

Better Information Better Actions

台灣使用健保資料庫發表 高影響力論文之分析 Where are we now and where should we go?

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成功大學健康資料增值應用研究中心

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IRS問題：您使用健保資料庫的經驗？

1. 曾經使用過健保資料庫發表過SCI論文
2. 曾經使用過健保資料庫寫過非SCI論文
3. 曾經使用過健保資料庫沒寫過論文
4. 未曾使用過健保資料庫

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Introduction of Taiwan NHI data

Catatrophic illnesses file
2001-, 142MB/y, 1,434,597/y

Inpatient file
1998-, 1.36GB/y, 3,046,589/y

Inpatient with prescriptions file
2001-, 1.55GB/y, 17,171,376/m

Outpatient file
1998-, 5.67GB/y, 26,740,396/m

Outpatient with prescriptions file
2001-, 12.64GB/y, 112,688,310/m

One million sampled file
A cohort sample

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75 variables in inpatient file

27-30. 4 Tx

31-48. 各類點數

49. 總醫療點數

50. 部份負擔點數

51. 申請費用點數

52-66. 住院點數

67-69. Pt demo

70-72. Ph demo

73-75. Hp demo

11-12. In Out date

13-14. 申報期間

15-16. 住院天數

17. DRG參考碼

18-19. 外因分類

20. Disposition

21. Principal Dx

22-25. 4 Dx

26. Principal Tx

1. 費用年月

2-3. 申報類別日期

4. 案件分類

5. 流水號

6. Pt birth date

7. 給付類別

8. 汽車交通事故

9. 健保卡就醫序號

10. 就醫科別

住院檔欄位名稱

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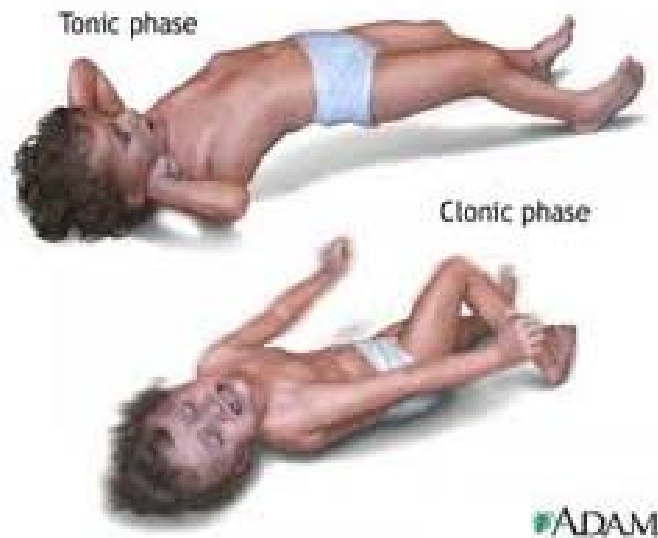
IRS問題：您認為健保資料庫的價值？

1. 非常非常非常有價值
2. 非常非常有價值
3. 非常有價值
4. 有價值

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Scenario 1

Occurrence of febrile convulsion



Frightened mother would ask doctor: what is the possibility that my child will become a patient with seizure?



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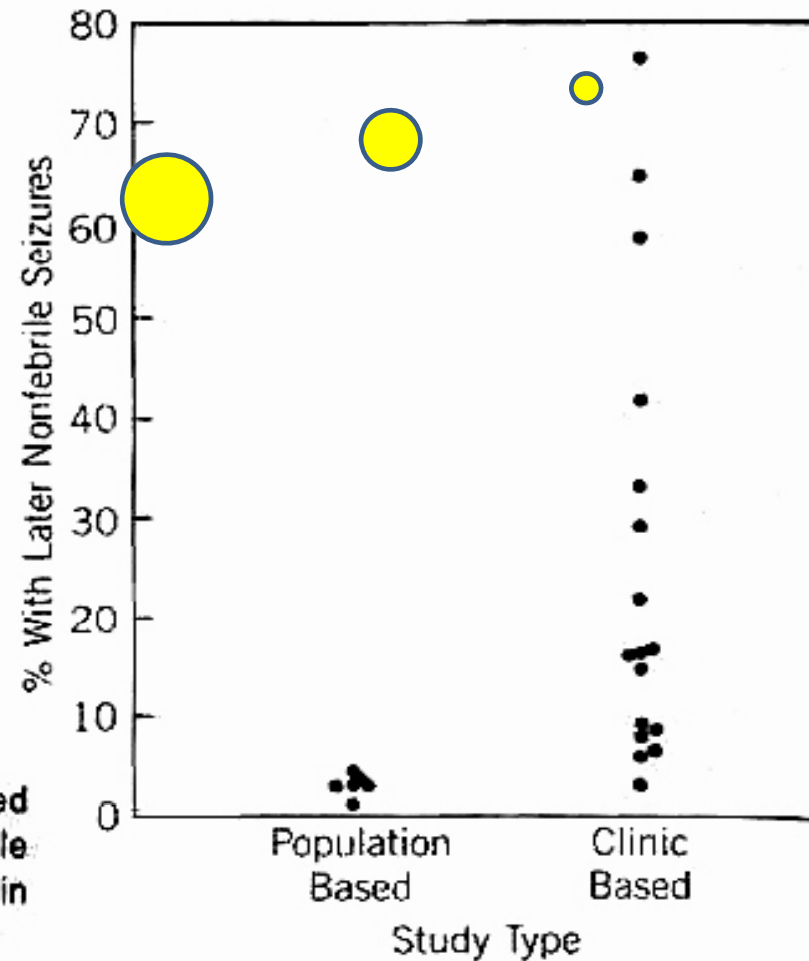
IRS問題：小孩發生熱性痙攣後，後來成為癲癇的機率有多大？ ？

1. <5%
2. 5-10%
3. 11-30%
4. 31-50%
5. 51-70%

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searching the answer

Be careful on
referral bias



Percentage of children who experienced nonfebrile seizures after one or more febrile seizures, in population-based (left) and in clinic-based (right) studies.

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Questions patients often asked

