Evidence-Based Medicine Teaching in Chang Gung University

長庚大學實證醫學教育

林口長庚紀念醫院實證醫學中心
風濕過敏免疫科 教授
長庚大學 余光輝醫師

2018.06.29

Professor, Department of Internal Medicine,
Chang Gung Memorial Hospital and Chang Gung University
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Chang-Gung Memorial Hospital, Taiwan
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Medical Education in the New Century

- 醫學人文教育
- 生物資訊
- 以病人為中心的照護
- 以問題為導向的學習 (PBL)
- 以實證為基礎的治療 (EBM)

THE COCHRANE COLLABORATION

2005年起醫學系六年級實證醫學選修課
2010年起長庚大學六年級醫學系必選修

考科藍


2007 Asia Pacific Evidence-Based Medicine Network Conference
亞太實證醫學聯盟研討會
November 16 - 18, 2007 Taipei, Taiwan
Promoting Evidence-Based Integrated Healthcare

The growing needs for EBHC teaching

醫學系方基存主任

DOH promoting project
NHRI research project

NHRI/NHI/TJCHA CPG developing protocol

Taiwan Biobank projects

NHRI guideline projects

Changhua Christian H

Wang Fung H
China Med H

Taichung VGH
St Martin H

Chang Gung H
Shin Kong H
Machay H
Cathay H

TJBCC
KMU H

NHRI EBPG platform

Taiwan EBM Association

Yr | 1996 | … | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008

Primary Care Global Budget (NHI)

Hospital Global Budget (NHI)

Physicians' licensing and continuing education scheme (DOH)

PGY scheme (TJCHA)

UGY scheme (TJCHA)

CGU

Nurse practitioner licensing & continuing education scheme (DOH)

HTA scheme (NHI/CDE)

Teaching cost subsidy Scheme(so-called all HPs-PGY) (DOH)

From KN Kuo

長庚紀念醫院

實證醫學學術研討會

主辦單位：

長庚紀念醫院林口醫學教育委員會

協辦單位：

財團法人醫院評鑑暨醫療品質策進會

活動日期：

中華民國九十四年三月二十六日

實證醫學學術研討會議程

時間：94 年 3 月 26 日（星期六） 13:00 ~ 17:00

地點：林口長庚紀念醫院 復健大樓〔綠棟〕一樓第一會議廳

地址：桃園縣龜山鄉復興街 5 號

主辦單位：財團法人長庚紀念醫院林口醫學中心

協辦單位：財團法人醫院評鑑暨醫療品質策進會

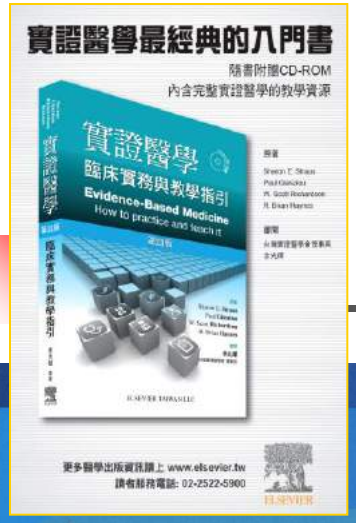
議程：

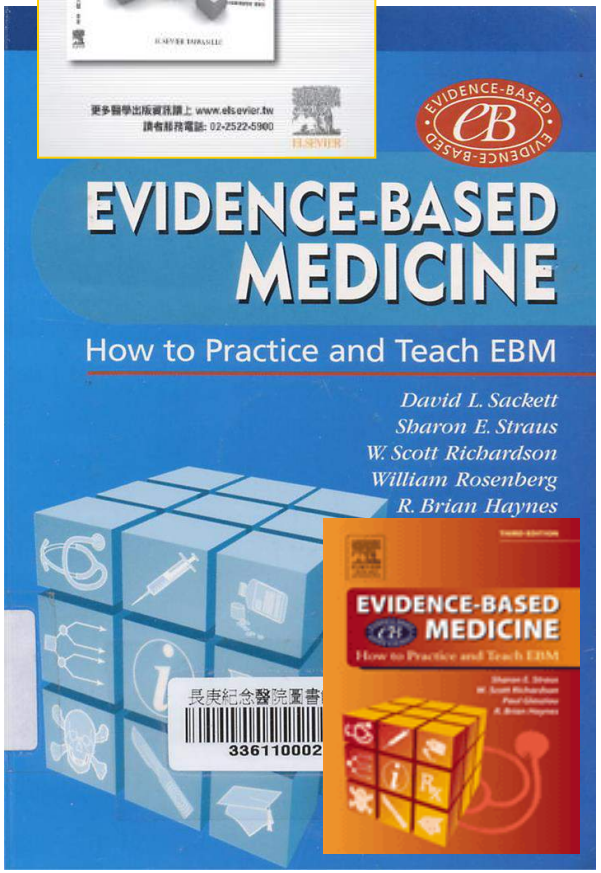
時間	議題	主講人	引言人
12:45-13:00	報到		
13:00-13:05	致詞	長庚醫院 翁文能副院長	
13:05-13:40	實證醫學醫學教育	長庚醫院 余光輝醫師	長庚醫院 翁文能執行副院長
13:40-14:15	實證醫學資料搜尋	萬芳醫院 陳杰峰主任	醫教會副主席 方基存醫師
14:15-14:50	實證醫學文獻評讀	台北榮總 郭英調醫師	內科部部長 葉森洲醫師
14:50-15:05	Coffee Break		
15:05-15:40	實證醫學的應用	台北榮總 郭英調醫師	內科部部長 葉森洲醫師
15:40-16:15	臨床診療指引發展	國衛院 郭耿南教授	內科部副部長 林仁德醫師
16:15-16:50	實證臨床診療指引	長庚醫院 張廷彰主任	內科部副部長 楊智偉醫師
16:50-17:00	綜合討論	全體	

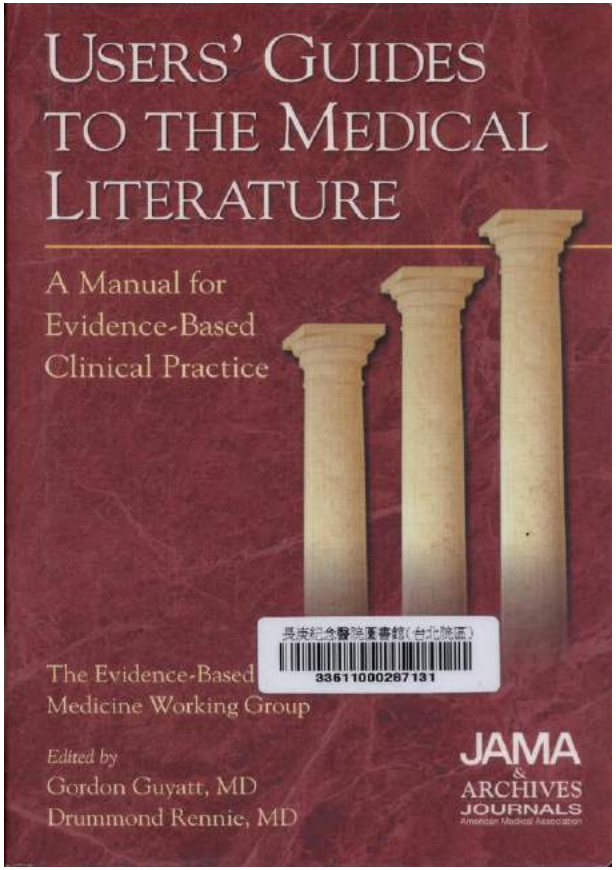
臨床問題類型

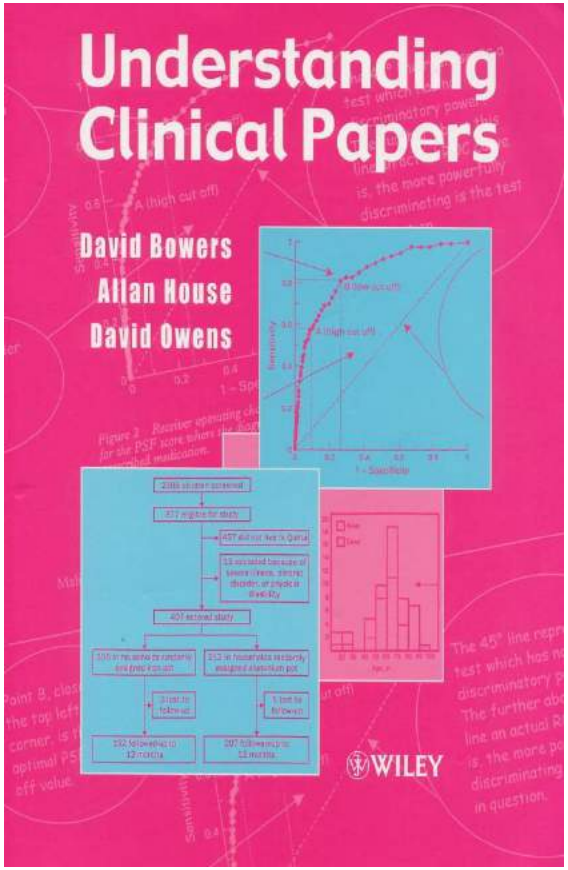
- 診斷 (Diagnosis)
  - Sensitivity, specificity 敏感度、特異度
  - Predictive value (PPV, NPV) 陽性預測值、陰性預測值
  - ROC curve, Likelihood ratio (**LR+, LR-**) 概似比
- 治療 (Therapy)
  - Clinical trial (Randomized Controlled Trial, **RCT, RR**)
- 預後 (Prognosis)
  - Prediction model (Survival analysis, **HR** 風險比=**RR**)
- 危險因子探討 (Risk factor)
  - Cohort study (Relative Risk, **RR** 相對風險比)
  - Case-control study (Odds Ratio, **OR** 勝算比)

實證醫學參考書籍


實證醫學最經典的入門書
隨書附贈CD-ROM
內含完整實證醫學的教學資源
實證醫學
臨床實務與教學指引
Evidence-Based Medicine
How to practice and teach it
更多醫學出版資訊請上 www.elsevier.tw
請洽服務電話: 02-2522-5900
ELSEVIER


EVIDENCE-BASED
EVIDENCE-BASED MEDICINE
How to Practice and Teach EBM
David L. Sackett
Sharon E. Straus
W. Scott Richardson
William Rosenberg
R. Brian Haynes
EVIDENCE-BASED MEDICINE
How to Practice and Teach EBM


USERS' GUIDES TO THE MEDICAL LITERATURE
A Manual for Evidence-Based Clinical Practice
The Evidence-Based Medicine Working Group
Edited by
Gordon Guyatt, MD
Drummond Rennie, MD
JAMA & ARCHIVES JOURNALS
American Medical Association


