

How to Present Medical Evidence to Patients

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MY BELIEF



All Health Care Providers should
have their practice underpinned
by the best available evidence

Evidence-Based Practice (EBP)

EVIDENCE-BASED PRACTICE

WHAT IT ISN'T

IT'S NOT ABOUT GUIDELINES

140/90
 $< 6.5\%$
 < 2.0

GUIDELINES RARELY
 CONSIDER
 PATIENT
 PREFERENCES

IT'S NOT ABOUT RCTs

ONLY ARE LIMITED
 BUT THEY ONLY
 HELP
 INFORM DECISIONS

IT'S NOT CHECKBOX MEDICINE

PEOPLE
 DON'T
 FIT
 INTO BOXES



IT'S NOT NECESSARILY ABOUT INFLUENCING OUTCOMES



IT'S NOT SOMETHING "NEW"



DOING THE
 RIGHT THING
 IS NOT A
 NEW IDEA

IT'S NOT ABOUT IGNORING BASIC SCIENCE

WE NEED TO
 UNDERSTAND
 HOW IT
 WORKS

IT'S NOT ABOUT ZERO COMPETING INTERESTS

RESEARCH
 COSTS MONEY
 SOMEBODY HAS TO
 PAY FOR IT

WHAT IT IS

IT'S A WAY OF THINKING

BEST AVAILABLE EVIDENCE
 USED IN A HIERARCHICAL WAY TO
 ANSWER CLINICAL QUESTIONS



USING CLINICAL EXPERTISE

Diagnostician
 Knowledge Broker
 Communicator
 Being Kind & Careful

INFORMING PATIENTS

ELICITING
 INTEGRATING PREFERENCES

Evidence-based
 practice IS

SIMPLY
 DOING
 THE
 RIGHT
 THING



IT'S NOT ABOUT GUIDELINES

140/90
 $< 6.5\%$
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IT'S NOT CHECKBOX MEDICINE

PEOPLE
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IT'S NOT SOMETHING "NEW"