我有DM又罹
患肺癌，死
亡率較是不
是比較高？

南部地區哪
位醫師開這
刀最厲害？

我朋友說A藥
比B藥好，真
的嗎？

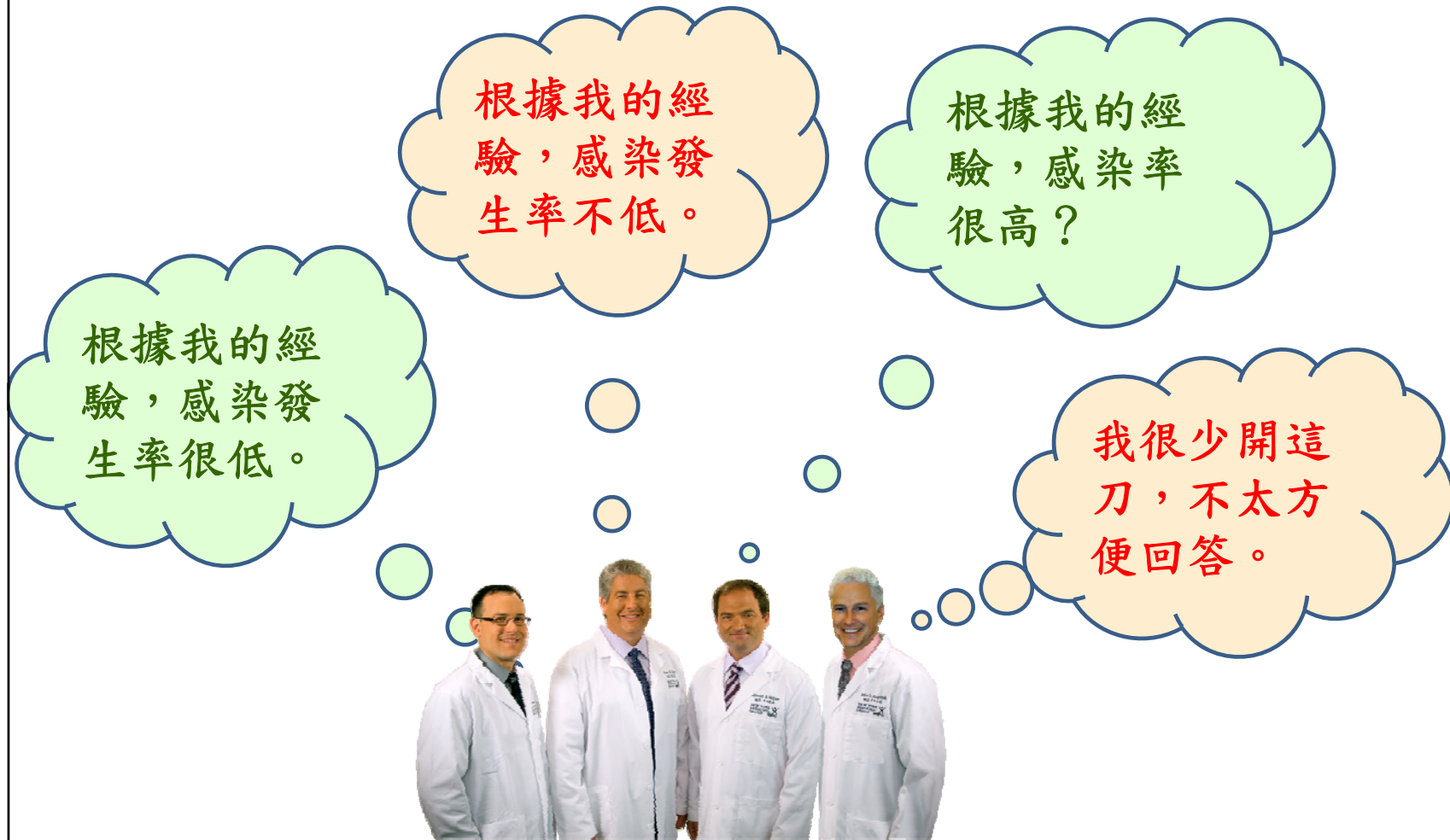
我長期吃
這藥有沒
有副作用？

我接受這手術
後發生感染的
機率多大？



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Different doctors gave different answers



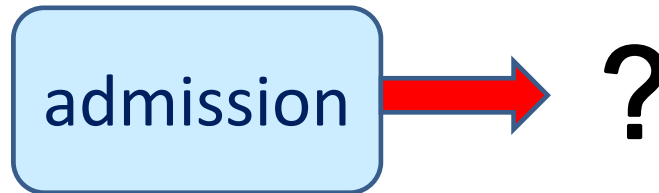
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Limitations of hospital-based data

- Different case-mixes in different settings



- Outcomes unknown after discharge



- Difficult to detect rare adverse effects

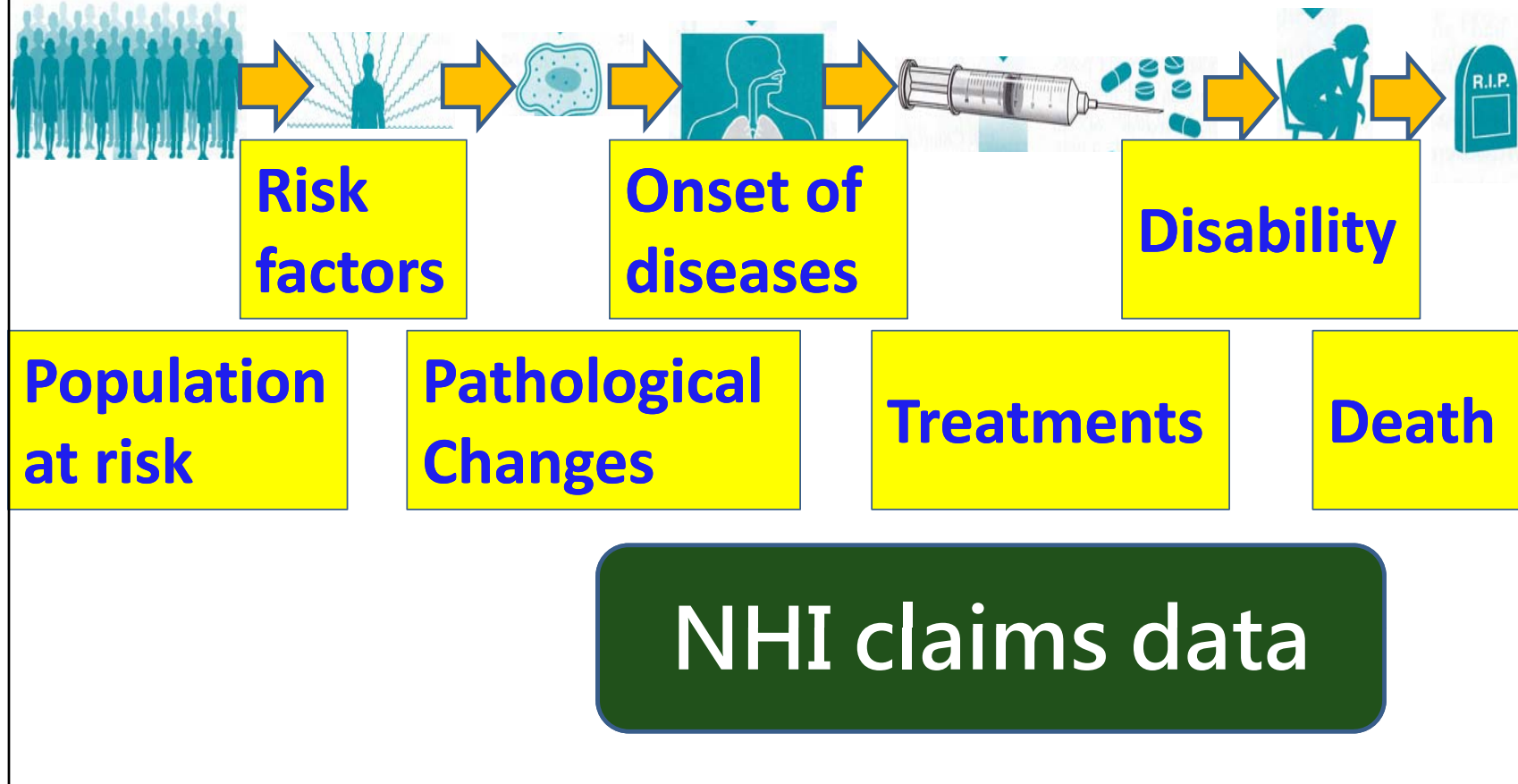
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Seeing trees and forests



