# Central venous catheter care for the patient with cancer:

# American Society of Clinical Oncology clinical practice guideline.

Schiffer CA, Mangu PB, Wade JC, Camp-Sorrell D, Cope DG, El-Rayes BF, Gorman M, Ligibel J, Mansfield P, Levine M.
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社區護理室 高雅玉 護理師

# J Clin Oncol

| Rank | Abbreviated Journal Title *(linked to journal information)* | ISSN | JCR Data | | | | | | *Eigenfactor®* Metrics | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total Cites | Impact Factor | 5-Year Impact Factor | Immediacy Index | Articles | Cited Half-life | *Eigenfactor®* Score | *ArticleInfluence®* Score |
| 1 | J CLIN ONCOL | 0732-183X | 120262 | **18.372** | 16.762 | 4.217 | 729 | 5.2 | 0.39463 | 5.560 |

# 緣起:居家護理收費標準

| 資源耗用類別 | 內容 | 費用 |
|---|---|---|
| 第一類 | 需一般照護項目之病人 | 700 |
| 第二類 | 需特殊照護群組任一組之病人 | 970 |
| 第三類 | 需特殊照護群組任二組之病人 | 1170 |
| 第四類 | 需特殊照護群組任三組及以上之病人 | 1370 |

# 特殊照護項目

| 特殊照護群組 | 診　療　項　目 |
| --- | --- |
| 1.氣切護理 | 換造口器， 含氣切造廔口處理 |
| 2.留置導尿管護理 | 留置導尿、更換腎臟引流或膀胱引流管 |
| 3.留置鼻胃管護理 | 胃管插入(或更換) |
| 4.膀胱灌洗 | 膀胱灌洗 |
| 5.三、四期壓瘡傷口護理 | 淺部創傷處理-傷口長5公分以下者<br>淺部創傷處理-傷口長5-10公分者<br>淺部創傷處理-傷口長10公分以上者<br>深部複雜創傷處理-傷口長5公分以下者<br>深部複雜創傷處理-傷口長5-10公分者 |
| 6.大量液體點滴注射 | 大量液體點滴注射 ，含靜脈留置針設立，觀察病患對注射藥物之反應、教導家屬觀察注射部位之狀況及維護靜脈點滴之通暢 |
| 7.造口護理 | 肛門切除後治療、人工肛門灌洗 、 三路灌洗、 迴腸造口永久裝具裝置、迴腸膀胱永久裝具裝置 |

# 一般照護項目

| 診　療　項　目 |
| --- |
| 小量注射：如肌肉注射、皮下注射、靜脈注射 |
| 靜脈點滴加藥 |
| 藥物敏感反應試驗(Cytomack test, Penicillin test等) |
| 濕氣吸入治療 、呼吸道抽吸、體位引流 |
| 被動性關節運動Passive R.O.M. |
| 置入器皮下注射(port-A)及護理 |
| 小換藥(10公分以下) 、中換藥(10-20公分) 、大換藥(20公分以上) 、 拆線-傷口在10cm以下 、拆線-傷口在10cm以上 |
| 一般導尿、更換尿袋、尿管護理、拔除尿管之膀胱訓練 |
| 口腔護理、一般身體檢查、護理指導 、酒精拭浴、薄荷擦拭、會陰沖洗 |
| 塞劑給予、糞嵌塞清除、大小量灌腸、礦物油留置灌腸 (留置灌腸比照本項) |
| 其它護理項目 ..... |

# 文獻評讀

## (AGREE II臨床診療指引評讀工具)

# 1.有特別描述指引的整體目的

- Purpose(P1357-Abstract)
  - To develop an evidence-based guideline on central venous catheter (CVC) care for patients with cancer that addresses catheter type, insertion site, and placement as well as prophylaxis and management of both catheter-related infection and thrombosis.

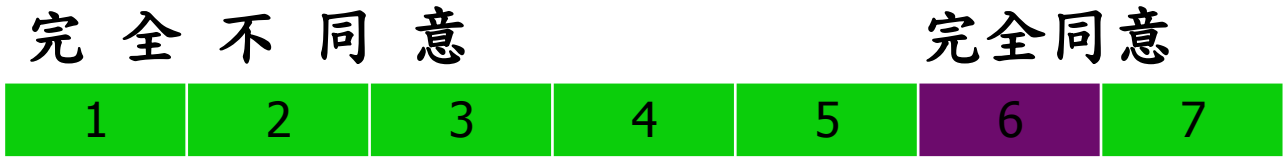
# 2.有特別描述指引所涵蓋的健康問題

- GUIDELINE QUESTIONS (P1358-1359)
  - *Clinical Question 1*
    - In patients with cancer, does catheter type, insertion site, or placement technique affect complication rates?
  - *Clinical Question 2*
    - What is effective prophylaxis for the prevention of catheterrelated infections?
  - *Clinical Question 3*
    - What are effective treatments for the management of catheterrelated infections?
  - *Clinical Question 4*
    - What is effective prophylaxis for the prevention of catheterrelated thrombosis?
  - *Clinical Question 5*
    - What are effective treatments for the management of catheterrelated occlusions?

