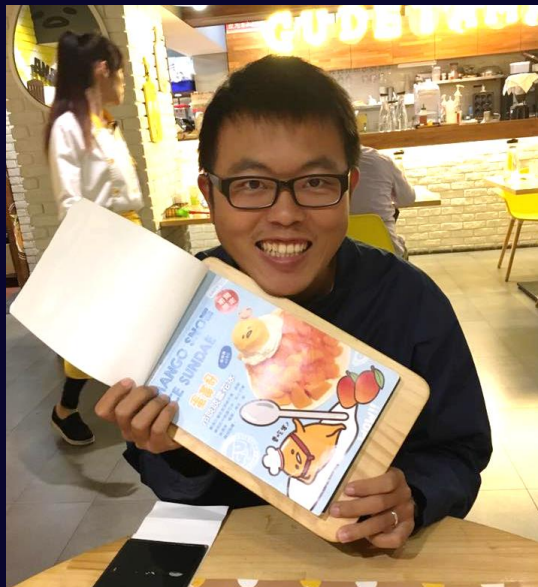




黃莊彥

婦產部
婦產科醫師



楊孟達

麻醉部
麻醉科醫師



王儷諭

護理部
護理師

國防醫學院三軍總醫院

實證醫學競賽



臨床情境

- 江先生長期使用抗生素，診斷為感染性腹瀉，根據其症狀使用**風險評估模式的工具**預測罹患困難縮狀桿菌的機率？
- 詢問使用**糞便菌叢移植法**，對付困難縮狀桿菌感染是否有效？

Clostridioides (formerly Clostridium) difficile infection in adults: Treatment and prevention

Third or subsequent recurrence — For patients with multiple recurrences who have received appropriate antibiotic treatment for at least three CDI episodes (ie, initial episode plus two recurrences), we favor fecal microbiota transplantation (FMT; which consists of instillation of processed stool collected from a healthy donor into the intestinal tract of a patient with recurrent CDI), in regions where expertise is available. Pretreatment evaluation for and administration of FMT is discussed further separately. (See "[Fecal microbiota transplantation for treatment of recurrent Clostridioides \(formerly Clostridium\) difficile infection](#)".)

The efficacy of FMT has been evaluated in randomized controlled and open-label trials; cure rates range from 70 to 90 percent [46,52-60]. In one meta-analysis that evaluated only randomized trials comparing FMT with placebo or antibiotics, the weighted pooled rate of cure was 68 for FMT versus 44 percent for the comparator [61]. Similarly, in a randomized trial of 64 patients with recurrent CDI that was not included in the meta-analysis, resolution of infection occurred more frequently among patients treated with oral [vancomycin](#) for 4 to 10 days followed by FMT than among patients treated with oral vancomycin or [fidaxomicin](#) for 10 days in the absence of FMT (92, 42, and 19 percent, respectively) [60].

More than one administration of FMT may be necessary for optimal efficacy. In one randomized trial including 232 patients with recurrent CDI treated with fresh or frozen FMT administered via enema, patients with no improvement in symptoms by day 4 received an additional FMT between days 5 and 9; those who did not respond to two FMTs were offered repeat FMT or antibiotic therapy [55]. The efficacy for one FMT was approximately 50 percent and increased

- 最初發作 - 用於治療非嚴重CDI的抗生素包括口服萬古黴素或口服fidaxomicin
- 首次復發的患者，口服萬古黴素治療是恰當的
- 第二次復發，方案包括口服萬古黴素（以脈衝錐形方式給藥），口服非達黴素 (fidaxomicin)，口服利福昔明 (rifaximin)。
- 第三次或以上復發，建議糞便微生物群移植(FMT)。

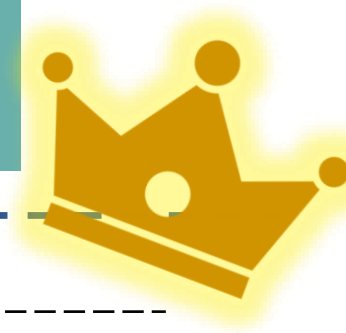
根據臨床問題形成第一個 PICO

	英文關鍵字/MeSH	同義字	中文關鍵字
P	Clostridioides difficile	Clostridioides (formerly Clostridium) difficile	困難縮狀桿菌/困難縮狀桿菌
I	Risk prediction model	-	風險評估模式
C	placebo	-	安慰劑
O	Infection	acute infection/bacteroid infection/accidental infection	感染

治療/預防型問題
 診斷型問題
 預後型問題
 傷害/病因型問題

Ask
問問題

根據臨床問題形成第二個 PICO



	英文關鍵字/MeSH	同義字	中文關鍵字
P	Clostridioides difficile	Clostridioides (formerly Clostridium) difficile	困難縮狀桿菌/困難縮狀桿菌
I	Fecal microbiota transplantation	FMT (fecal microbiota transplantation)/IMT (intestinal microbiota transplantation)/bacteriotherapy (feces)	糞便菌叢移植/糞便菌叢移植
C	placebo	-	安慰劑
O	treatment	acute infection/bacteroid infection/accidental infection	治療效果

- 治療/預防型問題
 診斷型問題
 預後型問題
 傷害/病因型問題

Ask
問問題

The New Evidence Pyramid

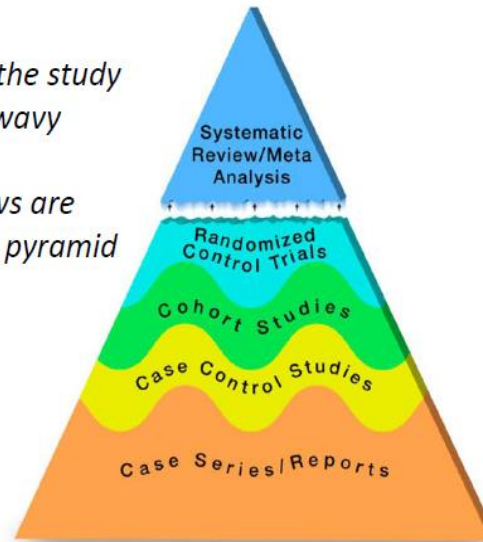
(The Evidence Trapezoid)

The traditional pyramid



Revising the pyramid

- (1) Lines separating the study designs become wavy (GRADE)
- (2) Systematic reviews are 'chopped off' the pyramid



The revised pyramid



Systematic reviews & Meta-analyses are a lens through which evidence is viewed and applied to patient care

檢索策略 - 搜尋 Cochrane Library - 提升檢索效率



Advanced Search

Search Search manager Medical terms (MeSH)

Save this search View saved searches Search help

Print

+						
-	+	#1	<u>Clostridioides</u> <u>difficile</u>	Limits	10	
-	+	#2	Fecal <u>microbiota</u> transplantation	Limits	318	
-	+	#3	infection*	Limits	110674	
-	+	#4	#1 and #2 and #3	Limits	4	

Cochrane Reviews 0 Cochrane Protocols 0 Trials 4 Editorials 0 Special collections 0 Clinical Answers 0 Other Reviews

4 Trials matching "#4 - #1 and #2 and #3"
Did you mean: *Rand* | *band* | *hand*

關鍵字

(Clostridioides difficile) and (Fecal microbiota transplantation) and infection*

技巧

- 使用Search manager, truncation, 布林邏輯
- Systematic review → randomized controlled trial → controlled trial → cohort

NCT03806803

檢索策略 - 搜尋EMBASE-提升檢索效率

Embase®

Quick **PICO** PV Wizard Advanced Drug Disease Device Article Authors

/mj /ae /exp /br

Find best term

- Emtree
 - diseases
 - physical disease
 - physical disease by etiology and pathogenesis
 - infection**
 - abdominal infection
 - abscess
 - airborne infection
 - algal infection
 - anaerobic infection
 - application site infection

Population
clostridioides difficile /br

Intervention
fecal microbiota transplantation /br + 58 synonyms :all

Comparison
e.g. placebo

Outcome
infection /br + 20 synonyms :all

Clear field

Clear field

Clear field

關鍵字

- Clostridioides (formerly Clostridium) difficile/br
- Fecal microbiota transplantation /br+synonyms:all
- Infection/br+synonyms

技巧

- PICO search
- 使用Emtree，增加精確性
- 使用內建synonyms系統，增加搜尋廣度

檢索策略 - 搜尋 EMBASE - 提升檢索效率

Embase®

Search > Mapping ▾ Date ▾ Sources ▾ Fields ▾ Quick limits ▲ EBM ▾ Pub. types ▾ Languages ▾ Gender ▾ Age ▾ Animal ▾ Search tips ▾