Understanding Clinical Papers
David Bowers
Allan House
David Owens
WILEY

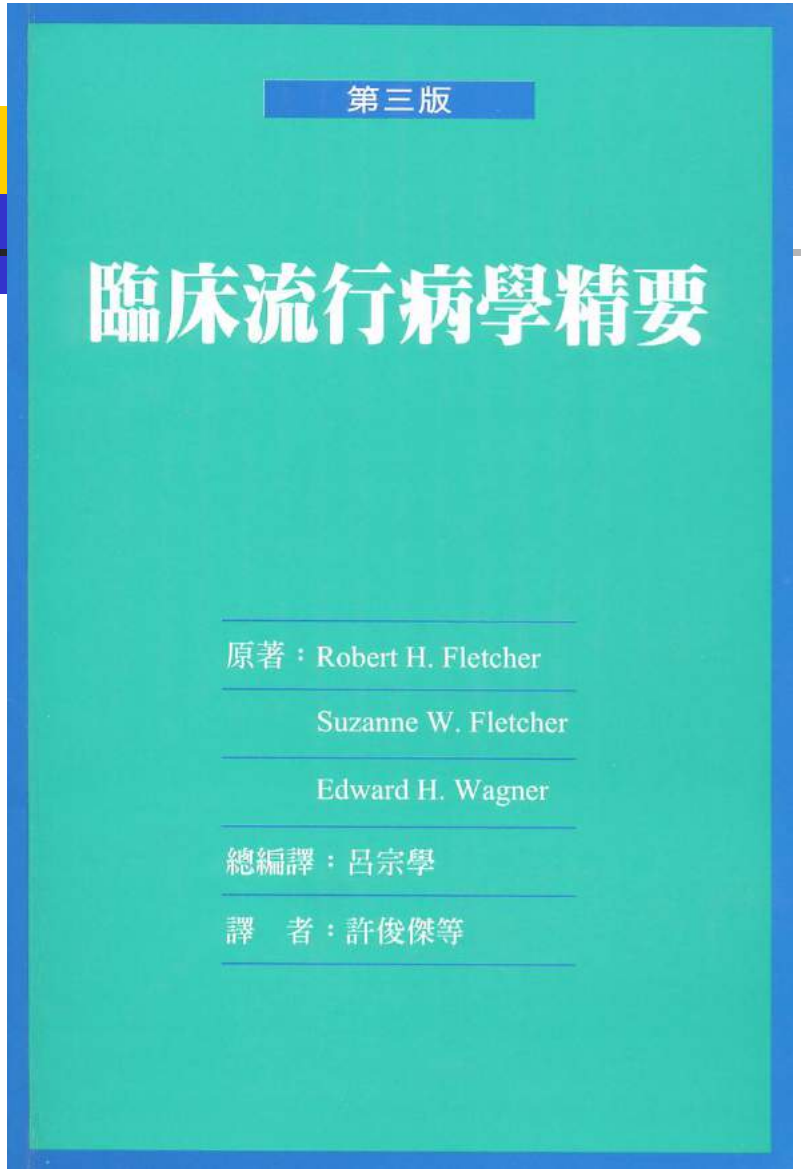
長庚大學九十七學年度第二學期 暨 林口長庚醫院 2009實證醫學課程表

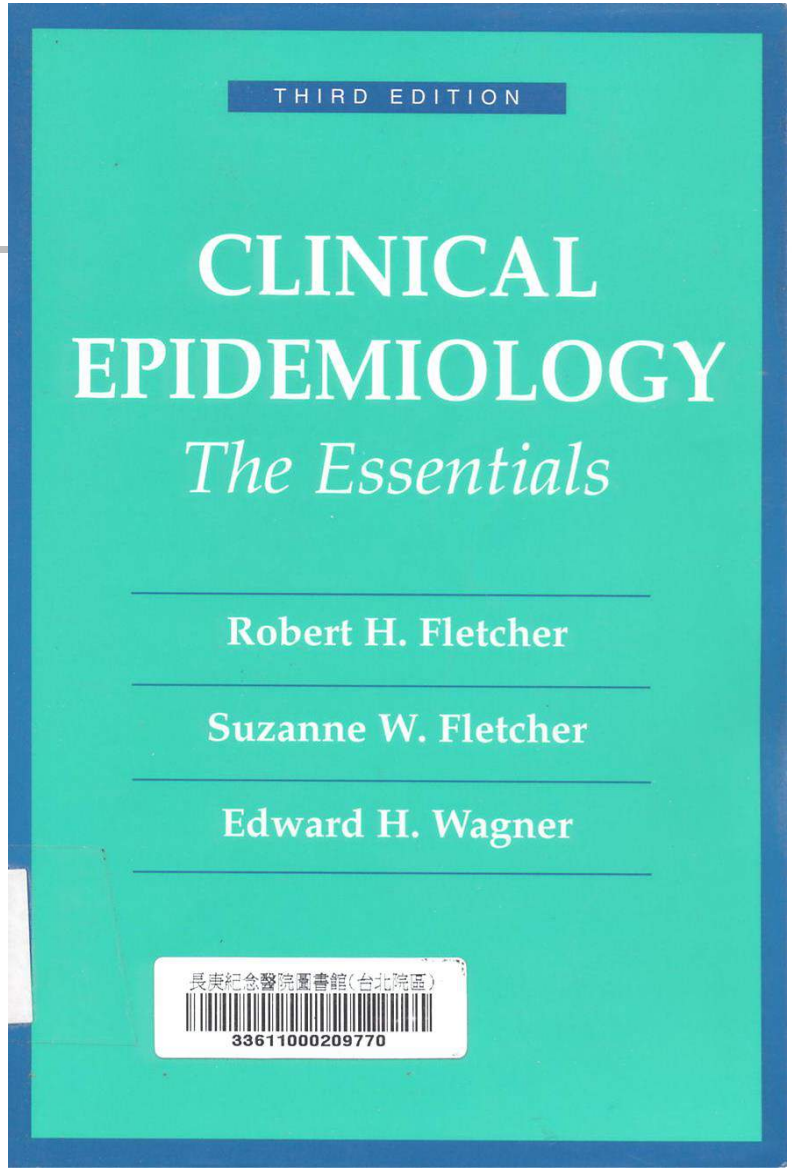
時間：98.01.14 ~ 98.05.13 每星期三下午 6點 ~ 7點

地點：醫學大樓第二會議廳

對象：醫學系及中醫系六年級、全院性、各級醫護人員〔醫師、藥師、醫檢師、護理人員〕

日期	星期	時間	主題	地點	授課教師	助教
1/14	W3	18:00-19:15	實證醫學導論	長庚醫院-第二會議廳	方基存 余光輝	朱世明 謝邦鑫 詹耀龍
1/21	W3	18:00-19:00	如何搜尋實證文獻	長庚醫院-第二會議廳	田亞中	
2/4	W3	18:00-19:00	基礎統計與研究設計I	長庚醫院-第二會議廳	陳永昌	謝邦鑫
2/11	W3	18:00-19:00	基礎統計與研究設計II	長庚醫院-第二會議廳	余光輝	林志隆
2/18	W3	18:00-19:00	網路文獻搜尋	長庚醫院-第二會議廳	余光輝	林正宜
2/25	W3	18:00-19:00	診斷數據分析 Diagnosis	長庚醫院-第二會議廳	陳永昌	楊宗翰
3/4	W3	18:00-19:00	診斷文獻評讀「A組」	長庚醫院-第二會議廳	陳永昌	楊宗翰
3/11	W3	18:00-19:00	暴露對疾病的風險指標 Risk	長庚醫院-第二會議廳	史麗珠	歐良修
3/18	W3	18:00-19:00	綜合分析 (Meta-analysis)	長庚醫院-第二會議廳	許光宏	歐良修 謝邦鑫
3/25	W3	18:00-19:00	綜合分析文獻評讀「B組」	長庚醫院-第二會議廳	余光輝	歐良修 謝邦鑫
4/1	W3	18:00-19:00	治療效果評估 Treatment	長庚醫院-第二會議廳	余光輝	陳俊吉
4/8	W3	18:00-19:00	治療文獻評讀「C組」	長庚醫院-第二會議廳	余光輝	陳俊吉
4/15	W3	18:00-19:00	預後存活分析I Prognosis	長庚醫院-第二會議廳	陳明岐	陳威志
4/22	W3	18:00-19:00	預後存活分析II	長庚醫院-第二會議廳	陳明岐	王敘涵
4/29	W3	18:00-19:00	預後文獻評讀「D組」	長庚醫院-第二會議廳	陳明岐	高國晉
5/6	W3	18:00-19:30	實證臨床問題討論會(1)	長庚醫院-第二會議廳	方基存 余光輝 陳永昌 田亞中	謝邦鑫 高振益 朱世明 詹耀龍
5/13	W3	18:00-19:30	實證臨床問題討論會(2)	長庚醫院-第二會議廳		


第三版
臨床流行病學精要
原著：Robert H. Fletcher
Suzanne W. Fletcher
Edward H. Wagner
總編譯：呂宗學
譯　者：許俊傑等


THIRD EDITION
CLINICAL EPIDEMIOLOGY
The Essentials
Robert H. Fletcher
Suzanne W. Fletcher
Edward H. Wagner
長庚紀念醫院圖書館(台北院區)
33611000209770

長庚大學104學年度第二學期暨林口長庚醫院 2016 實證醫學課程表

時間：**106.01.13~ 106.05.11** 隔週星期三下午 **5** 點 **~ 7** 點　　地點：醫學大樓第二會議廳

對象：醫學系六年級必選修**(since 2010)**、全院性、各級醫護人員

日期	星期	時間	主題	地點	授課教師	助教
2016 1/13	W3	17:00-19:00	實證醫學導論 基礎統計與研究設計 I	長庚醫院-第二會議廳	方基存 余光輝	朱世明 吳憲銘
1/27	W3	17:00-18:00	診斷數據分析	長庚醫院-第二會議廳	陳永昌	吳憲銘
1/27	W3	18:00-19:00	基礎統計與研究設計 II	長庚醫院-第二會議廳	陳永昌	葉勇信
2/17	W3	17:00-18:00	網路文獻搜尋	長庚醫院-第二會議廳	戴呈珍 余光輝	陳昭宇
2/17	W3	18:00-19:00	如何搜尋實證文獻	長庚醫院-第二會議廳	田亞中	葉勇信
3/2	W3	17:00-18:00	暴露對疾病的風險指標	長庚醫院-第二會議廳	史麗珠	葉勇信
3/2	W3	18:00-19:00	診斷文獻評讀「A組」	長庚醫院-第二會議廳	陳永昌	吳憲銘
3/16	W3	17:00-18:00	治療效果評估	長庚醫院-第二會議廳	余光輝	葉勇信
3/16	W3	18:00-19:00	綜合分析 (Meta-analysis)	長庚醫院-第二會議廳	余光輝	詹昆明
3/30	W3	17:00-18:00	治療文獻評讀「B組」	長庚醫院-第二會議廳	余光輝	歐良修
3/30	W3	18:00-19:00	綜合分析文獻評讀「C組」	長庚醫院-第二會議廳	余光輝	歐良修
4/13	W3	17:00-18:00	預後存活分析I	長庚醫院-第二會議廳	陳明岐	張鴻
4/13	W3	18:00-19:00	預後存活分析II	長庚醫院-第二會議廳	陳明岐	張鴻
4/27	W3	17:00-18:00	預後存活文獻評讀「D組」	長庚醫院-第二會議廳	余光輝	葉勇信
4/27	W3	18:00-19:00	實證臨床問題討論會(1)	長庚醫院-第二會議廳	方基存 余光輝 陳永昌 田亞中	吳憲銘 張鴻 朱世明
5/11	W3	17:00-19:00	實證臨床問題討論會(2)	長庚醫院-第二會議廳	方基存 余光輝 陳永昌 田亞中	吳憲銘 張鴻 朱世明

內容大綱

- 實證醫學介紹及應用
- 5 Steps in EBM (5 As)
- 提出臨床問題 (**Ask**- PICO)
- 提升文獻搜尋技巧 (**Acquire**, Search)
- 文獻評讀及臨床應用 (**Appraisal** & Apply)
- 實證醫學常見問題及處理
  - 實例練習 (Learning by doing – case present)

學習目標
"Learning by Doing"

- **Five steps in practicing EBM**
  - **Formulate clinical question ~ PICO principle**
    - **Search database**
      - **Cochrane** database, **CCTR**, DARE, ACP journal club
      - **UpToDate**
      - **PubMed** - **Clinical queries** (high quality filter) etc.
      - **Micromedex**, **CINHAL**…
    - **Judge level of evidence (研究設計), and Critical appraisal (VIP principle, RAMbo, Critical Appraisal Sheet, CASP…)**
- **Calculate NNT, NNH**
  - number needed to treat (**NNT** = 1/ARR)
  - number needed to harm (**NNH** = 1/ARI)
  - **Read forest plot (meta-analysis)**
- **Practice**
  - 主動積極 自我學習 Attitude and behavior change
  - **apply to patient care and chart record (cite reference).**