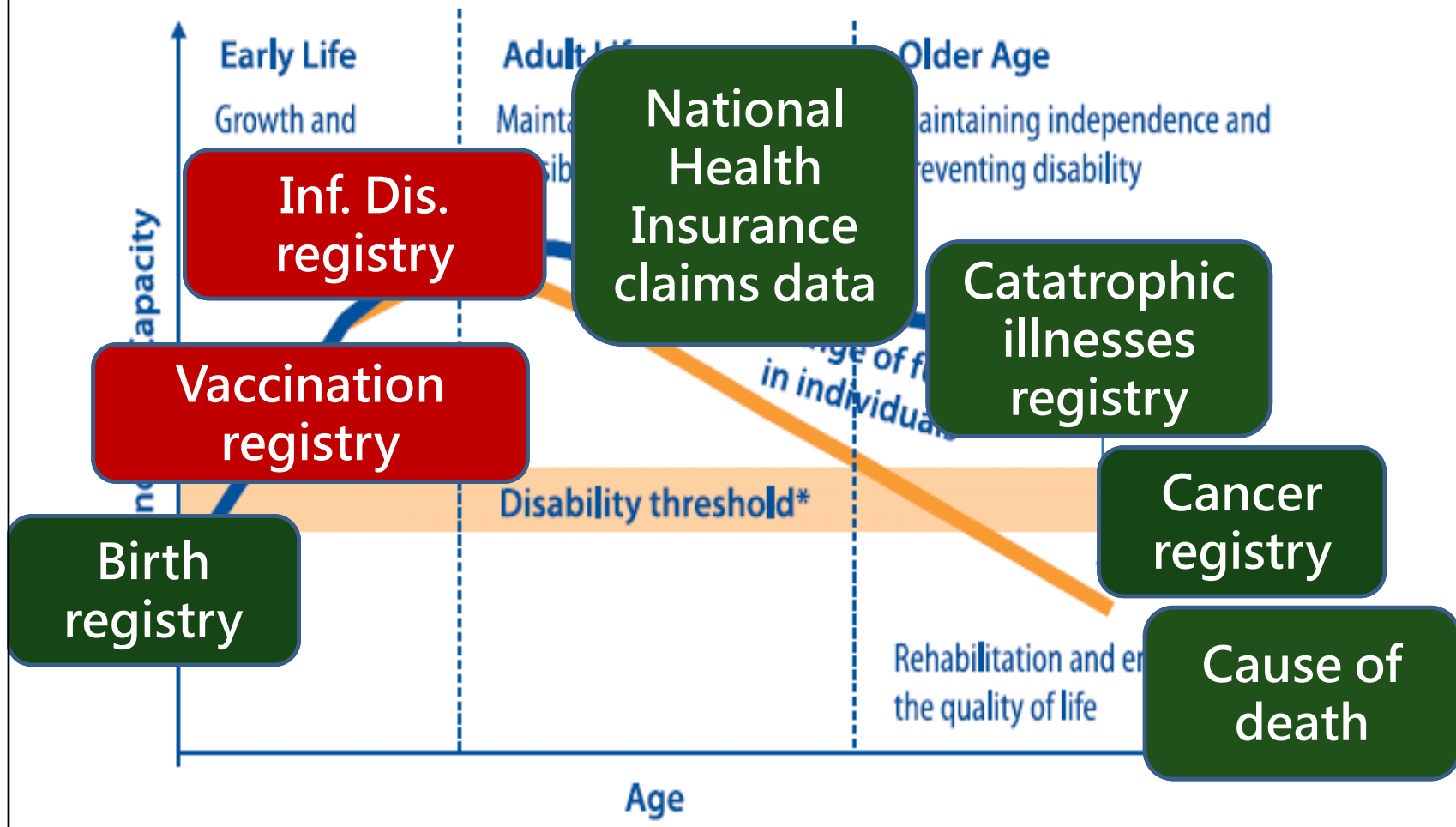
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What kind of questions we can ask by using NHI data?



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Population-based health data in Taiwan



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High impact study using pop data

Merck yanks arthritis drug Vioxx

Drugmaker says ongoing trial shows medication boosts risk of heart attack; shares tumble 27%.

October 6, 2004: 7:50 AM EDT

NEW YORK (CNN/Money) - Merck & Co. on Thursday recalled its arthritis drug Vioxx after an ongoing trial confirmed the medication increases the risk of heart attack and strokes. The news sent stock down nearly 27 percent and erased \$25 billion from its market value.

美國FDA研究顯示長期服用Vioxx會增加心肌梗塞發生率與死亡率

Risk of acute myocardial infarction and sudden cardiac death in patients treated with cyclo-oxygenase 2 selective and non-selective non-steroidal anti-inflammatory drugs: nested case-control study **Lancet 2005;365:475-481**

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Government request of using pop data

Food and Drug Administration Amendments Act (FDAAA) of 2007

On September 27, 2007, President George W. Bush signed into law H.R. 3580, the Food and Drug Administration Amendments Act of 2007. This new law represents a very significant addition to FDA authority. Among the many components of the law, the Prescription Drug User Fee Act (PDUFA) and the Medical Device User Fee and Modernization Act (MDUFMA) have been reauthorized and expanded. These programs will ensure that FDA staff have the additional resources needed to conduct the complex and comprehensive reviews necessary to new drugs and devices.

Two other important laws were reauthorized: the Best Pharmaceuticals for Children Act (BPCA) and the Pediatric Research Equity Act (PREA). Both of these are designed to encourage more research into, and more development of, treatments for children.

Overall, this new law will provide significant benefits for those who develop medical products, and for those who use them.

外當有個案通報或懷疑某藥或某裝置有可能有副作用時，美國FDA可以要求全國醫療保險公司申報資料一起分析此藥與裝置，增大樣本數來偵測不良反應與併發症。

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Releasing NHI data for research by NHRI

NHI 全民健康保險研究資料庫
National Health Insurance Research Database

NEW 100年 1到6月資料發行 **ENGLISH**

非學術界研究類

學術界研究類

學術界研究類
政府立案之國內公私立大專院校、政府所屬業務相關單位、或非營利研究機構（含教學醫院）之講師、技正（或相當職等）、助研究員、專科醫師等（含）以上或其他經「全民健康保險研究資料庫指導委員會」（以下簡稱指委會）審核通過者。

Welcome to
National Health Insurance Research Database

National Health Insurance Research Database
最佳瀏覽效果800x600
Copyright 2003 National Health Research Institutes. All rights reserved.

<http://nhird.nhri.org.tw/index.htm>

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Where are we now?

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IRS問題：從國家衛生研究院釋出健保資料庫後至今，使用健保資料庫發表在PubMed收錄期刊的論文數目約多少？

1. <600 篇
2. 600-699篇
3. 700-799篇
4. 800-899篇
5. >900篇

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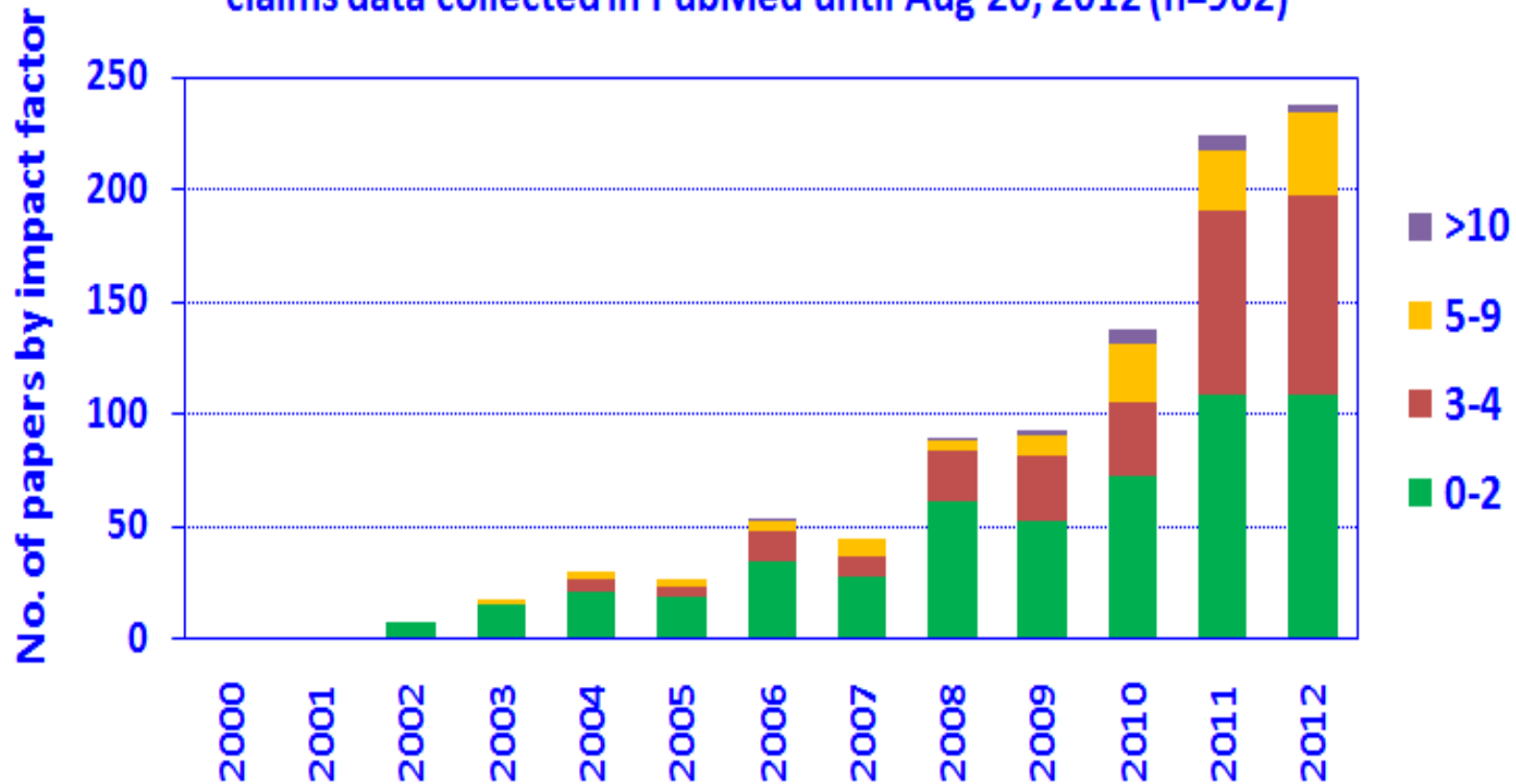
IRS問題：從國家衛生研究院釋出健保資料庫後至今，使用健保資料庫發表的論文IF數目大於5分的論文數約多少？