# 3.清楚定義適用的族群(病人, 公眾等)

(P1358)

- The purpose of this guideline is to assist in care and decision making for patients with cancer who often have long-term CVCs and to identify areas of controversy, promoting future research and clinical trials.
- This is a new American Society of Clinical Oncology (ASCO) guideline focused on CVC care for patients with cancer.



# 4.指引發展團隊成員包含所有相關專業團體

## METHODS

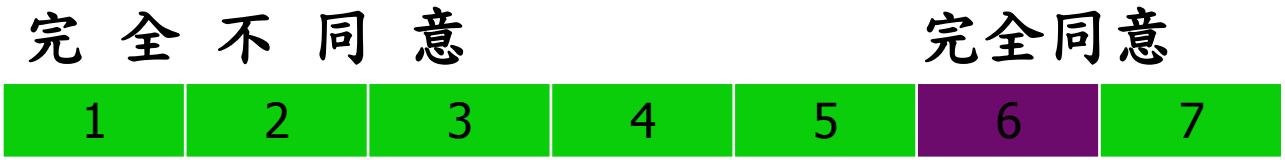
(P1359)

### *Panel Composition*

The ASCO Clinical Practice Guidelines Committee convened an Expert Panel consisting of experts in clinical medicine and research relevant to CVC care in patients with cancer, including medical and surgical oncologists and oncology nurses. Academic and community practitioners and a patient representative were also part of the Panel. The Panel members are listed in Appendix Table A1 (online only).

# 5.已納入目標族群(病人、公眾等)看法和偏好

- METHODS-
  - *Panel Composition* (P1359)
    - The ASCO Clinical Practice Guidelines Committee convened an Expert Panel consisting of experts in clinical medicine and research relevant to CVC care in patients with cancer, including medical and surgical oncologists and oncology nurses. Academic and community practitioners and a patient representative were also part of the Panel.



# 6.清楚界定指引使用者

| THE BOTTOM LINE | (P1358) |
|---|---|

American Society of Clinical Oncology Clinical Practice Guideline for Central Venous Catheter Care for the Patient With Cancer

*Intervention*

- Placement of a central venous catheter (CVC) in adult and pediatric patients with cancer and the subsequent prevention and management of catheter-related infections and thromboses

*Target Audience*

- Medical oncologists/hematologists, nurses, interventional radiologists, surgeons, infectious disease specialists, and specialized CVC care teams

完 全 不 同 意　　完全同意

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|

# 7.運用系統性的方法搜尋證據

- METHODS-*Literature Review and Analysis* (P1359)

***Literature Review and Analysis***

*Literature search strategy.* MEDLINE (Pubmed) and the Cochrane Collaboration Library were searched with the date parameters of January 1980 through January 2012. Reference lists of related reports and review articles were scanned for additional citations. Details about the literature search and results are provided in Data Supplements 3 and 4 at www.asco.org/guidelines/cvc.

(舉例)

**Data Supplement #3: Search terms**

**Catheter set**

(("Catheterization, Central Venous"[MeSH] OR "Catheters, Indwelling"[MeSH] OR "Infusion Pumps, Implantable"[MeSH] OR "Venous Cutdown"[MeSH] OR "central venous catheter*"[tw] OR "femoral line"[tw] OR "CVAD"[tw] OR "central line"[tw] OR ("central venous"[tw] AND access[tw]) OR "PICC"[tw] OR (("peripherally inserted"[tw] OR "peripherally implanted"[tw]) AND "central catheter*"[tw]) OR Hickman[tw] OR Broviac[tw] OR Groshong[tw] OR Quinton[tw] OR Opti-flow[tw] OR Pheres-flow[tw] OR "Tesio Twin"[tw] OR "Ash Split"[tw] OR "Dacron cuff"[tw] OR "Vita cuff"[tw] OR "Hohn catheter"[tw] OR "subcutaneous port"[tw] OR "implantable port"[tw] OR "arm port"[tw] OR "chest port"[tw] OR (femoral[tw] AND "venous access"[tw]) OR (("single lumen"[tw] OR single-lumen[tw] OR "double lumen"[tw] OR "double-lumen"[tw] OR "triple lumen"[tw] OR triple-lumen[tw] OR "multi lumen"[tw] OR multi-lumen[tw]) AND catheter[tw])) NOT urinary catheterization[MeSH])