Quick limits Clear page selections Collapse

Humans With abstract Article in Press With molecular sequence number
 Animals Priority journals In Process With clinical trial number
 Clinical studies Only in English MEDLINE Article in Press MEDLINE In Process

Study types

- human 21
- nonhuman 9
- randomized controlled trial (topic) 7
- meta analysis 2
- systematic review 2
- systematic review (topic) 2
- clinical article 1
- clinical trial 1

Results Filters + Expand - Collapse all Apply >

Sources Embse and MEDLINE: 13 MEDLINE: 0

mbase: 8

Click on 'Apply' to apply your selection

Drugs ▾ Diseases Devices

History Save | Delete | Print view | Export | Email Combine > using ● And ○ Or

- #3 #2 AND 'human'/de AND 'review'/it 21
- #2 I2002065615/sim 100
- #1 ('clostridioides difficile'/exp OR 'clostridioides difficile') AND ('faecal microbiota transplantation'/exp OR 'fmt (faecal microbiota transplantation)' OR 'imt (intestinal microbiota transplantation)' OR 'bacteriotherapy (feces)' OR 'faecal bacteriotherapy' OR 'faecal enema' OR 'faecal infusion' OR 'faecal matter transplant' OR 'faecal microbial transplant' OR 'faecal microbiome transplantation' OR 'faecal microbiota transplant' OR 'faecal microbiota transplantation' OR 'faecal microbiota transplantation' OR 'faecal transplant' OR 'faecal transplantation' OR 'fecal bacterial transplant' OR 'fecal bacterial transplantation' OR 'fecal bacteriotherapy' OR 'fecal enema' OR 'fecal infusion' OR 'fecal instillation' OR 'fecal matter transplant' OR 'fecal matter transplantation' OR 'fecal microbe transplant' OR 'fecal microbial transplant' OR 'fecal microbial transplantation' OR 'fecal microbiome transplant' OR 'fecal microbiome transplantation' OR 'fecal microbiota transplant' OR 'fecal microbiota transplantation' OR 'fecal microbiota transplantation' OR 'fecal microbiota transplantation' OR 'fecal microbiota transplantation' OR 'fecal microbiota transplantation' OR 'fecal microbiota transplantation' OR 'fecal microbiota transplantation' OR 'fecal microbiota transplantation' OR 'fecal microbiota transplantation' OR 'feces bacteriotherapy' OR 'feces microbe transplantation' OR 'feces microbiota transplantation' OR 'feces microflora transplant' OR 'feces microflora transplantation' OR 'gut microbial transplant' OR 'gut microbial transplantation' OR 'gut microbiome transplant' OR 'gut microbiome transplantation' OR 'gut microbiota transplant' OR 'gut microbiota transplantation' OR 'gut microbiota transplantation' OR 'gut microbiota transplantation' OR 'gut microbiota transplantation' OR 'gut microbiota transplantation' OR 'intestinal microbe transplantation' OR 'intestinal microbiota transplant' OR 'intestinal microbiota transplantation' OR 'intestinal microbiota transplantation' OR 'intestinal microbiota transplantation' OR 'rectal bacteriotherapy' OR 'stool enema' OR 'stool infusion' OR 'stool instillation' OR 'stool microbial transplantation' OR 'stool transplant' OR 'stool transplantation') AND ('infection'/exp OR infection OR 'accidental infection' OR 'acute infection' OR 'autoinfection' OR 'bacterial infections and mycoses' OR 'bacteroid infection' OR 'chronic infection' OR 'dormant infection' OR 'focal infection' OR 'inapparent infection' OR 'infection' OR 'infection mechanism' OR 'infection route' OR 'infection, focal' OR 'infectious disease' OR 'infectivity' OR 'latent infection' OR 'prosthesis-related infections' OR 'route of infection' OR 'silent infection' OR 'simultaneous infection')

技巧

- Similar records
- 使用Limit: Human
- Filter: sources, studytype Systematic review → randomized controlled trial → controlled trial → cohort

Export >

檢索策略 - 搜尋PubMed-提升檢索效率



Article types [clear](#)

Clinical Trial

Review

Customize ...

Text availability [clear](#)

Abstract

Free full text

Full text

Publication dates [clear](#)

5 years

10 years

Custom range...

Species [clear](#)

Humans

Other Animals

[Clear all](#)

關鍵字

[Additional filters](#)

((Fecal microbiota transplantation) AND Clostridioides difficile) AND infection

History

[Download history](#) [Clear history](#)

Search	Add to builder	Query	Items found	Time
#5	Add	Search ((Fecal microbiota transplantation) AND Clostridioides difficile) AND infection	628	21:09:57
#4	Add	Search infection	1625561	21:09:47
#3	Add	Search Clostridioides difficile	14704	21:09:43
#2	Add	Search Fecal microbiota transplantation	1631	21:09:30

技巧

- Advanced search, Truncation, Boolean logic
- My NCBI: 建置Clinical Queries
- 自然語言，同步MeSH檢索

檢索策略 - 搜尋PubMed - 提升檢索效率



[Download history](#) [Clear history](#)

- Article types [clear](#)
 - Clinical Trial
- Review [Customize ...](#)
- Text availability [clear](#)
 - Abstract
- Free full text
- Full text
- Publication dates [clear](#)
 - 5 y
 - 10 y
 - Cus

History

Search	Add to builder	Query	Items found	Time
#5	Add	Search ((Fecal microbiota transplantation) AND Clostridioides difficile) AND infection	628	21:09:57
#4	Add	Search infection	1625561	21:09:47
#3	Add	Search Clostridioides difficile	14704	21:09:43
#2	Add	Search Fecal microbiota transplantation	1631	21:09:30

Recent Activity

[Turn Off](#) [Clear](#)

- Similar articles for PubMed (Select 30400734) (10) PubMed
- ((Fecal microbiota transplantation) AND Clostridioides difficile)... (63) PubMed
- ((Fecal microbiota transplantation) AND Clostridioides difficile)... (162) PubMed
- ((Fecal microbiota transplantation) AND Clostridioides difficile)... (164) PubMed
- ((Fecal microbiota transplantation) AND Clostridioides difficile)... (395) PubMed

技巧

- Similar article 反覆檢索文獻
- 利用“研究設計”增加篩選效率 Systematic review → randomized controlled trial → controlled trial → cohort

檢索策略 - 搜尋華藝線上圖書館 - 提升檢索效率



[ALL]:糞便菌叢移植 AND [ALL]:困難縮狀桿菌 AND [ALL]:感染

編輯

期刊文章	會議論文	碩博士論文	電子書	紙本書
0	0	0	0	0

糞便菌叢移植

所有欄位

依下方條件來精確結果

查詢 (糞便菌叢移植) = 所有欄位 AND (困難縮狀桿菌) = 所有欄位 AND (感染) = 所有欄位

AND ▼

困難縮狀桿菌

所有欄位

查詢表達式: [ALL]:糞便菌叢移植 AND [ALL]:困難縮狀桿菌 AND [ALL]:感染

AND ▼

感染

所有欄位

>> 增加查詢欄位

查詢

清除

關鍵字

語言: 所有文章 繁體中文 簡體中文 英文 其他語言

技巧

[ALL]:糞便菌叢移植 AND [ALL]:困難縮狀桿菌 AND [ALL]:感染

- 進階檢索、中文關鍵字
- 布林邏輯連接關鍵字

Acquire
找資料

檢索策略-搜尋中國知網-提升檢索效率



輸入檢索條件:

(主題 ▼ 糞便菌叢移植 詞頻 ▼ 并含 ▼ [] 詞頻 ▼ 精確 ▼)

并且 ▼ (關鍵詞 ▼ 困難縮狀桿菌 詞頻 ▼ 并含 ▼ [] 詞頻 ▼ 精確 ▼)

并且 ▼ (篇名 ▼ 感染 詞頻 ▼ 并含 ▼ [] 詞頻 ▼ 精確 ▼)

作者 ▼ 中文名/英文名/拼音 精確 ▼ 作者單位: 全稱/簡稱/曾用名 模糊 ▼

發表時間: 從 [] 到 [] 更新時間: 不限 ▼

文獻來源: [] 模糊 ▼ ...

支持基金: [] 模糊 ▼ ...