1. <80 篇
2. 80-99篇
3. 100-119篇
4. 120-139篇
5. >140篇

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Published papers using NHI data

Peer-reviewed journal papers using Taiwan National Health Insurance claims data collected in PubMed until Aug 20, 2012 (n=962)



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IRS問題：從國家衛生研究院釋出健保資料庫後至今，使用健保資料庫發表的論文IF數目最高的是幾分？

- 1. 10-14**
- 2. 15-19**
- 3. 20-24**
- 4. 25-29**
- 5. >30**

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1. **Wu CY**, Chen YJ, Ho HJ, Hsu YC, Kuo KN, Wu MS, Lin JT. Association between nucleoside analogues and risk of hepatitis B virus-related hepatocellular carcinoma following liver resection. ⁺
JAMA in press (SCI, IF **30.026**, 3/153)⁺
2. **Wu CY**, Wu MS, Kuo KN, Chen YJ, Wang CB, Lin JT. Effective reduction of gastric cancer risk with regular use of NSAIDs in Helicobacter pylori-infected subjects. ⁺
J Clin Oncol 2010; 28(18): 2952-7 (SCI, IF **18.372**, 4/194)⁺
3. **Wu CY**, Chan FK, Wu MS, Kuo KN, Wang CB, Tsao CR, Lin JT. Histamine-2-receptor antagonist as an alternative to proton pump inhibitor in patients receiving clopidogrel: A population-based cohort study. ⁺
Gastroenterology 2010; 139(4): 1165-71 (SCI, IF **11.675**, 1/74)⁺
4. **Wu CY**, Kuo KN, Wu MS, Chen YJ, Wang CB, Lin JT. Early H. pylori eradication decreases risk of gastric cancer in patients with peptic ulcer disease.
Gastroenterology 2009; 137(5): 1641-8 (SCI, IF **11.675**, 1/74)⁺
5. Hsu YC, Lin JT, Chen TT, Wu MS, **Wu CY***. Long-term risk of recurrent peptic ulcer bleeding in patients with liver cirrhosis: a 10-year nationwide cohort study.⁺
Hepatology 2012 Aug 56(2): 698-705 (SCI, IF **11.665**, 2/74)⁺
6. Chen HP, Shieh JJ, Chang CC, Chen TT, Lin JT, Wu MS, Lin JH, **Wu CY***
Metformin decreases hepatocellular carcinoma risk in a dose-dependent manner: population-based and in vitro studies. ⁺
Gut 2012 Jul 7. Epub ahead of print (SCI, IF **10.111**, 3/74)⁺
7. **Wu CY**, Wu MS, Kuo KN, Wang CB, Chen YJ, Lin JT. Long term peptic ulcer rebleeding risk estimation in patients undergoing hemodialysis: a 10 year nationwide cohort study. ⁺
Gut 2011; 60(8): 1038-42. (SCI, IF **10.111**, 3/74)⁺
8. **Wu CY**, Wu MS, Chiang EP, Wu CC, Chen YJ, Chen CJ, Chi NH, Chen GH, Lin JT. Elevated plasma osteopontin associated with gastric cancer development, invasion and survival. ⁺
Gut 2007; 56:782-9 (SCI IF **10.111** 3/74)⁺

吳俊穎 教授



廣告：11月1日
1:10-3:00 PM
208教室演講

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Top 18 high impact factor papers

Title	Journal
Risk of ovarian cancer in women with pelvic inflammatory disease: a population-based study	Lancet Oncol
Effective reduction of gastric cancer risk with regular use of nonsteroidal anti-inflammatory drugs in Helicobacter pylori-i	J Clin Oncol
Angiotensin receptor blockade and risk of cancer in type 2 diabetes mellitus: a nationwide case-control study	J Clin Oncol
Pediatric end-of-life care for Taiwanese children who died as a result of cancer from 2001 through 2006	J Clin Oncol
Statins and the risk of hepatocellular carcinoma in patients with hepatitis B virus infection	J Clin Oncol
Statins, Risk of Diabetes, and Implications on Outcomes in the General Population	J Am Coll Cardiol
Population-based case-control study of Chinese herbal products containing aristolochic acid and urinary tract cancer risk	J Natl Cancer Inst
Risk of death by unnatural causes during early childhood in offspring of parents with mental illness	Am J Psychiatry
Association of cerebrovascular events with antidepressant use : a case-crossover study	Am J Psychiatry
Early Helicobacter pylori eradication decreases risk of gastric cancer in patients with peptic ulcer disease	Gastroenterology
Histamine2-receptor antagonists are an alternative to proton pump inhibitor in patients receiving clopidogrel	Gastroenterology
Risk of malignant neoplasms of liver and biliary tract in diabetic patients with different age and sex stratifications	Hepatology
Association of thiazolidinediones with liver cancer and colorectal cancer in type 2 diabetes mellitus	Hepatology
Long-term risk of recurrent peptic ulcer bleeding in patients with liver cirrhosis: A 10-year nationwide cohort study	Hepatology
Exogenous insulin use and hypertension in adult patients with type 2 diabetes mellitus	Arch Intern Med
A longitudinal examination of continuity of care and avoidable hospitalization: evidence from a universal coverage health	Arch Intern Med
Physician's case volume of intensive care unit pneumonia admissions and in-hospital mortality	Am J Respir Crit Care
Association between tobacco smoking and active tuberculosis in Taiwan: prospective cohort study	Am J Respir Crit Care

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Examples of drug related studies

Effective Reduction of Gastric Cancer Risk With Regular
Use of Nonsteroidal Anti-Inflammatory Drugs in
Helicobacter Pylori-Infected Patients

Therapy

Chun-Ying Wu, Ming-Shiang Wu, Ken N. Kuo, Chang-Bi Wang, Yi-Ju Chen, and Jaw-Town Lin

J Clin Oncol 28:2952-2957. © 2010 by American Society of Clinical Oncology

Angiotensin Receptor Blockade and Risk of Cancer in Type
2 Diabetes Mellitus: A Nationwide Case-Control Study

Adverse effect

Chia-Hsuin Chang, Jou-Wei Lin, Li-Chiu Wu, and Mei-Shu Lai

J Clin Oncol 29:3001-3007. © 2011 by American Society of Clinical Oncology

**Population-Based Case-Control Study of Chinese Herbal
Products Containing Aristolochic Acid and Urinary Tract
Cancer Risk**

Adverse effect

Ming-Nan Lai, Shuo-Meng Wang, Pau-Chung Chen, Ya-Yin Chen, Jung-Der Wang

J Natl Cancer Inst 2010;102:179-186

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What kind of questions are most welcomed?