DOING THE
 RIGHT THING
 IS NOT A
 NEW IDEA

IT'S NOT ABOUT SAVING MONEY



RATIONING
 IS NOT THE
 MOTIVE

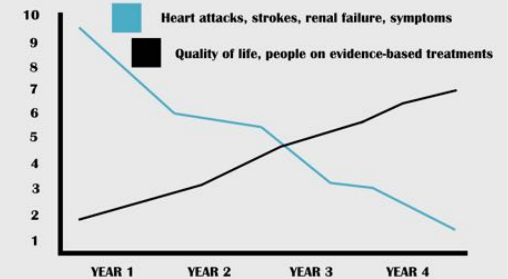
IT'S NOT ABOUT RCTs



RCTs ARE USEFUL
 BUT THEY ONLY
 HELP
 INFORM DECISIONS

$p < 0.05 \neq \text{GOOD}$ $p > 0.05 \neq \text{BAD}$

IT'S NOT NECESSARILY ABOUT INFLUENCING OUTCOMES



IT'S NOT ABOUT IGNORING BASIC SCIENCE



WE NEED TO
 UNDERSTAND
 HOW IT
 WORKS

IT'S NOT ABOUT ZERO COMPETING INTERESTS

RESEARCH
 COSTS MONEY
 SOMEBODY HAS TO
 PAY FOR IT



WE NEED TO
 UNDERSTAND
 BIAS IS
 EVERYWHERE

WHAT IT IS