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|---|---|---|---|---|---|---|

# 8. 清楚描述選擇證據的標準

- METHODS-*Literature Review and Analysis* (P1359)
  - *Inclusion*:
    - The systematic review conducted for this guideline included 108 randomized controlled trials (RCTs) in which adult or pediatric patients with cancer were randomly assigned to an appropriate control group or to an intervention of interest, including CVC type,placement site, or strategies to prevent or manage infection or thrombosis. Studies were included only if they had catheter type, placement site, infection,or thrombosis as a priori planned primary or secondary outcome and described a method of regular patient follow-up to ensure a consistent and identical identification of the outcomes in both study arms. Infection and/or thrombosis had to be confirmed either through objective tests (blood or imaging) and/or clinical observation. Results of meta-analyses are also reported in the Literature Review and Analysis sections pertaining to each recommendation; other guidelines, particularly those by the Centers for Disease Control and Prevention (CDC), originally published by the CDC in August 2002 and updated in 2011, and the Infectious Disease Society of America(IDSA), informed the decisions of the Panel.

# 8. 清楚描述選擇證據的標準(續)

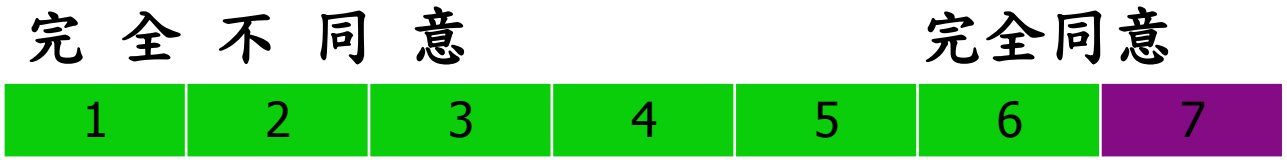
- *Exclusion*
  - Trials were excluded if they were nonrandomized reports or posthoc subgroup analyses or if only a minority of the patients studied had cancer.RCTs were also excluded if patients with CVCs were compared with patients with peripheral catheters.

# 9.清楚描述整體證據的強項及限制

- METHODS-*Literature Review and Analysis*(P1359)
  - *Study quality.*
    - Overall study quality was evaluated by the Jadad method.
    - The evidence tables in Data Supplements 1 and 2 at www.asco.org/guidelines/cvc include information on randomization, blinding, allocation concealment, withdrawals, and intention-to-treat analyses.
    - Meta-analyses were evaluated using the Oxman-Guyatt Index, in which questions must be clearly specified,target populations identified and accessed, and appropriate information obtained in an unbiased fashion.

# 10.清楚描述形成建議的方法

- METHODS-*Evidence-Based Guideline Development Process* (P1359)
  - The entire Panel met one time in person and a writing group met subsequently; additional work on the guideline was completed through a steering group and e-mail.
  - The Panel and writing group drafted guideline recommendations and distributed writing assignments. All members of the Panel participated in the preparation of the draft guideline document, which was then disseminated for review and approval by the entire Panel.
  - The guideline was submitted to *Journal of Clinical Oncology* for peer review. Feedback from additional external reviewers was also solicited. The content of the guideline and the manuscript was reviewed and approved by the ASCO Clinical Practice Guideline Committee before publication.



