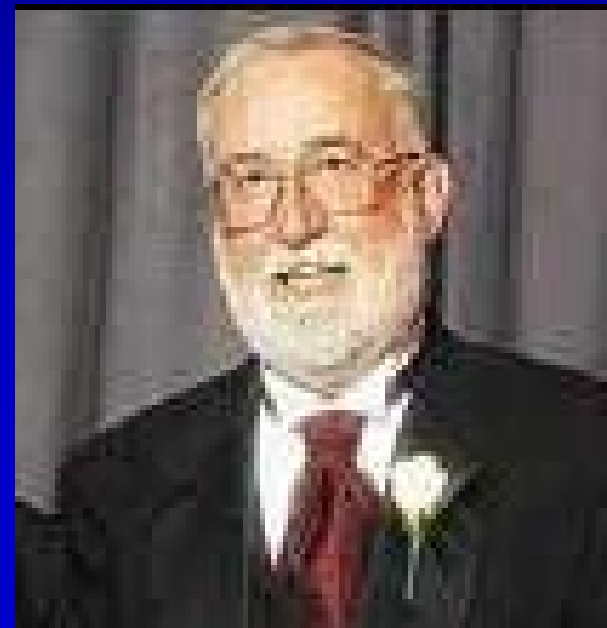


The evolution of EBM: Where Cochrane fits in

- brief history of EBM
- Cochrane's contribution to date
- Cochrane's contribution in future



1990 McMaster University internal medicine residency

- different practice of medicine
 - less trust of personal observations
 - less trust of physiological reasoning
 - less trust of experts
 - more emphasis on controlled clinical observations
 - strategies to reduce bias
 - reliance on critical use of published literature
 - demand of experts/teachers: what is the evidence?
- what to call it?
 - scientific medicine
 - evidence-based medicine

