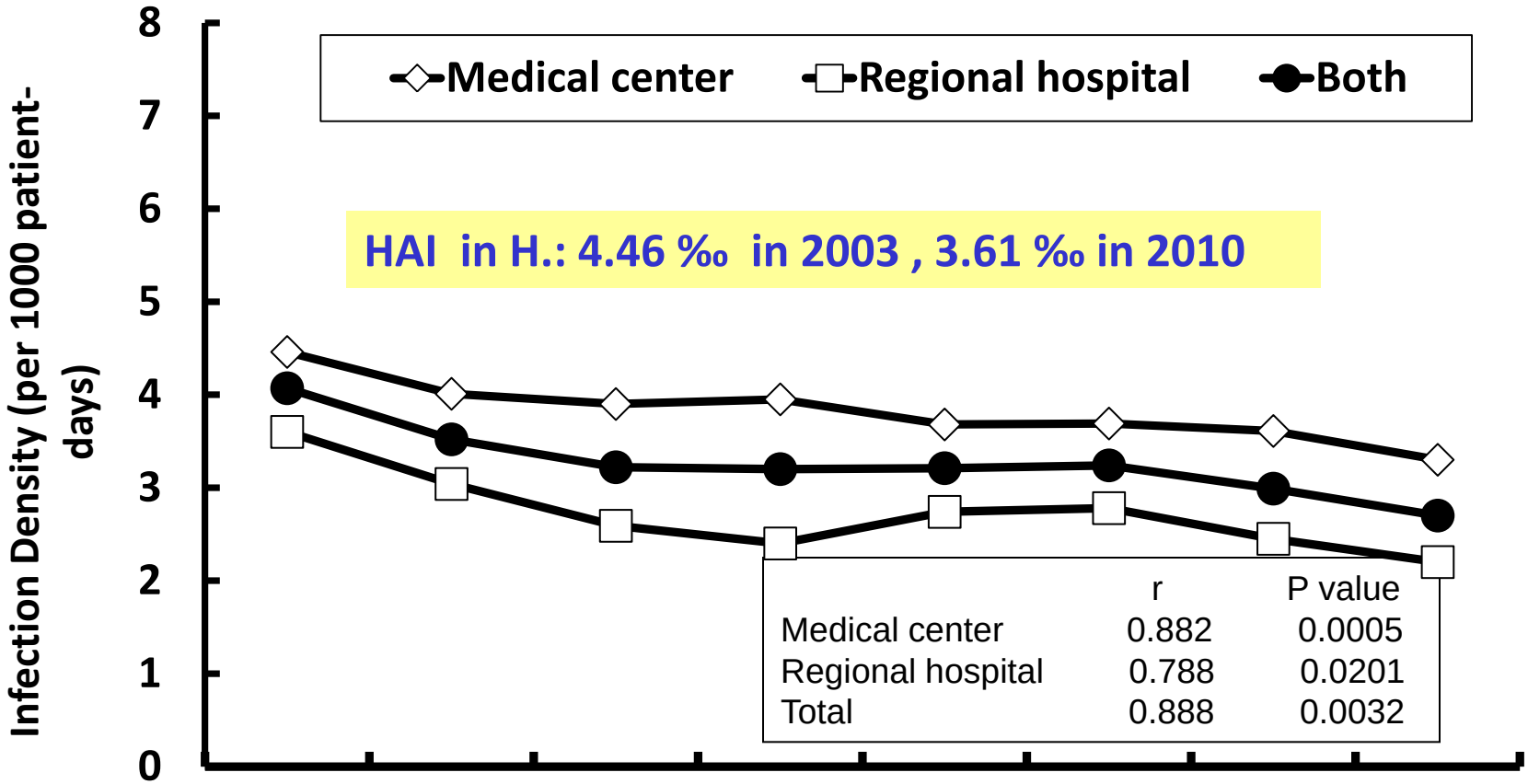
- “病人的安全是醫院的基石”
- Patient safety is the cornerstone of hospital
- “感染管制是病人安全的基石”
- Infection control is the cornerstone of patient safety

- ----- by Dr.李聰明
- Dr. Chun-Ming Lee

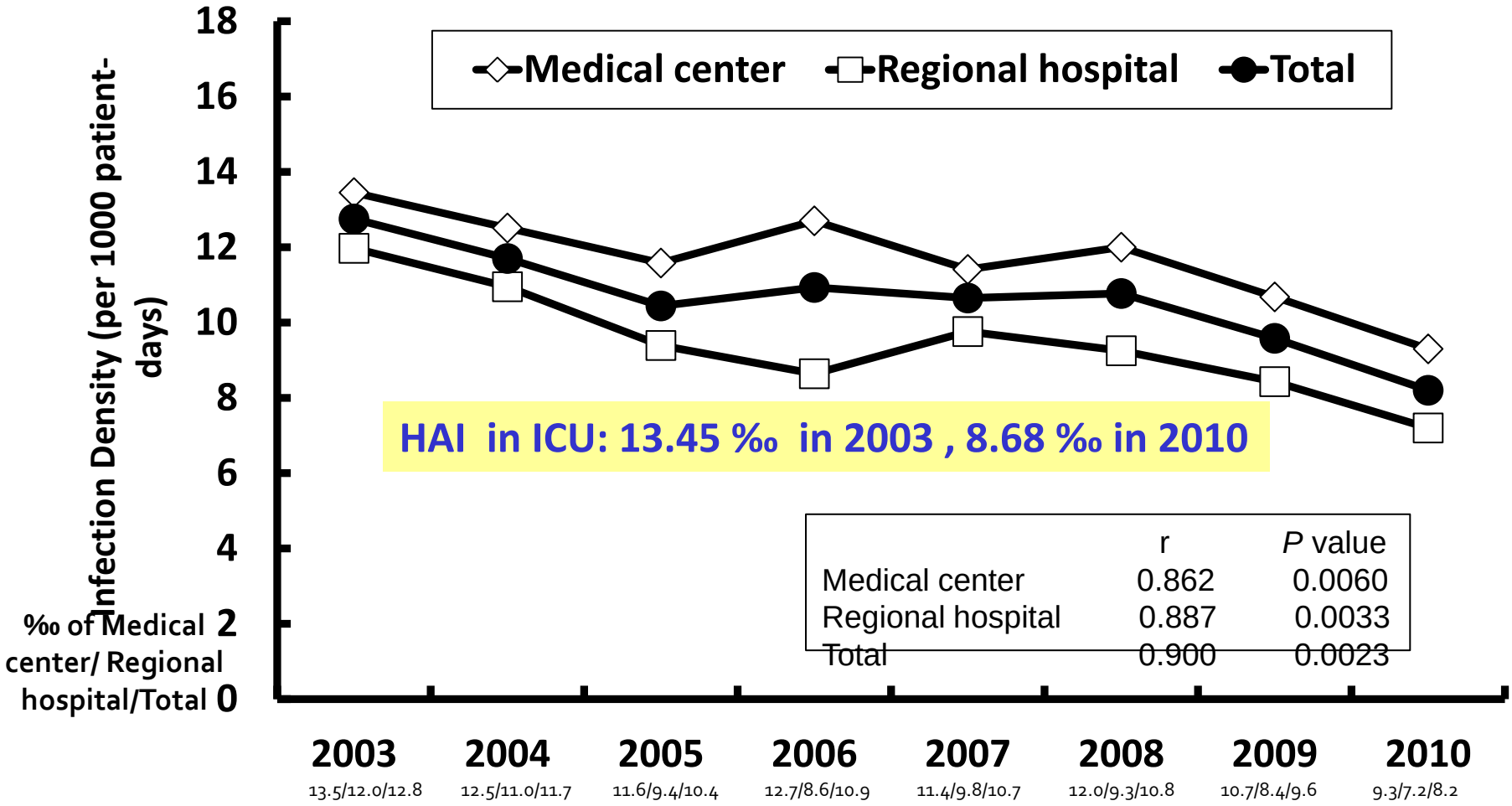
Estimated rates of HCAI worldwide

- At any time, hundreds of millions of people worldwide are suffering from infections acquired in health-care facilities
- In modern health-care facilities in the developed world: 5–10% of patients acquire one or more infections
- In developing countries the risk of HCAI is 2–20 times higher than in developed countries and the proportion of patients affected by HCAI can exceed 25%
- In intensive care units, HCAI affects about 30% of patients and the attributable mortality may reach 44%

HAIs density in Hospitals, 2003-2010 (TNIS)



HAIs density in ICUs, 2003-2010 (TNIS)



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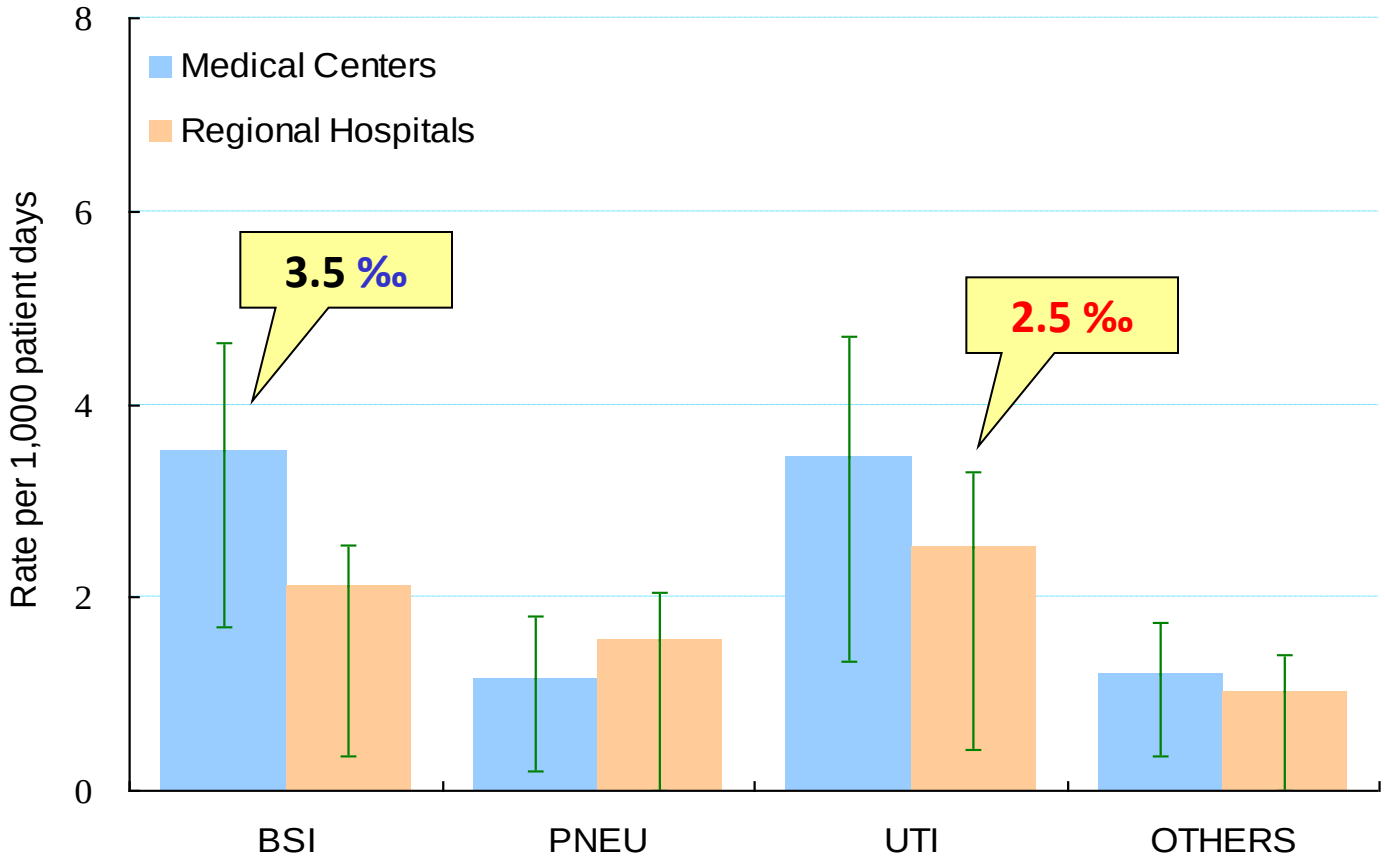
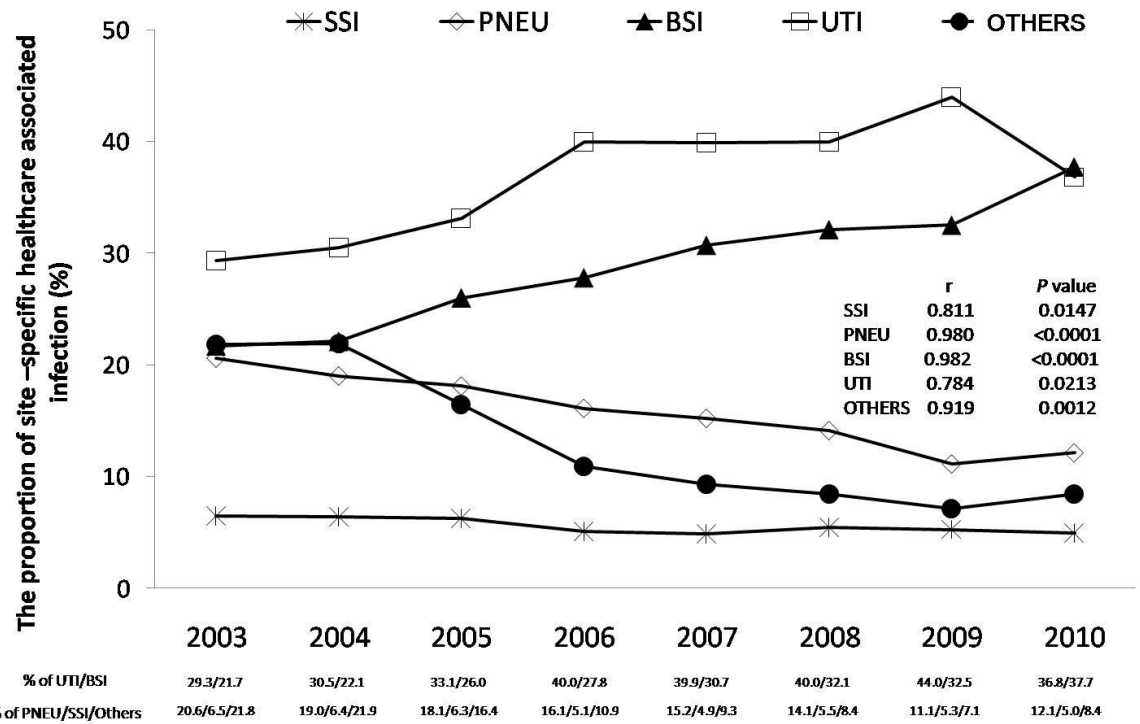
Type-specific Nosocomial Infections Density in ICUs of Hospitals, 2010 (TNIS)