Question	Impact factor			
	Total	>9	7-8	5-6
Prognosis of complication	61	5	21	35
Drug adverse effect	18	5	3	10
Prevalence	18		2	16
Therapeutic effect	17	5	8	4
Risk factor	12	4	4	4
Care	11	3	1	7
Prevalence & prognosis of c	5	1	1	3
Surgical complication	2			2
Total	144	23	40	81

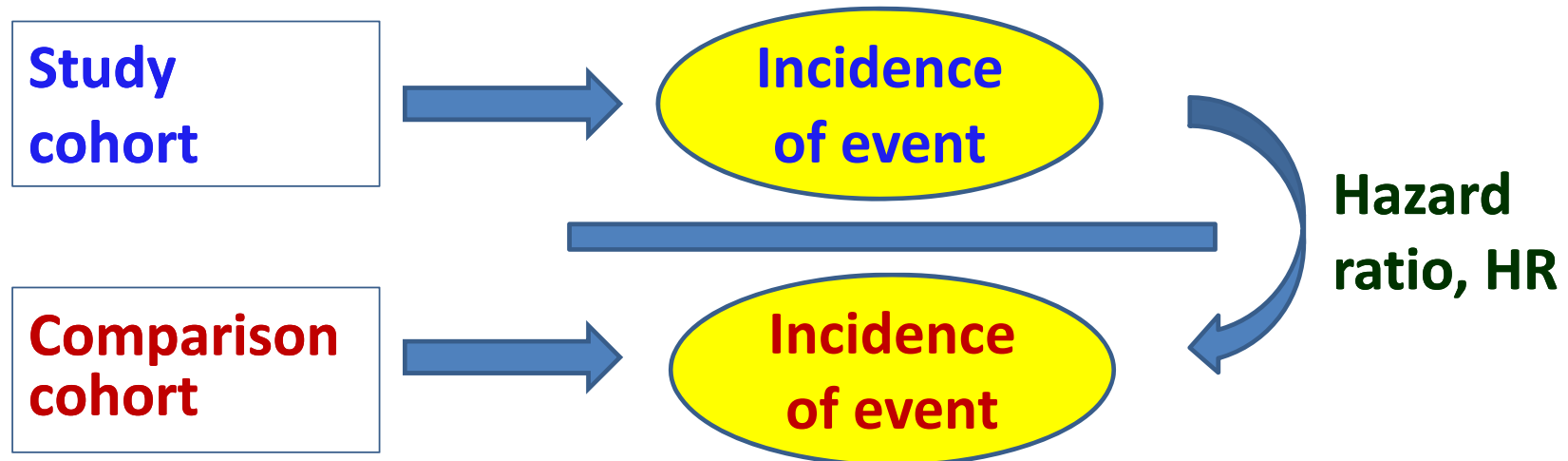
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What kind of study design are most welcomed?

Design	Impact factor			
	Total	>9	7-8	5-6
Cohort study	76	11	25	40
Cohort study, link	16	6	3	7
Cross-sectional study	16		2	14
Cross-sectional correlation study	13	1	2	10
Case-control study	9	3	3	3
Cross-sectional trends study	4		1	3
Case-crossover study	2	2		
Cross-sectional correlation study, link	2			2
Nested case-control study	2		2	
Others	2			2
Case-control study, link	1		1	
Cross-sectional study, link	1		1	
Total	144	23	40	81

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Form of cohort study design



**HR > 1 Prognosis of complications,
drug adverse effect**
HR < 1 Therapeutic effect

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Papers by specialty of patients studied

Patients by specialty	Impact factor			
	Total	>9	7-8	5-6
Total	144	23	40	81
Endocrinology	27	5	12	10
NA	25	3	2	20
Psychiatry	16	2	5	9
Cardiology	12	1	6	5
Infectious disease medicine	7	1	3	3
Nephrology	6	1	2	3
Ophthalmology	6			6
Respiratory medicine	6	1	2	3
Gastroenterology	5	3	2	
Hepatology	5	2		3
Oncology	5	1		4
Rheumatology	5		4	1
Orthopedics	3			3
Allergy	2			2
Chinese medicine	2	1		1
Dermatology	2		1	1
Injury	2			2

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Papers by outcomes studied

Main outcome	Total	Impact factor		
		>9	7-8	5-6
Total	144	23	40	81
Ca	29	9	10	10
Neuro	25	1	4	20
CV	18	3	7	8
HSR	14	3	2	9
GI	6	3	2	1
ID	6		1	5
Resp	6	2	3	1
Endo	5	1	1	3
Inj	5	1	1	3
Obs	5		3	2
Ped	5		1	4
Mort	4		2	2
Psych	4		1	3
Neph	3			3
Morb	2		1	1
Oph	2			2
Rheum	2			2

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Various outcomes in patients with diabetes

Patients	Main outcome
with diabetes	Active tuberculosis
with diabetes	acute pancreatitis
with diabetes	all cancers
with diabetes	all cancers
with diabetes	atrial fibrillation
with diabetes	bladder cancer
with diabetes	bladder cancer
with diabetes	bone fracture
with diabetes	Cancer of liver, colorectal
with diabetes	Hip fracture
with diabetes	Hypertension
with diabetes	Liver and biliary tract cancer
with diabetes	liver cancer
with diabetes	Mortality, SMR
with diabetes	non-Hodgkin's lymphoma
with diabetes	nontraumatic lower-extremity amputation
with diabetes	pancreatic cancer
with diabetes	Parkinson disease
with diabetes	prostate cancer
with diabetes	vascular diseases associated with diabetes

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Various patients having stroke outcome

Patients	Main outcome
general papteints	Stroke
general papteints	Stroke
with adhesive capsulitis	Stroke
with bullous pemphigoid	Stroke
with chronic obstructive pulmonary disease	Stroke
with head and neck cancers	Stroke
with herpes zoster	Stroke
with herpes zoster ophthalmicus	Stroke
with high intima-media thickness	Stroke
with high fibrinogen	Stroke
with hip fracture	Stroke
with liver cirrhosis	Stroke
with lung cancer	Stroke
with metabolic syndrome	Stroke
with neovascular age-related macular degeneration	Stroke
with open-angle glaucoma	Stroke
with pelvic inflammatory disease	Stroke
with reflux esophagitis	Stroke
with traumatic brain injury	Stroke
with tuberculosis	Stroke
women with hypertensive disorders in pregnancy	Stroke
women with preeclampsia-eclampsia during pregnancy	Stroke

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Where should we go?

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What kind of topics you can study?

Patients by specie	Main outcome																				
	Total	Ca	CV	Derm	Endo	GI	HSR	ID	Inj	Morb	Mort	Neph	Neuro	Obs	Oph	Ped	Psych	Resp	Rheum	Surg	Uro
Total	144	29	18	1	5	6	14	6	5	2	4	3	25	5	2	5	4	6	2	1	1
Endocrinology	27	11	5			1	1	3			1		2		1			1			1
NA	25	1	2	1	2	2	4	2				1	1			4	2	3			
Psychiatry	16	2	1		1		1	2			1		1	2		1	1	2	1		
Cardiology	12	3	1		2		2						4								
Infectious disease	7		2										4							1	
Nephrology	6					2	1	2						1							
Ophthalmology	6	1								1			2		1						1
Respiratory medicir	6		1				1	1					3								
Gastroenterology	5	2	1								1			1							
Hepatology	5	1				1					1	1	1								
Oncology	5	1	1				1						2								
Rheumatology	5	3								1					1						
Orthopedics	3	1	1										1								
Allergy	2	1					1														
Chinese medicine	2	1										1									
Dermatology	2		1										1								
Injury	2												1				1				
Physical medicine	2		1										1								
Dental	1		1																		
Geriatrics	1						1														
Gynecology	1	1																			
Neurology	1						1														
Obstetrics	1												1								
Surgery	1							1													

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Did high IF papers have impact on daily clinical practices?