林口長庚實證醫學中心 - Windows Internet Explorer
http://lnkwww.cgmh.org.tw/intr/intr2/ebmlink/html/e-learning.htm
檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)
搜尋
...attempting to retrieve buttons from Yahoo!...
搜尋網頁
452 已攔截
選項
院區網路 | 財團...
林口長庚實證醫...
網頁(P)
工具(Q)
林口長庚實證醫學中心
HOME
E-MAIL
何謂實證醫學
實證醫學進行
臨床診療指引
實證網路查詢
實證中心成員
實證網路教學
MAIL
實證網路教學
97實証醫學教學 -長庚醫院實證醫學中心余光輝主任
迴歸分析 -史麗珠博士
暴露對疾病的風險指標 -史麗珠博士
實證醫學資料庫找尋-田亞中醫師
How to read papers -楊宗翰醫師
診斷數據分析 -陳永昌醫師
如何嚴謹文獻評讀 -余光輝醫師
Association Measure between Exposure & disease - 長庚大學公衛科史麗珠博士
效度與偏差-長庚大學公衛科史麗珠博士
治療效果評估-余光輝醫師
Evidence-based Medicine: Treatment of Gouty Arthritis-余光輝醫師
【94.3.26研討會】實證醫學教育-長庚醫院實證醫學中心余光輝主任
網際網路
100%
開始
20080223 EBM 統計...
林口長庚實證醫學...
CH
下午 12:55

Q & A 實例練習

- P:
- I:
- C:
- O:

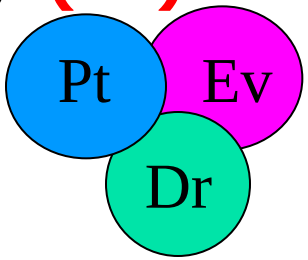
Evidence-Based Health Care
Evidence-Based Medicine (EBM)

※ 實證健康照護 定義: **Use of current best evidence in making decisions** about the care of individual patients.

※ 三方面整合: **EBM is the integration of best research evidence with clinical expertise and patients' unique biology, values and circumstances (expectation - shared decision making 共享醫療決策). (3E)**

(Evidence-based Practice)

(Sackett & Straus)



Decision Making in Health Care

- **What you learned during your professional training**
- **Browse journals**
- **Textbooks**
- Ask colleagues
- **Searching bibliographic databases**
- Clinical practice guideline (CPG)
- Evidence-based journal abstracts
- “Do no harm”

Cite references 引用文獻

統計數字(數據)會說話

以統計數字呈現結果

- 相對危險 **(Relative risk)**、勝算 **(Odds)**、勝算比 **(Odds ratio)** 、信賴區間(95% confidence interval) 、**p** 值

- 敏感度（**sensitivity**）、特異度（**specificity**）、陽性預測值 (Positive predictive value, **PPV**)、陰性預測值 (Negative predictive value, **NPV**)、概似比（likelihood ratio, **LR**）、檢測前機率（pre-test probability）、檢測後機率（post-test probability）, **ROC** Curve

- **ARR** (Absolute risk reduction) = EER (Experimental Event Rate) - CER (Control Event Rate) 、相對危險度減少百分比（relative risk reduction，RRR）、 Number needed to treat, **NNT = 1 / ARR**（增加一位病患得到某種處置好處所需的治療病人數）

- 絕對危險度增加百分比（absolute risk increase，**ARI**）= EER (Experimental Event Rate) - CER (Control Event Rate)、Number needed to harm, **NNH = 1 / ARI**（增加一位受試者罹患某種醫源性傷害的治療病人數）

診斷檢驗
Diagnostic test

指標：Sensitivity. Specificity, PPV, NPV, LR, ROC curve

Sensitivity = a / (a+c)

Specificity = d / (b+d)

PPV = a / (a+b)

NPV = d / (c+d)

Prevalence = (a+c) / (a+b+c+d)

Pretest odd = prevalence / (1-prevalence)

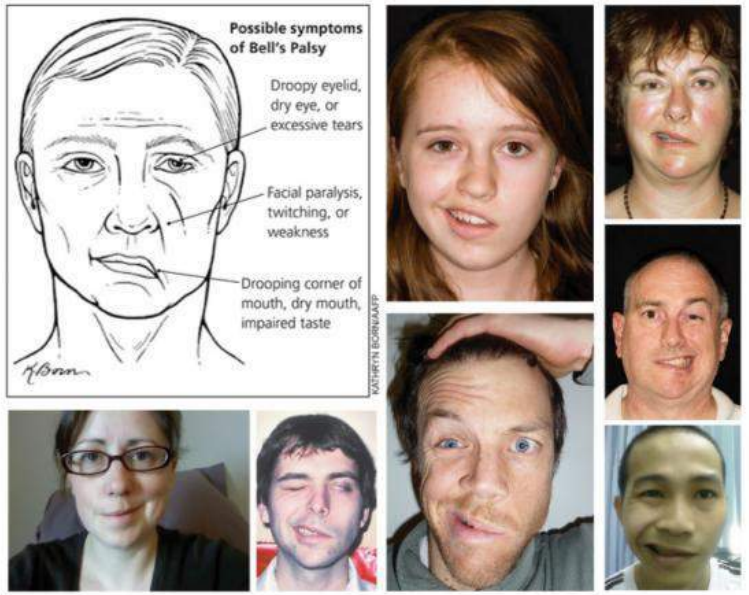
LR (odds)

Posttest odd = Pretest odds × LR

		疾病 (Disease)	
		有 (Yes)	無 (No)
檢查 (Test)	陽性 (Positive)	真陽性 TP a	b 偽陽性 FP
	陰性 (Negative)	偽陰性 c FN	d 真陰性 TN

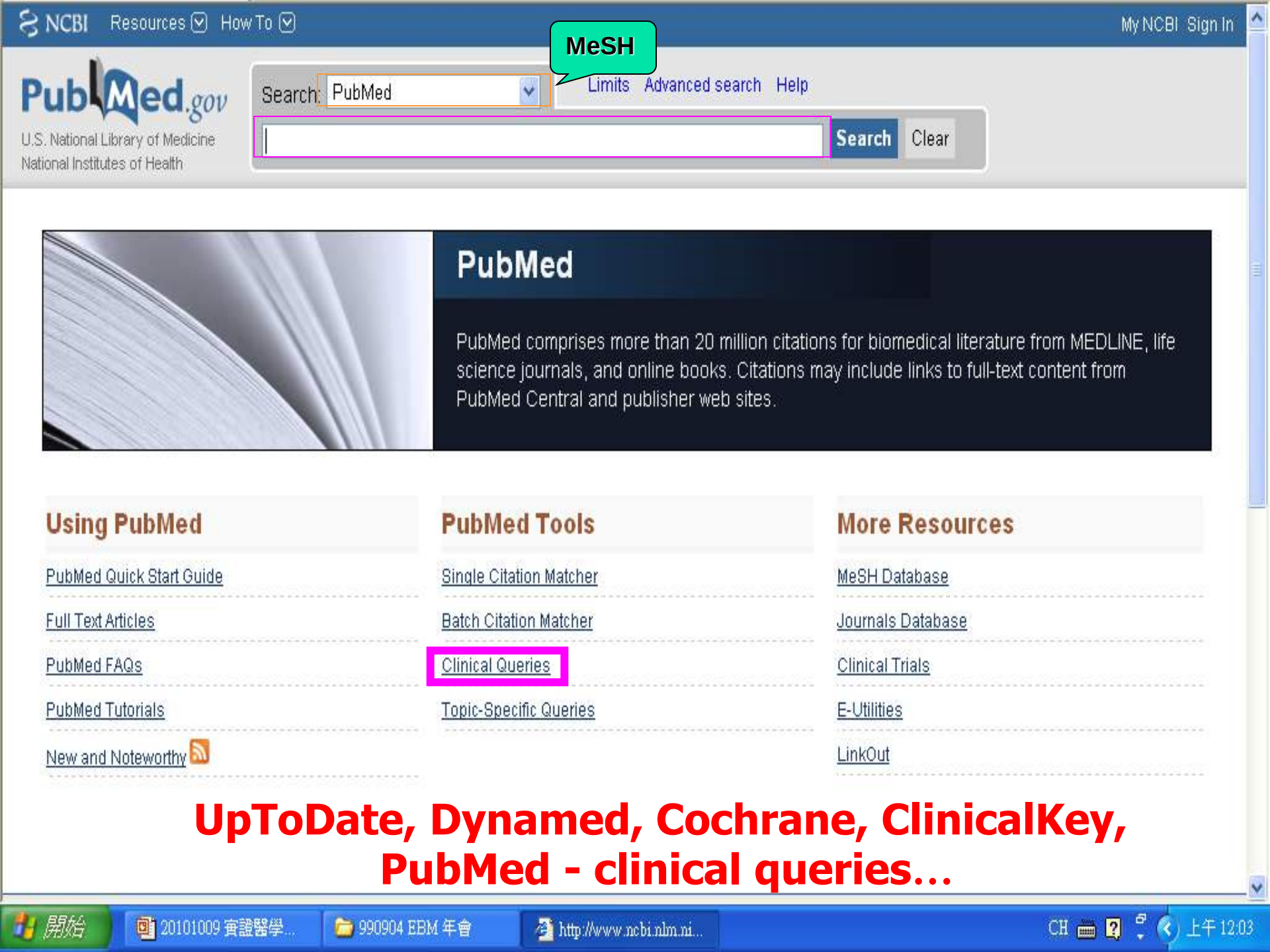
Bell's Facial Palsy

- 貝爾氏麻痺 (Bell's palsy) 暫時性顏面神經麻痺



N Engl J Med. 2007 Oct 18;357(16):1598-607

Sullivan FM, Swan IR, Donnan PT, et al. Early treatment with prednisolone or acyclovir in Bell's palsy. *N Engl J Med.* 2007;357:1598-1607.


NCBI Resources How To
My NCBI Sign In
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Clinical Queries
Topic-Specific Queries
More Resources
MeSH Database
Journals Database
Clinical Trials
E-Utilities
LinkOut
UpToDate, Dynamed, Cochrane, ClinicalKey,
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PubMed Clinical Queries

Results of searches on this page are limited to specific clinical research areas. For comprehensive searches, use PubMed directly.

bell's palsy Search

Clinical Study Categories

Category: Therapy

Scope: Broad

Systematic Reviews

Medical Genetics

Topic: All

Results: 5 of 776

Effect of Weakening of Ipsilateral Depressor Anguli Oris on Smile Symmetry in Postparalysis Facial Palsy.

Jowett N, Malka R, Hadlock TA.
JAMA Facial Plast Surg. 2016 Sep 22; . Epub 2016 Sep 22.

Antiviral Agents Added to Corticosteroids for Early Treatment of Adults With Acute Idiopathic Facial Nerve Paralysis (Bell Palsy).

Sullivan F, Daly F, Gagyor I.
JAMA. 2016 Aug 23-30; 316(8):874-5.

Needle Sensation and Personality Factors Influence Therapeutic Effect of Acupuncture for Treating Bell's Palsy: A Secondary Analysis of a Multicenter Randomized Controlled Trial.

Zhang CY, Xu SB, Huang B, Du P, Zhang GB, Luo X, Huang GY, Xie M, Zhou ZK, Wang W.

Results: 5 of 106

Corticosteroids for Bell's palsy (idiopathic facial paralysis).

Madhok VB, Gagyor I, Daly F, Somasundara D, Sullivan M, Gammie F, Sullivan F.
Cochrane Database Syst Rev. 2016 Jul 18; 7:CD001942. Epub 2016 Jul 18.

Antiviral treatment for Bell's palsy (idiopathic facial paralysis).

Gagyor I, Madhok VB, Daly F, Somasundara D, Sullivan M, Gammie F, Sullivan F.
Cochrane Database Syst Rev. 2015 Nov 9; (11):CD001869. Epub 2015 Nov 9.