IT'S A WAY OF THINKING



EVIDENCE-BASED PRACTICE

BEST AVAILABLE EVIDENCE

USED IN A **HIERARCHICAL** WAY TO
ANSWER **CLINICAL QUESTIONS**

Patient
Intervention
Comparator
Outcome



USING CLINICAL EXPERTISE

Diagnostician

Knowledge Broker

Communicator

Being Kind & Careful



INFORMING PATIENTS

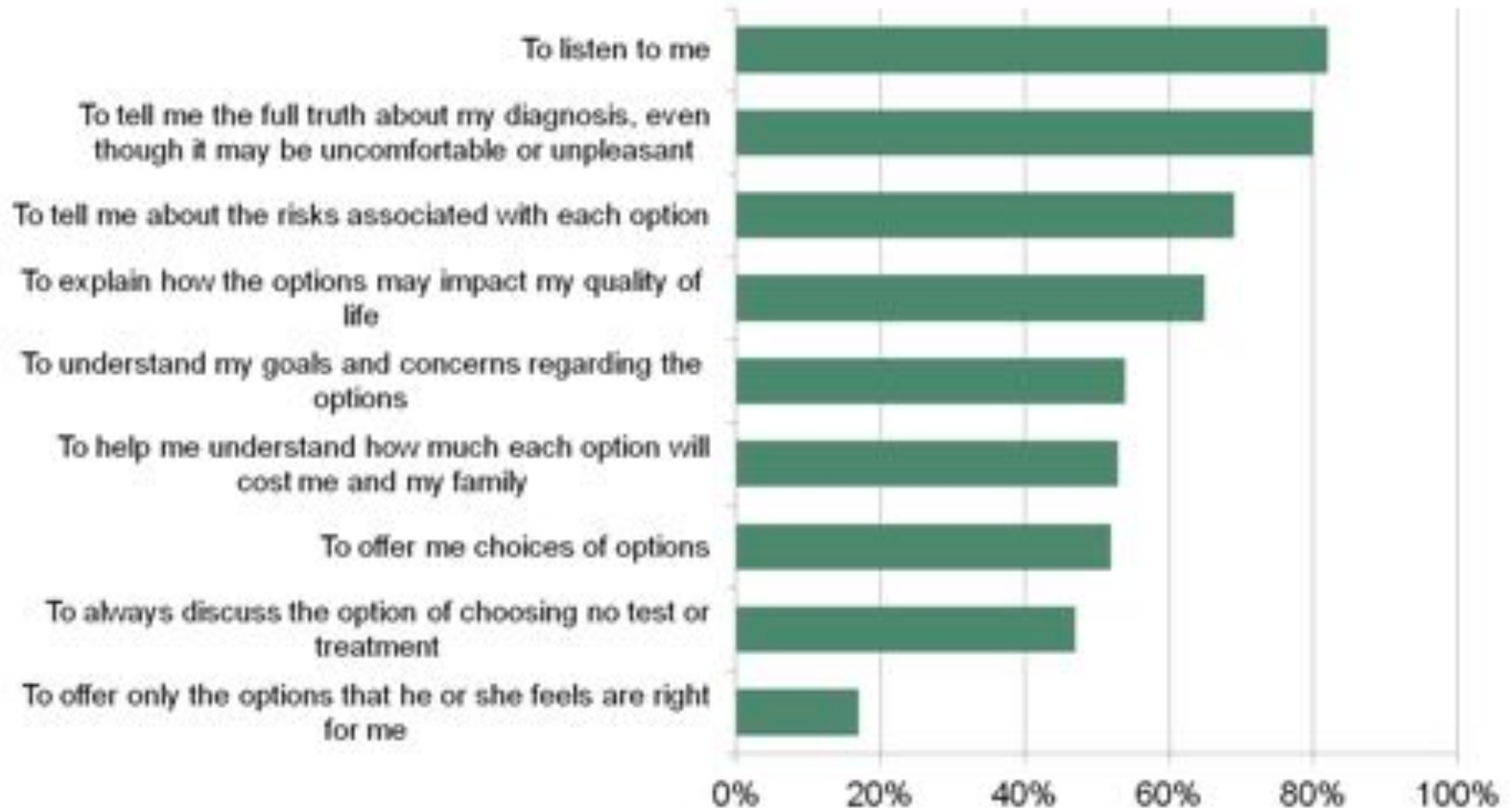
**&
ELICITING
&**

INTEGRATING PREFERENCES



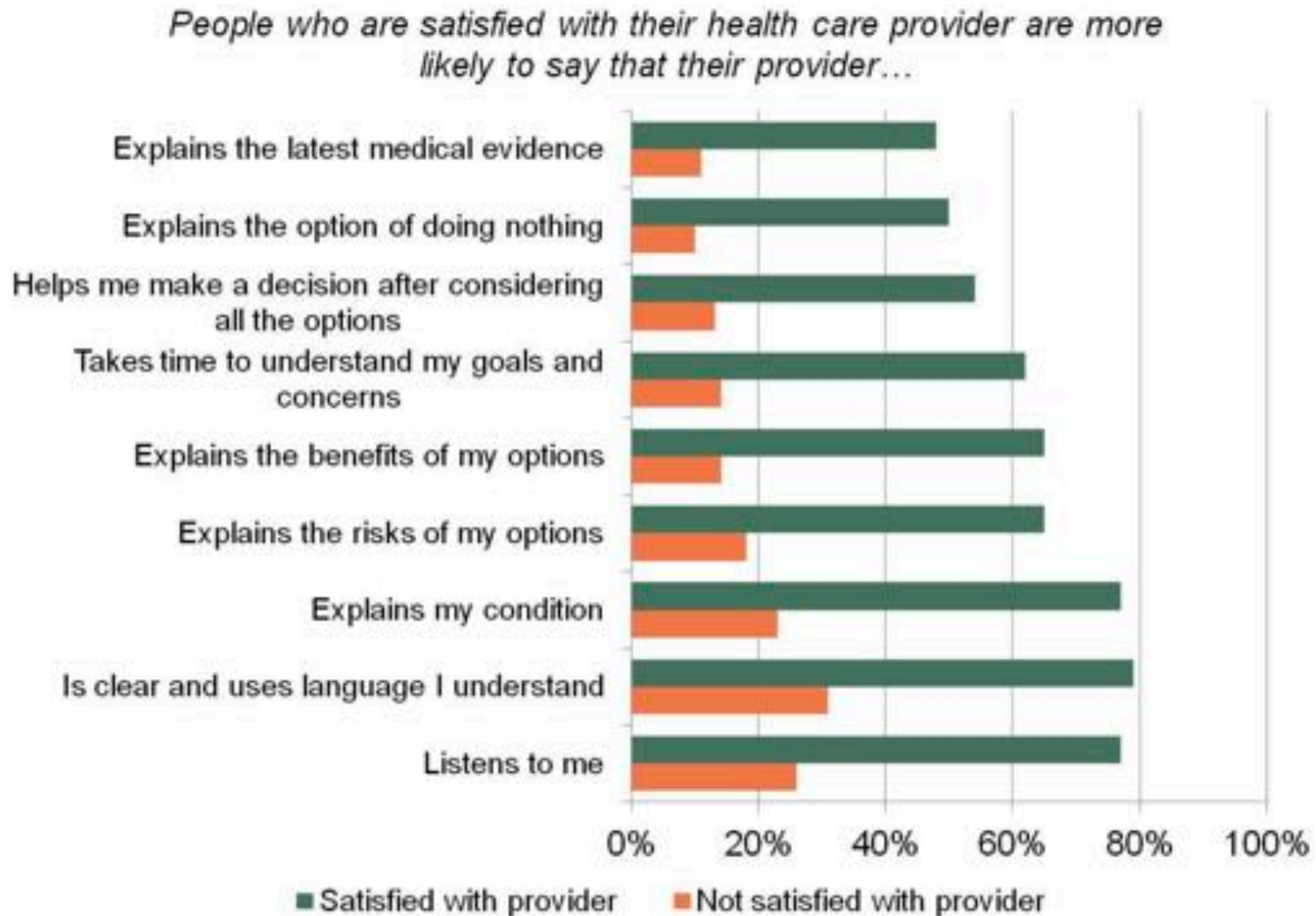
People want involvement in evidence and decisions

Bars show the percent of people surveyed who strongly agree with the statement: "I want my provider..."