我有DM又罹
患肺癌，死
亡率較是不
是比較高？

南部地區哪
位醫師開這
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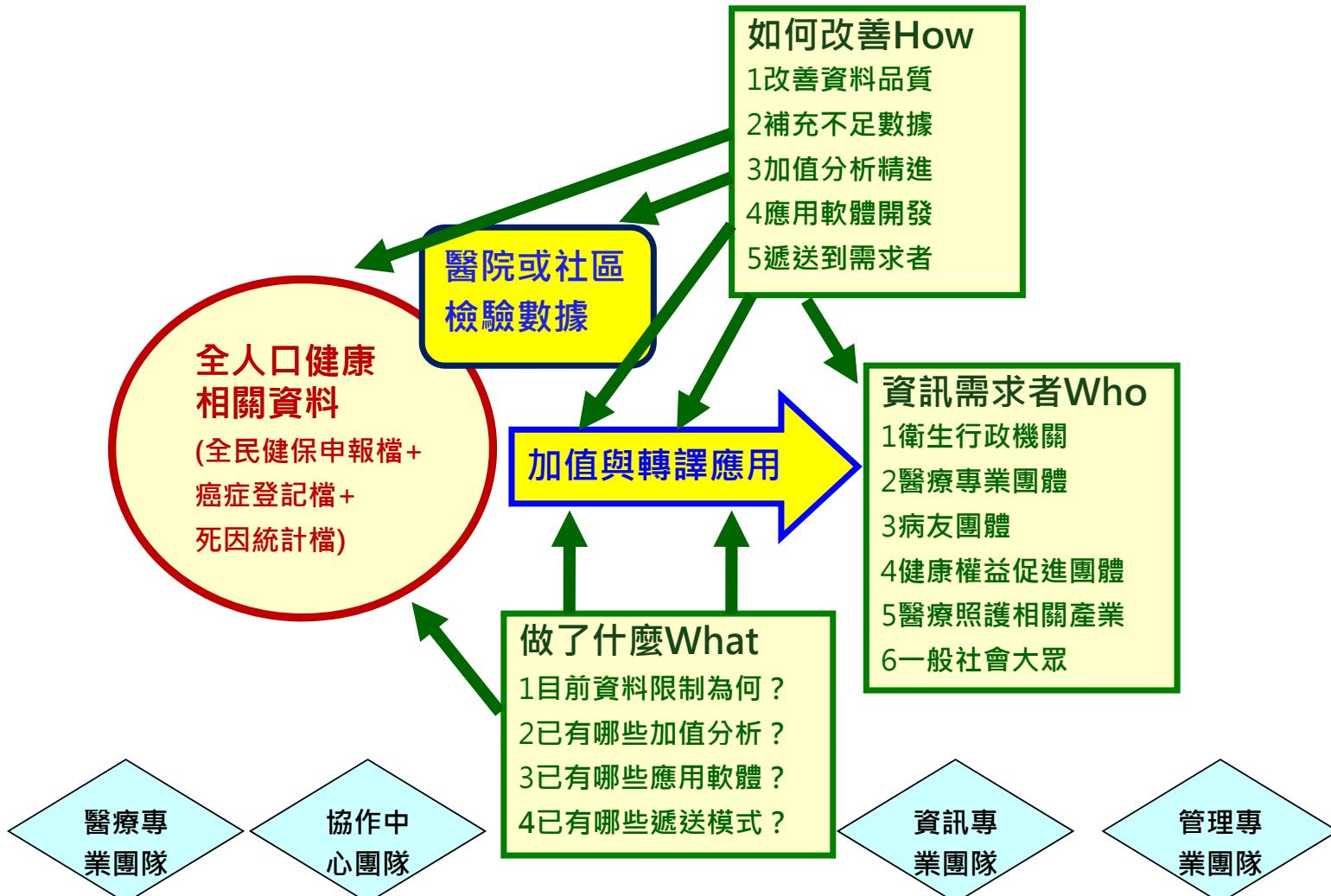
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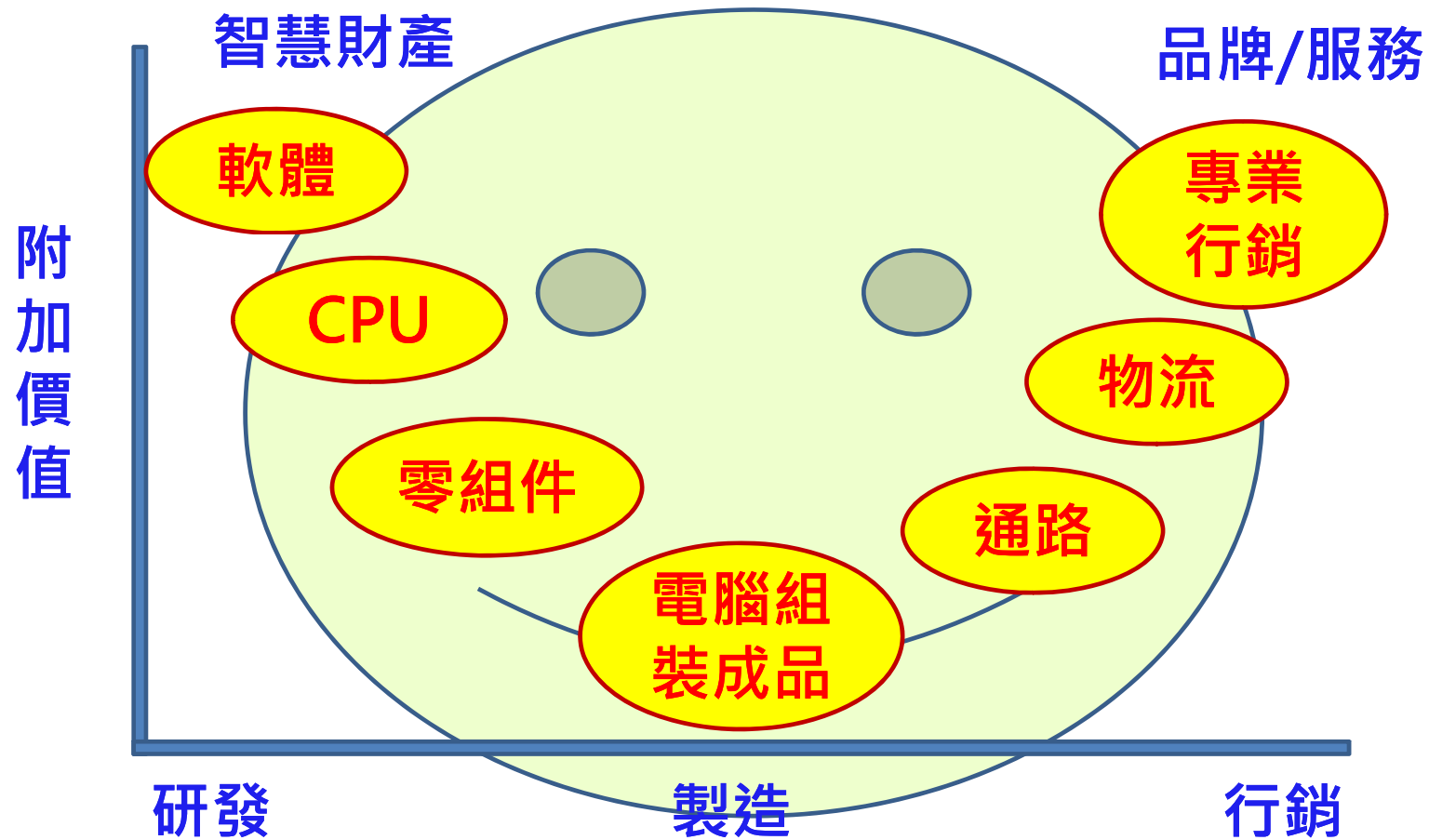
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How to deliver the information to those needed?