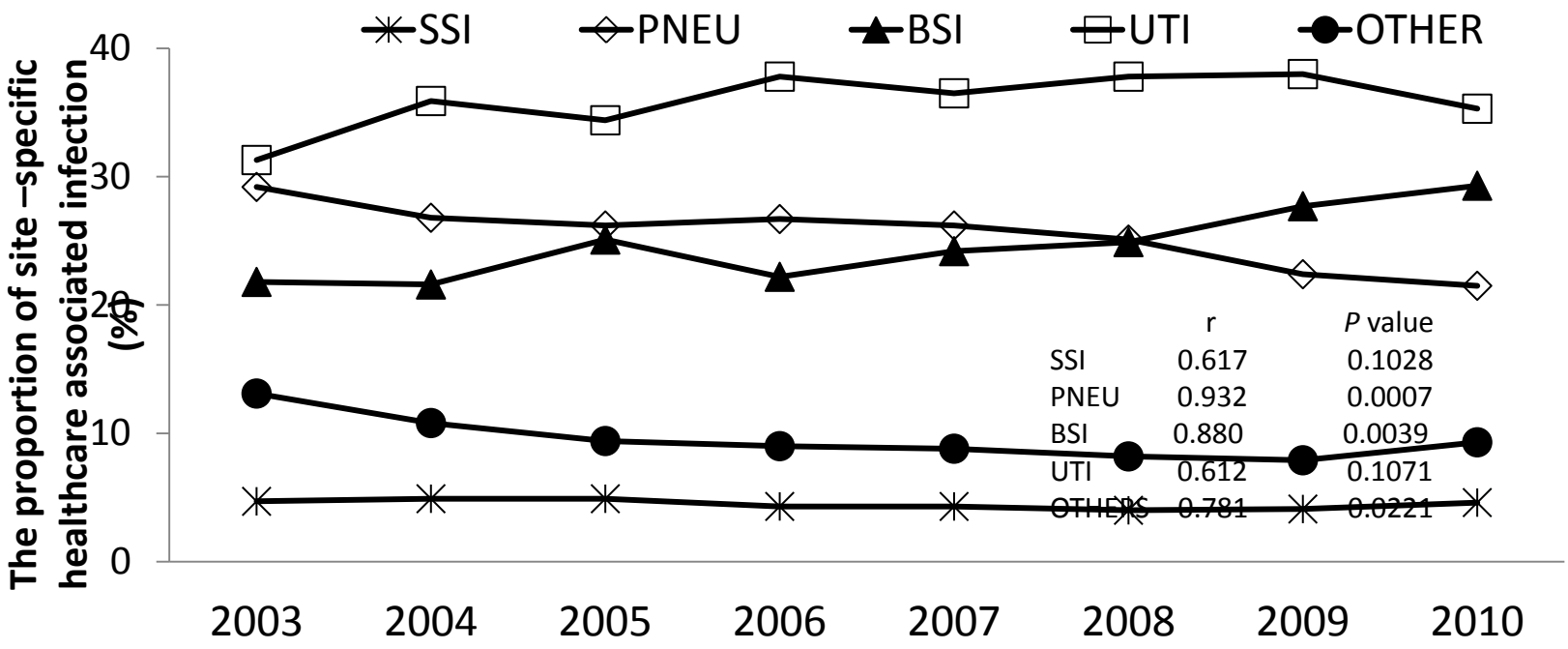
The proportions of site-specific HAIs in ICU of Medical Centers ,2003-2010 (TNIS)

BSI:38%; UTI:37%; PNEU:12%; other : 8%; SSI: 5% in 2010

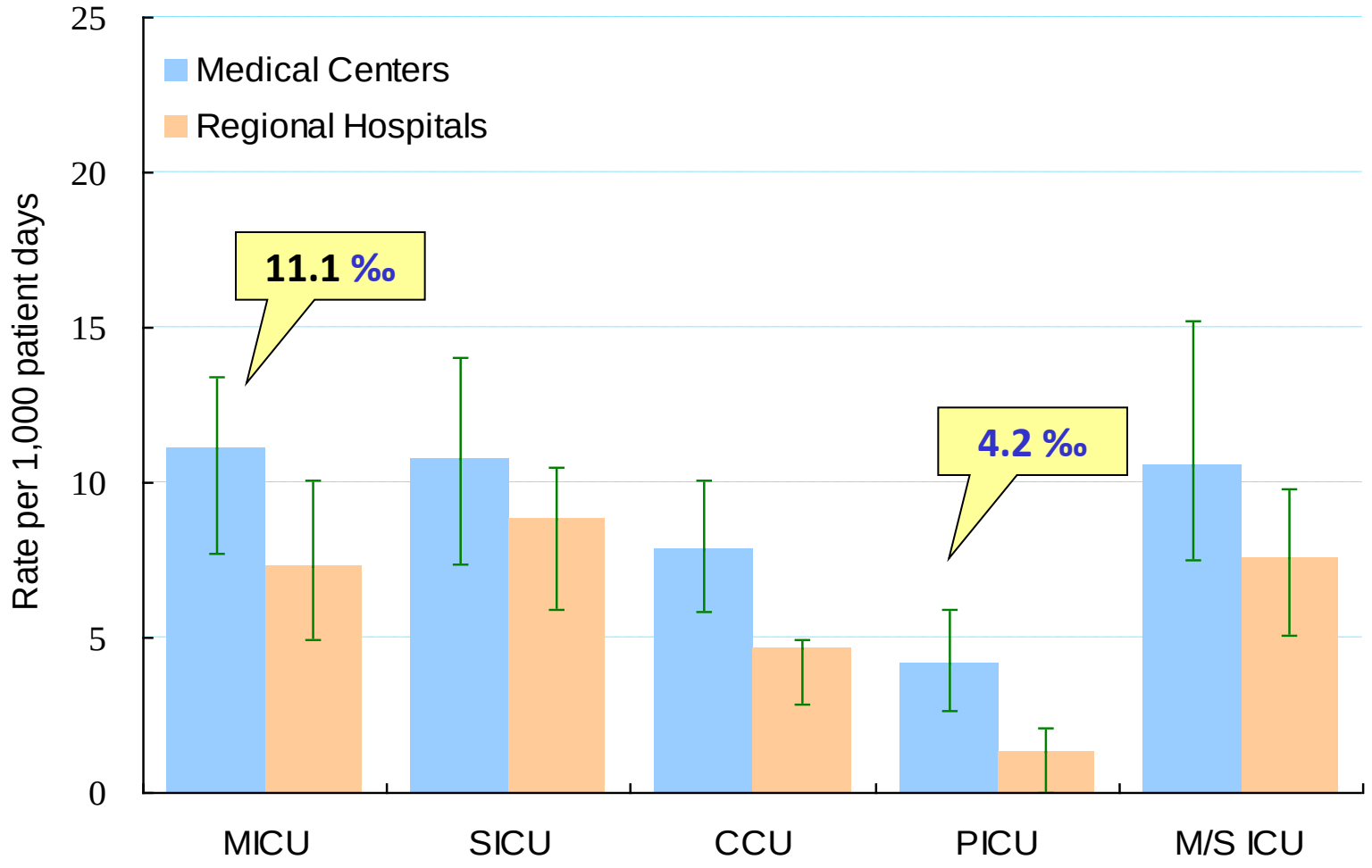


The proportions of site-specific HAIs in ICU of Regional Hospitals,2003-2010 (TNIS)

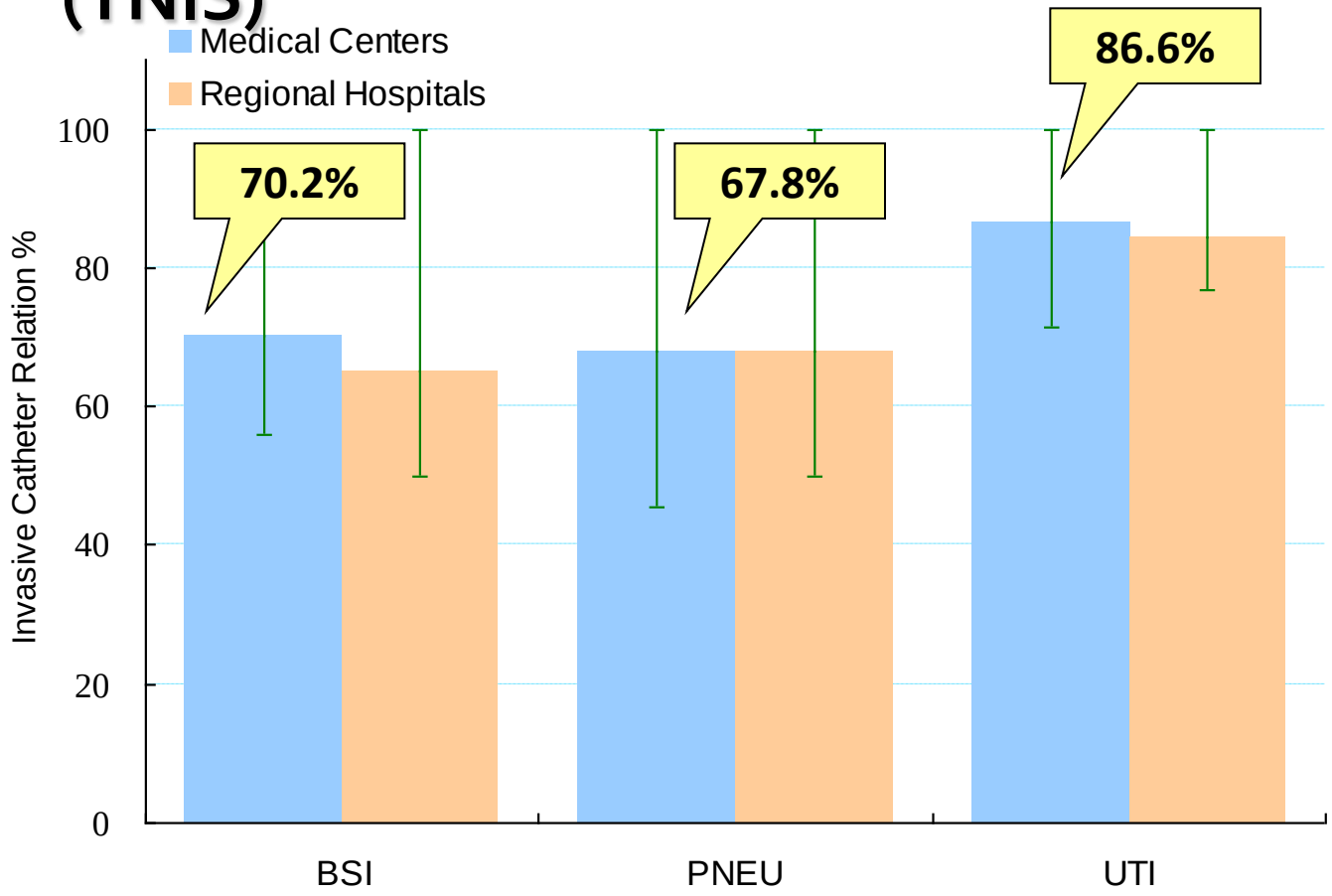
UTI:35%; BSI:29%; PNEU:23%; other :9%; SSI:3% in 2010