Communicating with patients on health care evidence.
Discussion Paper, Institute of Medicine, Washington, DC 2012

Satisfaction is linked to shared decisions



Communicating with patients on health care evidence.
Discussion Paper, Institute of Medicine, Washington, DC 2012

“Most patients cannot recall a time when their care provider discussed scientific evidence as the basis for better care”

Communicating with patients on health care evidence.
Discussion Paper, Institute of Medicine, Washington, DC 2012

Many courts (UK, US, CA)

“The reasonable-patient standard ... requires physicians and other health care practitioners to disclose all relevant information about the risks, benefits, and alternatives of a proposed treatment that an **OBJECTIVE PATIENT** would find material in making an intelligent decision as to whether to agree to the proposed procedure”



PATIENT REVOLUTION

=

Clinicians and patients working in partnership

KNOWING THE MAGNITUDE OF THE BENEFIT OF
TREATMENT

KNOWING the POTENTIAL HARMS - SIDE EFFECTS,
COST AND INCONVENIENCE

REALIZING HEALTH DECISIONS ARE YOUR DECISIONS

Why Most Clinical Research Is Not Useful

John P. A. Ioannidis^{1,2*}

“The problem of non-useful research should not be seen as a blame game against a specific group (e.g., clinical researchers) but instead should be seen as an opportunity to improve.”

“Much current public funding could move from preclinical research to useful clinical research” - pre-clinical funded by industry, blue-sky research by the public

“Instead of trying to make a prolific researcher of every physician, training physicians in understanding research methods and evidence-based medicine may also help improve the situation by instilling healthy skepticism and critical thinking skills.”

Why Most Clinical Research Is Not Useful

John P. A. Ioannidis^{1,2*}

“Overall, not only are most research findings false, but, furthermore, most of the true findings are not useful.”

Evidence Issues

Much of research is not going to be “right”

One study likely proves nothing - need reproducibility

“The evidence for nonreproducibility in basic and preclinical biomedical research is compelling” John Ioannidis

Cohort trials don't prove causation

Research does go unpublished - but large studies do get reported



“Science can be used to inform clinical decisions, but cannot definitively inform value judgements, because the significance of potential benefits and harms of a therapy are in the eye of the beholder and will differ across individuals.”

Some clinical adages?

Ask - how do you feel about being involved in making decisions about your treatment?

It's OK if we say I don't know, let's look into it, it's your decision.

You and your patient's perception are not necessarily “right” and likely not the same

Patients' Expectations of the Benefits and Harms of Treatments, Screening, and Tests

A Systematic Review

Tammy C. Hoffmann, PhD; Chris Del Mar, MD, FRACGP

BENEFIT - 88% of study authors concluded that participants **overestimated benefits**

HARM - 67% **underestimated harm**

It's all about figuring out

The Chance

WITH NO
TREATMENT

VS

The Chance
WITH
TREATMENT

Ballpark risk estimate

Epidemiological data/cohort data
- Framingham, QRISK, FRAX,
CHA2DS2-VASc

Ballpark benefit estimate

RCT data

use the absolute benefit if
people are similar to those in
the studies or,

use the relative benefit and
apply it to the baseline risk

Key steps to communicating evidence

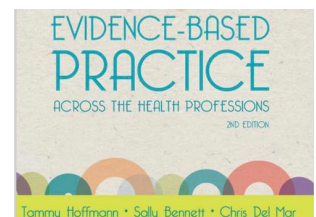
Understand the patient's (and family members') experiences and expectations.

Build partnerships.

Discuss the evidence, including a balanced discussion about uncertainties.

Present recommendations.

Check for understanding and agreement.



Risky Relative Adjectives

HOW

low is low

moderate is moderate

high is high



Evidence-based risk communication

“There is likely no single best method of communicating probabilities to patients but rather several good options with some better suited to certain risk scenarios.”