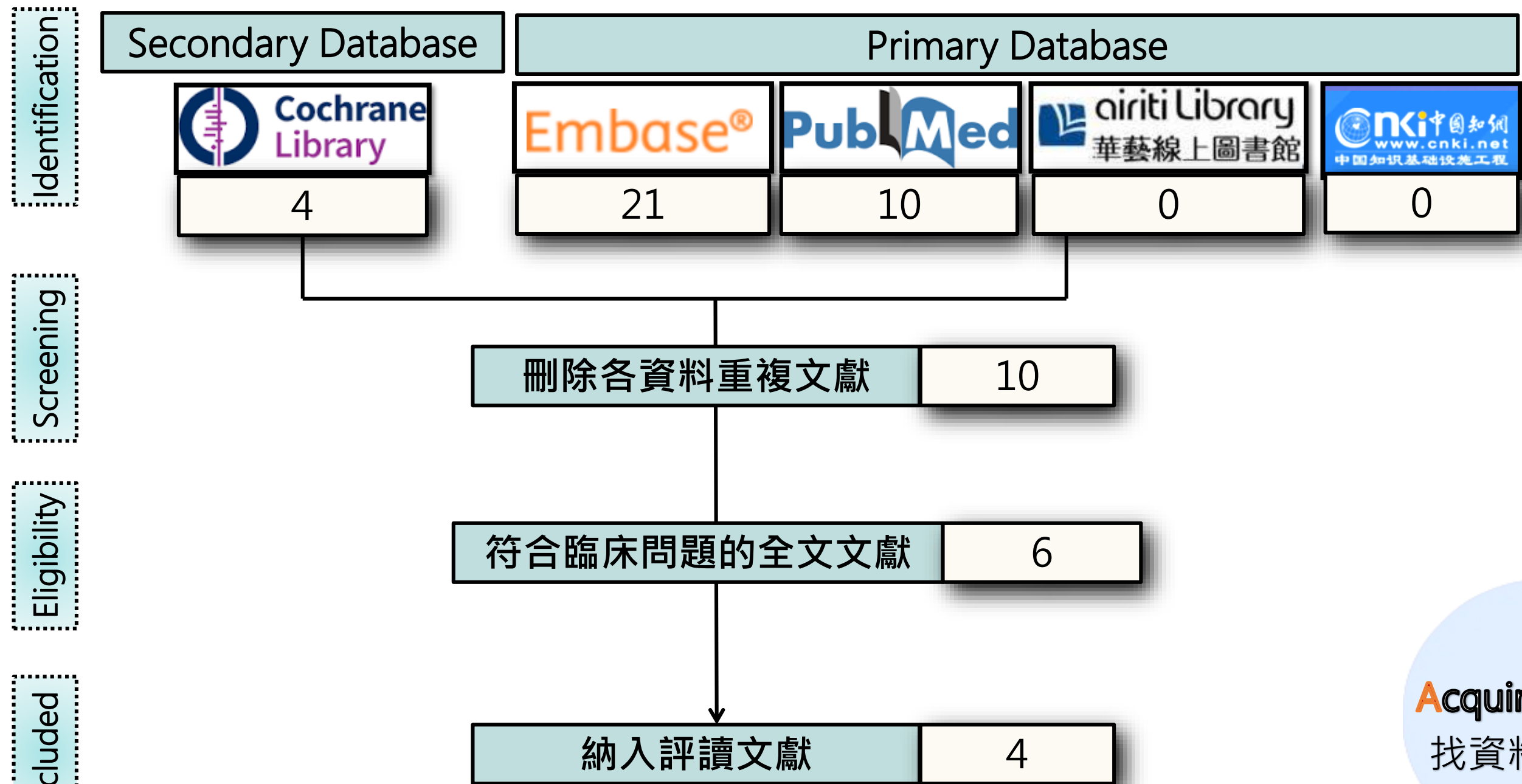
網絡首发 增強出版 數據論文 中英文擴展 同義詞擴展

關鍵字



糞便菌叢移植and困難縮狀桿菌and感染

技巧





- 高級檢索、簡體中文關鍵字
- 藉由他篇文獻確認用語正確性
- 布林邏輯連接關鍵字



比較收納文獻 - 選出最佳文獻，並提出我們的理由

來源	收納文章	S	P	I	C	O
 Cochrane Library	Fecal transplantation for treatment of inflammatory bowel disease [2018]	●	●	●	●	●
Embase®	Faecal microbiota transplantation for the decolonization of antibiotic-resistant bacteria in the gut: a systematic review and meta-analysis [2019]	●	●	●	●	●
Embase®	Faecal microbiota transplantation for eradicating carriage of multidrug-resistant organisms: a systematic review. [2019]	●	●	●	●	●
 PubMed	A Systematic Review of the Efficacy and Safety of Fecal Microbiota Transplant for Clostridium difficile Infection in Immunocompromised Patients. [2018]	●	●	●	●	●

比較收納文獻 - 選出最佳文獻，並提出我們的理由

來源	收納文章	S	P	I	C	O
 Cochrane Library	Fecal transplantation for treatment of inflammatory bowel disease[2018]	●	●	●	●	●
 Embase®	<u>Faecal microbiota</u> transplantation for the decolonization of antibiotic-resistant bacteria in the gut: a systematic review and meta-analysis[2019]	●	●	●	●	●
 PubMed	Faecal m multidrug	●	●	●	●	●
 airiti Library 華藝線上圖書館	A System Microbic Immuno	●	●	●	●	●

- 為SR-MA
- 為2019年最新發表
- 最符合臨床情境

Acquire
找資料

嚴格評讀

- ✓ 最佳的研究設計
- ✓ 較新的發表年份
- ✓ 含有亞洲人種資料
- ✓ 最符合臨床情境

Journal of Hospital Infection 102 (2019) 174–188



ELSEVIER

Available online at www.sciencedirect.com

Journal of Hospital Infection

journal homepage: www.elsevier.com/locate/jhin



Review

Faecal microbiota transplantation for the decolonization of antibiotic-resistant bacteria in the gut: a systematic review and meta-analysis



2.39

CiteScore

3.354

Impact Factor

CASP [13.03.17]

Systematic Review Checklist



Appraisal

評讀文獻

IMPACT FACTOR

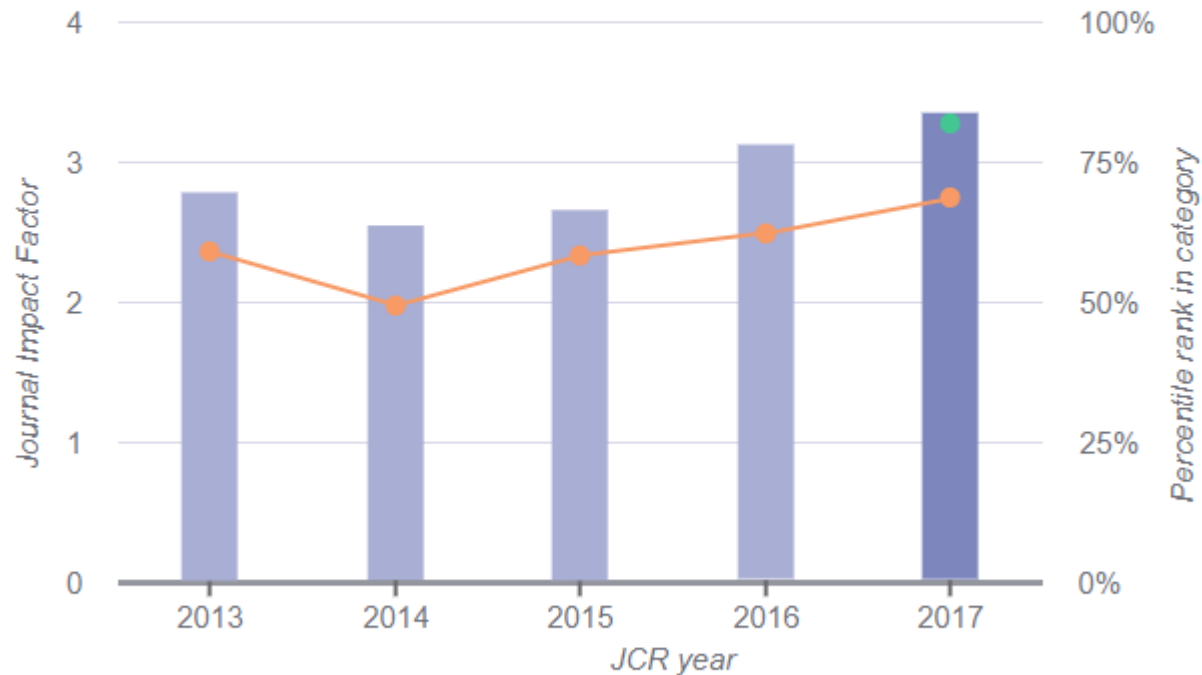
Journal Impact Factor Trend 2017

[Printable Version](#)