Nosocomial Infection Density by ICU Types in Hospitals, 2010 (TNIS)



Relation between the utilization of invasive catheter and infection rate in ICUs , 2010 (TNIS)



The impact of HCAI

- **HCAI can cause:**
  - more serious illness
  - prolongation of stay in a health-care facility
  - long-term disability
  - excess deaths
  - high additional financial burden
  - high personal costs on patients and their families

醫療照護相關感染的重要性
–以導管相關血流感染醫療成本為例

Catheter-related Bloodstream Infection (CRBSI) in US

- 350,000 patients per year
- Mortality rate: 12% to 25%
- Extra-hospital stay : 5 to 20 days per CRBSI
- Extra-costs : $34,000- $56,000 per CRBSI
- Annual costs: $2.3 billion Stone PW, et al. *Am J Infect Control.* 2005;33:542-547.Perencevich EN, et al. *Infect Control Hosp Epidemiol* 2007; 28:1121-33.

- More than 50% of CRBSI may be preventable.

Harbarth S, et al. *J Hosp Infect.* 2003;54:258-266.

Healthcare-associated BSI, Taiwan

- In Taiwan, HA-BSI prolong 16 days of hospital stay and extra-costs 101,536 NTs Sheng WH, wt al. JFMA 2005;104:318-26.
- HA-BSI: Medical centers vs. Community hospitals
  - No differences
  - Extra-LOS (15.5 vs 16.5 days, p=0.94)
  - Extra-cost (4872 USD vs 4643 USD, p=0.92)
- Similar in VAP, CA-UTI and SSI

Sheng WH, et al. J Hosp Infect 2005;59:205-14.

How Many are Preventable ?

“We have accepted infections as normal”

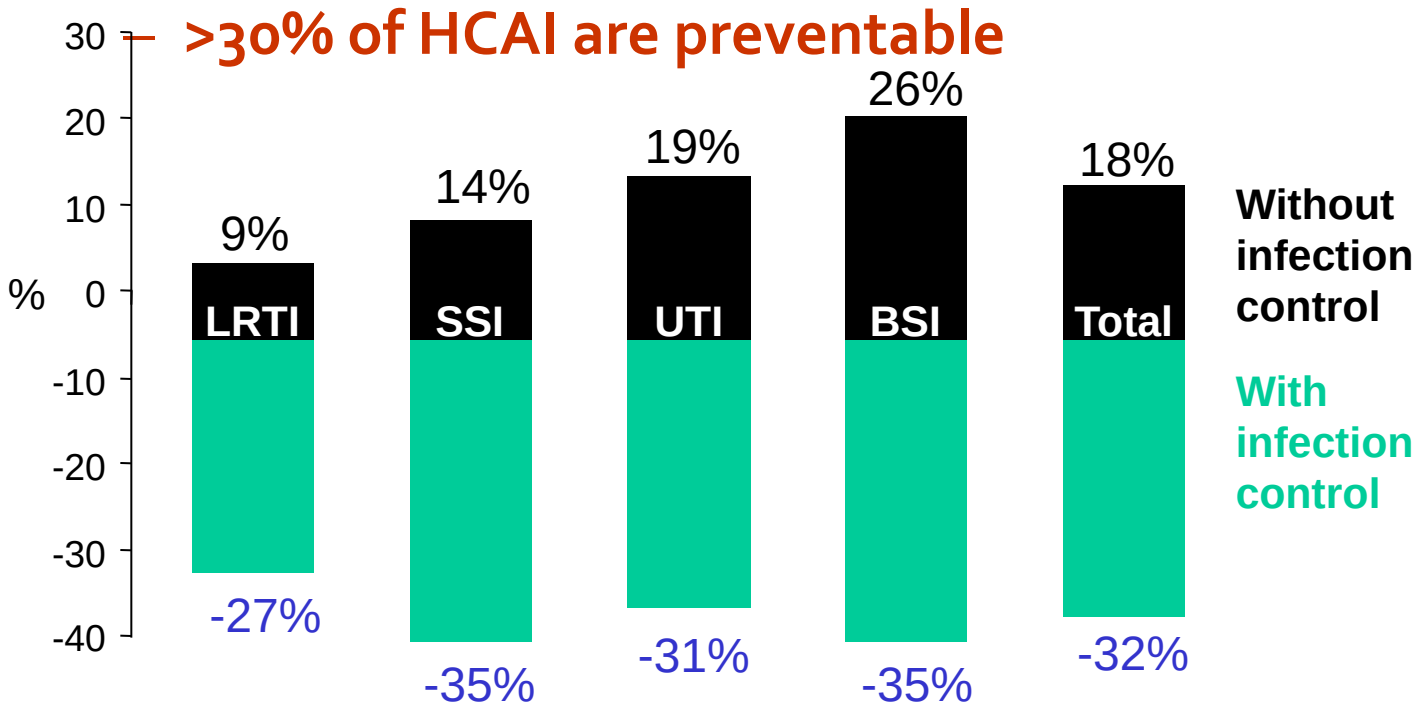
B Durden

Prevention of HCAI

- Validated and standardized prevention strategies have been shown to reduce HCAI
- At least 50% of HCAI could be prevented
- Most solutions are simple and not resource-demanding and can be implemented in developed, as well as in transitional and developing countries

SENIC study: Study on the Efficacy of Nosocomial Infection Control

Relative change in NI in a 5 year period (1970–1975)



Haley RW et al. *Am J Epidemiol* 1985

Background to Care Bundles

- Dr. Peter Pronovost is accredited with developing the 1st Care Bundle – insertion and management of CVC's
- Intensivist in a hospital in Michigan
- Developed a checklist for insertion and management of CVC's to ensure that key interventions recommended by the CDC 2002 guidelines were implemented every time a CVC was inserted

Interventions relating to CVC's

1. Hand decontamination pre insertion
2. Full sterile barrier precautions (operator & patient)
3. 2% chlorhexidine for skin disinfectant
4. Avoiding use of femoral site
5. Removing unnecessary catheters

Results

- 103 ITU's in 67 hospitals data was included in the study results
- Medium rate of catheter-related blood stream infections per 1000 catheter days decreased from 2.7 at baseline to 0 at 3 months after implementation
- 67% reduction in catheter related blood stream infections over the 18 months of the study


組合式照護Care bundle
手部衛生Hand hygiene
順從性Compliance
持續性Consistency
零容忍
Zero tolerance
行政院衛生署疾病管制局
社團法人台灣感染管制學會
since 2012

WHO手部衛生五大策略-Care Bundles

策略	作法
系統性改變 (System Change)	建置院內各單位手部衛生設備，並達到WHO推動醫護人員在每一個病人區(patient zone)皆可方便取得酒精性乾洗手液之目標
教育訓練 (Training Education)	針對不同對象有系統的規劃從基礎到進階的課程，定期或不定期舉辦教育訓練，以提高醫護人員手部衛生認知
評估及回饋 (Evaluation and Feedback)	依據績效指標項目規劃稽核及評估(含QCC)作業，並規劃績效指標及計畫實施成效定期回饋機制，以提供計畫參與人員及院內員工參考

衛生WHO手部五大策略-Care Bundles

策略	作法
工作場所標示(Reminders in the Workplace)	規劃以WHO手部衛生5時機等海報為主題，於門診診間、病房、手部衛生設備設置處等醫護人員工作場所佈置宣導，加強醫護人員正確執行手部衛生
創造院內安全文化風氣(Institutional Safety Climate)	1.由醫院院長及主管發表聲明支持院內手部衛生推廣計畫 2.建立病人參與(設計病人入院說明卡及出院病人電訪問卷，以及訪視方式) 3. 規劃持續型手部衛生推動計畫

參與醫院家數及型態

1馬偕醫院
2台大醫院
3三軍總醫院
4林口長庚
5中國
6中榮
7奇美醫院
8高榮
9高醫

10高雄長庚

10家醫學中心

1花蓮門諾
2郭綜合醫院

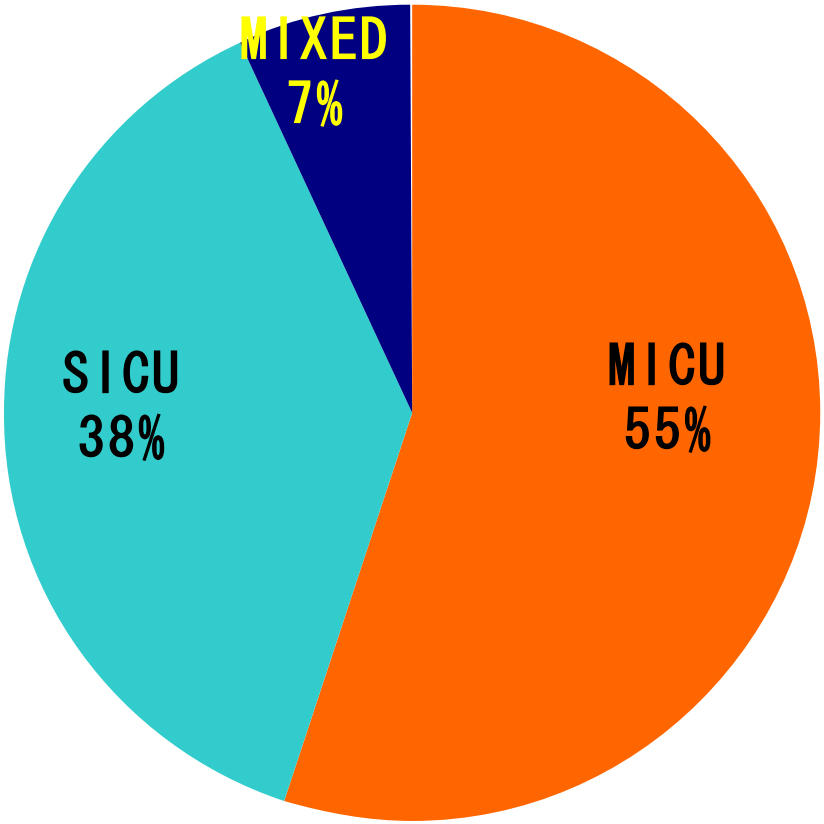
3台南醫院

3家區域醫院

1. 嘉義陽明

1家地區醫院

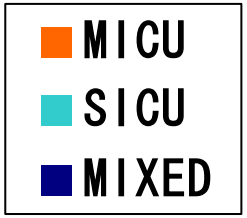
完成加護病房型態及家數



- 共29間ICU
- 總床數432床
- 完成同性質ICU

進行控制/實驗組及有介入措施與

無介入措施比較（1家醫院有2組進行MICU、SICU比較）



文獻探討

頁數限制：5 頁

六、重要參考文獻：依一般科學論文之參考文獻撰寫方式，列出所引用之參考文獻，並於計畫內容引用處標註之。

1. 張雪梅、王麗華：中心靜脈導管相關的血流感染 感染控制雜誌 15(4)。
2. 吳受津、張嘉頻、陳美君：降低某內科加護病房『與中心導管相關血流感染』發生率之改善方案. 台灣醫療品質促進年會第二屆。
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   2010;p54-57。
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   prevention strategy on the impact
   infacts.Journal of Hospital Infectio
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   line-associated infections in the int
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   associated bloodstream infection
   2010;38:434-9.
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   medical intensive csre unit. J Crit
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   infections by implementation of
   2010;38:430-3.
10. Centers for Disease Control and
    intravascular Catheter-Related Infe
11. Central venous catheter-related b
    aureus: microbiology and risk fi
    Apr.2006.