WITHDRAWN: Antiviral treatment for Bell's palsy (idiopathic facial paralysis).

Gagyor I, Madhok VB, Daly F, Somasundara D, Sullivan M, Gammie F, Sullivan F.
Cochrane Database Syst Rev. 2015 Sep 7; (9):CD001869. Epub

Results: 5 of 81

Varicella-zoster virus-specific cell-mediated immunity in Ramsay Hunt syndrome.

Haginomori S, Ichihara T, Mori A, Kanazawa A, Kawata R, Tang H, Mori Y.
Laryngoscope. 2016 Jan; 126(1):E35-9. Epub 2015 Jul 15.

A three-generation family with idiopathic facial palsy suggesting an autosomal dominant inheritance with high penetrance.

Grønhøj Larsen C, Gyldenløve M, Jønch AE, Charabi B, Tümer Z.
Case Rep Otolaryngol. 2015; 2015:683938. Epub 2015 Jan 18.

Involvement of MAPK ERK activation in upregulation of water channel protein aquaporin 1 in a mouse model of Bell's palsy.

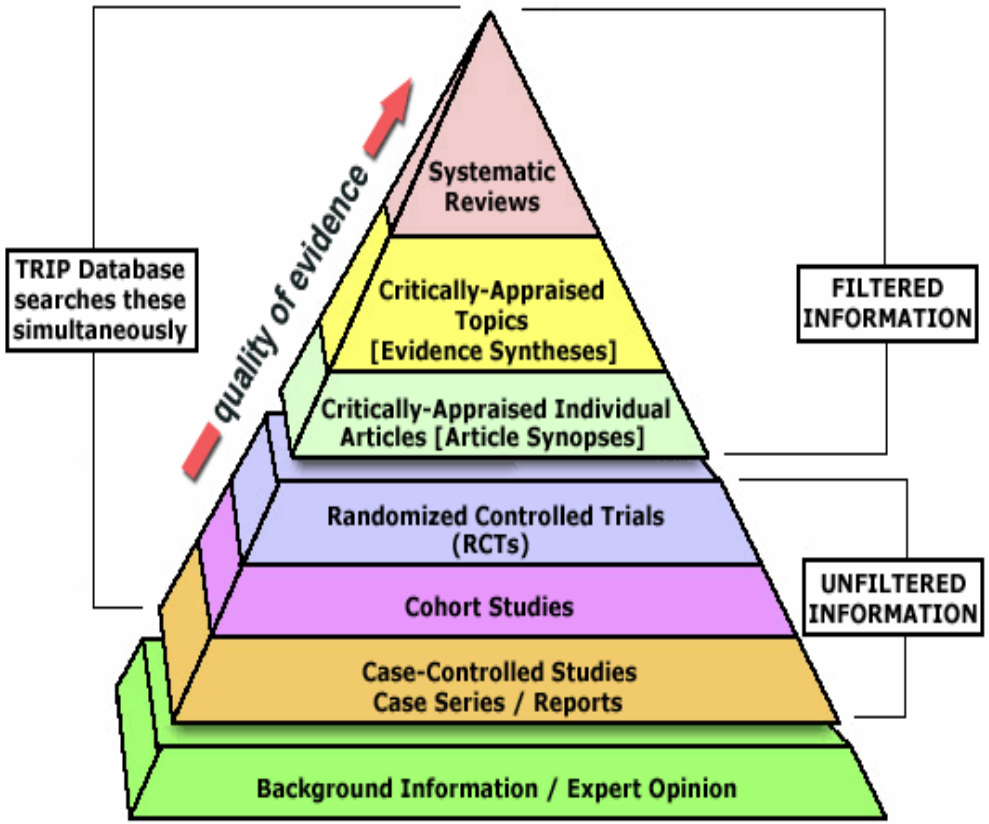
Fang F, Liu CY, Zhang J, Zhu L, Qian YX, Yi J, Xiang ZH, Wang H, Jiang H.
J Mol Neurosci. 2015 May; 56(1):164-76. Epub 2014 Dec 20.

Scenario 臨床情境
: Ask ~ PICO

Patient	Intervention	Comparison	Outcome
Passenger	Stocking	No stocking	DVT
Population	Influenza vac.	No vaccine	URI%
SLE nephritis	**Endoxan**/ steroid	**Steroid**	Mortality/ESRD
Osteoporosis	Hormone	No hormone	Cancer
Bell's palsy	Anti-virus/ Steroid	Observation	Complication
Acute coronary	Troponin I	CPK-MB	Diagnosis
Kawasaki	High dose aspirin	Low dose aspirin	aneurysm

資料庫搜尋 Database (Internet, Intranet)

EBM- and Search-Pyramids



風濕免疫常見疾病之實證醫學範例

疾病	PICO 問題
1. **SLE lupus nephritis**	WHO第四型狼瘡腎炎，使用Cyclophosphamide與使用steroid之差別
	WHO第四型狼瘡腎炎，使用Cyclophosphamide與使用Mycophenolate之差別
2. **Rheumatoid arthritis**	關節炎患者，使用COX 2 inhibitor與傳統NSAID止痛藥物，對產生心血管疾病風險之差異？
3. **Gout**	急性痛風關節炎時，使用高劑量或低劑量之秋水仙素？
4. **Dermatomyositis**	嚴重皮肌炎患者，使用免疫球蛋白治療？
5. **Scleroderma**	硬皮症患者，使用高劑量或低劑量之D-penicillamine治療？
6. **Osteoarthritis**	退化關節炎患者，使用維骨力治療以減少疼痛及退化速度？

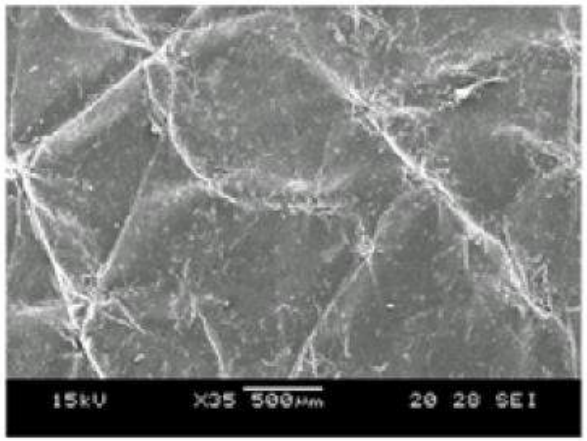
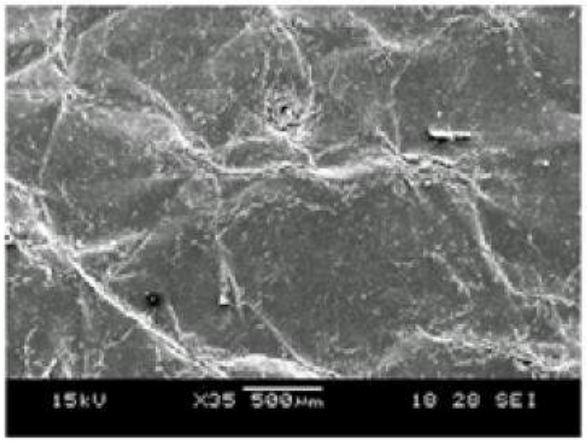
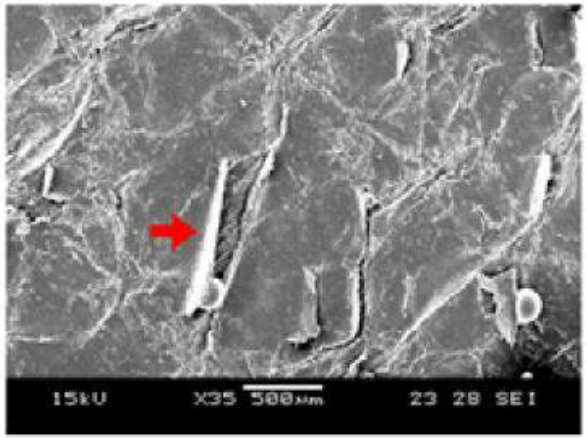
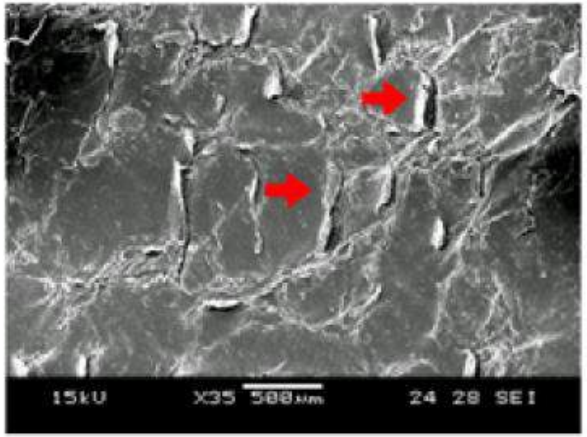
p.s. 2003年4月起內科主治醫師 monthly EBM Lecture

6 S: 連結個別病歷的臨床資訊與支援決策系統 (Computerized decision support) (ACP J Club. 2006;145:A8)檢驗報告結合藥囑系統，由資訊系統進行控管，協助醫師臨床決策。 **E.g. HLA-B*1520, 5801**

1. Asking Answerable Clinical Question (PICO)

Question: 罹患退化性膝關節炎的老年男性持續服用葡萄糖胺是否能改善其關節疼痛症狀？

Patient and/or problem 病人或問題	退化性膝關節炎的老年男性
Intervention 介入處置	葡萄糖胺 (Glucosamine)
Comparison intervention 對照的處置	安慰劑 (Placebo)
Outcomes 臨床結果	關節疼痛改善

Use	Skin magnified photo after two time shaving		Result
Electrical Clipper			No skin irritation and damage
Prep Razor			Skin irritation and damage can be seen (➔)

PREOPERATIVE HAIR REMOVAL:
IMPACT ON SURGICAL SITE INFECTIONS

臨床情境

我家裡老大有氣喘，如果我吃益生菌，
可以預防第2胎新生兒氣喘的發生嗎？

Evidence-Based Practice Clinical Scenario

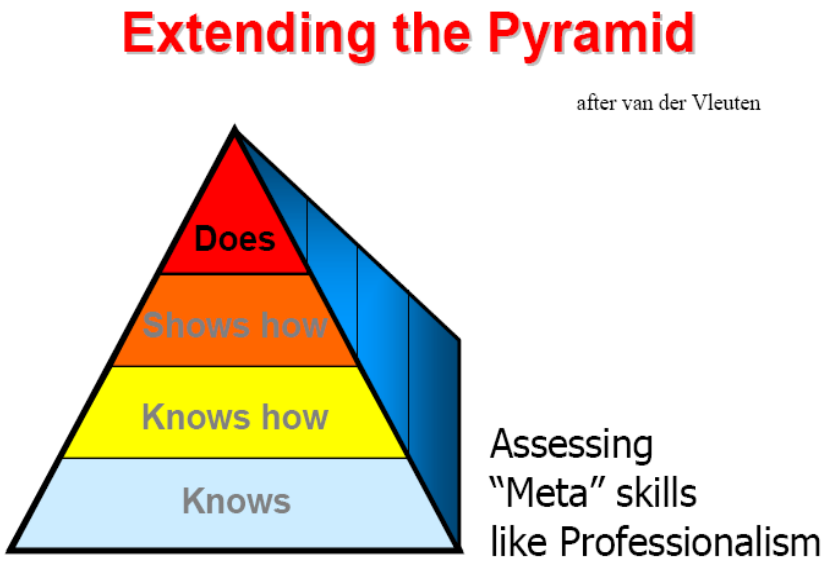
- **Patient's Clinical Problem**
  - **Raise clinical question** 學習目標 (期末報告評估)
- **Perform Five Steps in EBM (5 As)**
  - **A**sk **(PICO)**: ask a clinical question (P-I-C-O)
  - **A**cquire: **search database** (cite reference)
  - **A**ppraisal **(VIP)**: Valid? Important? Practical?
  - **A**pply: to patient's problem **(3E** evidence, experience, expectation **)**
  - **A**udit: effectiveness (**Explain** treatment options to patient~ SDM)