3.354

2017 Journal Impact Factor



JIF INFECTIOUS DISEASES
PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH



2.39

CiteScore

3.354

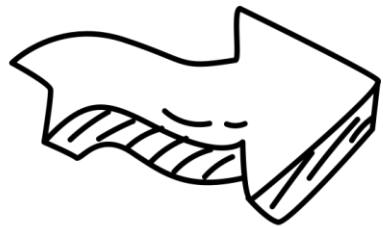
Impact Factor

Appraisal

評讀文獻



1. Did the review address a clearly focused question ?
此回顧是否問了一個清楚、明確的臨床問題？



HINT: An issue can be “focused” In terms of

1. The population studied
2. The intervention given
3. The outcome considered

評讀結果

Summary

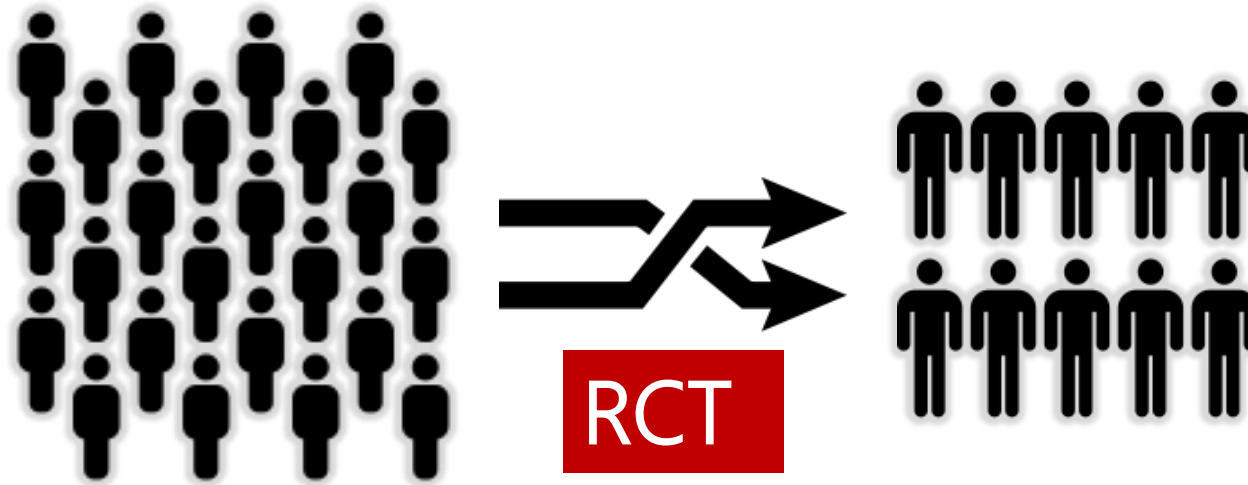
P	Clostridium difficile infections	<p>Antibiotic resistance is a growing global problem associated with increased morbidity and mortality, and presents a significant financial and economic burden on healthcare. Faecal microbiota transplantation (FMT) has been proven effective for curing recurrent Clostridium difficile infections, however no systematic review to date has addressed its effectiveness for decolonization of antibiotic-resistant bacteria from the gut. The aim of this study was to establish whether faecal microbiota transplantation decolonizes antibiotic-resistant bacteria from the gut of colonized adults. A systematic review was performed by undertaking a comprehensive search on MEDLINE, Embase, CENTRAL, PubMed and CINAHL databases for evidence up until May 2018. Randomized and non-randomized studies evaluating the effects of FMT on gut colonization of antibiotic-resistant bacteria in adults were eligible. Studies were assessed using the Joanna Briggs Institution critical appraisal checklists. Quality of reporting was assessed using PROCESS and CARE checklists. Data was synthesized narratively, along with a meta-analysis of proportions for the primary outcome.</p>
I	Faecal microbiota transplantation (FMT)	
C	placebo	
O	the effects of FMT on gut colonization of antibiotic-resistant bacteria in adults	
T	1 month	

作者清楚地說明了PICOT，因此評讀結果為Yes。

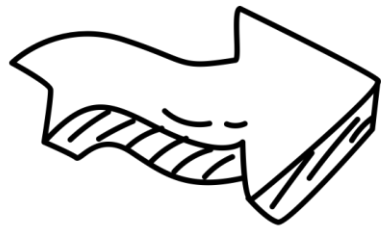
Yes

No

Unclear



2. Did the authors look for the right type of papers?
作者是否收納適當的研究類型？



HINT: “The best sort of studies” would

- 1. Address the review’s question**
- 2. Have an appropriate study design (usually RCTs for papers evaluating interventions)**

評讀結果

Summary

Antibiotic resistance is a growing global problem associated with increased morbidity and mortality, and presents a significant financial and economic burden on healthcare. Faecal microbiota transplantation (FMT) has been proven effective for curing recurrent *Clostridium difficile* infections, however no systematic review to date has addressed its effectiveness for decolonization of antibiotic-resistant bacteria from the gut. The aim of this study was to establish whether faecal microbiota transplantation decolonizes antibiotic-resistant bacteria from the gut of colonized adults. A systematic review was performed by undertaking a comprehensive search on MEDLINE, Embase, CENTRAL, PubMed and CINAHL databases for evidence up until May 2018. Randomized and non-randomized studies evaluating the effects of FMT on gut colonization of antibiotic-resistant bacteria in adults were eligible. Studies were assessed using the Joanna Briggs Institution critical appraisal checklists. Quality of reporting was assessed using PROCESS and CARE checklists. Data was synthesized narratively, along with a meta-analysis of proportions for the primary outcome.

Yes

No

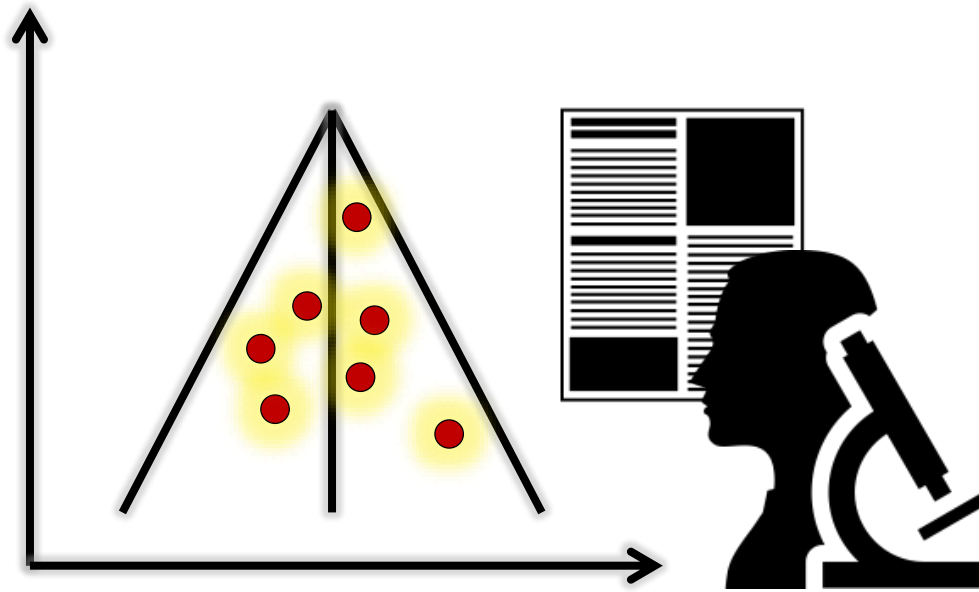
Unclear

優點

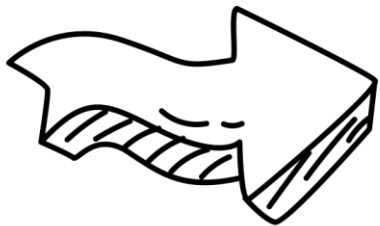
1. 收錄符合治療型問題的RCT文章、非RCT、觀察型研究
2. 清楚定義了納入條件
3. 清楚定義了排除條件

缺點

1. 非全為RCT文章



3. Do you think the important, relevant studies were included?
重要、相關的研究是否皆被納入？



HINT: Look for

1. Which bibliographic databases were used
2. Follow up from reference lists
3. Personal contact with experts
4. Search for unpublished as well as published studies
5. Search for non-English language studies

評讀結果

Search strategy

A systematic literature search for eligible studies up until May 2018 was undertaken on MEDLINE (1946 to May week 3 2018), Embase (1974 to May week 3 2018), CENTRAL (1898 to May week 4 2018), PubMed (1950 to May week 4 2018), and CINAHL (1961 to May week 4) databases.

The PICO framework was used to construct a facet analysis based on the population, intervention, and outcome elements of the research question (Supplementary Table S2). This allowed the generation of an exhaustive search strategy for database searching. The search terms within each facet were combined with the Boolean operator 'OR', and the results from each facet search were combined with the Boolean operator 'AND'. The resulting hits were limited to studies on humans and English language, but no date restriction was applied. The full electronic search strategy for the MEDLINE database is presented in Supplementary Table S3.