# 11.形成建議時, 有考慮到健康效益、副作用及風險

**(P1360)**

**Table 1.** ASCO Recommendations for CVC Care

| Clinical Question | Recommendation |
|---|---|
| 1. In patients with cancer, does catheter type, insertion site, or placement affect complication rates? | 1.1. There is insufficient evidence to recommend one type of CVC routinely for all patients with cancer; the choice of catheter should be influenced by the expected duration of use, chemotherapy regimens, and patient ability to provide care; the minimum number of lumens essential for the management of the patient is recommended; these issues should be discussed with the patient<br>1.2. There is insufficient evidence to recommend one insertion site or approach (left sided or right sided) for tunneled CVCs for patients with cancer; individual risks and benefits (comfort, security, maintenance of asepsis) of the catheter site should be considered; the Panel recommends that CVC insertion into the femoral vein be avoided because of increased infection risks and concerns about thrombosis, except in certain emergency situations<br>1.3. Most CVC placement in patients with cancer is performed as an elective procedure; although image-guided insertion (eg, ultrasound guided, fluoroscopy) of CVCs is recommended, well-trained providers who use the landmark method regularly (eg, for subclavian or internal jugular) may have high rate of success and low incidence of acute and/or chronic complications |
| 2. What is effective prophylaxis for the prevention of catheter-related infections? | 2.1. CVC care clinical bundle (including hand hygiene, maximal barrier precautions, chlorhexidine skin antisepsis during catheter insertion, optimal catheter site selection, and assessment of CVC necessity) is recommended for placement and maintenance of all CVCs to prevent infections; there is no evidence that particular dressing types or more frequent IV set and/or dressing changes decrease risk of infection; use of topical antibiotic ointment or cream on insertion sites is not recommended because of potential to promote fungal infections and resistance to antimicrobials; scheduled guidewire exchange of CVC may be associated with greater risk of infection versus catheter replacement at new vascular site; thus, guidewire exchange is not routinely recommended, unless access options are limited<br>2.2. Use of antimicrobial/antiseptic-impregnated or -coated CVCs (CH-SS or minocycline/rifampin) and/or heparin-impregnated catheters is recommended to decrease risk of catheter-related infections for short-term CVCs, particularly in high-risk groups such as bone marrow transplantation recipients or patients with leukemia; however, relative benefit and increased cost must be carefully considered before they are routinely used<br>2.3. Prophylactic use of systemic antibiotics (IV or oral) before insertion of long-term CVCs is not recommended<br>2.4. There are conflicting data about the relative value of prophylactic heparin with saline flushes to prevent catheter-associated bloodstream infections or thrombosis; data are not sufficient to recommend for or against routine use of antibiotic-flush/antibiotic-lock therapy |
| 3. What are effective treatments for the management of catheter-related infections? | 3.1. Cultures of blood from the catheter and when appropriate of soft tissues at entrance-exit sites or tunnel should be obtained before initiation of antibiotic therapy; most exit- or entrance-site infections can be treated successfully with appropriate antimicrobial therapy without the need for catheter removal, although removal is usually needed for clinically apparent tunnel or port-site infections; antimicrobial agents should be optimized once pathogens are identified and antibiotic susceptibilities defined |
| 4. What is effective prophylaxis for the prevention of catheter-related thrombosis? | 4.1. Use of systemic anticoagulation (warfarin, LMWH, UFH) has not been shown to decrease incidence of catheter-associated thrombosis; therefore, routine prophylaxis with anticoagulants is not recommended for patients with cancer with CVCs; routine flushing with saline of the CVC to prevent fibrin buildup is recommended<br>4.2. Data are insufficient to recommend routine use of urokinase (not available in the United States) and/or other thrombolytics to prevent catheter occlusion |
| 5. What are effective treatments for the management of occluded catheters? | 5.1. Instillation of 2-mg t-PA is recommended to restore patency and preserve catheter function<br>5.2. Although it is appropriate to try to clear thrombosis with the CVC in place, if there is radiologically confirmed thrombosis that does not respond to fibrinolytic therapy or if fibrinolytic or anticoagulation therapy is contraindicated, catheter removal is recommended; prolonged retention of unneeded CVCs can lead to significant problems associated with thrombosis and fibrosis; 3 to 6 months of anticoagulant therapy with LMWH or LMWH followed by warfarin (INR, 2.0 to 3.0) is recommended for treatment of symptomatic CVC thrombosis, with duration depending on clinical issues in individual patients |

完 全 不 同 意　　完全同意

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|---|---|---|---|---|---|---|

# 12.指引建議與其支持證據間有明確的關聯

**(P1360)**

**Table 1.** ASCO Recommendations for CVC Care

| Clinical Question | Recommendation |
|---|---|
| 1. In patients with cancer, does catheter type, insertion site, or placement affect complication rates? | 1.1. There is insufficient evidence to recommend one type of CVC routinely for all patients with cancer; the choice of catheter should be influenced by the expected duration of use, chemotherapy regimens, and patient ability to provide care; the minimum number of lumens essential for the management of the patient is recommended; these issues should be discussed with the patient<br>1.2. There is insufficient evidence to recommend one insertion site or approach (left sided or right sided) for tunneled CVCs for patients with cancer; individual risks and benefits (comfort, security, maintenance of asepsis) of the catheter site should be considered; the Panel recommends that CVC insertion into the femoral vein be avoided because of increased infection risks and concerns about thrombosis, except in certain emergency situations<br>1.3. Most CVC placement in patients with cancer is performed as an elective procedure; although image-guided insertion (eg, ultrasound guided, fluoroscopy) of CVCs is recommended, well-trained providers who use the landmark method regularly (eg, for subclavian or internal jugular) may have high rate of success and low incidence of acute and/or chronic complications |