Two Fundamental Principles of EBM

- **EBM posits a hierarchy of evidence to guide clinical decision making.** (Level of evidence)
- **Evidence alone is never sufficient to make a clinical decision. 3E:**
  - **Consider the patient's value (Expectation of the Patient)** 告知 同意：用病人可以聽得懂的語言 **(explain)**
  - **Integrate clinical expertise (Expert opinion)**
    - **Trade the benefits and risks (NNT, NNH)**
    - **Costs ($)**
    - **Inconvenience**
      - 研究效果需要因應個別病人做調整
        - 如治療 Patient NNT = 1/ (RRR × PEER)
        - PEER = patient expected event rate (your case)

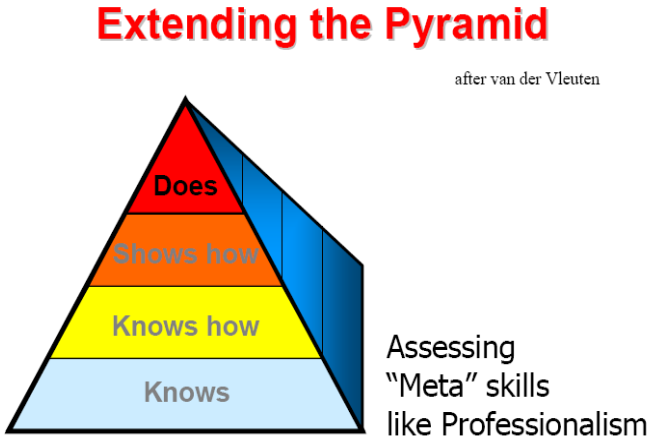
Q & A 實例練習

- **Search database**



期末評量

- 期末繳交臨床問題分析報告 **PPT**
- **BQ之EBM能力評估測驗**
- **Paper presentation following lecture**
  - Diagnosis
  - Risk
  - Treatment
  - Prognosis



Rx Educational Prescription

Patient's Name

Learner:

3-part Clinical Question

Target Disorder:

Intervention (+/- comparison):

Outcome:

Date and place to be filled:

Presentations will cover:

1. search strategy;
2. search results;
3. the validity of this evidence;
4. the importance of this valid evidence;
5. can this valid, important evidence be applied to your patient;
6. your evaluation of this process.

林口長庚醫院 EBM - PBL 臨床問題分析單

日期:	Case Chart No:	報告者:
科別:	職級:☐Resident ☐Intern ☐Clerk ☐V.S.	完成日:

問題敘述 (problem description):

搜尋關鍵字 (key word):

資料來源〔reference〕~ 至少需查詢此四個實證資料庫:CCTR、CDSR、DARE、ACP、及 PubMed and /or other databases:

實證資料庫查詢網址: http://lnkwww.cgmh.org.tw/intr/intr2/ebmlink/index.htm

文獻等級: ___〔Level of evidence〕: Level 1: RCT ~ Level 2: cohort study ~ Level 3: case control study ~ Level 4: case series ~ Level 5: expert opinion et al.

主要內容: (Main results)

實證醫學中心網頁

RAM bo **checklist**: ☑Yes ☒ No ☐ ? Unclear

☐ **R**研究族群是否具有代表性 (**Representative**)

☐ **A**是否有足夠的確認和追蹤 (**Ascertainment/follow-up**)

☐ **M** bo結果測量 (**Measurement**)有偏差?(**b**linded or **o**bjective)

與臨床狀況之比較分析(Reviewers' conclusions):

教師回覆: 臨床教師簽名

可諮詢之人員或單位: 各主治醫師、實證種子講師

Rx Educational Prescription

Patient's Name

Learner:

3-part Clinical Question

Target Disorder:

Intervention (+/- comparison):

Outcome:

Date and place to be filled:

Presentations will cover:

1. search strategy;
2. search results;
3. the validity of this evidence;
4. the importance of this valid evidence;
5. can this valid, important evidence be applied to your patient;
6. your evaluation of this process.

林口長庚醫院 EBM - PBL 臨床問題分析表單

日期:94/01/10	Case Chart No:20652811	報告者:張光正
科別:chest 1	職級:■Resident □Intern □Clerk □V.S.	成日:94/01/06

問題敘述 (Problem description):

In adult patients with acute asthma treated in the emergency setting, does the addition of intravenous aminophylline to [beta]$_2$-agonists have an additional bronchodilation effect?

搜尋關鍵字 (Key word):

aminophylline ;treatment, acute asthma

資料來源〔Reference〕~ ACP Journal Club and Best Evidence Copyright 2001 American College of Physicians - American Society of Internal Medicine

Volume 134(3) May/June 2001 p 97

文獻等級: I 〔Level of evidence〕:.

主要內容 (Main results):

: 15 trials met the selection criteria. Treatment groups did not differ for airflow outcomes at any time. Patients in the aminophylline group had higher values of PEF and FEV_1 at 12 and 24 hours, but treatment-group differences were not statistically significant (Table). Neither airflow limitation at baseline nor the use of steroids modified the effect of aminophylline. Patients in the aminophylline group reported higher rates of palpitations

Outcomes	Am	Placebo	Weighted mean difference (95% CI)	
PEF (L/min, 12 h)	194	184	8.3 (−21 to 37)	
PEF (L/min, 24 h)	216	209	22.2 (−57 to 101)	
FEV_1 (L, 12 h)	2.0	1.6	0.4 (−0.2 to 1.0)	
FEV_1 (L, 24 h)	2.2	1.8	0.4 (−0.1 to 1.0)	
			RRI (CI)	**NNH (CI)**
Arrhythmia/palpitations†	25%	10%	44% (4 to 29)	7 (4 to 24)
Vomiting†	31%	9%	225% (112 to 368)	5 (3 to 10)
Tremor†	44%	35%	29% (−7 to 67)	Not significant
			RRR (CI)	**NNT (CI)**
Hospitalized	21%	28%	35% (−1 to 61)	Not significant

*PEF = peak expiratory flow. Other abbreviations defined in Glossary. RRI, RRR, NNH, NNT, and CI estimated from data in article.
†Follow-up time not provided.

結論(Conclusions) ~ 與臨床問題之比較分析:

In adult patients with acute asthma, the addition of intravenous aminophylline to [beta]$_2$-agonists does not lead to additional bronchodilation, but some adverse effects were reported more frequently.

教師回覆:

可諮詢之人員或單位: 各主治醫師、實證種子講師

實證資料庫查詢網址: http://lnkwww.cgmh.org.tw/intr/intr2/ebmlink/index.htm

長庚大學2018年EBM期末考 (2)（共 5 頁）

科　目	課程負責老師	學　號	姓名
實證醫學	余光輝		

(　　)1. 你是鄉下某區域醫院的婦科醫師。一位 46 歲婦女在摘除乳房小硬塊後，確定是乳癌(期別:T1NOMO)。當病患得知自己的診斷後，相當沮喪，並想知道若不再接受其他治療，她還能活多久。
你不確定病患在接受成功的手術但未接受其他額外的治療時，是否會降低其存活率？若會影響，會影響到何種程度？。你希望從適當的研究中獲得解答。下列哪個研究最適合解答你的問題。
(A). 病例對照研究　(B). 橫斷性研究　(C). 世代研究　(D). 個案系列研究
(E). 盛行率研究

(　　)2. 在文獻檢索時，您找到下列研究。下列哪一個研究能提供病患最好的解答。
(A). 在一個大型多中心的研究中，3600 位乳癌婦女在接受乳房腫瘤切除手術後被隨機分配至兩個組。一組接受放射治療，另一組接受化學治療。報告中提及兩組的存活率。
(B). 在英國一個小鎮上，所有 49 歲以上的婦女都接受訪談，以了解其是否接受過乳癌手術。所有接受乳癌手術之婦女依不同的癌症期別計算各期別的死亡率。此外，也依其年齡分布，計算年齡別的各癌症分期的死亡率。
(C). 您最近剛退休的頂頭上司收集他職涯中所有曾接受他開刀的 T1-carcinoma 女病患。某着名期刊在他 65 歲生日時，出版報導此結果的特刊。此研究指出所有受試者皆存活。
(D). 在德國某一個城市裡，所有婦科部門都參與當地一個研究計畫。計畫中所有接受乳房惡性腫瘤切除手術的病患會紀錄下其個別的癌症期別，爾後每年都追蹤病患的存活狀況。現呈現不同癌症分期病患的存活率。
(E). 某間有名的醫學院病理學系過去曾紀錄所有接受大體解剖的乳房惡性腫瘤切除手術病患。根據病患手術日期至死亡日期間的差異計算各期別的存活率。

長庚大學2018年EBM期末考 (1)

柏林問卷評估

1. 學號：_____
2. 姓名：_____
3. 性別： ☐ 男 ☐ 女
4. 年齡： _____ 歲
5. Self-rating of EBM-knowledge 目前實證醫學知識自評如下：

☐ None at all ☐ Little ☐ Average ☐ Advanced ☐Expert

共15題單選題

QUESTION 1:

Answer 1: ____

你是一位在急診待命的醫師，你被要求去看一位至少已持續24小時右下腹部疼痛的病人。身體檢查沒有發現闌尾炎的典型症狀，但你知道在這個年齡層中，約十分之一的下腹疼痛病人是闌尾炎但未出現闌尾炎的典型症狀。你安排病人做超音波檢查，因為超音波檢查是當下最能精準診斷出病患是否罹患闌尾炎的一項檢查。(陽性概似比= 1.8，陰性概似比= 0.2)。超音波確診你的病人是闌尾炎。當你請外科醫師來看病人時，他詢問你這個個案確診為闌尾炎的可能性有多少時，您的回答是：

A. about 2 %
B. about 7 %
C. about 15 %
D. about 30 %
E. A statement is impossible before the arrival of the lab results

Evaluation of Evidence-Based Medicine Competence using the Validated Berlin Questionnaire

以中文版柏林問卷評估實證醫學照護訓練

Kuang-Hui Yu 余光輝, Hsueh-Erh Liu 劉雪娥

林口長庚紀念醫院內科副教授
實證醫學中心主任
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Kuang-Hui Yu, M.D.

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Taiwan

international society for EVIDENCE BASED HEALTH CARE

Evaluation of Evidence-Based Medicine Competence using the Validated Berlin Questionnaire in Medical Students

以中文版柏林問卷評估實證醫學照護訓練

Kuang-Hui Yu 余光輝, **Hsueh-Erh Liu** 劉雪娥

林口長庚紀念醫院內科副教授

實證醫學中心主任

風濕過敏免疫科主任 余光輝

Kuang-Hui Yu, M.D.

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Director, Division of Rheumatology, Allergy, and Immunology

Chang Gung Memorial Hospital and Chang Gung University, Taiwan

Evaluation of Evidence-Based Medicine Competence using the Validated Berlin Questionnaire

Kuang-Hui Yu*, Hsueh-Erh Liu
Center for Evidence-Based Medicine, Chang Gung Memorial Hospital and Chang Gung University, Taiwan
* President, Taiwan Evidence-Based Medicine Association (TEBMA)

Medical education in the new century focuses on patient-centered care, problem-based learning, and an evidence-based approach in health care. Evidence-based medicine (EBM), or evidence-based health care (EBHC), has become a popular approach to making medical decision and is increasingly included in postgraduate and undergraduate medical education. However, the literature on the evaluation of EBM performance is very sparse. The implementation of a 6–10 hours EBM program for postgraduate first-year (PGY1) residents to meet patient care and education needs has been a requirement in all teaching hospitals in Taiwan since 2004. In accordance with government policy, an instruction in EBM was extended to cover all undergraduate interns since 2006. In January 2005, information skill instruction by EBM center staff was incorporated into the curriculum for Chang Gung University's sixth-year (clerkship) medical students as an elective curriculum. In 2010, the 18-hours curriculum became an essential course for all sixth-year clerkship medical students.