First principle: Hierarchy of Evidence

Randomized Trials



Observational studies
patient-important outcomes

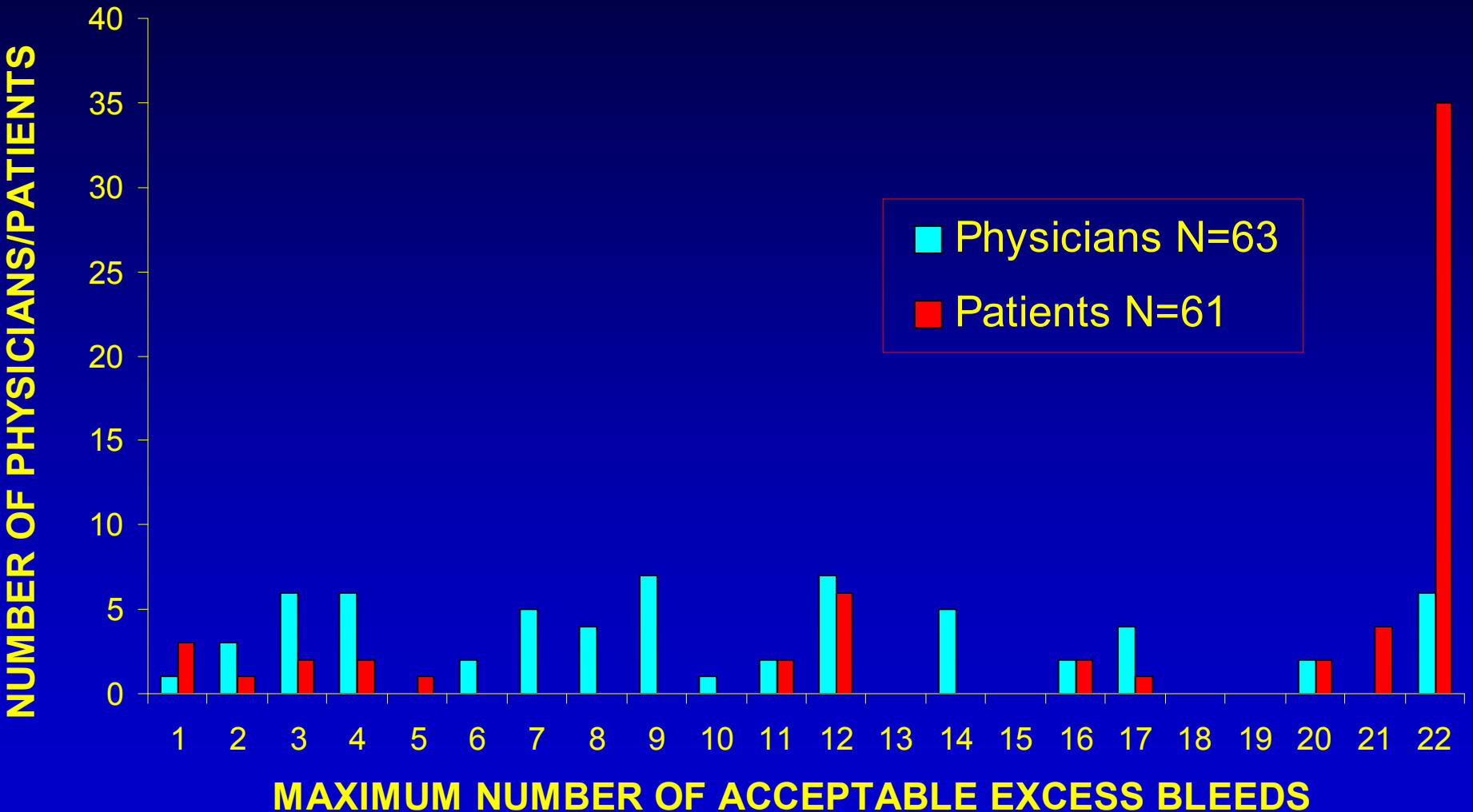


Basic research
test tube, animal, human physiology



Clinical experience

PHYSICIAN AND PATIENT BLEEDING THRESHOLDS FOR WARFARIN



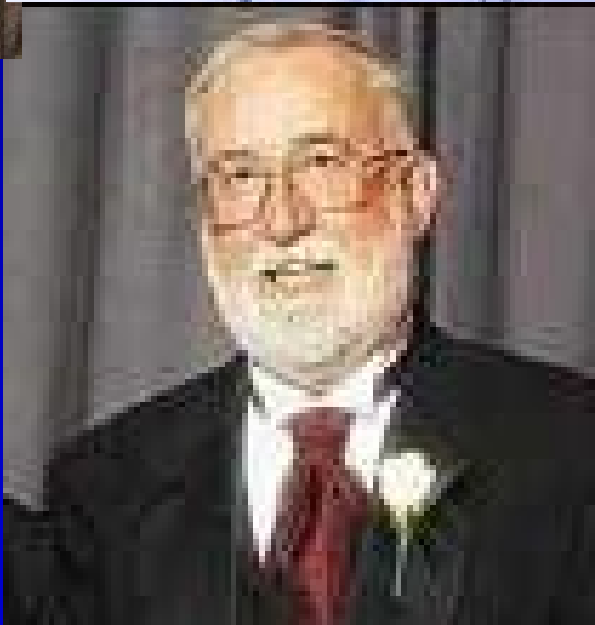
Model of evidence based clinical decisions