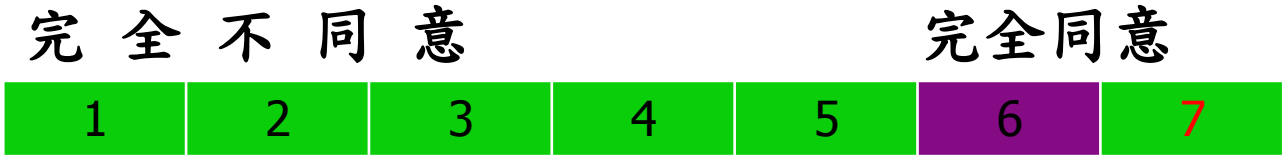
- *Literature review and analysis* **(P1361-1366)**
  - 1.1 Ten RCTs17-26 and three meta-analyses[6,27,28] addressed these issues.
  - 1.2 Evidence from six RCTs[21,29-33] and one meta-analysis3[34] indicated that there was no compelling evidence for one insertion site or approach (left sided or right sided)
  - 1.3 Four RCTs[37-40] and three metaanalyses[41-43]

完 全 不 同 意　　完全同意

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|

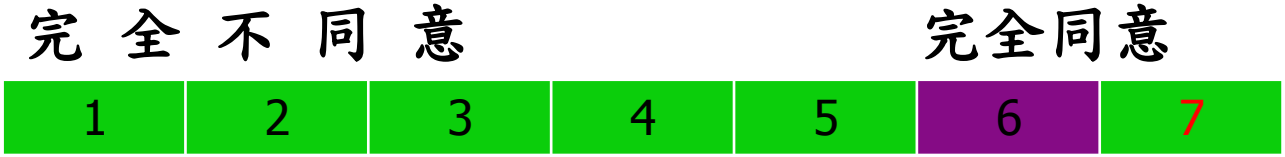
# 13.指引公告前已經由其他外部專家審閱

- METHODS-*Evidence-Based Guideline Development Process* (P1359)
  - The entire Panel met one time in person and a writing group met subsequently; additional work on the guideline was completed through a steering group and e-mail. The Panel and writing group drafted guideline recommendations and distributed writing assignments. All members of the Panel participated in the preparation of the draft guideline document, which was then disseminated for review and approval by the entire Panel.
  - The guideline was submitted to *Journal of Clinical Oncology* for peer review. Feedback from additional external reviewers was also solicited. The content of the guideline and the manuscript was reviewed and approved by the ASCO Clinical Practice Guideline Committee before publication.



# 14.提供指引更新的程序

- METHODS-*Revision Dates* (P1359)
  - At annual intervals, the Panel co-chairs will determine the need for revisions to the guideline based on an examination of current literature.
  - If necessary, the entire Panel or an update committee will be reconvened to discuss potential changes.
  - When appropriate, the Panel will recommend revised recommendations to the Clinical Practice Guideline Committee for approval.



# 15.建議明確不含混 (P1358)

**THE BOTTOM LINE**

**American Society of Clinical Oncology Clinical Practice Guideline for Central Venous Catheter Care for the Patient With Cancer**

***Intervention***

- Placement of a central venous catheter (CVC) in adult and pediatric patients with cancer and the subsequent prevention and management of catheter-related infections and thromboses

***Target Audience***

- Medical oncologists/hematologists, nurses, interventional radiologists, surgeons, infectious disease specialists, and specialized CVC care teams

***Key Recommendations***

- There is insufficient evidence to recommend a specific type of CVC or insertion site, but femoral vein insertion should be avoided, except in certain emergency situations
- CVCs should be placed by well-trained health care providers
- Use of a CVC clinical care bundle is recommended
- Use of antimicrobial/antiseptic-coated CVCs and/or heparin-impregnated CVCs has been shown to be beneficial, but the benefits and costs must be carefully considered before they can be routinely used
- Prophylactic use of systemic antibiotics is not recommended before CVC insertion
- Cultures of blood from the CVC and/or tissue at the entrance-exit sites should be obtained before initiation of antibiotic therapy; most clinically apparent exit- or entrance-site infections as well as bloodstream infections can be managed with appropriate microbial therapy, so CVC removal may not be necessary; antimicrobial agents should be optimized once the pathogens are identified; catheter removal should be considered if the infection is caused by an apparent tunnel or port-site infection, fungi, or nontuberculous mycobacteria or if there is persistent bacteremia after 48 to 72 hours of appropriate antimicrobial treatment
- Routine flushing with saline is recommended
- Prophylactic warfarin and low–molecular weight heparin have not been shown to decrease CVC-related thrombosis, so routine use is not recommended
- Tissue plasminogen activator (t-PA) is recommended to restore patency in a nonfunctioning CVC; CVC removal is recommended when the catheter is no longer needed, if there is a radiologically confirmed thrombosis that does not respond to anticoagulation therapy, or if fibrinolytic or anticoagulation therapy is contraindicated