Yes

No

Unclear

優點

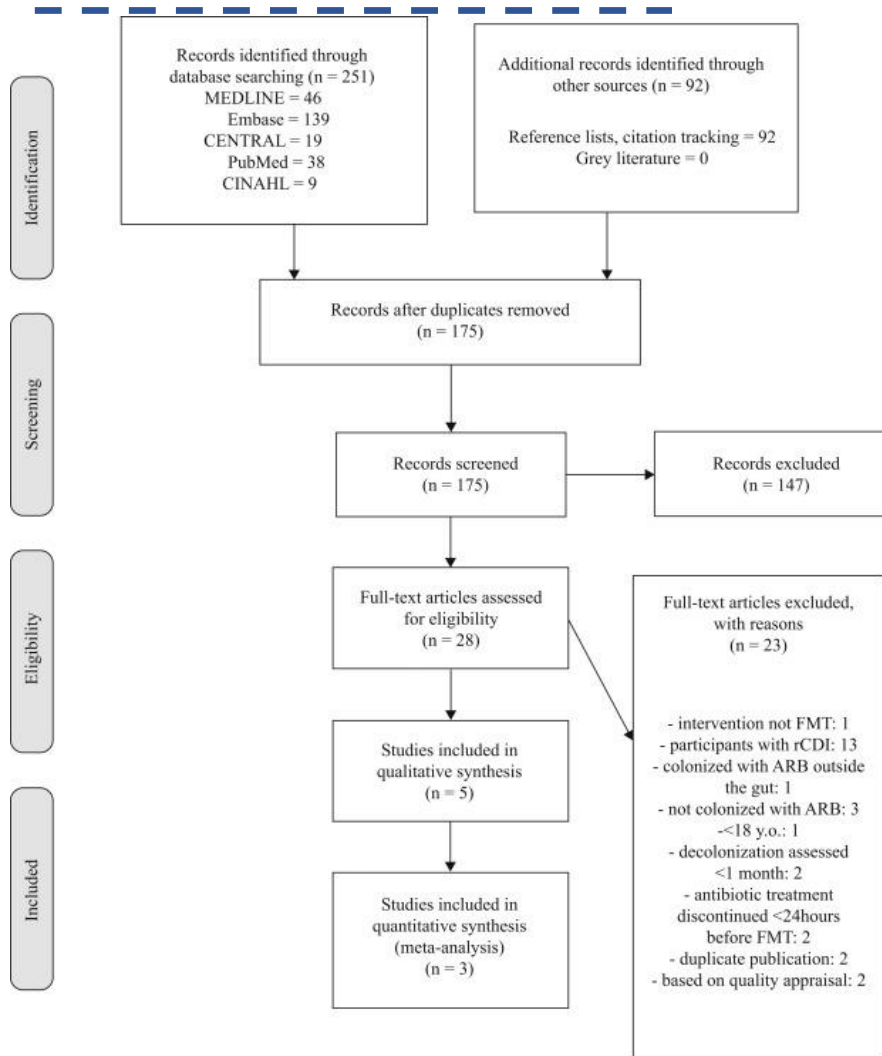
1. 作者盡可能搜尋了各種一級和二級資料庫
2. 作者更進一步取得尚未發表的文章
3. 運用布林邏輯字元、說明語言(英語)、種族(人類)限制
4. 列出flow chart清楚說明納入、排除理由

缺點

1. 沒有漏斗圖
2. 缺乏亞洲(台灣)資料

評讀結果

For missing data or clarification, three study authors were contacted via email correspondence [40], [41], [42]. However, response was received from one study author [40] (Supplementary Table S6).



優點

1. 作者盡可能搜尋了各種一級和二級資料庫
2. 作者更進一步取得尚未發表的文章
3. 運用布林邏輯字元、說明語言(英語)、種族(人類)限制
4. 列出flow chart清楚說明納入、排除理由

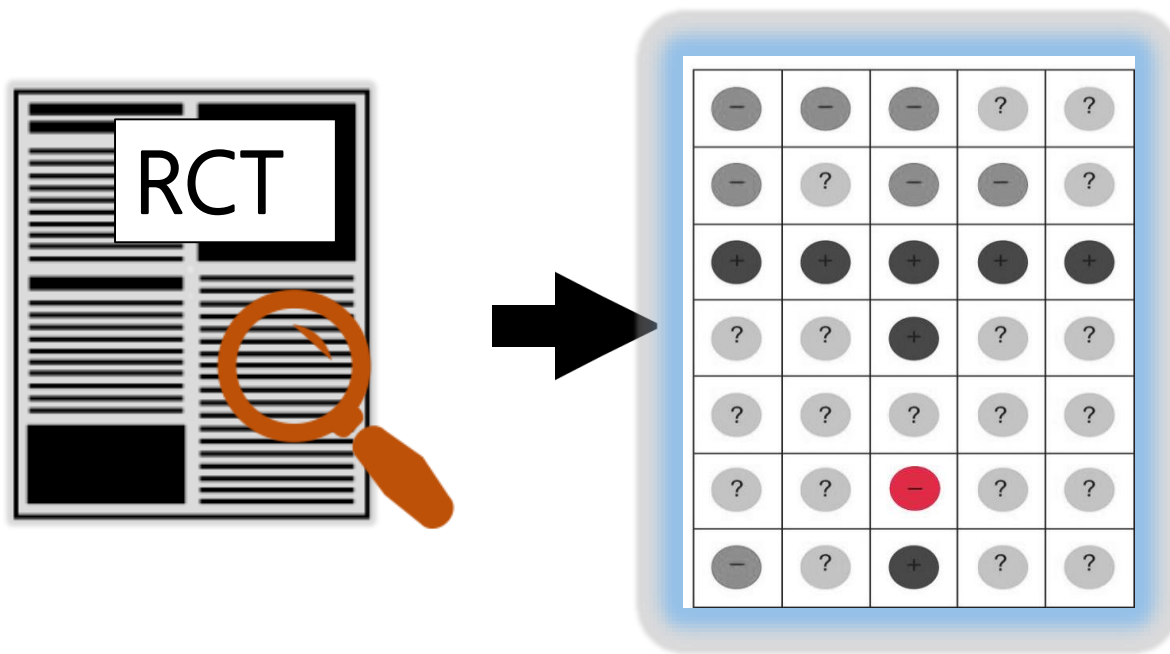
缺點

1. 沒有漏斗圖
2. 缺乏亞洲(台灣)資料

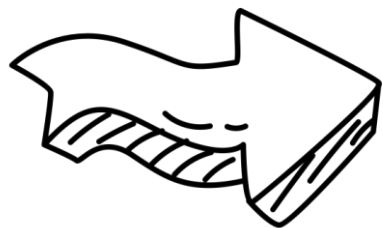
Yes

No

Unclear



4. Did the review's authors do enough to assess the quality of the included studies?
作者是否有評估收納研究的品質？



HINT:

The authors need to consider the rigour of the studies they have identified. Lack of rigour may affect the studies results.

評讀結果

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Bilinski et al. 2017	Y	Y	Y	?	?	Y	Y	Y	Y	Y
Dinh et al. 2018	Y	Y	Y	?	?	Y	Y	Y	Y	Y
Singh et al. 2018	N	Y	Y	?	Y	Y	Y	Y	Y	Y

Y - Yes, N - No, ? - Unclear

Quality assessment

For the assessment of risk of bias in non-randomized studies of interventions, the Cochrane Collaboration suggests the use of the ROBINS-I tool, which is specifically designed for observational studies, such as cohort, case-control, and cross-sectional studies [43]. However, because the identified studies in this systematic review were case series and case reports, this tool was deemed unsuitable.

In such cases, the Cochrane Collaboration advises that reviewers choose a tool suitable for their review. Therefore, the quality of included studies was assessed using the Joanna Briggs Institution (JBI) standardized critical appraisal checklists for case series and case reports [44].