六、重要參考文獻：依一般科學論文之參考文獻撰寫方式，列出所引用之參考文獻，並於計畫內容引用處標註之。

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12. Rate, risk factors and outcomes of catheter-related bloods
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    logy, 1999:514.
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    ation sets: is it safe to prolong use beyond 72 hours'
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    K, Zack JE, Mayfield JL, et al. The effect of an educ
    of central venous catheter-associated bloodstream i
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    ntrol Hosp Epidemiol 2000;21:12-7.
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■辦理國際研習會1場次(中心導管相關血流感染國際研討會)。邀請國外(澳洲/中國)學者來台，期能透過國外學者實際執行CLABSI Bundle之經驗，提供該策略之介紹、執行後之優缺點及其執行成功的經驗分享。

時間:101.2.11
地點：馬偕醫院9樓大禮堂
參加人數：423人


The International Symposium of Central Line-Associated Bloodstream Infection

Time	Programs	Speakers	Moderators
12:30~13:00	ICST Members Registration		
13:00~13:30	Open remarks	Feng-Yee Chang , CDC Direct-General (疾病管制局局長 張峰義) Yu-Cheng Yang, Superintendent of Mackay Memorial Hospital(馬偕醫院院長 楊育正)	
13:30~14:20	The Impact of CLABSI in the healthcare setting	Glenys Harrington, APSIC Secretary General (APSIC 秘書長)	Chung-Ming Lee, ICST President (台灣感染管制學會 李聰明理事長)
14:20~15:10	Needless systems in the prevention of CLABSI.	Bi-Jie Hu,Directors, Department of Infectious Diseases, Zhongshan Hospital (復旦大學附屬中山醫院 感染性疾病科胡必杰主任)	Ping-Cherng Chiang, Department Head, Chang Gung Memorial Hospital (林口長庚紀念醫院 江秉誠主任)
15:10~15:30	Coffee Break		
15:30~16:20	How to implement bundle interventions to prevent CLABSI.	Glenys Harrington, APSIC Secretary General (APSIC 秘書長)	Chung-Ming Lee, ICST President (台灣感染管制學會 李聰明理事長)
16:20~17:00	Pathogens and antibiotic resistance of BSI in Taiwan.	Po-Ren Hsueh ,Divisions of Clinical Microbiology and Infectious Diseases, National Taiwan University Hospital (台大醫院 薛博仁教授)	Zhi-Yuan Shi, Department Head, Taichung Veterans General Hospital (台中榮民總醫院 施智源主任)
17:00~17:30	Panel Discussion	Shan-Chwen Chang, Vice Superintendent, National Taiwan University Hospital (台大醫院 張上淳副院長)	

圖1 課程表

圖3-4 上課活動

圖2 海報


預防
中心導管相關血流感染的組合式照護
Care Bundle of Central Line Associated Infection Prevention
手部衛生
Hand hygiene
最大無菌面防護
Maximal Barrier Precautions
2% CHG皮膚消毒
Alcohol-based 2% Chlorhexidine Gluconate
避免選擇股靜脈
Avoid Femoral Vein
每日評估留置必要性
Daily Review of Line Necessity
行政院衛生署疾病管制局
社團法人台灣感染管制學會
since 2012

洗手與院內感染

hand hygiene saves lives


手部衛生五時機
1.接觸病人前
BEFORE TOUCHING A PATIENT
2.執行清潔/無菌操作技術前
BEFORE CLEAN/ASEPTIC PROCEDURE
3.暴觸病人體液風險後
AFTER BODY FLUID EXPOSURE RISK
4.接觸病人後
AFTER TOUCHING A PATIENT
5.接觸病人週遭環境後
AFTER TOUCHING PATIENT SURROUNDINGS
Form:61771 99.8
馬偕紀念醫院 Mackay Memorial Hospital 感染管制中心提醒您

酒精性乾洗手液使用步驟圖

兒童使用
大人陪同

危險

有效期限

年　月　日

～

年　月　日

當機器故障與無溶液時請與我們聯絡

負責單位＿＿＿＿＿＿

聯絡電話＿＿＿＿＿＿

指背在掌心中搓揉

酒精性乾洗手液
約5ml置於掌心中

右（左）拇指作輪狀搓揉

掌心對掌心搓揉

右（左）手指尖對左（右）手掌心來回搓揉

右（左）掌心搓揉
左（右）手背

約20－30秒，待手乾後，您的手就是清潔乾淨的手

指縫間交叉搓揉

FORM：AG-059　馬偕紀念醫院感染管制中心 關心您　2011/03/05 三版

病人需放置中心導管時
護理人員須備妥下列用物

1.髮帽(2個)
2.外科口罩(2個)
3.無菌手套(2雙)
4.無菌隔離衣(2件)
5.中心靜脈導管(型號依醫囑) 1支
6.中心靜脈導管包(CVP包) 1個
7. 2% Chlorhexidine Gluconate 1瓶
8. 2% xylocaine 1瓶
9.酒精或Hibiscrub® 1瓶
10.10cc無菌空針 1支
11.棉枝或棉球 適量

Maximal sterile barrier precaution 最大無菌面

- For all involved HCW: mask, cap, sterile gown, gloves
- For patient: covered with a large sterile drape from head to toe with a small opening for site of insertion

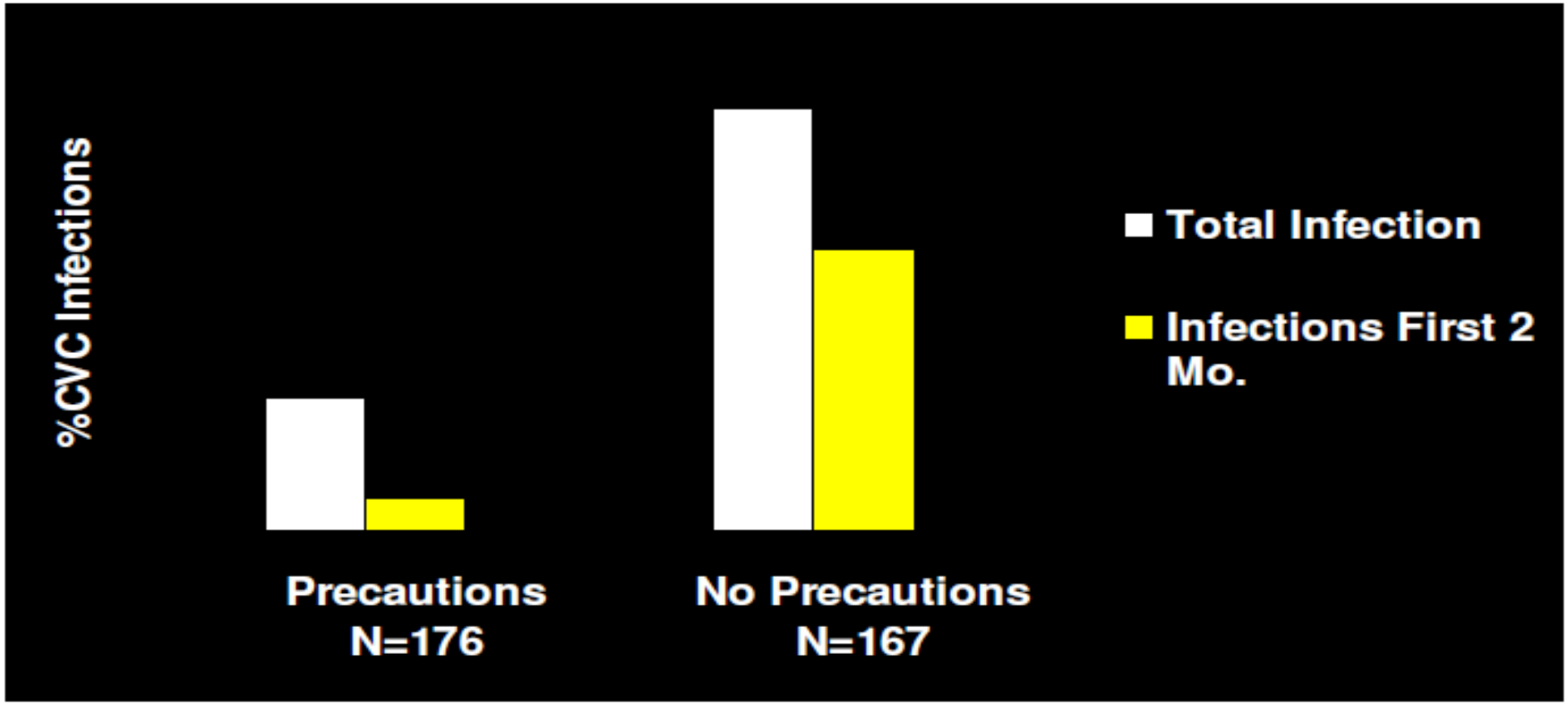
中心靜脈導管置放包

新的CVC包(100*100洞巾、小方巾*2、手術衣、加入110*80布單共3條)