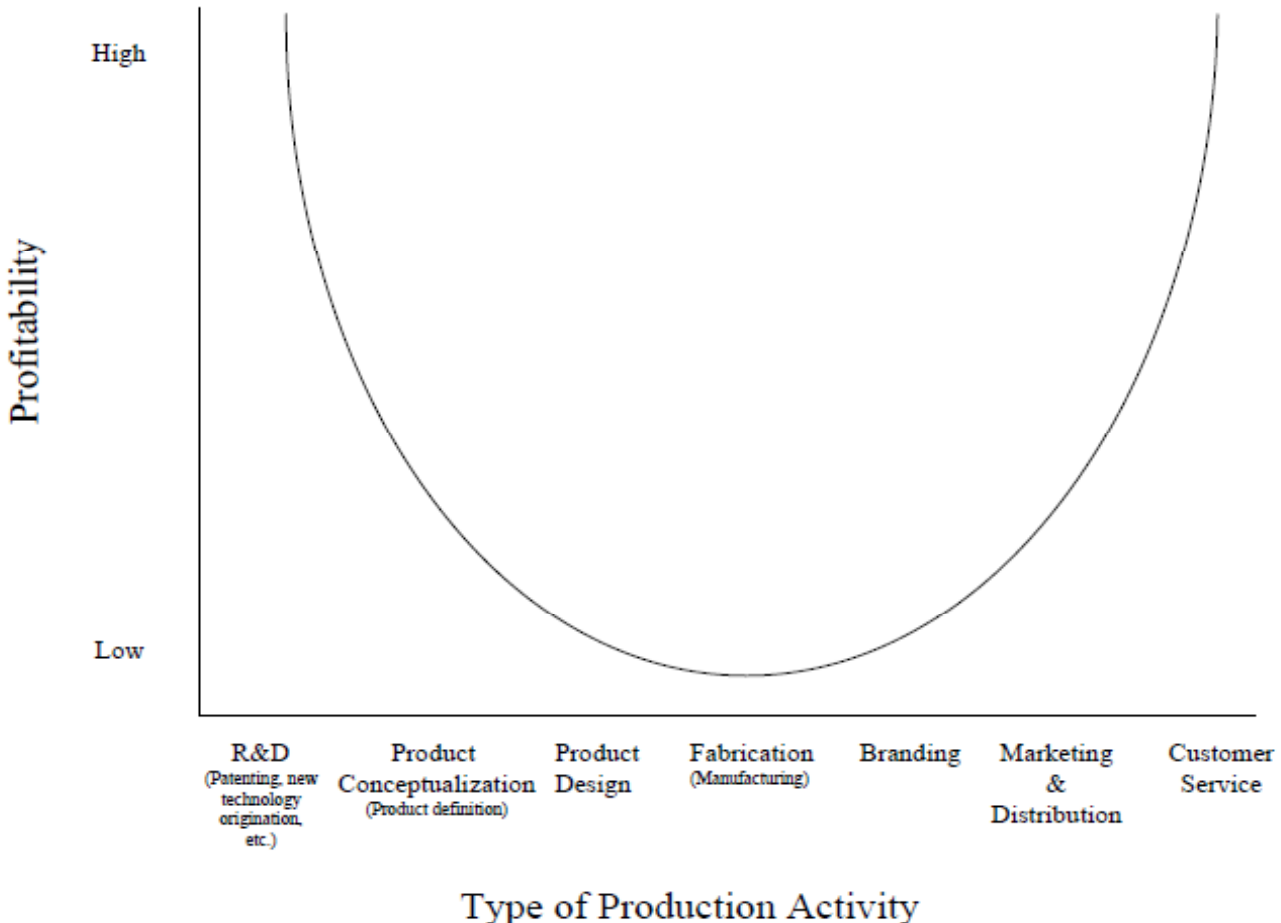
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施振榮先生1992年提出微笑曲線



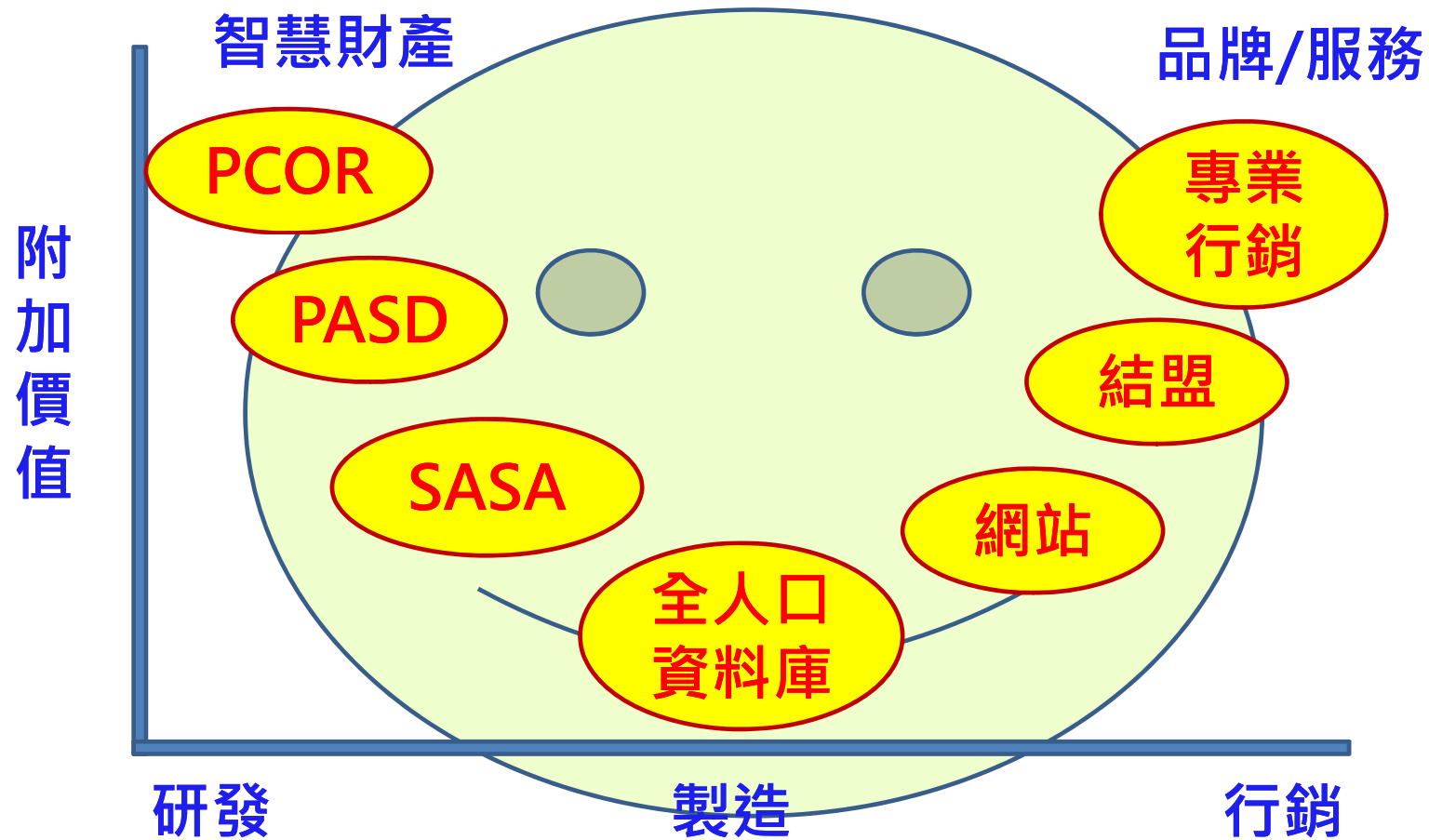
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Stan Shih's "Smile" Curve



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How to deliver the information to those needed?



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NCKU will establish a NHI information service center

台灣使用健保資料庫發表論文搜尋

查詢條件

- 發表年代
- 期刊名稱
- 期刊影響係數
- 期刊專科別
- 論文題目
- 被引用次數
- 研究問題
- 病患專科別
- 病患疾病別
- 結果專科別
- 結果疾病別
- 研究設計
- 第一作者姓名
- 第一作者機構
- 通訊作者姓名
- 通訊作者機構

搜尋 進階搜尋

- 一般內科
- 一般外科
- 心臟科
- 內分泌科
- 肝膽科
- 胃腸科
- 麻醉科
- 胸腔內科
- 神經內科
- 神經外科
- 骨科
- 腎臟科
- 感染科

- 盛行率
- 發生率
- 疾病
- 併發症
- 藥物不良反應
- 相對療效
- 死亡率
- 醫療照護使用
- 醫療照護費用
- 成本效益分析

最新消息

研究問題
知識分享平台

維基百科

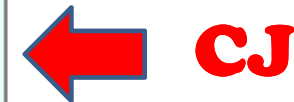
民眾教育

特殊服務

加入會員

關於我們

國立成功大學健康資料加值應用研究中心
台南市東區大學路一號 電話：+886-6-2353535 ext 5567



CJ

<http://ikmbio.csie.ncku.edu.tw/mcp2/user/query.html>

Malignant Hyperthermia

Update on Susceptibility Testing

Ronald S. Litman, DO

Henry Rosenberg, MD, CPE

IN 1962, DRS DENBOROUGH AND Lovell and colleagues¹ from Melbourne, Australia, described a young man with a fractured tibia who was more concerned about receiving general anesthesia than about his leg. The patient had good reason: 10 of his relatives had died without explanation during or following general anesthesia. During his surgery (performed with halothane anesthesia), the patient developed severe hyperthermia, tachycardia, and tachypnea, and was ultimately rescued by aggressive cooling. When Denborough, a geneticist, investigated