Objective:

To evaluate EBM curriculum knowledge and skills by the validated Berlin Questionnaire for clerkship medical students. Furthermore, we aimed to validate the Berlin questionnaire for its difficulty and discrimination index.

Materials and Methods:

We evaluated EBM knowledge and skills of sixth year medical students by Berlin Questionnaire as they progressed through an 18-hour EBM curriculum in 2010-2011 at Chang Gung University. Questionnaire performance was further assessed by index of difficulty, discrimination index (DI). In 2010, each student completed the Berlin Questionnaire set A on the mid-term examination and, four weeks apart, completed the same questionnaire at the end of the curriculum. In 2011, each student completed the set B on the mid-term examination and completed the set A questionnaire at the end of the curriculum. This instrument consists of 15 multiple-choice questions designed to assess the ability to apply concepts of EBM domains. Scores on this instrument may range from 0 to 15. A discrimination index (DI) and a difficulty index were calculated for each item. Internal consistency reliability was calculated using Cronbach alpha. Item discrimination is the difference in proportions for test takers (students) answering correctly between those scoring in the upper 27% on total score and those scoring in the lower 27%. The degree of difficulty for each item was calculated using a difficulty index, which was defined as the proportion of students answering the item correctly and was calculated as ρ = number of correct answers/number of all answers. Items were classified as very difficult ($\leq$ 0.20), moderately difficult ($\rho >$ 0.20 and $\leq$ 0.40), intermediately difficulty (> 0.40 and $\leq$ 0.60), moderately easy (> 0.60 and $\leq$ 0.80), or very easy (> 0.80).

Table 1. The Berlin Questionnaire score of the Chinese sixth year clerkship medical students

Results:

All 96 medical students contributed data at the mid-term examination baseline and at the end of the curriculum.

- The mean age was 24.7±1.6 (median 24.0, range 23–35) years old. The Berlin Questionnaire score increased from 9.9±1.7 (median 10, range 6–14) to 13.8±1.0 (median 14, range 10–15). EBM knowledge and skills scores increased from mid-term examination baseline by 3.9 points at the end of the curriculum ($p<0.001$).
- Self-rated EBM knowledge increased by 0.3 points from 2.7±0.7 to 3.0±0.6 in a five point Likert scale ($p<0.001$).
- The mean difficulty index was 0.76±0.19 (median, 0.73; range, 0.29 to 1.00), and the mean discrimination index was 0.39±0.26 (median, 0.33; range, 0.00 to 0.76). The overall questionnaire as well as each item had acceptable internal consistency (Cronbach's alpha > 0.54 for each item, range 0.54–0.64). Overall, the questionnaire had a Cronbach's alpha of 0.67.

The Berlin B Questionnaire score of the sixth year clerkship medical students - 2011

The Berlin A Questionnaire score of the sixth year clerkship medical students - 2011

Discussion:

- The mean Berlin scores achieved in this study by the sixth year clerkship students was higher than previous two studies (pretest score 6.3–7.5; posttest score 8.9–9.9), which were conducted in students, novice learners, experts, or tutors with short courses or workshops.
- In 2010, the construct validity of the Berlin Questionnaire was good ($p<0.05$) for all items with the exception of items 4 and 11, which had $p = 0.56$ and 0.07, respectively.
  - There was a statistically significant difference between items pass rate with the exception for items 4, and 11.
  - In addition, the items requiring risk factor evaluation and statistical calculations (item 10 and 11) were among the most difficult for students at mid-term examination.
  - Some items might be then modified, at least for our clerkship medical student, in response to this study in the future.
- The 15-item Berlin Questionnaire is a valid, reliable assessment of medical students' EBM knowledge and skills. The Berlin Questionnaire is an easily administered instrument that evaluates most of EBP steps. A semester of 18-hour medical school EBM curriculum was associated with an increased EBM knowledge and skills.

服務・教學・研究

實證課程回饋問卷 2016

	非常同意 5	同意 4	普通 3	不同意 2	非常不同意 1	M±SD
1. 對教授實證醫學主題的信心程度						
1.1 我會 “如何形成臨床問題”						4.2±0.7
1.2 我會 “文獻搜尋”						4.2±0.7
1.3 我會 “隨機對照試驗的文獻評讀”						4.1±0.7
1.4 我會 “系統性文獻回顧的文獻評讀”						4.1±0.7
1.5 我會 “實證研究之臨床照護應用”						4.1±0.7
2. 整體課程滿意度						
2.1 我對課程規劃感到滿意						3.9±0.7
2.2 我對課程時間安排感到滿意						3.3±0.7
2.3 我對教材感到滿意						3.8±0.7
2.4 我對ABCD分組討論之課程內容感到滿意						3.9±0.7
2.5 我認為課程內容符合學習需求						4.0±0.7
2.6 本次課程對於我未來臨床病人照護的幫助						4.0±0.7
2.7 其他意見： A. 希望能移到醫學論文寫作之前 (五下或六上) B. 課程安排時間不滿意 (17:00~19:00上課)						

P.S. 新制將改為四年級上學期，星期四下午13:10-15:00上課

長庚大學106學年度第二學期醫學系暨中醫系四年級 實證醫學

時間：**107.03.08~ 107.06.28** 隔週星期四下午 **13:10 ~ 15:00** 地點：長庚大學管院 **B0204**

日期	星期	時間	主題	地點	授課教師
2018 3/8	W4	13:10-14:00	實證醫學導論	管理大樓 2 樓 B204 教室	余光輝
3/8	W4	14:10-15:00	統合分析 (Meta-analysis)	管理大樓 2 樓 B204 教室	余光輝
3/22	W4	13:10-14:00	診斷數據分析	管理大樓 2 樓 B204 教室	陳永昌
3/22	W4	14:10-15:00	基礎統計與研究設計	管理大樓 2 樓 B204 教室	陳永昌
4/5	W4	13:10-14:00	網路文獻搜尋與統計	管理大樓 2 樓 B204 教室	余光輝
4/5	W4	14:10-15:00	如何搜尋實證文獻	管理大樓 2 樓 B204 教室	余光輝
4/19	W4	13:10-14:00	治療效果評估	管理大樓 2 樓 B204 教室	余光輝
4/19	W4	14:10-15:00	精準醫學	管理大樓 2 樓 B204 教室	陳品元
5/3	W4	13:10-14:00	暴露對疾病的風險指標	管理大樓 2 樓 B204 教室	史麗珠
5/3	W4	14:10-15:00	診斷文獻評讀「A 組」	管理大樓 2 樓 B204 教室	余光輝
5/17	W4	13:10-14:00	預後存活分析 I	管理大樓 2 樓 B204 教室	陳明岐
5/17	W4	14:10-15:00	預後存活分析 II	管理大樓 2 樓 B204 教室	陳明岐
5/31	W4	13:10-14:00	治療文獻評讀「B 組」	管理大樓 2 樓 B204 教室	余光輝
5/31	W4	14:10-15:00	統合分析評讀「C 組」 預後文獻評讀「D 組」	管理大樓 2 樓 B204 教室	余光輝
6/14	W4	13:10-14:00	實證臨床問題報告討論會	管理大樓 2 樓 B204 教室	余光輝
6/14	W4	14:10-15:00	實證臨床問題報告討論會	管理大樓 2 樓 B204 教室	余光輝
6/28	W4	13:10-14:00	實證專題演講:三高的控制	管理大樓 2 樓 B204 教室	蔡松昇
6/28	W4	14:10-15:00	期末回饋與考試	管理大樓 2 樓 B204 教室	余光輝


From RRR to ARR and NNT
Measures of the effects of treatment: RRR, ARR
RRR
ARR
NNT
RRR can not discriminate huge treatment effects from
長庚醫院內科部

Objective Structured Clinical Examination

EBM - Objective Structured Clinical Examination


The Evidence Pyramid
Randomized Controlled Double Blind Studies
Meta - analysis


Rejected by Peer Reviewed


Short-term study: < 10%
Long-term study: < 15%
Intention-to-treat analysis


第一屆長庚盃實證醫學競賽
唬人隊
王建民最棒對不隊
實習醫師兩人組隊
Micro-team
不會EBM
Christoph
半長庚青年隊
我就是愛作對
蚵男隊
台灣囝仔
女王隊
GYN
小R隊


第一屆長庚盃實證醫學競賽
王建民最棒對不
我就是愛你對
再來一隊
必勝隊
周一帆隊
不會EBM
蚵男隊
小R隊
女王


第二屆長庚盃實證醫學競賽及種子教師研
通通都隊
讓我答隊
飛龍在天
Bingo
M99
PED

International Journal of
Rheumatic Diseases

International Journal of Rheumatic Diseases 2018; **21**: 772–787

SPECIAL EDITORIAL REVIEW

Management of gout and hyperuricemia: Multidisciplinary consensus in Taiwan

Kuang-Hui YU,[1,*] Der-Yuan CHEN,[2,3,4] Jiunn-Horng CHEN,[5,6] Shih-Yang CHEN,[7] Shyh-Ming CHEN,[8] Tien-Tsai CHENG,[9] Song-Chou HSIEH,[10] Tsu-Yi HSIEH,[11,12] Pai-Feng HSU,[2,13] Chang-Fu KUO,[1] Mei-Chuan KUO,[14,15] Hing-Chung LAM,[16] I-Te LEE,[2,17] Toong-Hua LIANG,[18] Hsiao-Yi LIN,[2,19] Shih-Chang LIN,[20,21] Wen-Pin TSAI,[22] Gregory J. TSAY,[5,6] James Cheng-Chung WEI,[23,24,25] Chung-Han YANG[1,26] and Wen-Chan TSAI[27]

[1]*Division of Rheumatology, Allergy, and Immunology, Chang Gung Memorial Hospital, Chang Gung University,* [2]*Faculty of Medicine, National Yang-Ming University, Taipei,* [3]*Department of Internal Medicine, Taichung Veterans General Hospital,* [4]*Ph.D. Program in Translational Medicine, Rong Hsing Research Center for Translational Medicine, National Chung Hsing University,* [5]*Division of Immunology and Rheumatology, Department of Internal Medicine, China Medical University Hospital,* [6]*School of Medicine, College of Medicine, China Medical University, Taichung,* [7]*Center of Gout, Country Hospital, Taipei,* [8]*Division of Cardiology, Department of Internal Medicine, Kaohsiung Chang Gung Memorial Hospital, Chang Gung University,* [9]*Division of Rheumatology, Allergy and Immunology, Department of Internal Medicine, Kaohsiung Chang Gung Memorial Hospital, Chang Gung University, Kaohsiung,* [10]*Division of Rheumatology, Immunology and Allergy, Department of Internal Medicine, National Taiwan University Hospital, Hsinchu,* [11]*Division of Allergy, Immunology, and Rheumatology, Department of Internal Medicine, Taichung Veterans General Hospital,* [12]*Ph.D. Program of Business, Institute of Business, Feng-Chia University, Taichung,*

International Journal of
Rheumatic Diseases

International Journal of Rheumatic Diseases 2017; **20:** 1057–1071

SPECIAL EDITORIAL REVIEW

Diagnostic utility of HLA-B*5801 screening in severe allopurinol hypersensitivity syndrome: an updated systematic review and meta-analysis

Kuang-Hui YU,[1,2] Cheng-Yen YU[2] and Yao-Fan FANG[2]

[1]*Center for Evidence-based Medicine, Division of Rheumatology, Allergy and Immunology, Department of Internal Medicine, Chang Gung University, and* [2]*Division of Rheumatology, Allergy, and Immunology, Chang Gung Memorial Hospital, Tao-Yuan, Taiwan*

Abstract

Background: Despite many studies suggesting an association between human leukocyte antigen (HLA)-B*5801 and allopurinol-induced toxic epidermal necrolysis (TEN) and Stevens-Johnsons syndrome (SJS), the evidence of association in different populations and the degree of association remain uncertain.