散邊
（車縫線邊）
朝床尾

打開大洞巾

Effect of Maximal Barrier Precautions During Insertion on CVC Infections



Raad et al, Infect Control Hosp Epidemiol, 1994

Alcohol based 2% Chlorhexidine(CHG) 執行消毒

.病人皮膚以2%Chlorhexidine消毒※ （不適用2個月以下嬰幼兒使用）
※若病人對2%Chlorhexidine過敏者可選用其他消毒劑

2%Chlorhexidine

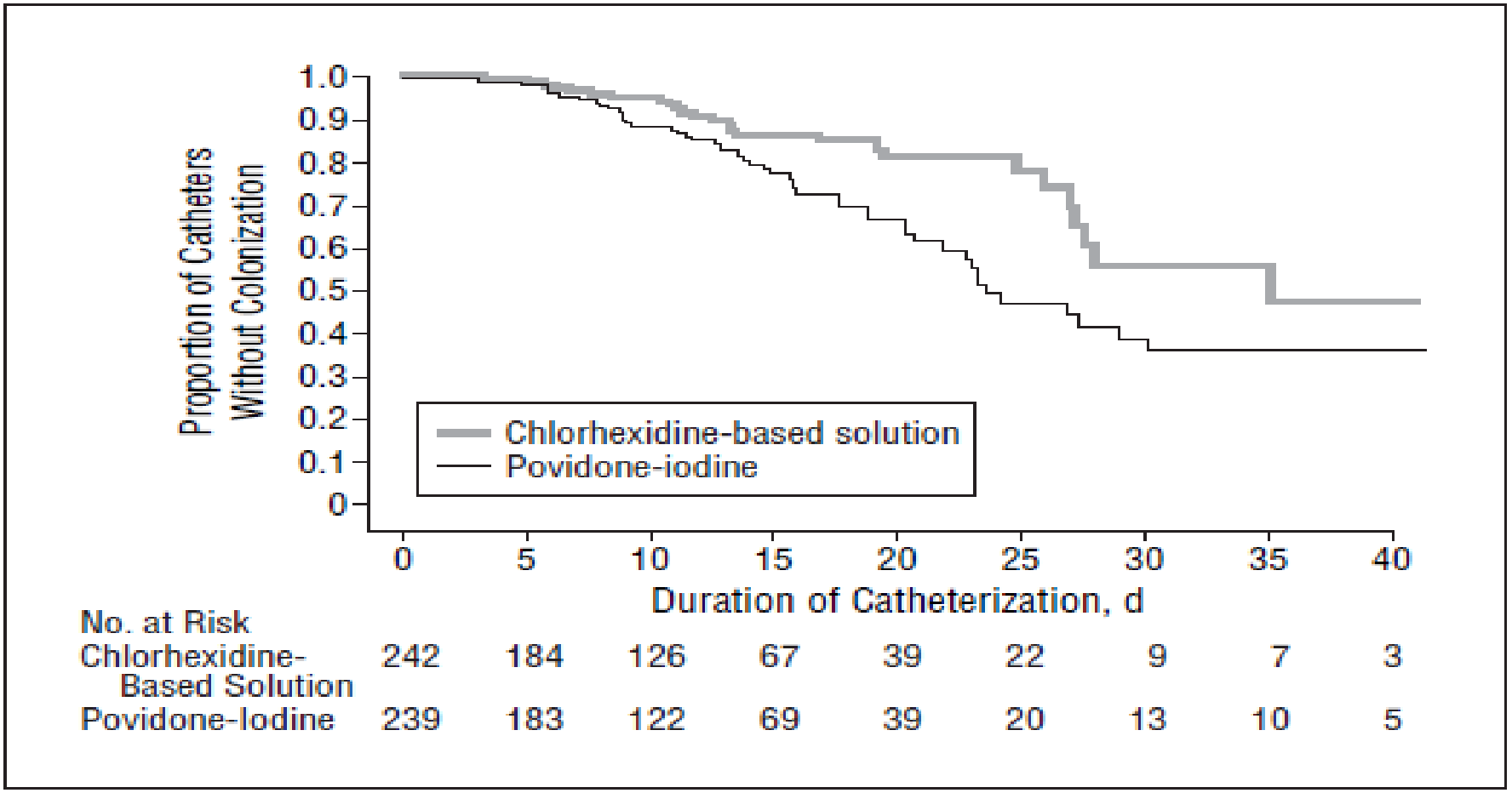
Beta-iodine

CVC Insertion bundle

什麼是2% chlorhexidine gluconate (CHG)?

- 廣效性陽離子殺菌劑:附著細胞膜，抑制革蘭氏陰性菌、酵母菌、脂包膜病毒
- 立即殺菌
- 一次消毒即可
- 可持續48小時殺菌效果
- 安全不刺激
- 不受高蛋白組織液體及血液影響消毒能力

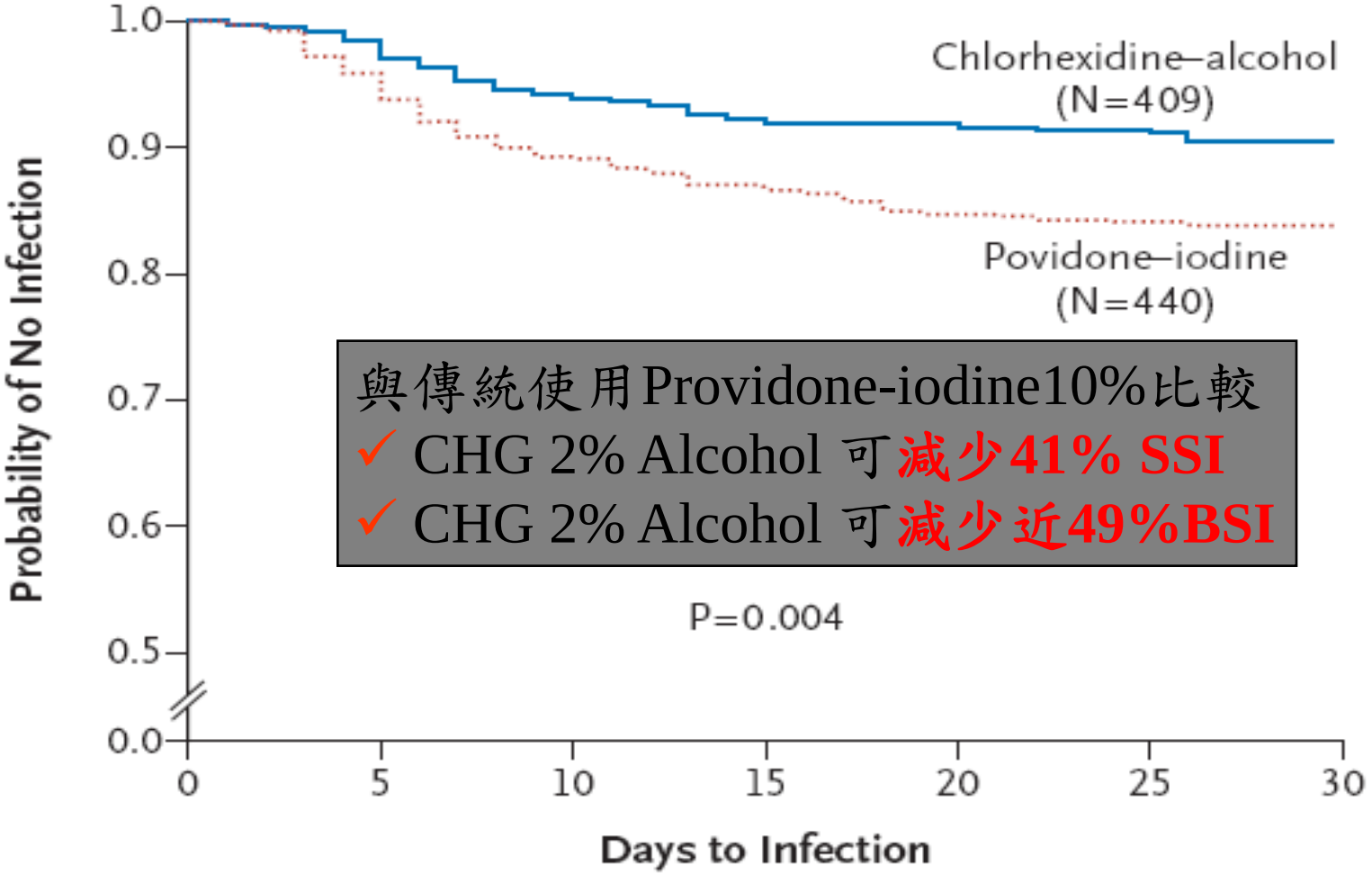
P=.006 by the log-rank test



CHG延緩導管移生率

Arch Intern Med. 2007;167(19):2066-2072

術前皮膚消毒並觀察手術30天後之感染臨床研究



與傳統使用Providone-iodine10%比較

✓ CHG 2% Alcohol 可**減少41% SSI**

✓ CHG 2% Alcohol 可**減少近49%BSI**

Chlorhexidine-Alcohol versus Povidone-Iodine for Surgical-Site Antisepsis. N Engl J Med 2010; 362:18-26.

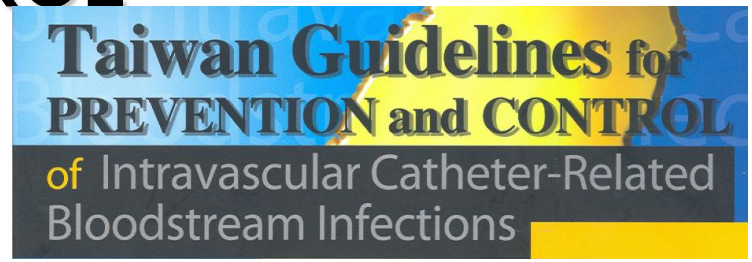
2011 CDC USA

- 相較於povidone iodine有效降低49%血流感染
- 平均每次可節省$113美金的醫療成本支出
- 降低死亡率

Guidelines for the Prevention of Intravascular Catheter-Related Infections, 2011

colonization or in CRBSI [256]. In a three-armed study (2% aqueous chlorhexidine gluconate vs 10% povidone-iodine vs 70% alcohol), 2% aqueous chlorhexidine gluconate tended to decrease CRBSI compared with 10% povidone iodine or 70% alcohol [82]. A meta-analysis of 4,143 catheters suggested that chlorhexidine preparation reduced the risk of catheter related infection by 49% (95% CI .28 to .88) relative to povidone iodine [257]. An economic decision analysis based on available evidence suggested that the use of chlorhexidine, rather than povidone iodine, for CVC care would result in a 1.6% decrease in the incidence of CRBSI, a 0.23% decrease in the incidence of death, and a savings of $113 per catheter used [258]. While

2011 Taiwan Guildelines for PREVENTION and CONTROL



VII. Performance Indicators (P.35-36)

Performance indicators for reducing CRBSI are : (1) implementation of educational programs that include didactic and interactive components for those who insert and maintain catheters; (2) use of maximal sterile barrier precautions during catheter placement; **(3) use of chlorhexidine for skin antisepsis** ; and (4) rates of catheter discontinuation when the catheter is no longer essential for medical management.

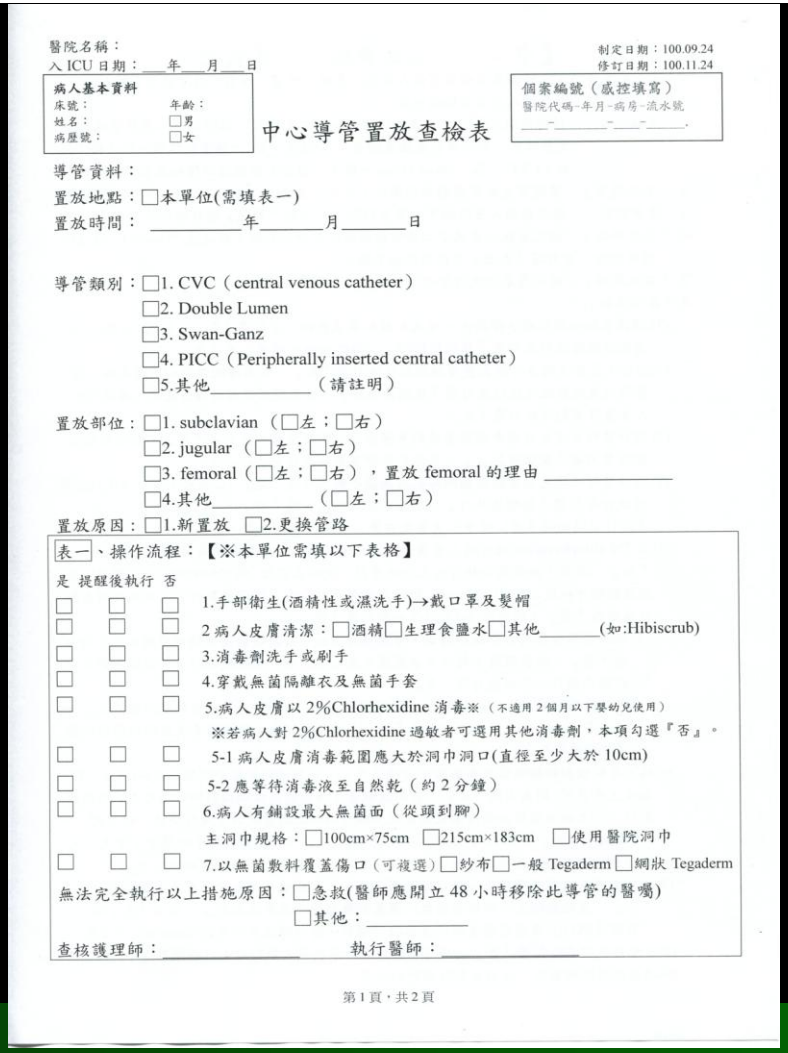
4 Skin Preparation (P.44-45)

4.1 **Prepare and clean the skin site with and alcoholic chlorhexidine solution** containing a concentration of CHG greater than 0.5% **or 2% chlorhexidine -base preparation before central venous catheter insertion and during dressing changes**.