Yes

No

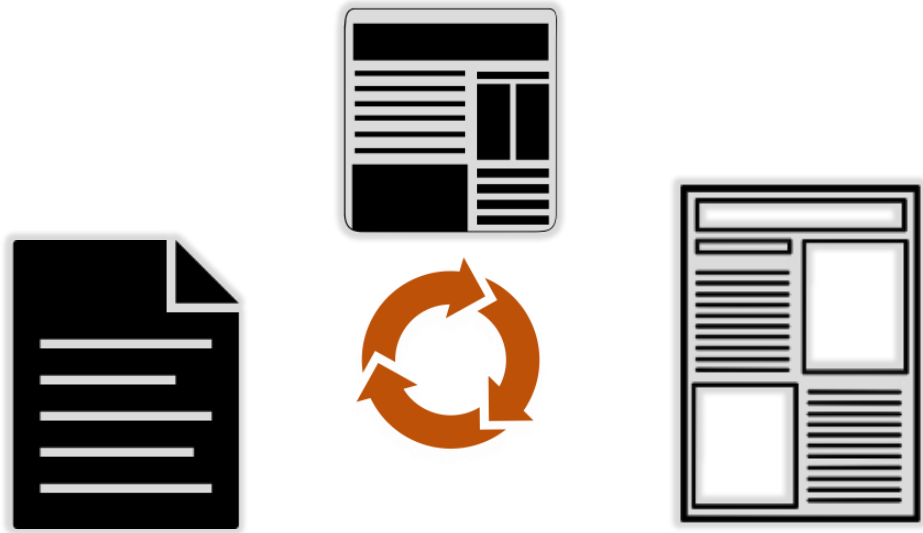
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優點

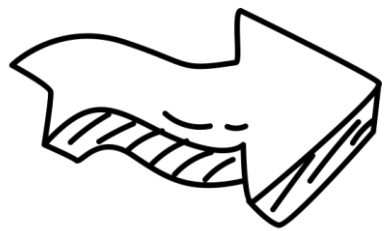
1. 使用 Cochrane Collaboration suggests the use of the ROBINS-I tool 工具做評讀
2. 評適釋表報消其 級用的現告耗他 根的， 據偏例倚倚見 非倚如、 隨域選檢渣混發 機風擇測洩表 研究來倚倚倚 險偏偏倚倚 和

缺點

1. 未提出由幾位作者獨立評讀



5. If the results of the review have been combined, was it reasonable to do so?
作者是否有把各個研究的結果合併起來？
這樣的合併是合理的嗎？



HINT: Consider whether

1. The results were similar from study to study
2. The results of all the included studies are clearly displayed
3. The results of the different studies are similar
4. The reasons for any variations in results are discussed

主要結果-

Under the random-effects model, the I^2 statistics for inconsistency was 73.1% (95% CI 0-89.9), Cochran's $Q=7.43$ (degrees of freedom (df)=2), **P-value=0.0244**. This indicates statistical significance for the presence of heterogeneity and that **73.1%** of the variability in effect estimates was due to heterogeneity rather than random error signifying **moderate heterogeneity** (I^2 50-75%)

異源性(Heterogeneity): $\text{Chi}^2/\text{df}=1.29$, $P=0.0244$, **$I^2=73\%$**

作者採用 **"random effect model"**

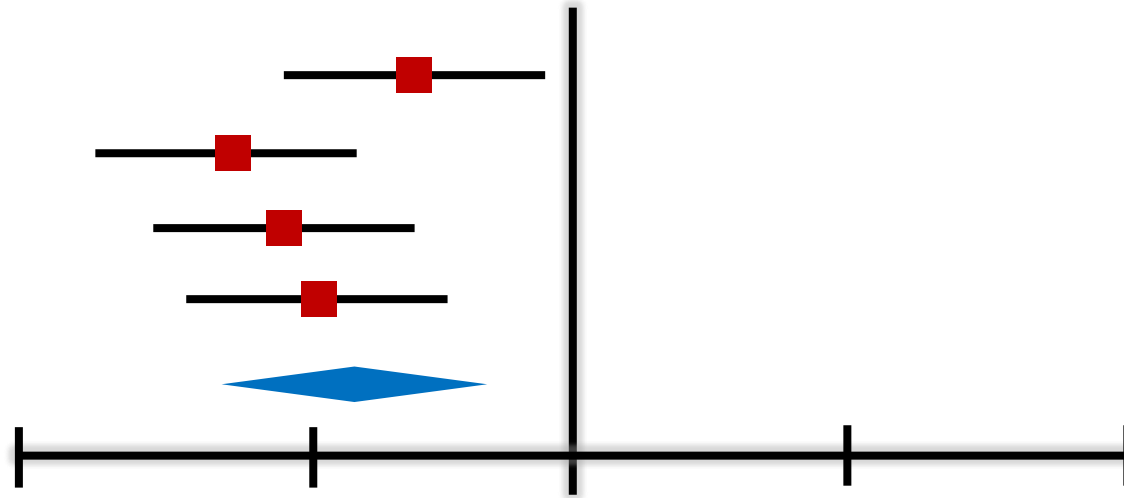
中度異質性

Yes

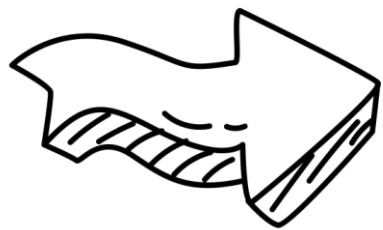
No

Unclear

FMT seems to be **safe** in terms of short-term side-effects, however not enough evidence exists for its long-term effects in terms of recolonization, colonization with new bacterial strains and transfer of resistance genes.



6. What are the overall results of the review? 這篇回顧呈現了什麼結果？



HINT: Consider

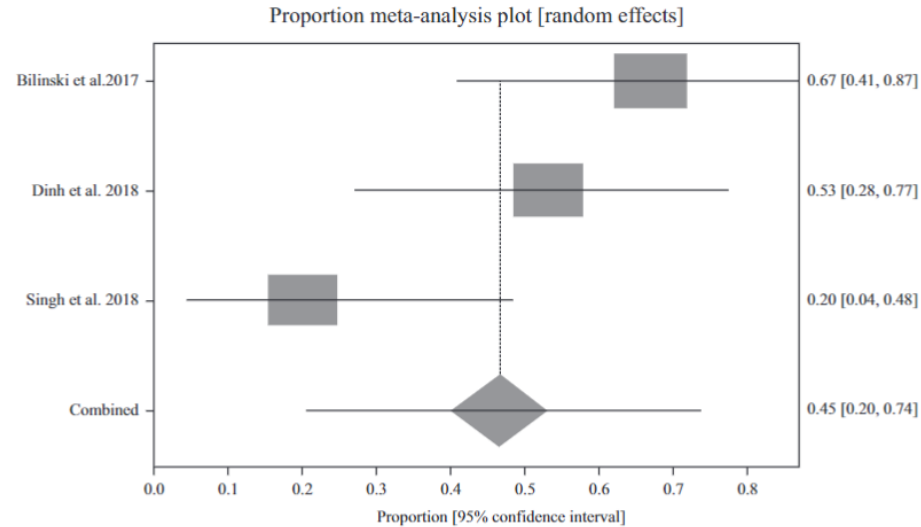
1. If you are clear about the review's "bottom line" results
2. What these are (numerically if appropriate)
3. How were the results expressed (NNT, odds ratio etc)

主要結果

Importance

重要性

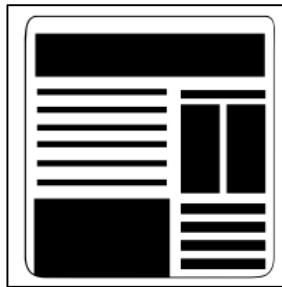
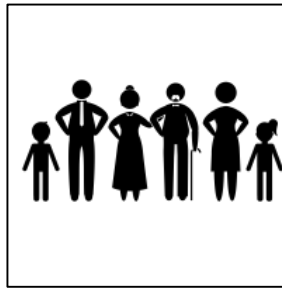
V. Tavoukjian / Journal of Hospital Infection 102 (2019) 174–188



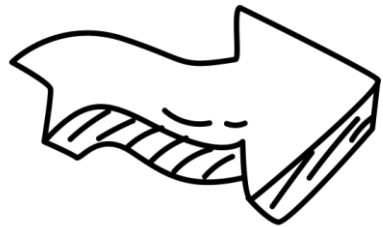
Intervention	Fecal microbiota transplant	
Comparison	Placebo	
研究結果	OR 2.22[1.35,5.00](95%CI)	NNT=20
time	一個月	
結論	使用糞便菌叢移植, 四周後可以減少45%菌叢	

FMT seems to be **safe** in terms of short-term side-effects, however not enough evidence exists for its long-term effects in terms of recolonization, colonization with new bacterial strains and transfer of resistance genes.