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# 16.清楚呈現處理狀況或健康議題的不同選項

**(P1360)**

**Table 1.** ASCO Recommendations for CVC Care

| Clinical Question | Recommendation |
|---|---|
| 1. In patients with cancer, does catheter type, insertion site, or placement affect complication rates? | 1.1. There is insufficient evidence to recommend one type of CVC routinely for all patients with cancer; the choice of catheter should be influenced by the expected duration of use, chemotherapy regimens, and patient ability to provide care; the minimum number of lumens essential for the management of the patient is recommended; these issues should be discussed with the patient<br>1.2. There is insufficient evidence to recommend one insertion site or approach (left sided or right sided) for tunneled CVCs for patients with cancer; individual risks and benefits (comfort, security, maintenance of asepsis) of the catheter site should be considered; the Panel recommends that CVC insertion into the femoral vein be avoided because of increased infection risks and concerns about thrombosis, except in certain emergency situations<br>1.3. Most CVC placement in patients with cancer is performed as an elective procedure; although image-guided insertion (eg, ultrasound guided, fluoroscopy) of CVCs is recommended, well-trained providers who use the landmark method regularly (eg, for subclavian or internal jugular) may have high rate of success and low incidence of acute and/or chronic complications |
| 2. What is effective prophylaxis for the prevention of catheter-related infections? | 2.1. CVC care clinical bundle (including hand hygiene, maximal barrier precautions, chlorhexidine skin antisepsis during catheter insertion, optimal catheter site selection, and assessment of CVC necessity) is recommended for placement and maintenance of all CVCs to prevent infections; there is no evidence that particular dressing types or more frequent IV set and/or dressing changes decrease risk of infection; use of topical antibiotic ointment or cream on insertion sites is not recommended because of potential to promote fungal infections and resistance to antimicrobials; scheduled guidewire exchange of CVC may be associated with greater risk of infection versus catheter replacement at new vascular site; thus, guidewire exchange is not routinely recommended, unless access options are limited<br>2.2. Use of antimicrobial/antiseptic-impregnated or -coated CVCs (CH-SS or minocycline/rifampin) and/or heparin-impregnated catheters is recommended to decrease risk of catheter-related infections for short-term CVCs, particularly in high-risk groups such as bone marrow transplantation recipients or patients with leukemia; however, relative benefit and increased cost must be carefully considered before they are routinely used<br>2.3. Prophylactic use of systemic antibiotics (IV or oral) before insertion of long-term CVCs is not recommended<br>2.4. There are conflicting data about the relative value of prophylactic heparin with saline flushes to prevent catheter-associated bloodstream infections or thrombosis; data are not sufficient to recommend for or against routine use of antibiotic-flush/antibiotic-lock therapy |
| 3. What are effective treatments for the management of catheter-related infections? | 3.1. Cultures of blood from the catheter and when appropriate of soft tissues at entrance-exit sites or tunnel should be obtained before initiation of antibiotic therapy; most exit- or entrance-site infections can be treated successfully with appropriate antimicrobial therapy without the need for catheter removal, although removal is usually needed for clinically apparent tunnel or port-site infections; antimicrobial agents should be optimized once pathogens are identified and antibiotic susceptibilities defined |
| 4. What is effective prophylaxis for the prevention of catheter-related thrombosis? | 4.1. Use of systemic anticoagulation (warfarin, LMWH, UFH) has not been shown to decrease incidence of catheter-associated thrombosis; therefore, routine prophylaxis with anticoagulants is not recommended for patients with cancer with CVCs; routine flushing with saline of the CVC to prevent fibrin buildup is recommended<br>4.2. Data are insufficient to recommend routine use of urokinase (not available in the United States) and/or other thrombolytics to prevent catheter occlusion |
| 5. What are effective treatments for the management of occluded catheters? | 5.1. Instillation of 2 mg t-PA is recommended to restore patency and preserve catheter function<br>5.2. Although it is appropriate to try to clear thrombosis with the CVC in place, if there is radiologically confirmed thrombosis that does not respond to fibrinolytic therapy, if fibrinolysis or anticoagulation therapy is contraindicated, catheter removal is recommended; prolonged retention of unneeded CVCs can lead to significant problems associated with thrombosis and fibrosis; 3 to 6 months of anticoagulant therapy with LMWH or [illegible] thrombosis |

Abbreviations: ASCO, American Society of Clinical Onc[illegible] normalized ratio; IV, intravenous; LMWH, low–molecular w[illegible]

完全不同意 完全同意

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(P1358)