4.3 Allow **povidone iodine** to remain on the skin for **at least 2 minutes or longer** for the antibacterial properties to take effect, if it is not yet dry before catheter insertion. The antibacterial properties of chlorhexidine work on contact, and **chlorhexidine does not require a minimum 2-minute drying time** before proceeding. Catheter insertion may begin **as soon as possible as the chlorhexidine is dry**. Category IB.

內容完整之預防中心導管置入時之組合式照護查檢表(Insertion check list)及每日照護評估表(Daily care check list)

■中心導管置入及每日照護之遵從性評估



醫院名稱：
入 ICU 日期：___年___月___日

制定日期：100.09.24
修訂日期：100.11.24

病人基本資料
床號：　年齡：
姓名：　□男
病歷號：　□女

個案編號（感控填寫）
醫院代碼-年月-病房-流水號

中心導管置放查檢表

導管資料：
置放地點：□本單位(需填表一)
置放時間：_____年_____月_____日

導管類別：□1. CVC（central venous catheter）
□2. Double Lumen
□3. Swan-Ganz
□4. PICC（Peripherally inserted central catheter）
□5.其他_____（請註明）

置放部位：□1. subclavian（□左；□右）
□2. jugular（□左；□右）
□3. femoral（□左；□右），置放 femoral 的理由 _____
□4.其他_____（□左；□右）

置放原因：□1.新置放 □2.更換管路

表一、操作流程：【※本單位需填以下表格】

是	提醒後執行	否	
□	□	□	1.手部衛生(酒精性或濕洗手)→戴口罩及髮帽
□	□	□	2.病人皮膚清潔：□酒精□生理食鹽水□其他_____(如:Hibiscrub)
□	□	□	3.消毒劑洗手或刷手
□	□	□	4.穿戴無菌隔離衣及無菌手套
□	□	□	5.病人皮膚以 2%Chlorhexidine 消毒※（不適用 2 個月以下嬰幼兒使用）
			※若病人對 2%Chlorhexidine 過敏者可選用其他消毒劑，本項勾選『否』。
□	□	□	5-1 病人皮膚消毒範圍應大於洞巾洞口(直徑至少大於 10cm)
□	□	□	5-2 應等待消毒液至自然乾（約 2 分鐘）
□	□	□	6.病人有鋪設最大無菌面（從頭到腳）
			主洞巾規格：□100cm×75cm □215cm×183cm □使用醫院洞巾
□	□	□	7.以無菌敷料覆蓋傷口（可複選）□紗布□一般 Tegaderm □網狀 Tegaderm

無法完全執行以上措施原因：□急救(醫師應開立 48 小時移除此導管的醫囑)
□其他：_____

查核護理師：_____　執行醫師：_____

第 1 頁，共 2 頁

醫院名稱：
入 ICU 日期：___年___月___日

修訂日期：100.11.24

個案編號（感控填寫）
醫院代碼-年月-病房-流水號

床號：　年齡：
姓名：　□男
病歷號：　□女

中心導管每日照護評估表

置放地點：□本單位□其他_____（請註明單位）
置放原因：□新置放□更換管路　置放時間：_____年_____月_____日
置放管路：□ Central venous catheter (CVC) □ Double Lumen □ Swan-Ganz
□ Peripherally inserted central catheter（PICC）□其他_____（請填寫）
置放部位：□ subclavian（□左；□右）□ jugular（□左；□右）
□ femoral（□左；□右）；理由：_____ □ 其他_____（□左；□右）

※每日評估項目：＊填寫方式：V 執行； × 未執行； NA 未發生或不適用

①於執行所有管路照護前確實執行洗手。
②檢視敷料有效日期（Tegaderm至少每7天更換一次；紗布至少每2天更換一次）。
③更換敷料時或執行管路相關照護工作，須使用 2%Chlorhexidine 消毒。
④觀察注射部位有無紅、腫、熱、痛情形（若出現感染症狀，應立即請醫師評估後移除）。
⑤每日醫師確認是否有使用中心導管必要。
＊管路留置原因(可複選)：1.輸注高濃度藥物；2.輸注化學治療藥物；3.輸注全靜脈營養；4.血液動力學監測；5.急救處置；6.血液透析；7.體液置換；8.心律不整治療；9.周邊導管困難置放；0.其他，請說明原因。**經醫師評估可拔除管路者，留置原因請填NA。**

日期	時間	每日評估項目 ①	②	③	④	護理師簽章	⑤	＊留置原因	醫師簽章

＊□拔除管路/□更換管路日期：_____年_____月_____日 ＊病人轉出日期：_____年_____月_____日
＊＊以下由感管師填寫：
是否發生下列感染：□是□否　感染收案日期：_____年_____月_____日
□血液細菌培養結果：□ No growth □ growth/菌種名稱：_____
□導管置放部位感染：□ No growth □導管前端半定量培養菌落數＞15 /菌種名稱：_____

流程：①單位→②感染管制。一管一聯。

第 -1- 頁，共 2 頁

以ICU 常見的管路為主

導管類別：

☐1. CVC（central venous catheter）

☐2. Double Lumen

☐3. Swan-Ganz

☐4. PICC（Peripherally inserted central catheter）

☐5.其他_____（請註明）

置放部位：☐1. subclavian （☐左；☐右）

☐2. jugular （☐左；☐右）

☐3. femoral（☐左；☐右）， 置放femoral的理由 _____

☐4.其他_____（☐左；☐右）

中心導管查檢表及每日照護單

姓名：　□男
病歷號：　□女

中心導管每日照護評估表 ____-_____-____-_____.

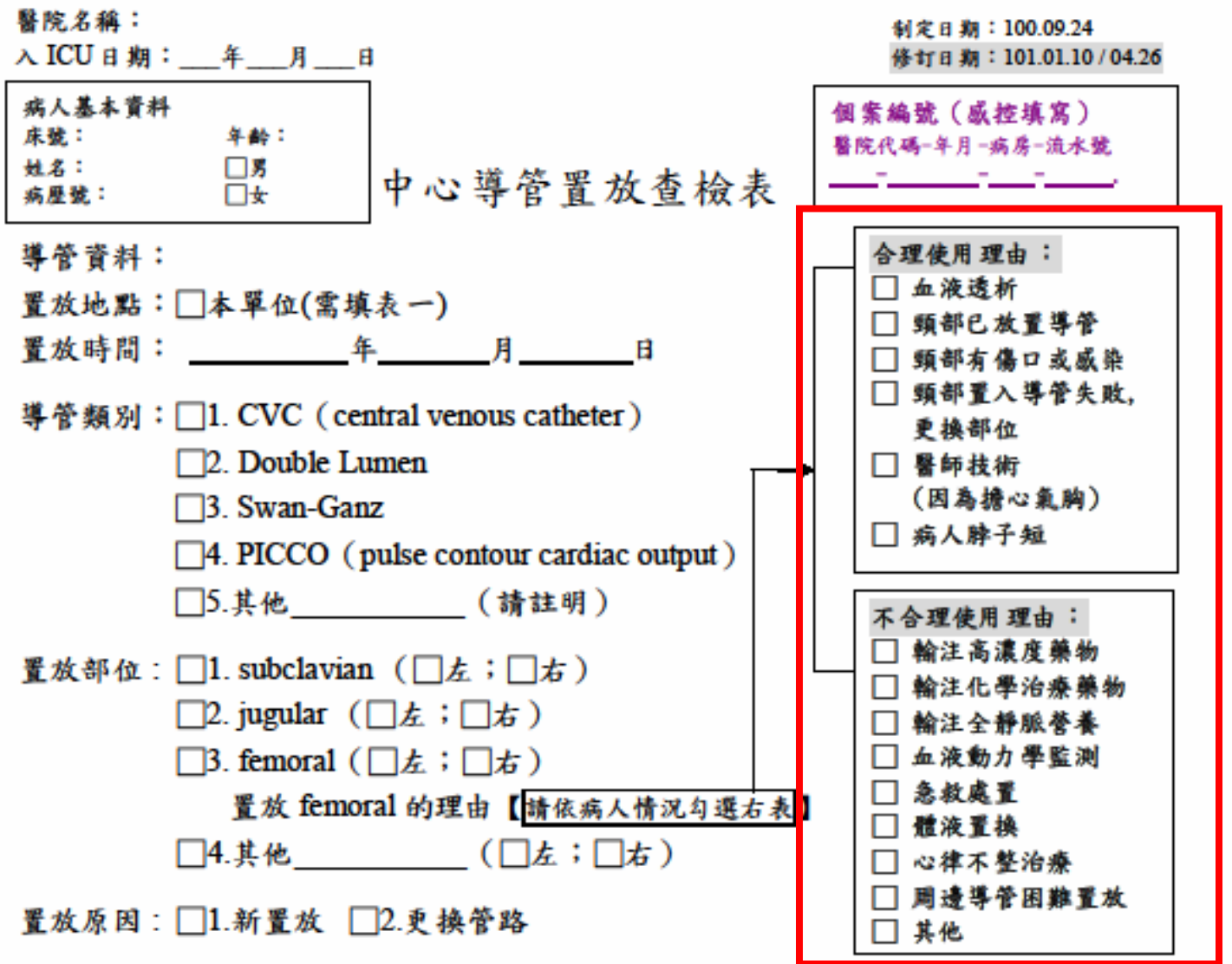
置放地點：□本單位□其他_____(請註明單位)
置放原因：□新置放□更換管路　　置放時間：_____年_____月_____日
置放管路：□ Central venous catheter (CVC) □ Double Lumen □ Swan-Ganz
□ Peripherally inserted central catheter（PICC）□其他_____（請填寫）
置放部位：□ subclavian（□左；□右）□ jugular（□左；□右）
□ femoral（□左；□右）；理由：_____ □ 其他_____（□左；□右）

※每日評估項目：**＊填寫方式：V 執行； × 未執行； NA 未發生或不適用**

①於執行所有管路照護前確實執行洗手。
②檢視敷料有效日期（Tegaderm至少每7天更換一次；紗布至少每2天更換一次）。
③更換敷料時或執行管路相關照護工作，須使用 2%Chlorhexidine 消毒。
*照護行為(可複選)：1.更換敷料；2.經管路注入藥物或輸液；3.經管路抽血；0.其他，請說明。
④觀察注射部位有無紅、腫、熱、痛情形（若出現感染症狀，應立即請醫師評估後移除）。
⑤每日醫師確認是否有使用中心導管必要。
管路留置原因(可複選)：1.輸注高濃度藥物；2.輸注化學治療藥物；3.輸注全靜脈營養；4.血液動力學監測；5.急救處置；6.血液透析；7.體液置換；8.心律不整治療；9.周邊導管困難置放；0.其他，請說明原因。經醫師評估可拔除管路者，留置原因請填NA。**

日期	時間	每日評估項目								
		①	②	③	*照護行為	④	護理師簽章	⑤	**留置原因	醫師簽章

■中心導管置入及每日照護之遵從性評估



醫院名稱：
入 ICU 日期：___年___月___日

制定日期：100.09.24
修訂日期：101.01.10 / 04.26

病人基本資料
床號：　　年齡：
姓名：　　□男
病歷號：　　□女

個案編號（感控填寫）
醫院代碼-年月-病房-流水號
____-_____-___-_____

中心導管置放查檢表

導管資料：

置放地點：□本單位(需填表一)

置放時間：_____年_____月_____日

導管類別：□1. CVC（central venous catheter）
□2. Double Lumen
□3. Swan-Ganz
□4. PICCO（pulse contour cardiac output）
□5.其他_____（請註明）

置放部位：□1. subclavian（□左；□右）
□2. jugular（□左；□右）
□3. femoral（□左；□右）
置放 femoral 的理由【請依病人情況勾選右表】
□4.其他_____（□左；□右）

置放原因：□1.新置放 □2.更換管路

合理使用理由：
□ 血液透析
□ 頸部已放置導管
□ 頸部有傷口或感染
□ 頸部置入導管失敗，更換部位
□ 醫師技術（因為擔心氣胸）
□ 病人脖子短

不合理使用理由：
□ 輸注高濃度藥物
□ 輸注化學治療藥物
□ 輸注全靜脈營養
□ 血液動力學監測
□ 急救處置
□ 體液置換
□ 心律不整治療
□ 周邊導管困難置放
□ 其他

Catheter Insert Sites

Avoid femoral vein (股靜脈) for CVC (A-I)

- Risk of infection and deep venous thrombosis
- Limited to overweight adult (BMI >28.4) or children
- Lower risk in subclavian v. than internal jugular v.