clinical circumstances

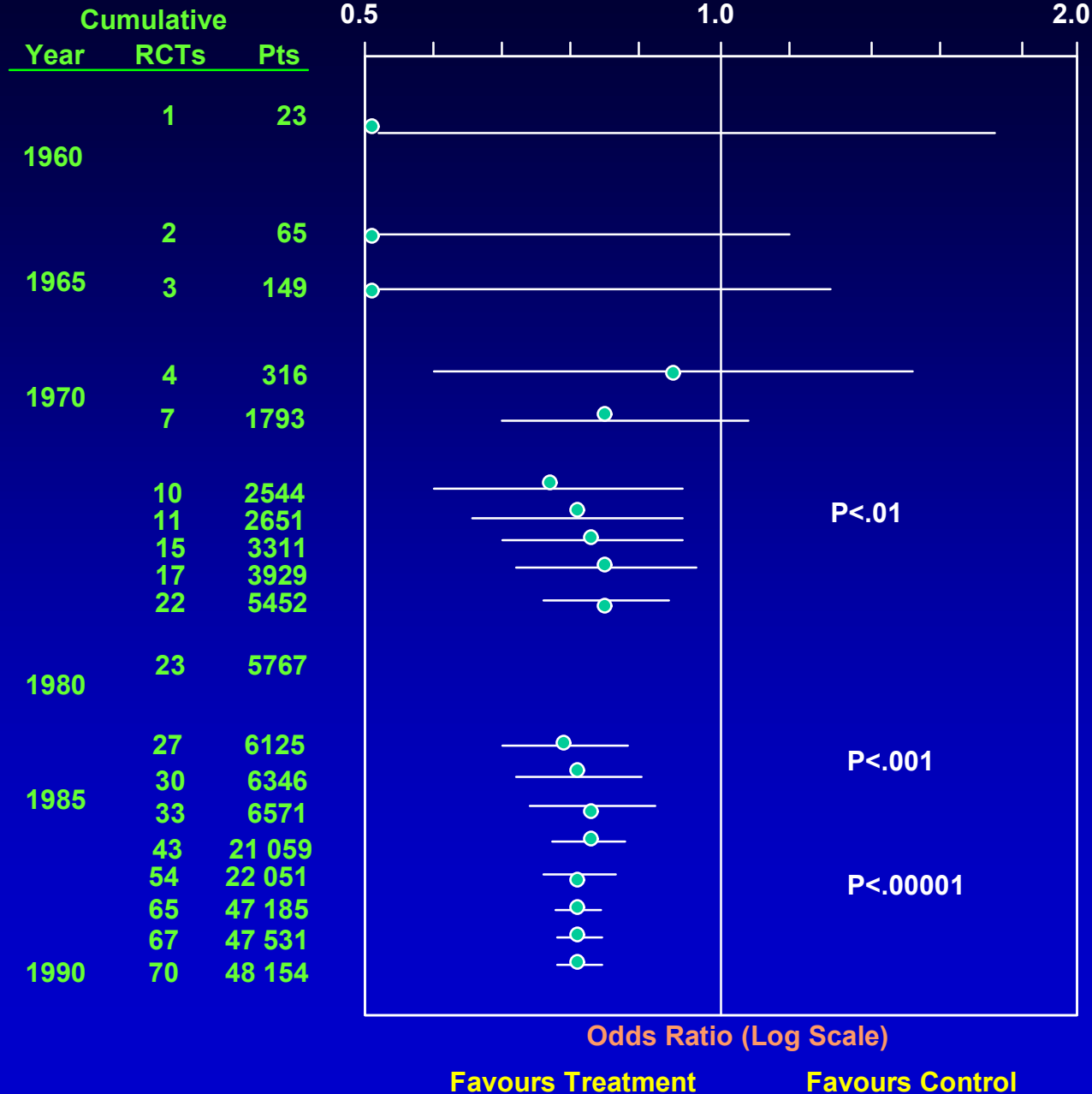


patient preference

research
evidence



Thrombolytic Therapy



Textbook/Review Recommendations

	Routine	Specific	Rare/Never	Experimental	Not Mentioned
					21
					5
				1	10
				1	2
				2	8
					7
					8
		1			12
M		1		8	4
M		1		7	3
M		1			
M	5	2		2	1
M	15	8			1
M	6	1			

Prophylactic Lidocaine in MI

Outcome = death

Favors treatment

Favors placebo

Relative risk (CI)