Methods: The primary analysis was based on population-control studies. Data were pooled by means of a random-effects model, and sensitivity, specificity, positive likelihood ratios (LR+), negative likelihood ratios (LR−), diagnostic odds ratios (DOR), and areas under summary receiver operating characteristic (SROC) curves (AUC)

精準化醫療（個人化醫療）

精准醫療依賴大量的臨床資料，包括基因測序結果及檢查記錄，確定不同患者適用的藥物。針對特定患者最有效，同時成本最低的藥物。

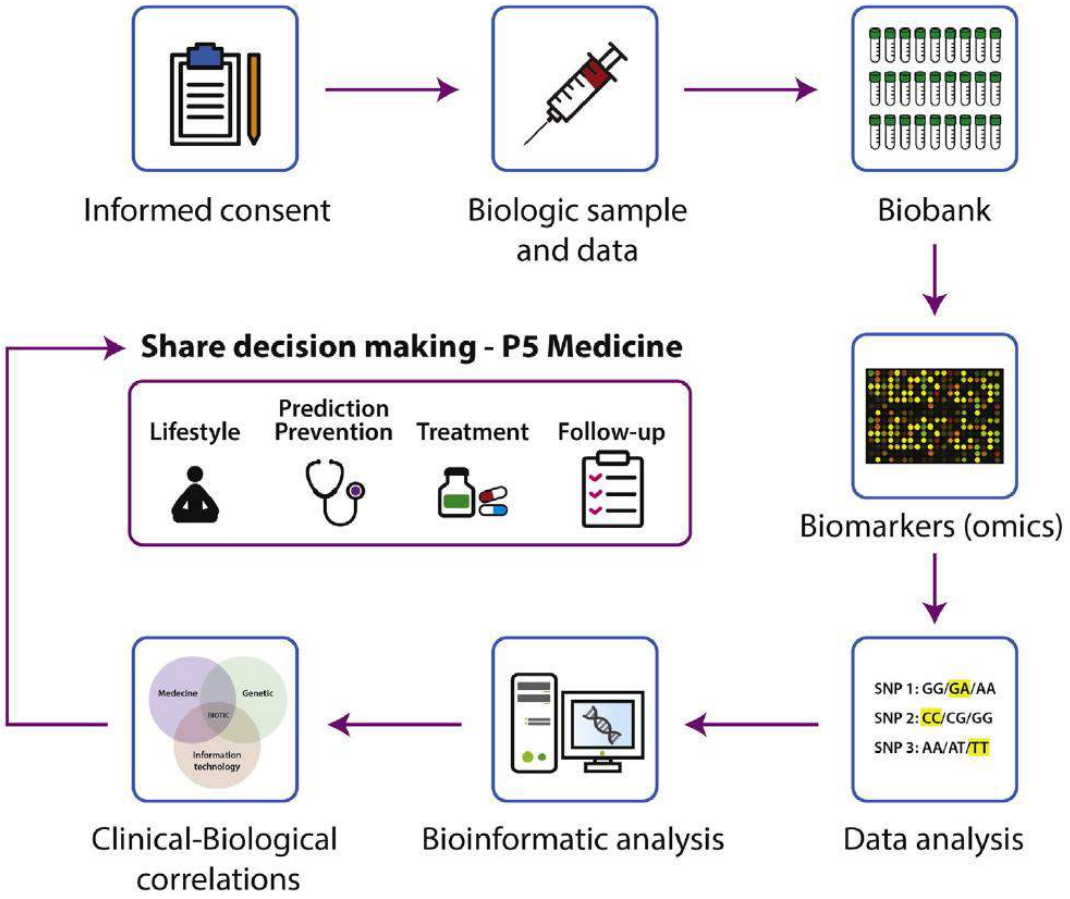


Fig. 1. Steps on the road to personalized medicine.

J.-M. Anaya et al. / Autoimmunity Reviews xxx (2016)

Example of "follow-up" case presentation 報告範例

Dave Sackett

- 某某先生/太太，是幾歲...，在幾月幾日住院，其主訴為...(注意: 時間經過多久幾年)。
- 病人有...幾項主要問題。
- 第一個問題為...，主要特徵為...和...，我們進行了什麼檢查，其結果為...。我們認為這個問題的原因為...，同時我們進行...治療，病人對該治療的反應為...。我們計畫...。
- 第二/三/四個問題為...〔重複上述第一個問題的步驟〕。

- 在病人剛入院期間，我並不是很了解...的情況，因此我進行一份教育處方，去回答這一個問題。我藉由...發現相關的證據，從這些證據中，我發現臨床底線為...。我相信此臨床底線可能是不正確的，因為....，並且相信這些證據無法施行，因為....。因此我計畫以...來處理此病人的問題及未來相似的病人。

(Patient centered care-PBL-EBM)


Childrens hospital
Wards 28 - 31
Accidents and emergencies
Blood test
Fracture clinic
Pharmacy
X-ray

為何要報告？
To show that you〔要表現出您〕

- 清楚了解病人的醫療問題及其對疾病的情緒反應：對日常生活及工作帶來什麼影響？病人如何處理？家人給他多少支持？病人對於病情有甚麼主訴或抱怨？是否配合診療？動機如何？病人對於其疾病及診斷與治療措施的了解有多少？
  - Know (well) the patient's medical problem and his emotional reaction to the illness. How is his daily life and work affected? How does he cope? How much support from the family? What is his compliant? Co-operative? Motivated? His understanding of the illness and the treatment options?
- 蒐集足夠的資料(包括正反面)以做診斷和治療
  - Collected adequate data（both positive and negative）for diagnosis and treatment
- 分析並綜合資料，提出報告（病歷寫作）
  - Analyze and synthesize the data thoroughly and now presenting it
- 培養良好溝通能力與說話技巧
  - Good communication and speaking skills
- 對於疾病、疾病過程以及預測疾病的發展，擁有充足的能力與知識
  - Sufficient knowledge of the disease and diseases process and the prognosis
- 閱讀最新的疾病文獻與不同的疾病鑑別診斷（閱讀文章–記載於病歷 reference）
  - Read up-to-date literature about the disease and differential diagnosis
- 運用邏輯與理性決策（你是如何做結論?）
  - Logic and reason in your decision making（how you reach conclusion?
- 由報告病例了解學習更多情況（失誤遺漏、推理等）
  - Learn by presenting the case (errors in omission/commission, reasoning, etc.)

New case presentation should include the following

報告新病人應包括

- **5** minutes, 34 items

Dave Sackett

1. Surname
   姓名
2. Age
   年紀
3. Gender
   性別
4. Occupation
   職業
5. When admitted
   何時住院
6. The chief complaint that led to admission
   導致住院的主要病痛抱怨主訴
7. Where in the body its located
   主要病痛的部位
8. Quality
   質量
9. Quantity, intensity, and degree of impairment
   數量、強度和損害程度
10. Chronology：when it began, constant/episodic, progressive
    時間順序：何時開始，持續性/突發，進展
11. Setting：under what circumstances did it occur
    情況：在甚麼環境下會發生
12. Any aggravating or alleviating factors
    任何加重或減緩的因素
13. Any associated symptoms
    任何相關的症狀
14. Whether a similar complaint had happened previously, if so：
    先前是否有類似的抱怨主訴，如果有
15. How it was investigated
    如何被診斷出來
16. What the patient was told about its cause
    病人如何被告知病因

17. How the patient has been treated for it
病人受到何種治療
18. Pertinent past history of other conditions that are either of prognostic significance or would affect the evaluation of treatment of the chief complaints
包括有預後意義或影響抱怨主訴的治療評估之其他相關情況病史。
19. And how those other conditions have been treated
其他狀況如何被處理
20. Family history, if pertinent to chief complaint or hospital care
與抱怨主訴或醫療照顧有相關的家族病史
21. Social history if pertinent to chief complaint or hospital care
與抱怨主訴或醫療照顧有相關的家族病史的社會病史
22. Their 病人的：
    ideas（what they think is wrong with them）
    想法（病人的錯誤認知）
    concerns（about their illness, and other issues）
    焦慮（對於病情等狀況）
    expectations（of what's going to happen to and for them）
    期望（將會發生在病人身上的情況）
23. Their condition on admission：
病人住院情況
    Acutely and/or chronically ill
    急性/慢性生病
    Severity
    嚴重度
    Requesting what sort of help.
    要求什麼樣的幫助

報告新病人

24. The pertinent physical findings on admission.
住院相關的理學檢查發現
25. The pertinent diagnostic test results.
相關的診斷檢驗結果
26. Your concise, one-sentence problem synthesis.
簡潔表達，以一句話綜合所有的問題
27. What you think the most likely diagnosis is
最有可能的診斷為何
28. And the other items in your differential diagnosis
其他的鑑別診斷
29. Any further diagnostic studies you plan to carry out.
您準備下一步進行的診斷檢驗
30. Your estimate of the patient's prognosis
你預估病人的預後
31. Your treatment plans
你的診療計畫
32. How you will monitor the treatment.
你將如何監督這項治療
33. And what you will do if the patient doesn't respond to treatment
如果病人對於治療無回應，你將會怎麼做
34. The educational prescription you would like to write for yourself in order to better understand the patient's pathophysiology, clinical findings, differential diagnosis, diagnosis, prognosis, therapy, prevention or other issue in order to become a better clinician
自己撰寫教育處方以便更了解病人的病理生理、臨床發現、鑑別診斷、診斷、預後、治療，預防或其他問題，以成為更好的臨床醫生

Presentation of an "old" case for "follow-up" rounds（20 items in 2 min）報告舊病人查房之追蹤應包括

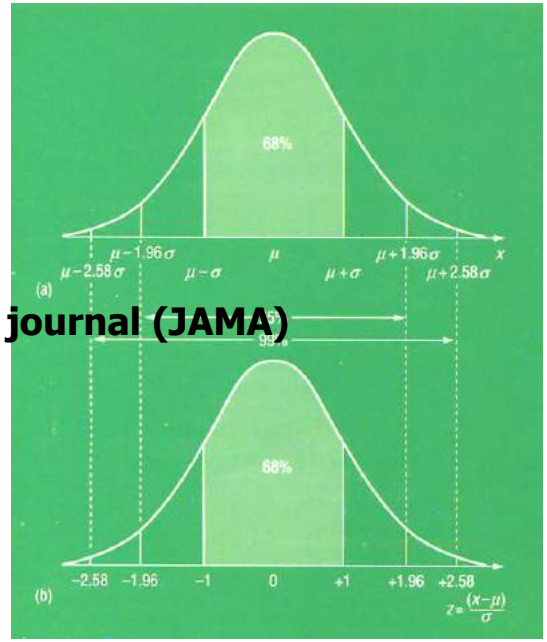
1. The patient's surname
   病人的姓名
2. The age
   年紀
3. Gender
   性別
4. Occupation/social role
   職業/社會角色
5. When admitted
   何時生病住院
6. Chief complaint that led directly to admission
   導致住院的主要病痛抱怨主訴
7. The number of active problems at the present time. For each active problem （which may be a symptom, sign, event, diagnosis, injury, psychological state, or social predicament, etc.）
   現階段有問題的數量。每一個問題，可能都是一個症狀、表徵、事件、診斷、傷害、心理狀態或社會困境等。
8. The most important symptom, if any
   最重要的症狀，如果有

Dave Sackett

9. The most important sign, if any
最重要的表徵，如果有
10. The result of diagnosis or other investigations
診斷結果或其他的檢查
11. The explanation for the problem（diagnosis or state）
問題的解釋（診斷或狀態）
12. The treatment plan instituted for the problem
針對問題制定治療計畫
13. The response to the treatment
對於治療計畫的反應
14. The future plans for managing this problem.
進一步處理這問題的計畫
15. Repeat 8 to 14 for each **active problem**
針對每一個問題重複8到14的步驟
16. Your plans for discharge, post-hospital care and follow-up.
你的出院計畫、出院後的護理和後續治療追蹤
17. Whether you've filled the educational prescription that you requested when this patient was admitted(in order to better understand the patient's pathophysiology, clinical findings, diagnosis, prognosis, therapy, prevention of recurrence, quality of care or other important issue in order to become a better clinician）. If so：
當病人住院時，你被要求填寫的教育處方是否填好（為了能更了解病人的病理生理、臨床發現、診斷、預後、治療，預防復發，醫療品質或其他重要問題，才能成為更好的臨床醫生)
18. How you found the relevant evidence
你如何發現這些問題的相關證據。
19. What you found. The clinical bottom line derived from that evidence.
從這些證據中，你得到甚麼的臨床證據底線。
20. Your critical appraisal of that evidence for its **validity and applicability**
你對該證據的有效性與適用性的嚴格評估。
21. How that critically appraised evidence will alter your care of that（or the next similar）patient. If not, when you are going to fill it?
這些嚴格的證據評估是否會影響你照顧此病人或下一位類似病人的方式？如果沒有，你會如何做?