Complication	Frequency		
	Internal Jugular	Subclavian	Femoral
		percent	
Arterial puncture	6.3–9.4	3.1–4.9	9.0–15.0
Hematoma	<0.1–2.2	1.2–2.1	3.8–4.4
Hemothorax	NA	0.4–0.6	NA
Pneumothorax	<0.1–0.2	1.5–3.1	NA
Total	6.3–11.8	6.2–10.7	12.8–19.4

McGee Dc, et al. N Engl J Med 2003;348:1123-33.

Catheter Insert Sites

Avoid femoral vein (股靜脈) for CVC (A-I)

- Risk of infection and deep venous thrombosis
- Limited to overweight adult (BMI >28.4) or children
- Lower risk in subclavian v. than internal jugular v. femoral

Complication	Frequency		
	Internal Jugular	Subclavian	Femoral
		percent	
Arterial puncture	6.3–9.4	3.1–4.9	9.0–15.0
Hematoma	<0.1–2.2	1.2–2.1	3.8–4.4
Hemothorax	NA	0.4–0.6	NA
Pneumothorax	<0.1–0.2	1.5–3.1	NA
Total	6.3–11.8	6.2–10.7	12.8–19.4

McGee Dc, et al. N Engl J Med 2003;348:1123-33.

中心導管標準作業操作手冊

制定日期：2011.09.24
修訂日期：2011.11.03

完成工作說明書

「100 年度應用組合式感染控制介入措施(bundle intervention)降低中心導管相關血流感染計劃」工作說明書

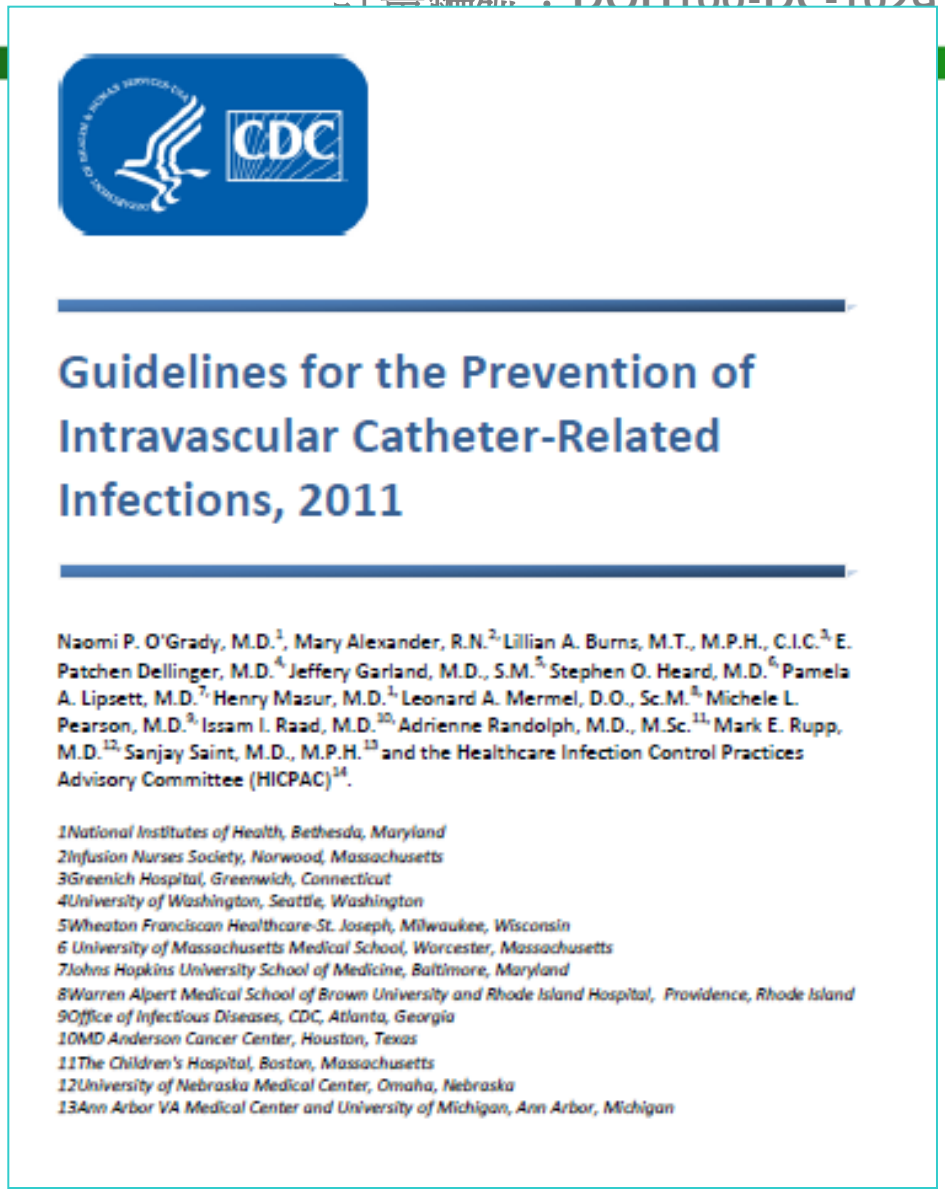
執行期間：100.06.02～101.12.31

目錄

VCD實體操作流程影視光碟

- 美國CDC之「2011 guidelines for the prevention of intravascular catheter-related infection」全文翻譯

獲得美國疾病管制中心同意轉譯(2011.11.29)刊登於感控雜誌101.4及101.8期刊



Guidelines for the Prevention of Intravascular Catheter-Related Infections, 2011

Naomi P. O'Grady, M.D.[1], Mary Alexander, R.N.[2], Lillian A. Burns, M.T., M.P.H., C.I.C.[3], E. Patchen Dellinger, M.D.[4], Jeffery Garland, M.D., S.M.[5], Stephen O. Heard, M.D.[6], Pamela A. Lipsett, M.D.[7], Henry Masur, M.D.[1], Leonard A. Mermel, D.O., Sc.M.[8], Michele L. Pearson, M.D.[9], Issam I. Raad, M.D.[10], Adrienne Randolph, M.D., M.Sc.[11], Mark E. Rupp, M.D.[12], Sanjay Saint, M.D., M.P.H.[13] and the Healthcare Infection Control Practices Advisory Committee (HICPAC)[14].

1National Institutes of Health, Bethesda, Maryland
2Infusion Nurses Society, Norwood, Massachusetts
3Greenich Hospital, Greenwich, Connecticut
4University of Washington, Seattle, Washington
5Wheaton Franciscan Healthcare-St. Joseph, Milwaukee, Wisconsin
6 University of Massachusetts Medical School, Worcester, Massachusetts
7Johns Hopkins University School of Medicine, Baltimore, Maryland
8Warren Alpert Medical School of Brown University and Rhode Island Hospital, Providence, Rhode Island
9Office of Infectious Diseases, CDC, Atlanta, Georgia
10MD Anderson Cancer Center, Houston, Texas
11The Children's Hospital, Boston, Massachusetts
12University of Nebraska Medical Center, Omaha, Nebraska
13Ann Arbor VA Medical Center and University of Michigan, Ann Arbor, Michigan

■學會網頁系統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Bundle intervention
Bundle 提問
資料參考區
提報資料區
會員提問區
問題:
132465463123
2011-09-16 17:02:34 10001
123
祕書處回覆
個人得獎紀錄
檔案下載
年會投稿進度
感控雜誌投稿
活動集錦
年會專區
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.4545345
祕書處回覆
問題:
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2011-09-16 17:02:12 10001
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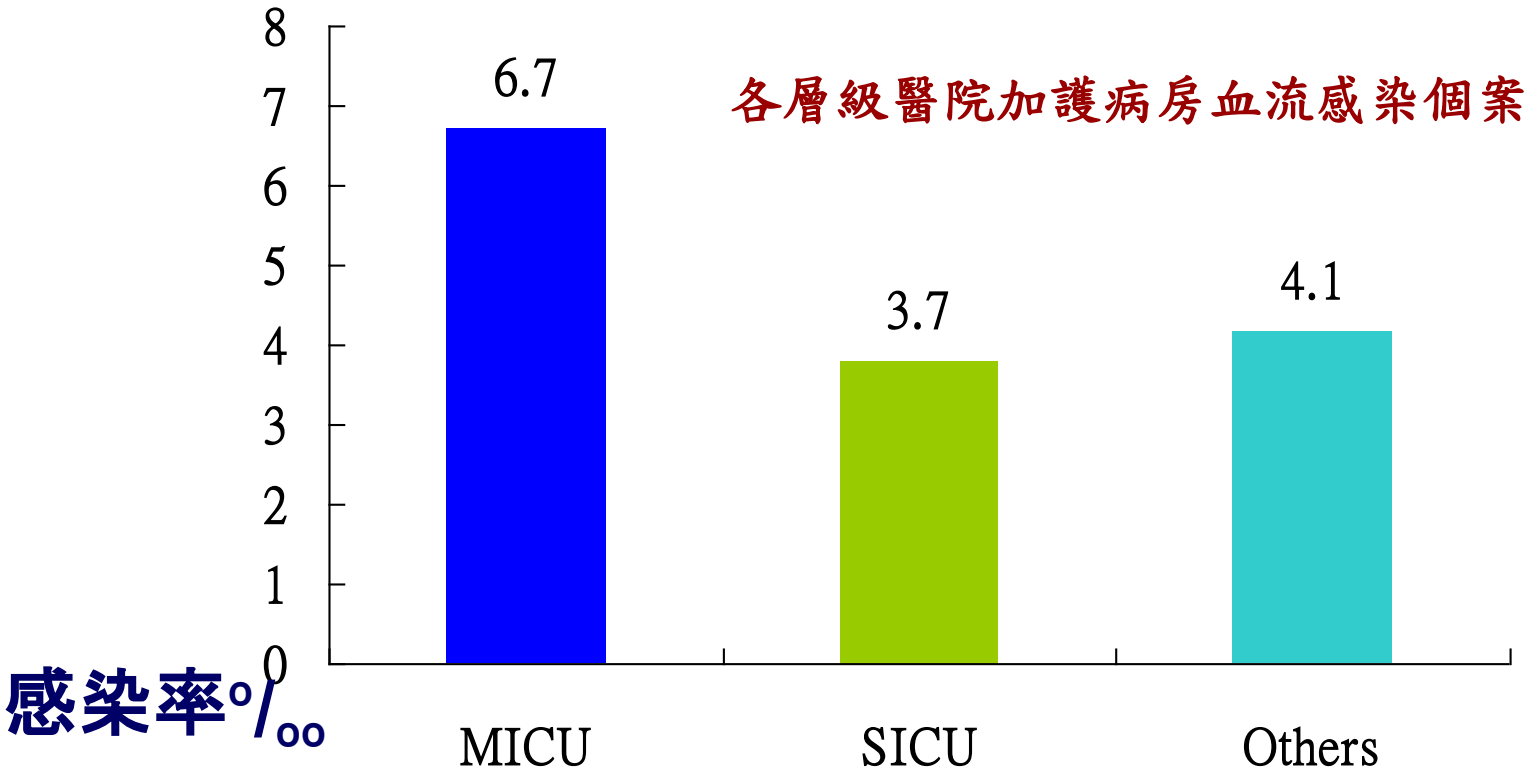
祕書處回覆
問題:
465465456wefg
2011-09-16 17:01:27 10001
4546632134165
祕書處回覆
ADVERTISING
廣告刊登申請區
感控雜誌出刊通知登記
Bundle intervention
相關連結
01. 行政院衛生署
02. 衛生署疾病管制局
03. 台灣感染症醫學會
04. 中華民國醫事檢驗學會
05. 中央健康保局