Intervention	Fecal microbiota transplant
Comparison	Placebo
研究結果	並未增加腸道菌之抗藥性
time	一個月
結論	並未增加腸道菌之抗藥性

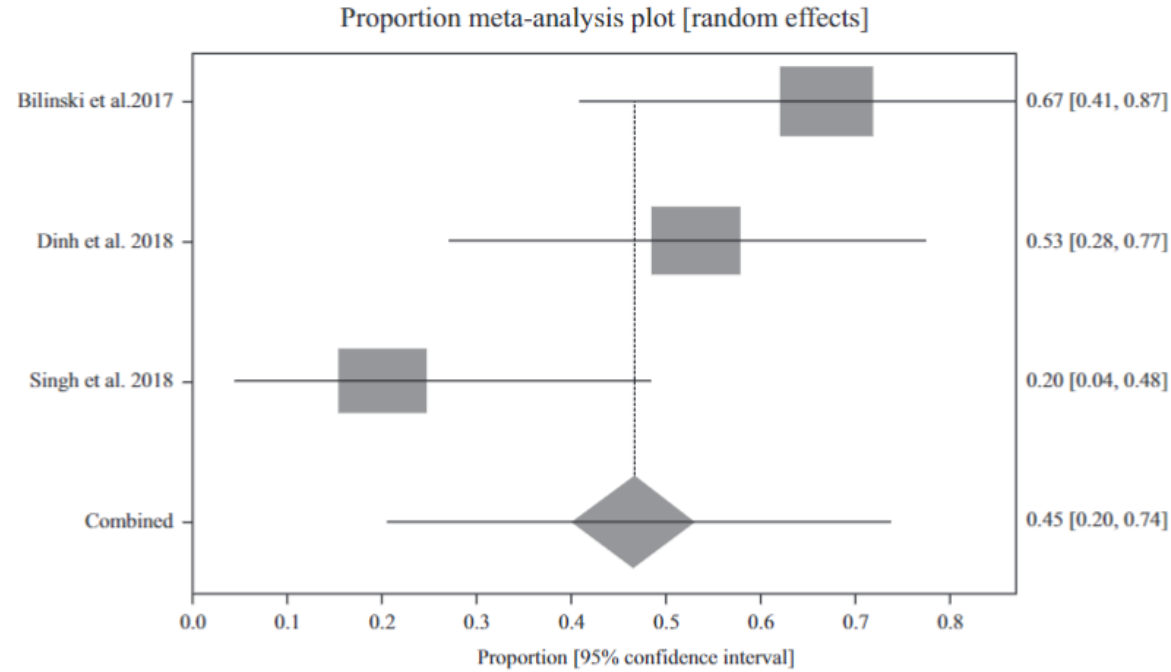


7. How precise are the results? 結果精準嗎？



HINT: Look at the confidence intervals, if given

主要結果



Outcome	Decolonization
RR	OR 2.22[1.35,5.00](95%CI)
NNT	20
結論	有達到統計學上差異，但抗藥性菌叢減少45%

Yes

No

Unclear



Table V. GRADE evidence table for decolonization success at 1 month

Certainty assessment						No. of patients	
No. of studies/study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	FMT	Standard treatment
Five observational studies	Very serious ^a	Very serious ^b	Not serious	Very serious ^c	Publication bias strongly suspected ^d	25/52 (48.1%)	—

評定證據等級 - OCEBM Level of Evidence, 2011

Question	Step 1 (Level 1*)	Step 2 (Level 2*)	Step 3 (Level 3*)	Step 4 (Level 4*)	Step 5 (Level 5)
How common is the problem?	Local and current random sample surveys (or censuses)	Systematic review of surveys that allow matching to local circumstances**	Local non-random sample**	Case-series**	n/a
Is this diagnostic or monitoring test accurate? (Diagnosis)	Systematic review of cross sectional studies with consistently applied reference standard and blinding	Individual cross sectional studies with consistently applied reference standard and blinding	Non-consecutive studies, or studies without consistently applied reference standards**	Case-control studies, or "poor or non-independent reference standard**	Mechanism-based reasoning
What will happen if we do not add a therapy? (Prognosis)	Systematic review of inception cohort studies	Inception cohort studies	Cohort study or control arm of randomized trial*	Case-series or case-control studies, or poor quality prognostic cohort study**	n/a
Does this intervention help? (Treatment Benefits)	Systematic review of randomized trials or n-of-1 trials	Randomized trial or observational study with dramatic effect	Individual randomized trial or (exceptionally) observational study with dramatic effect		
What are the COMMON harms? (Treatment Harms)	Systematic review of randomized trials, systematic review of nested case-control studies, n-of-1 trial with the patient you are raising the question about, or observational study with dramatic effect	Individual randomized trial or (exceptionally) observational study with dramatic effect			
What are the RARE harms? (Treatment Harms)	Systematic review of randomized trials or n-of-1 trial	Randomized trial or (exceptionally) observational study with dramatic effect			
Is this (early detection) test worthwhile? (Screening)	Systematic review of randomized trials	Randomized trial			

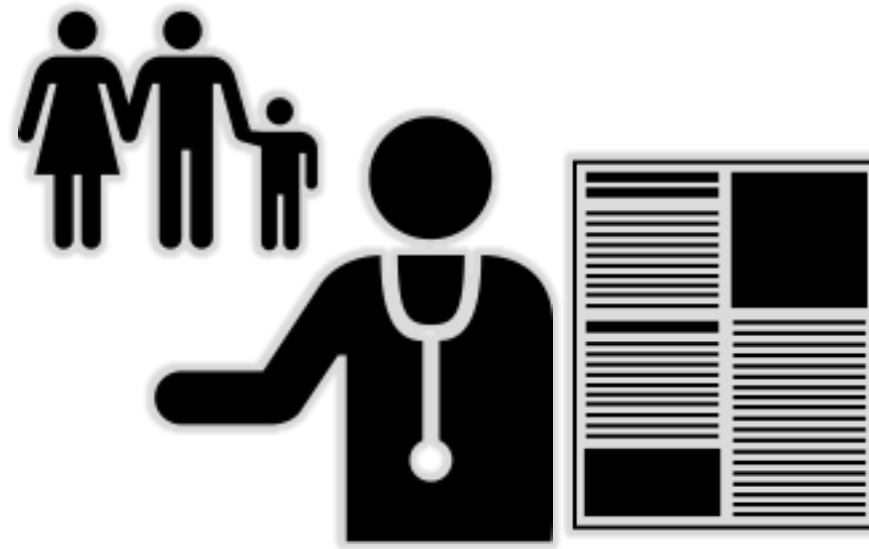
■ **【治療型問題】**
 RCT之系統性回顧文章
 證據等級為 **Level 1 >>> 2**
 ※經嚴格評讀，無其他需要考慮降階理由

理由

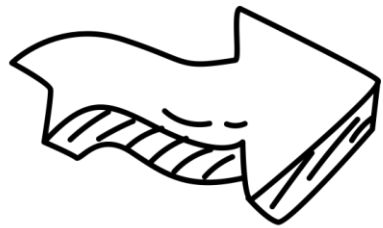
存在誤差風險
 結果不精準

結果不一致
 存在發表誤差

證據不具直接性



8. Can the results be applied to the local population? 此研究是否可應用到你的病患？



HINT: Consider whether

- 1. The patients covered by the review could be sufficiently different to your population to cause concern**
- 1. Your local setting is likely to differ much from that of the review**

評估適用性 - 比較評讀文獻與臨床情境

	評讀文獻	臨床情境
P	抗藥性致感染性腹瀉	65歲男性感染性腹瀉
I	糞便菌叢移植	口服或管灌糞便菌叢移植
C	安慰劑	安慰劑
O	抗藥性菌叢數	治療成效

Yes

No

Unclear

評估適用性 - 比較評讀文獻與臨床情境

	評讀文獻	臨床情境
P		
I		
C	1. 我們的病患與文獻研究是否相似？	
O	<input checked="" type="checkbox"/> 年齡 <input checked="" type="checkbox"/> 性別 <input checked="" type="checkbox"/> 種族 <input checked="" type="checkbox"/> 共病 <input checked="" type="checkbox"/> 同時服用其他治療藥物 <input checked="" type="checkbox"/> 疾病嚴重度	
		是
	2. 這項治療在台灣是否可行？	
		可

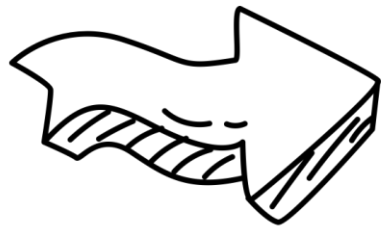
Yes

No

Unclear



9. Were all important outcomes considered?
是否所有重要的臨床結果都被考量到？



HINT: Consider whether

1. Is there other information you would like to have seen

臨床結果

Types of outcome measures

The primary outcome of interest is decolonization rate of antibiotic-resistant bacteria in the gut assessed at least 1 month (30 days) after FMT from rectal swab or stool samples. Decolonization rate was defined as number of participants decolonized from antibiotic-resistant bacteria to total number of participants at a certain time point.

Ideally, decolonization would be evidenced by three separate negative rectal swabs, with at least one confirmed by PCR [36]. However, for the purpose of this review, the decolonization success definitions delineated by the individual studies were accepted.