數字
圖表
簡化

How to report statistics in medical journal (JAMA)



4. Selecting Statistical Method 長庚

Goal 目的	Type of Data		
	Measurement (from Gaussian Population) 連續變項且爲常態分佈	Rank, Score, or Measurement (from Non-Gaussian Population)	Binomial 二項式變數 (Two Possible Outcomes)
Describe one group	Mean, SD	Median, interquartile range (Q_1-Q_3)	Proportion (%)
Compare one group to a hypothetical value	One-sample t test	Wilcoxon test	Chi-square or Binomial test
Compare two unpaired groups	Two-sample t test (unpaired t test)	Mann-Whitney test/ Wilcoxon rank-sum test	Fisher's test (chi-square for large samples)
Compare two paired groups	Paired t test	Wilcoxon signed-rank test	McNemar's test
Compare three or more unmatched groups	One-way ANOVA	Kruskal-Wallis test	Chi-square test
Quantify association between two variables	Pearson correlation	Spearman correlation	Contingency coefficients
Predict value from another measured variable	Simple linear regression	Nonparametric regression	Simple logistic regression
Predict value from several measured or binomial variables	Multiple linear regression		Multiple logistic regression

PERSONALIZED MEDICINE

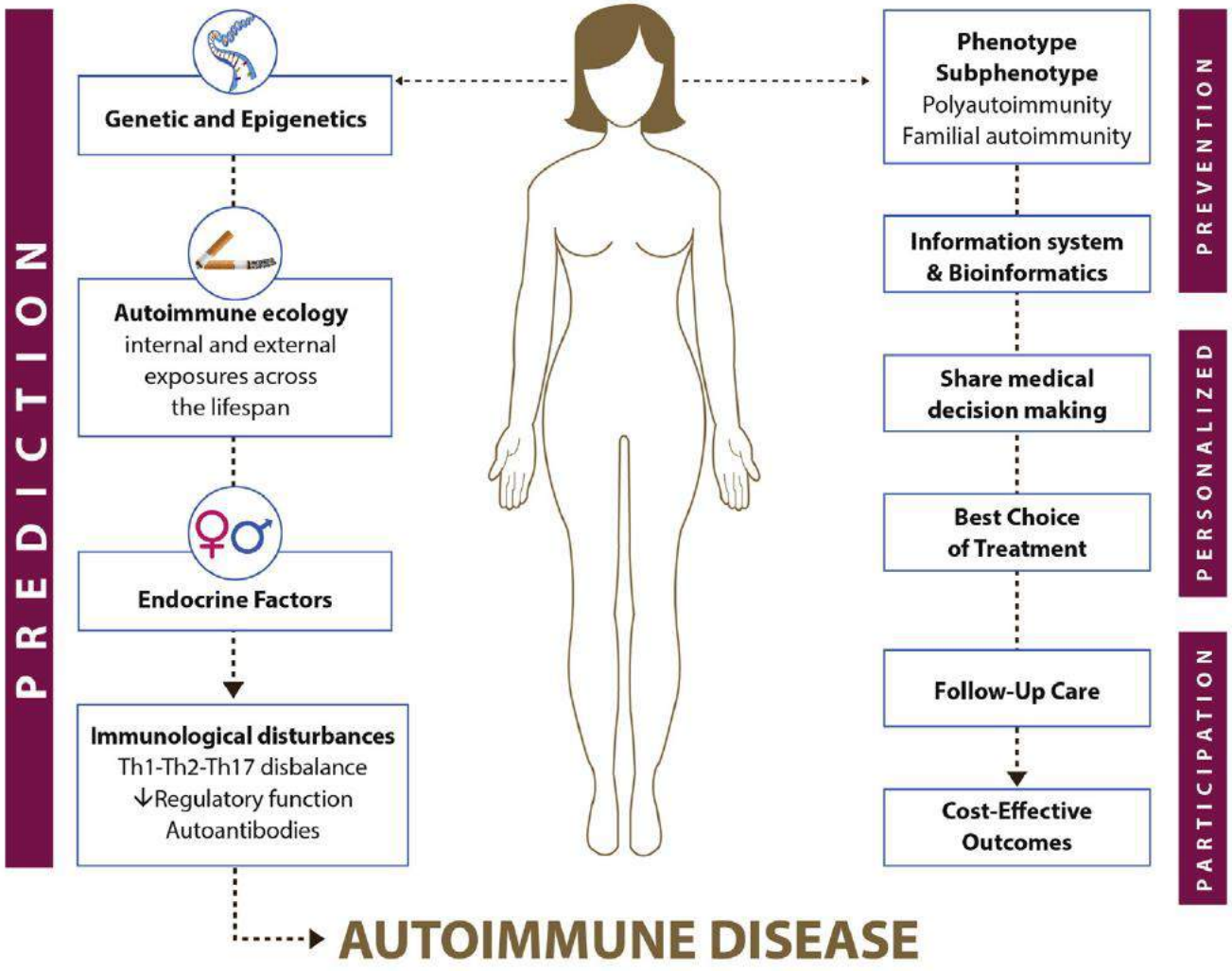


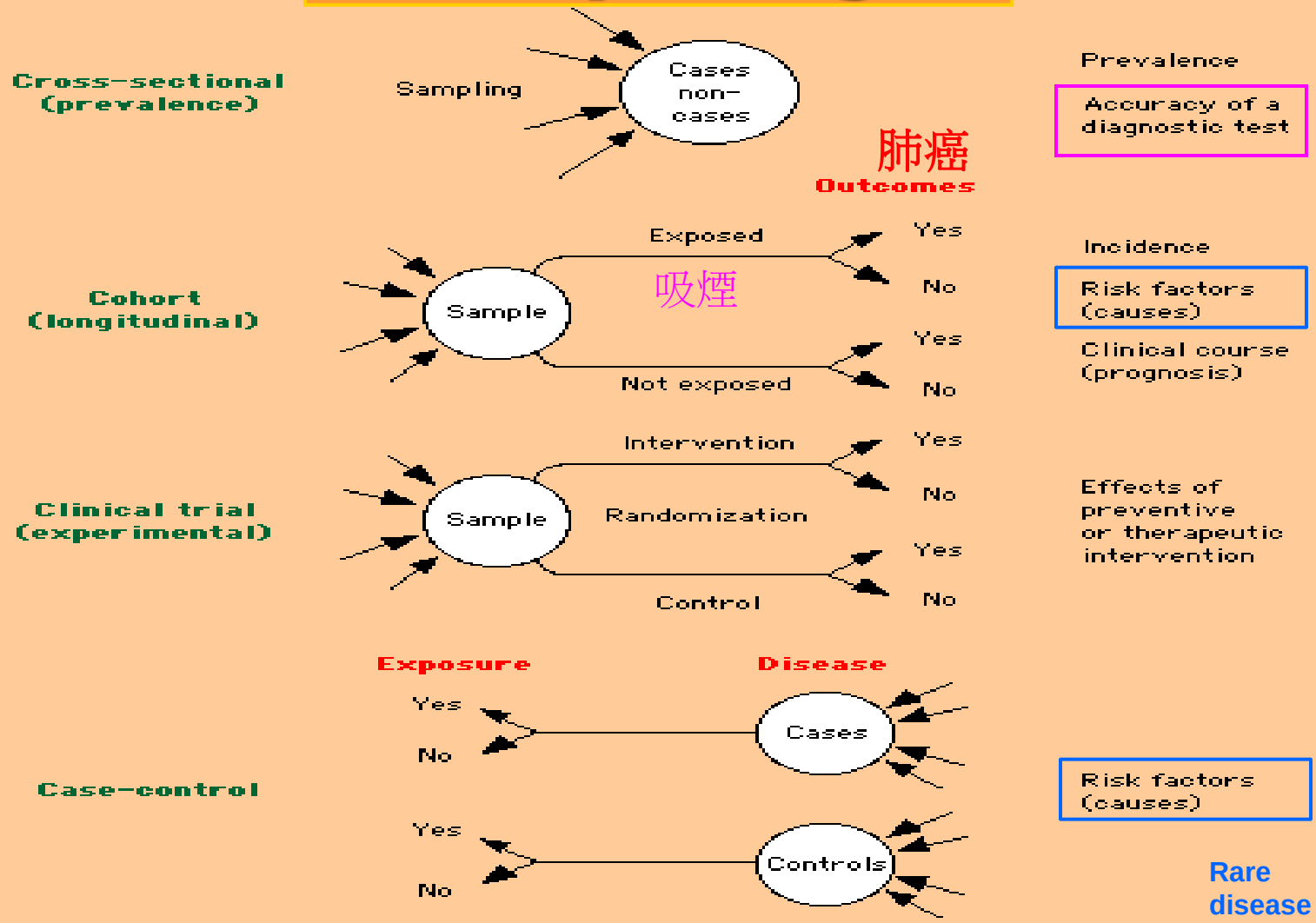
Fig. 2. Personalized medicine in the framework of P5 medicine.


謝謝聆聽 敬請指教
Thank you for your attention
K.H. Yu
Taiwan

評讀 附件: Critical Appraisal

- **Oxford - Critical Appraisal Sheets** (CAT form, RAMbo)
  - 1. RCT (therapy study)
  - 2. Systematic review
  - 3. Diagnostic test
- **CASP**
  - Critical Appraisal Skills Programme (CASP) appraisal tool
    - http://www.phru.nhs.uk/pages/PHD/resources.htm
- 報告
  - RCT: CONSORT statement
  - Systematic review : PRISMA statement
  - Diagnosis test : STARD Initiative, QUADAS-2
  - Observation study : STORBE statement

Study Design



Study research design The appropriate research design depends upon the question asked. A randomized, controlled trial is best for information on the effects of a therapeutic or preventive intervention, while a cross-sectional study is best for the evaluation of diagnostic test performance. Reproduced with permission from Fletcher, RH, Fletcher, SW. Principles of clinical epidemiology. In: Kelly, WN (Ed). Textbook of Internal Medicine. Philadelphia; JB Lippincott 1988.

Appraising the evidence:

☑ Applicability 臨床可應用性

- ☑ **Are the result Valid?**
- ☑ **Is it clinical important ? (Impact: NNT..)**
- ☐ **Applicability to our patient ? (臨床可應用性)**
  - ☑ **Is our patient so different from those in the study that its results cannot apply ?**
    - **Data from Taiwan, China, or Asia (種族差異)? Cost-effectiveness analysis (效益分析)**
    - **Do I miss any data?** 搜尋參考文獻 詢問專家
  - ☑ What're our Pt's potential **benefits** from CCRT ?
  - ☑ What're our Pt's potential **harms** from CCRT ?
  - ☑ **What're our Pt's values & preferences for the outcomes & side effect ? (3 E - SDM)**
- **Discussion, apply** and Audit
  - **Plain language** summary (absolute % difference, NNT, NNH)