# 17.主要建議清楚易辨

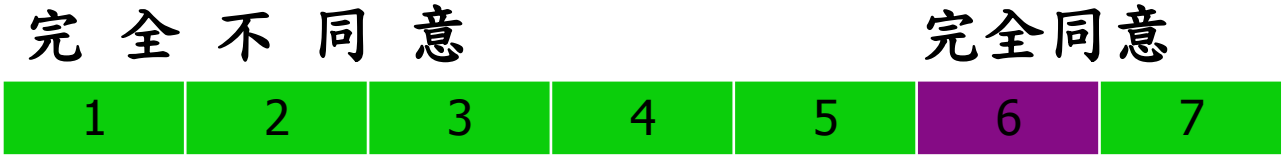
***Key Recommendations***

- There is insufficient evidence to recommend a specific type of CVC or insertion site, but femoral vein insertion should be avoided, except in certain emergency situations
- CVCs should be placed by well-trained health care providers
- Use of a CVC clinical care bundle is recommended
- Use of antimicrobial/antiseptic-coated CVCs and/or heparin-impregnated CVCs has been shown to be beneficial, but the benefits and costs must be carefully considered before they can be routinely used
- Prophylactic use of systemic antibiotics is not recommended before CVC insertion
- Cultures of blood from the CVC and/or tissue at the entrance-exit sites should be obtained before initiation of antibiotic therapy; most clinically apparent exit- or entrance-site infections as well as bloodstream infections can be managed with appropriate microbial therapy, so CVC removal may not be necessary; antimicrobial agents should be optimized once the pathogens are identified; catheter removal should be considered if the infection is caused by an apparent tunnel or port-site infection, fungi, or nontuberculous mycobacteria or if there is persistent bacteremia after 48 to 72 hours of appropriate antimicrobial treatment
- Routine flushing with saline is recommended
- Prophylactic warfarin and low–molecular weight heparin have not been shown to decrease CVC-related thrombosis, so routine use is not recommended
- Tissue plasminogen activator (t-PA) is recommended to restore patency in a nonfunctioning CVC; CVC removal is recommended when the catheter is no longer needed, if there is a radiologically confirmed thrombosis that does not respond to anticoagulation therapy, or if fibrinolytic or anticoagulation therapy is contraindicated

| 完全不同意 | | | | | | 完全同意 |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# 18.指引有描述在應用時會遇到助力或障礙

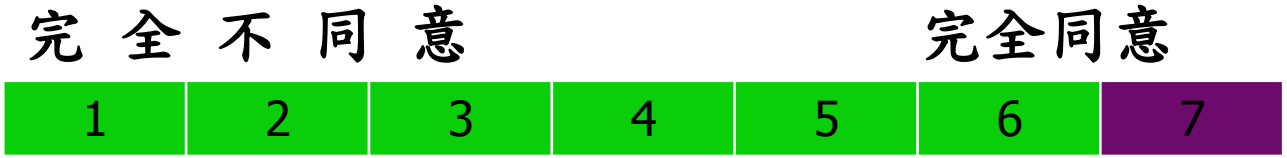
- HEALTH DISPARITIES(P1367)
  - ….Racial and ethnic disparities in health care contribute significantly to this problem in the United States. Racial/ethnic minority patients with cancer suffer disproportionately from comorbidities, can experience substantial obstacles to receiving care, are more likely to be uninsured, and are at greater risk of receiving poorer quality care than other Americans.141-144 Many other patients lack access to care because they live at a distance from appropriate treatment facilities.
  - Awareness of these disparities in access to care should be considered in the context of this clinical practice guideline, and health care providers should strive to deliver the highest level of cancer care to these vulnerable populations.
  - In particular, the availability of adequate home care for catheter maintenance might vary widely among different patient populations and could influence the choice of CVC



# 19.指引有提供如何實踐建議的說明和(或)配套工具

# 20.有考慮到應用建議時對資源的潛在影響

- ADDITIONAL RESOURCES (P1367)
  - Data supplements, including evidence tables, and clinical tools and resources can be found at www.asco.org/guidelines/cvc. Patient information is available at www.cancer.net.



# 21.指引呈現監測和(或)評估的標準

未提及

| 完全不同意 | | | | | | 完全同意 |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# 22.贊助者的見解沒有影響到指引的內容