Secondary outcomes include time frame for achievement of decolonization and adverse effects of FMT.

A summary of the inclusion and exclusion criteria is presented in [Supplementary Table S1](#).

- Primary outcome:治療效果
- Second outcome:adverse effect of FMT.

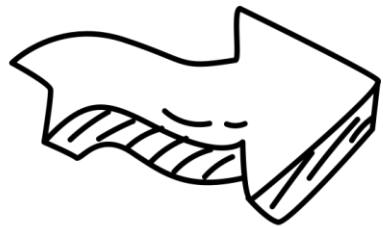
Yes

No

Unclear



10. Are the benefits worth the harms and costs?
這些好處隨之而來的傷害和花費是否值得？



HINT: Consider

1. Even if this is not addressed by the review, what do you think?



各項選擇 - 對醫療品質的影響



選擇	好處	證據等級	備註
vancomycin 125 mg 4 times daily for 10 days	<ul style="list-style-type: none"> 針劑 	(IDSA/SHEA Strong recommendation, High-quality evidence ; ESCMID Grade A-I)	start therapy directed at <i>Clostridium difficile</i> (consider empiric treatment pending testing results) for initial episode of nonsevere disease
fidaxomicin 200 mg twice daily for 10 days		(IDSA/SHEA Strong recommendation, High-quality evidence)	
metronidazole 500 mg orally 3 times daily for 10 days		(IDSA/SHEA Weak recommendation, High-quality evidence)	
fecal microbiota transplantation		LEVEL 3	



成本效益 - 藥價, 藥效



衛生福利部中央健康保險署
NATIONAL HEALTH INSURANCE ADMINISTRATION, MINISTRY OF HEALTH AND WELFARE

Practice
應用

藥物	優點	缺點(副作用)	健保單價
Metronidazole	• 便宜	• 針劑住院施打	NT.57元
fidaxomicin	• 復發也有效	• 較貴	NT. 2224元
vancomycin		• 針劑住院施打	NT.317元
fecal microbiota transplantation		• 較新治療方式 • 證據等級不足	自費





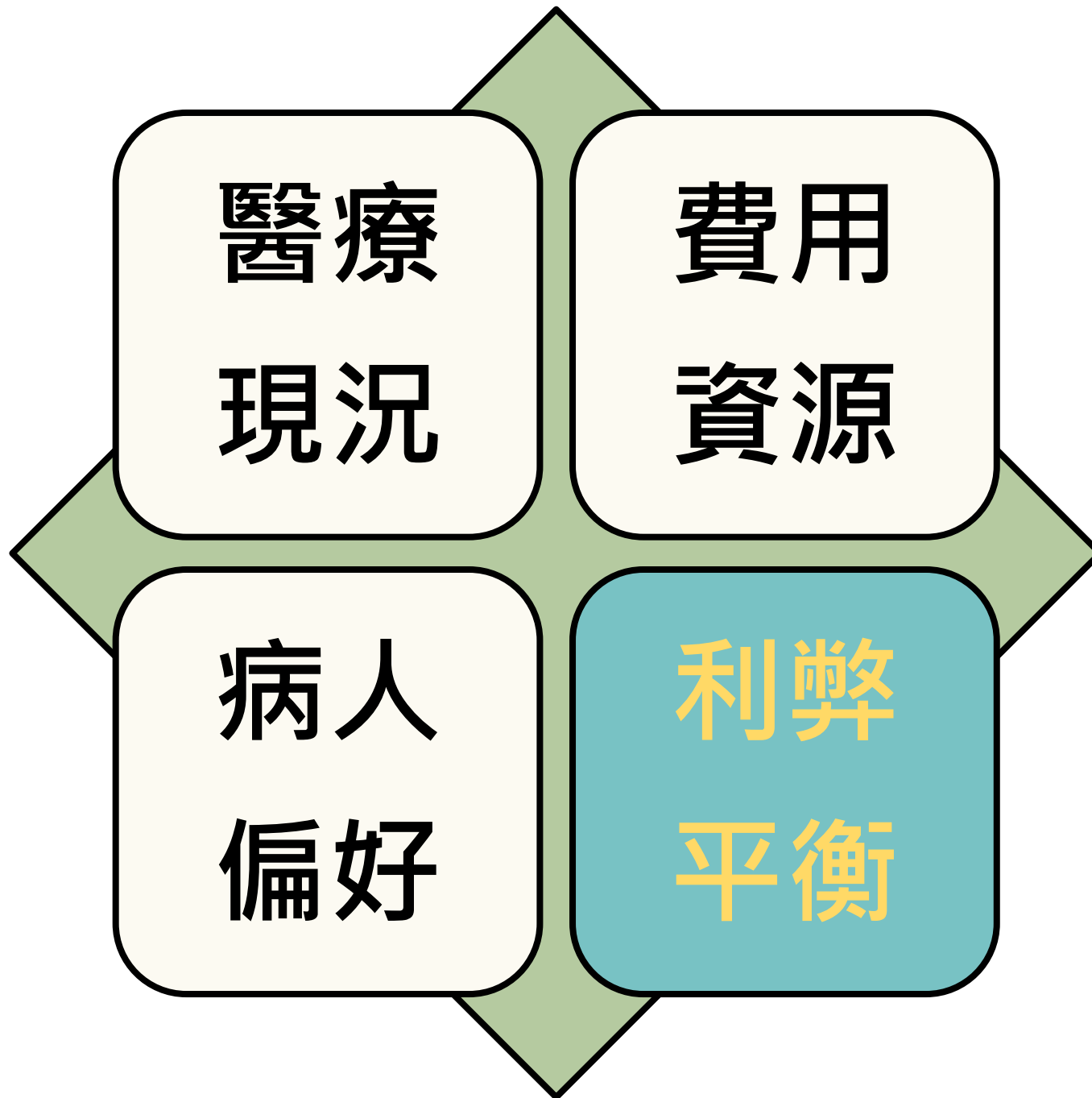
了解病人主要問題

- 65歲罹患感染性腹瀉疑似困難梭狀桿菌造成



尊重病人治療意願

- 新療法糞便菌叢移植法的療效及副作用



Option

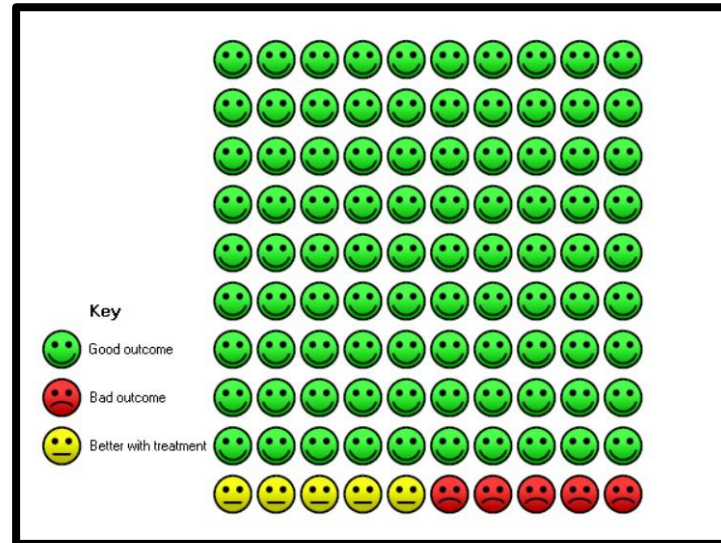


Benefit



FMT

寫Major
outcome



In 100 people:
90 improve on their own
5 improve due to treatment
5 don't improve

您選擇治療方式的考量因素有什麼?以及在意的程度

共享決策

考量因素	最不重要	影響程度					最重要
糞便菌叢移植法 技術的成熟度	0	1	2	3	4	5	
治療的 成效	0	1	2	3	4	5	
副作用 影響	0	1	2	3	4	5	
經濟 考量	0	1	2	3	4	5	

您對治療方式的認知有多少？

共享決策

1. 糞便菌叢移植法可以提升疾病治癒率：對 不對 不確定

2. 糞便菌叢移植法目前也有健保給付：對 不對 不確定

3. 糞便菌叢移植法都沒有副作用：對 不對 不確定

臨床應用-回覆病人問題

薄弱建議

醫療
現況

費用
資源

病人
偏好

利弊
平衡

江先生您好，經過我們團隊縝密的實證搜尋後，目前現有最佳證據是由系統性回顧文章支持，糞便菌叢移植法的使用，一個月內可減少抗藥性菌叢45%且無明顯副作用，但目前非健保給付項目，若經濟上許可且有使用抗生素之副作用疑慮，若不排斥，可嘗試使用。