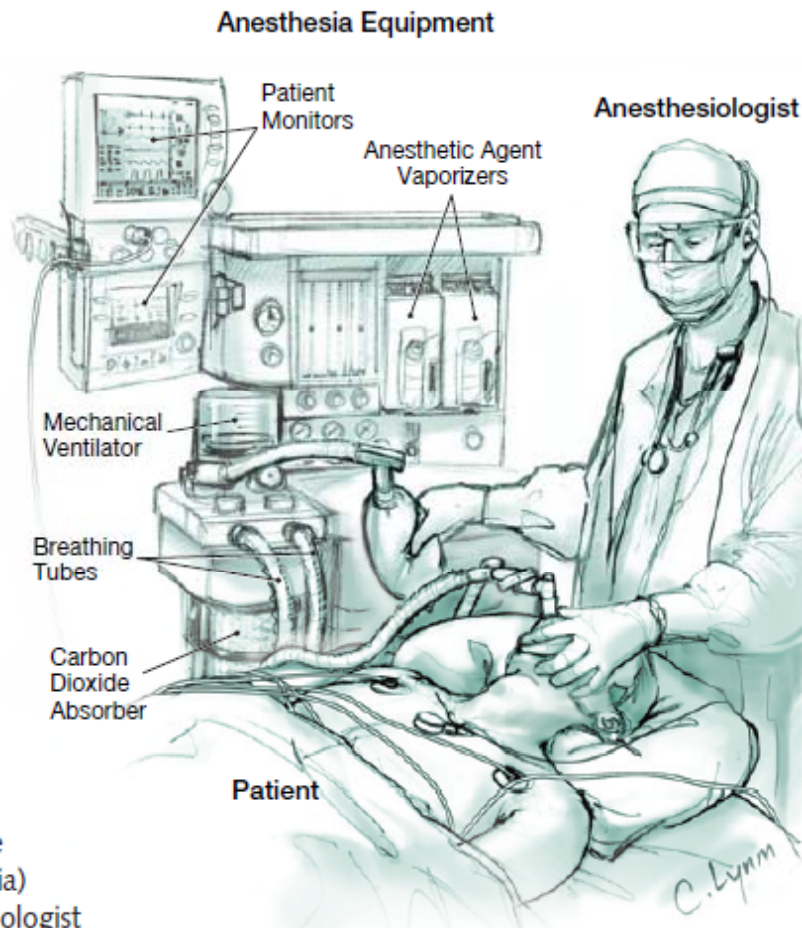
Malignant hyperthermia (MH) is a pharmacogenetic clinical syndrome that manifests as a hypermetabolic crisis when a susceptible individual is exposed to an anesthetic triggering agent. Clinical signs include unexplained elevation of end-tidal carbon dioxide, muscle rigidity, acidosis, tachycardia, tachypnea, hyperthermia, and evidence of rhabdomyolysis. This process is a result of an abnormally increased release of calcium from the sarcoplasmic reticulum, which is often caused by an inherited mutation in the gene for the ryanodine receptor (*RYR1*) that resides in the membrane of the sarcoplasmic reticulum. The gold standard for determination of MH susceptibility is the caffeine-halothane contracture test. However, it is invasive, requiring skeletal muscle biopsy and is not widely available. Researchers have begun to map mutations within the ryanodine receptor gene (chromosome 19q13.1) responsible for conferring MH susceptibility. Ryanodine receptor mutations are found in at least 25% of known MH susceptible individuals in North America. Mutation analysis has recently become available in the

Malignant Hyperthermia

Malignant hyperthermia (MH) is severe, potentially fatal increased body energy consumption after exposure to certain anesthetic drugs. Malignant hyperthermia occurs in persons who have a **genetic** (inherited) susceptibility to this medical problem. Family history of death during **general anesthesia** (being put to sleep for surgery) or having a high body temperature during or after general anesthesia are the most likely indicators that a person may be susceptible to MH. The June 15, 2005, issue of JAMA includes an article about **genetic testing** (DNA testing from a sample of blood or other tissue) that can detect the presence of susceptibility for MH in persons with a family history of the disorder.

ANESTHESIA FOR PERSONS WITH MH

It is crucial for persons who are known to have MH or who have family members with MH to inform their doctors about it, particularly if they are having any type of anesthesia or surgery. Wearing a medical alert bracelet is a helpful way to communicate this in case of an emergency, especially for children. **Anesthesiologists** (doctors with special training in pain control and other medical care during surgery) can prevent the triggering of MH if they know in advance of an individual's susceptibility to MH. Anesthesiologists avoid certain commonly used medications for persons with MH. These include **succinylcholine** (a muscle relaxant used during general anesthesia) and the **volatile** (inhaled) anesthetic agents. When the anesthesiologist

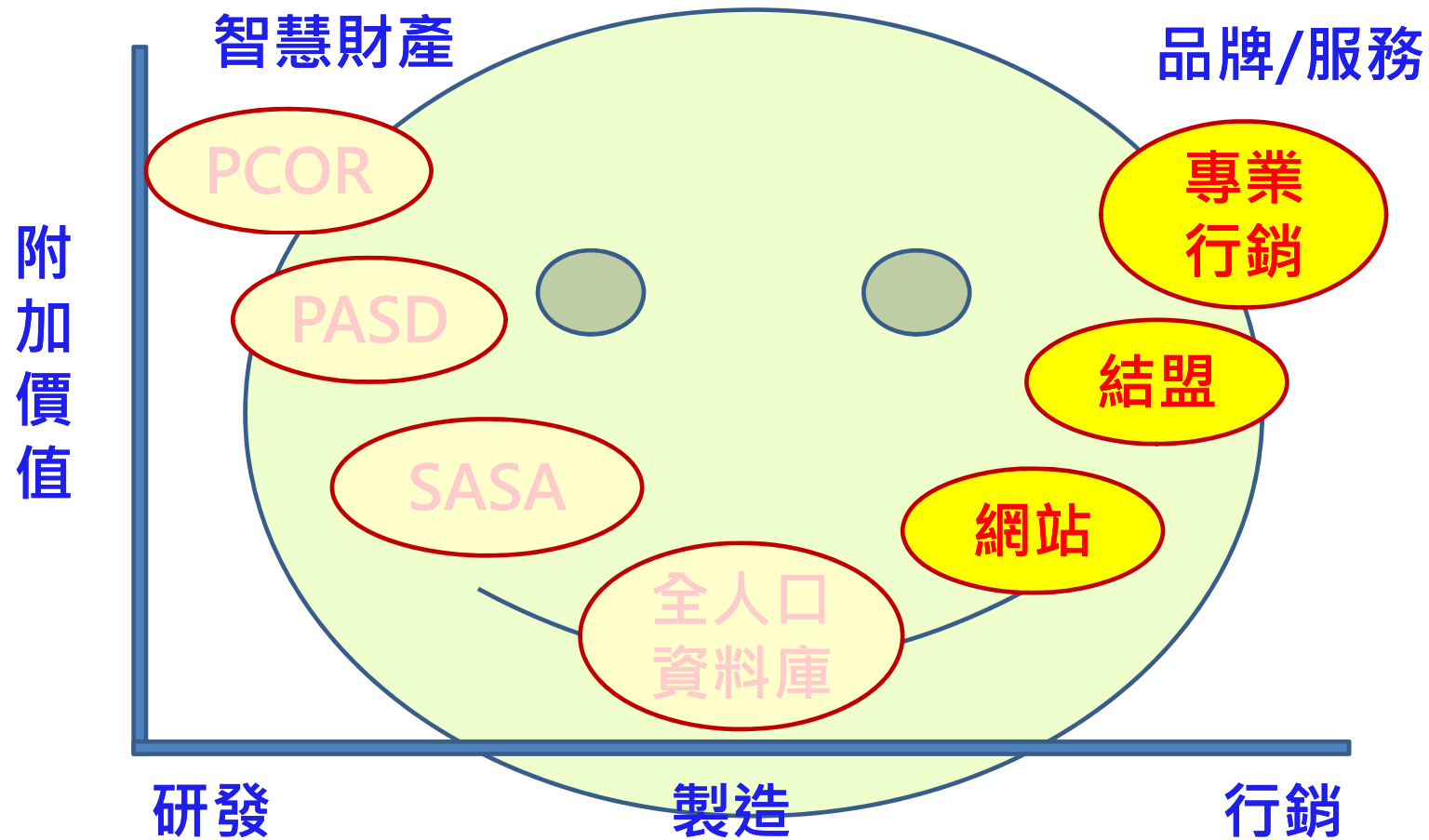


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Better Information Better Actions

Let's together creating right side curve.



Better Information Better Actions

**Thank you for
your attention**

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