未提及

| 完全不同意 | | | | | | 完全同意 |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

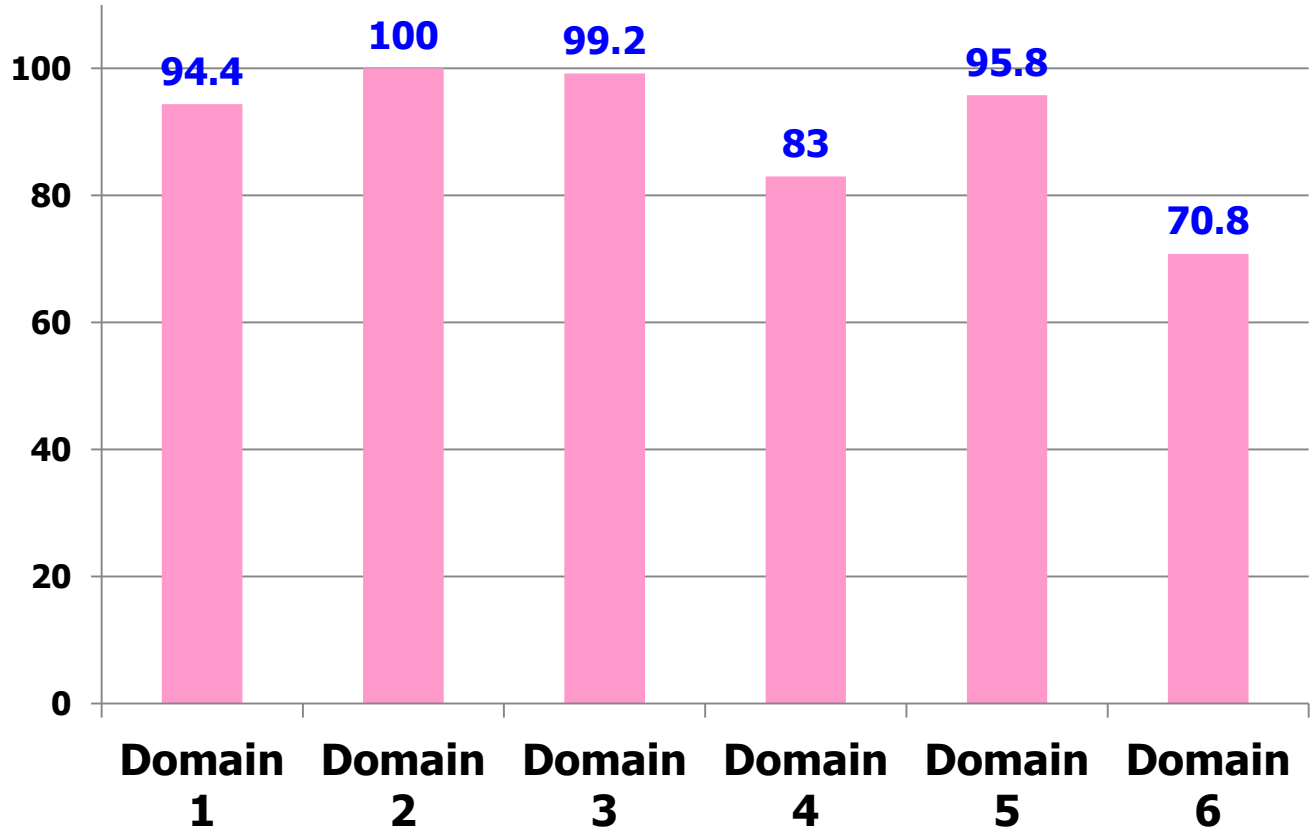
# 23. 記錄和陳述指引發展團隊成員的利益競爭

- AUTHORS’ DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST(P1367)

- The author(s) indicated no potential conflicts of interest.

# AGREE II 標準化計分

- Domain
  1. 適用範圍與目的(Scope and purpose)
  2. 權益相關人的參與情形(Stakeholder involvement)
  3. 指引發展的嚴謹度(Rigour of development)
  4. 指引的明確性和代表性(Clarity and presentation)
  5. 應用性(Applicability)
  6. 編製的公正客觀及獨立性(Editorial independence)



# AGREE II 整體總評

## OVERALL GUIDELINE ASSESSMENT

For each question, please choose the response which best characterizes the guideline assessed:

**1. Rate the overall quality of this guideline.**

| 1<br>Lowest possible quality | 2 | 3 | 4 | 5 | ✓ | 7<br>Highest possible quality |
|---|---|---|---|---|---|---|

**1.整體品質評分**

# AGREE II 整體總評

**2. I would recommend this guideline for use.**

| | |
|---|---|
| Yes | ✓ |
| Yes, with modifications | |
| No | |

## 2.我是否建議採用本指引

- 建議
- 建議(有但書或需修改)
- 不建議

- 同意7人
- 懷疑 12人
- 不同意0人

# 討論及後續建議

- Recommendation4.1. Routine flushing with saline of the CVC to prevent fibrin buildup is recommended.
  - 未提及生理食鹽水沖洗的證據，應多久沖洗一次、及每次沖洗劑量，建議進一步進行文獻搜尋
- Recommendation 5.1. The instillation of 2-mg t-PA is recommended to restore patency and preserve catheter function.
  - 使用 t-PA 之可行性及安全性評估?

- 自行發展 CPGs 或採用具實證基礎的 CPGs?
- 修訂癌症病人 CVC care 標準規範

thanks!