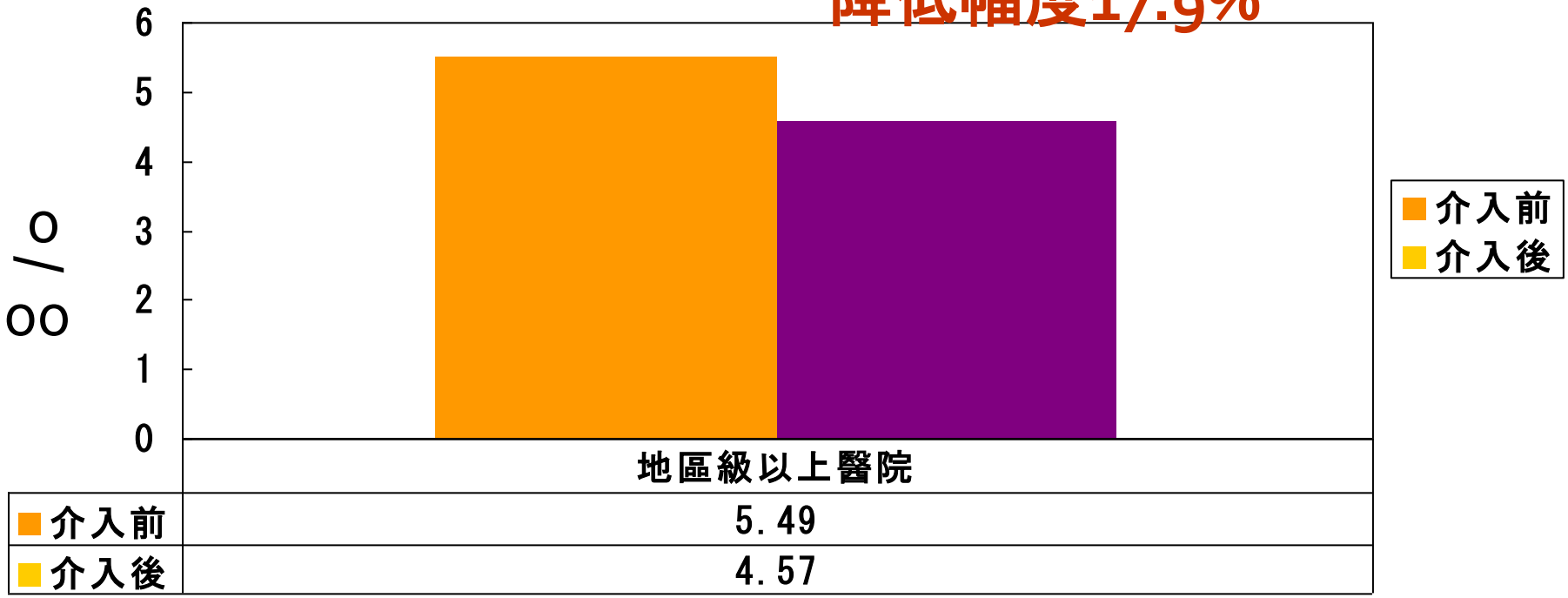
■14家(29間ICU參加醫院之感染資料收集(99年7月1日至100年6月30日)



依據台灣醫院感染管制學會期中報告提交的監測資料，將14家醫院26間加護病房的中心導管相關血流感染密度分為在介入前(2010/1~2011/10)與介入後(2011/11~2012/05)比較，整體降低幅度達17.9%。

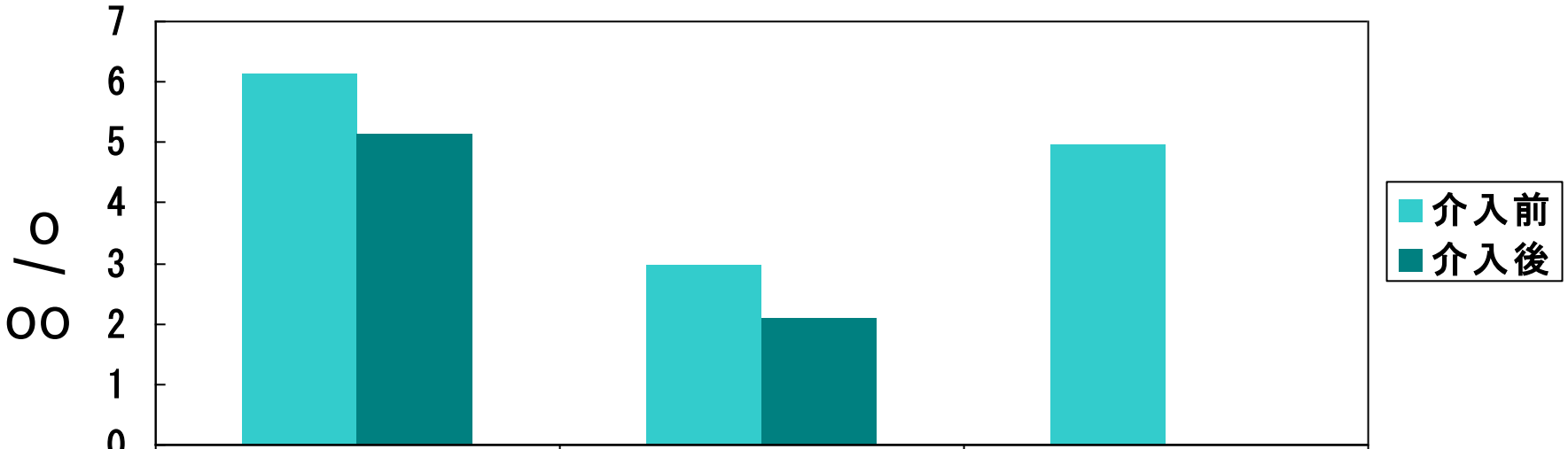
■介入期前後中心導管相關血流感染密度比較(按醫院層級分)

降低幅度17.9%



	地區級以上醫院
介入前	5.49
介入後	4.57

■介入期前後中心導管相關血流感染密度比較(按醫院層級分)



	醫學中心	區域醫院	地區醫院
介入前	6.11	2.95	4.95
介入後	5.13	2.07	0

■介入期前後中心導管相關血流感染密度比較(按加護病房類別分)

醫院層級(家數)	中心導管相關血流感染密度‰		降低幅度(%)
	介入前 (2010/01~2011/10)	介入後 (2011/11~2012/05	
MICU (13)	6.59	4.85	26.4
SICU (11)	4.34	4.30	0.9
MSICU (1)	4.95	0.0	100.0
合計	5.69	4.51	17.9

■介入期前後VAP感染密度/粗死亡率比較(按加護病房類別分)

醫院層級(家數)	VAP感染密度‰		降低幅度(%)
	介入前(2010/01~2011/10)	介入後(2011/11~2012/05	
VAP	1.88	1.12	40.4

醫院層級(家數)	粗死亡率 %		降低幅度(%)
	介入前(2010/01~2011/10)	介入後(2011/11~2012/05	
粗死亡率	11.9	11.43	3.9

- **醫療措施的改變/操作流程最大的變革**

✓ 個人防護裝備改變：新增加操作者/協助者需穿戴髮帽及無菌隔離衣

✓ 病人皮膚消毒方式由原來Povidone-iodide (Betadine)改成Alcohol based 2% Chlorhexidine消毒。

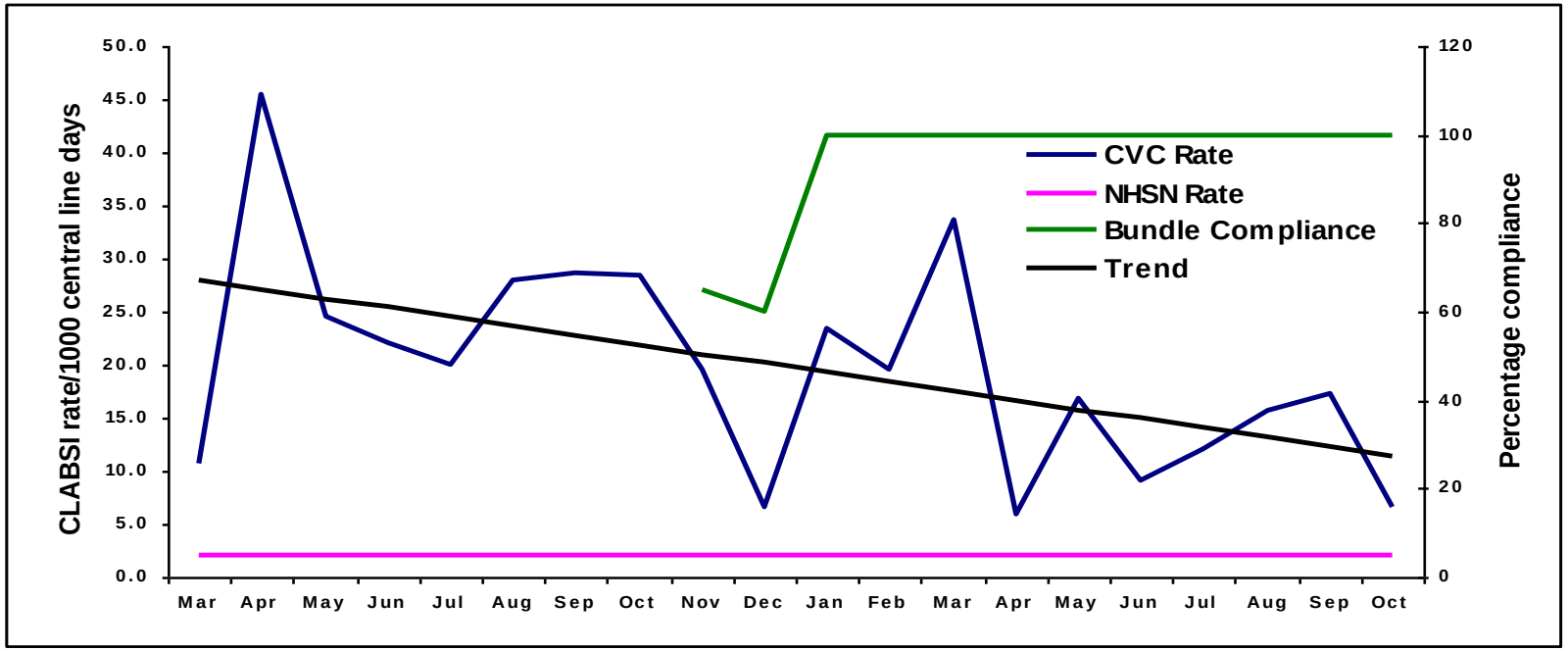
✓ 病人有鋪設最大無菌面（從頭到腳）的改變。

✓ 需有2位操作者才能順利進行

中心導管相關血流感染改善措施

- ✓ 置放導管前後確實洗手
- ✓ 著髮帽、無菌手術衣、無菌手套及正確佩帶口罩
- ✓ 最大無菌面執行導管置入
- ✓ 使用alcohol- based 2% CHG 執行皮膚消毒
- ✓ 盡量避免置放於股靜脈
- ✓ 每日執行傷口照護及評估有無感染徵象
- ✓ 儘早拔除導管

Implementation of CVC Care Bundle in a regional ITU in Belfast



Mach 2007 – CLABSI rate 10.75 per 1000 catheter days
October 2008 – CLABSI rate was 6.5 per 1000 catheters days with CVC care bundle compliance was 95%

Crookshanks H et al 2008


組合式照護Care bundle
手部衛生Hand hygiene
順從性Compliance
持續性Consistency
零容忍
Zero tolerance
行政院衛生署疾病管制局
社團法人台灣感染管制學會
since 2012

Other adjuvant methods

- Daily bathe ICU patients with chlorhexidine
- Antiseptic- or antimicrobial-impregnated CVC
  (Polyvinylpyrrolidone, chlorhexidine-silver sulfadiazine, minocycline-rifampin)
- Use chlorhexidine-containing sponge dressings
- Use antimicrobial locks for CVCs
  - *i. Units or patient populations have high* CRBSI rates
  - *ii. Limited difficult venous access or* recurrent CRBSI
  - *iii. Risk for severe sequela* from CRBSI
    (recently implant device, prosthetic valve or graft)

- 以標準之作業內容，統一的醫療措施，不僅可以保護醫療品質，對於病人的安全也是一大保障。希望病人在就診時，同樣的的醫療措施不會因為醫院層級的不同，地區的不同，或人為的因素而改變了醫療照護品質的一致性。

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