0.5

1

1.5

2

Year # RCTs Cumulative Subjects

1970 2 304

1974 9 1451

1976 11 1686

1978 12 1986

1985 14 8412

1988 15 8745

Recommendations		
Yes	No	Not mentioned

9	1	1
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8	0	2
---	---	---

5	0	2
---	---	---

8	0	3
---	---	---

14	4	6
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4	2	1
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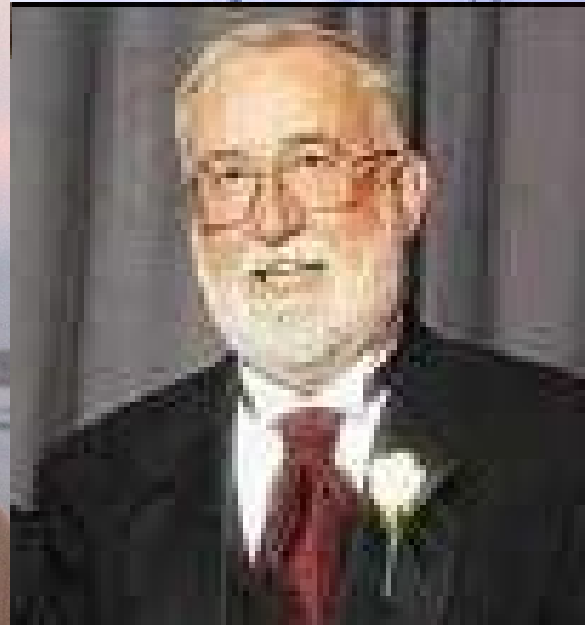
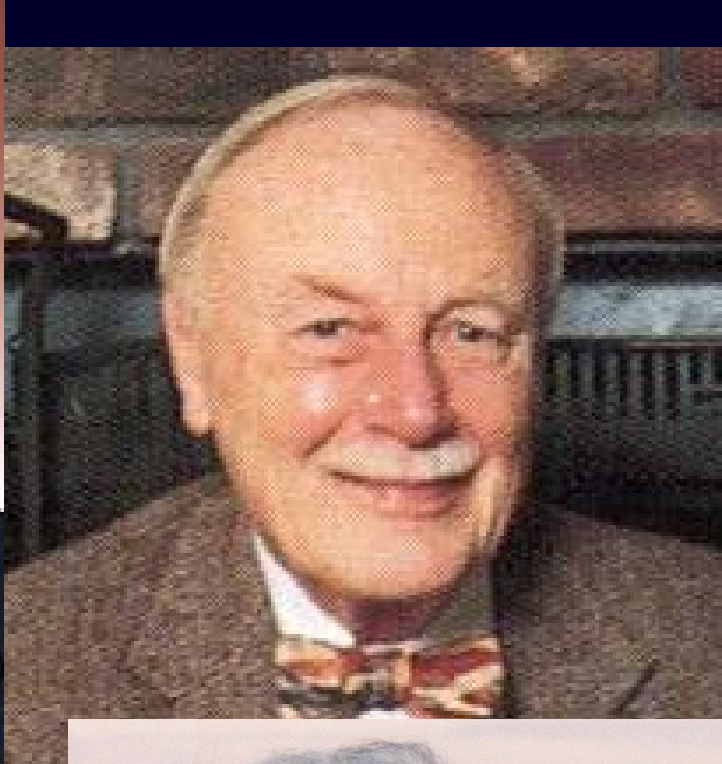
1989 - 1st meta-analysis published

Additional principle of EBM

- systematic summaries of best evidence should inform clinical decisions
- need for systematic reviews
- need for practice guidelines

Limitations of Cochrane Reviews

- for clinicians
 - long, complex, confusing, inaccessible
- for guideline developers
 - best estimate of effect of alternatives on all patient-important outcomes
 - often don't include all outcomes
 - when they do, difficult to efficiently access evidence summaries



GRADE

- system for rating quality of evidence and grades of recommendations
- system for developing recommendations
- system to guide interpretation of systematic reviews to inform clinical guidelines and clinical decisions

Rating quality of evidence

- categories of quality
 - high, moderate, low, very low
- RCTs start high
- 5 factors can lower quality?
 - detailed design and execution
 - inconsistency
 - indirectness
 - imprecision
 - reporting bias

Compression stockings compared with no compression stockings for people taking long flights

Patients or population: Anyone taking a long flight (lasting more than 6 hours)

Settings: International air travel

Intervention: Compression stockings¹

Comparison: Without stockings

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk Without stockings	Corresponding risk With stockings				
Symptomatic deep vein thrombosis (DVT)	See comment	See comment	Not estimable	2821 (9 studies)	See comment	0 participants developed symptomatic DVT in these studies.
Symptom-less deep vein thrombosis	Low risk population ²		RR 0.10 (0.04 to 0.26)	2637 (9 studies)	⊕⊕⊕⊕ High	
	10 per 1000	1 per 1000 (0 to 3)				
	High risk population ²					
	30 per 1000	3 per 1000 (1 to 8)				
Superficial vein thrombosis	13 per 1000	6 per 1000 (2 to 15)	RR 0.45 (0.18 to 1.13)	1804 (8 studies)	⊕⊕⊕○ Moderate ³	
Oedema Post-flight values measured on a scale from 0, no oedema, to 10, maximum oedema.	The mean oedema score ranged across control groups from 6 to 9.	The mean oedema score in the intervention groups was on average 4.7 lower (95% CI -4.9 to -4.5).		1246 (6 studies)	⊕⊕○○ Low ⁴	

Role of Cochrane within EBM

- systematic summaries of best evidence should guide clinical decision-making
- Cochrane central to EBM
 - enormous impact and contribution
 - but hasn't met full potential
- full potential may soon be met