Recommended approaches

Need a time frame, main endpoints, ask what they know

GENERAL SUGGESTIONS - these are “relative”
use percentages (5%) or natural frequencies (5
out of 100) - BOTH?

use absolute terms

add bar graphs or icon arrays

use incremental risk format with icon arrays in
the same array

- **avoid use of NNTs**

if use relative risks add baseline risks

Approaches differ depending on outcome

Every patient is an experiment - dose and effect

Prevention - one will never know if it worked

Symptoms - we can usually figure out if it is working - but it is tricky

Diagnosis - pre- and post-test probabilities

Expectations

Prevention

The Absolute CVD Risk/Benefit Calculator

Framingham
Heart attacks + angina/coronary insufficiency + heart failure + strokes + intermittent claudication

QRISK[®]2-2014
Heart attacks + strokes

ACC/AHA ASCVD
CHD death + nonfatal heart attacks + fatal/nonfatal strokes

Age
 years

Gender
☒ Male ☐ Female

Smoker
☐ Yes ☒ No
CVD risk is reversed after 5-10 years of no smoking

Diabetes
☐ Yes ☒ No

Systolic Blood Pressure
 mmHg
Blood pressure should be prior to drug treatment
120 mmHg is used for baseline risk

On treatment for BP
☐ Yes ☒ No

Total Cholesterol
 mmol/L
Cholesterol should be prior to drug treatment
3 mmol/L is used for baseline risk.
[Click to change to mg/dL.](#)

HDL Cholesterol
 mmol/L
HDL should be prior to drug treatment
1.3 mmol/L is used for baseline risk.

Family History of Early CHD
 %

Relative Benefit: 30%
Benefit often has nothing to do with the effect on the surrogate marker. At present, you can only select one intervention at a time.

☐ Physical Activity
☐ Mediterranean Diet vs Low fat
☐ Vitamin/Omega-3 supplements
☒ BP meds (not atenolol/doxazosin)

Harm Of Intervention

- Types of side effects vary between drugs
- Having to stop drug due to intolerability NNH 10
- Inconvenience of surrogate remeasurements
- Drug Cost

☐ Low-mod intensity statins
☐ High intensity statins ☐ Fibrates
☐ Niacin ☐ Ezetimibe ☐ Metformin
☐ Sulfonylureas ☐ Insulins ☐ Glitazones
☐ GLPs ☐ DPP-4s ☐ Meglitinides
☐ SGLT2 ☐ Smoking Cessation
☐ ASA

Risk Time Period
10 years

☒ 74.0% No event
☒ 18.2% Total with an event
☒ 7.8% Number who benefit from treatment
NNT Number needed to treat
☒ 15.8% Baseline events using baseline factors alone
☒ 2.4% Additional events "caused" by risk factors

As with all risk calculators, calculated risk numbers are +/- 5% at best. [More information](#)

Calculate ballpark 10-yr risk of CVD - BP, chol, diabetes

Make estimate of benefit based on the best available evidence

Gives a list of adverse effects to discuss

cvdcalculator.com

Age	<input type="radio"/> <65	<input type="radio"/> 65-74	<input checked="" type="radio"/> 75+
TIA or stroke (at any time in the past)	<input type="checkbox"/>	CHF/LV dysfunction (diagnosed at any time in the past)	<input type="checkbox"/>
Prior MI, peripheral artery disease, or aortic plaque	<input type="checkbox"/>	Hypertension (controlled or uncontrolled)	<input checked="" type="checkbox"/>
Female	<input type="checkbox"/>	Diabetes Type I or II (controlled or uncontrolled)	<input type="checkbox"/>

<http://www.sparctool.com>

	PERCENT PER YEAR	
	annual risk of stroke/embolism	annual risk of major bleeding (intracranial bleeding, bleeding requiring hospitalization, Hgb decrease of > 20 g/L, or need for transfusion secondary to bleeding)
NO THERAPY	4.3%	0.6%
ASPIRIN	3.4%	1.1%
WARFARIN	1.4%	2.2%
DABIGATRAN 110	1.4%	1.8%
DABIGATRAN 150	0.9%	2.2%
RIVAROXABAN	1.4%	2.2%
APIXABAN	1.1%	1.5%

Calculate ballpark annual risk of stroke - based on risk factors- BP, chol, diabetes
 Make estimate of benefit based on the best available evidence - all agents
 Make estimate of a GI bleed



10 year fracture risk %

Major osteoporotic fracture (clinical spine, forearm, hip or shoulder fracture)/Hip

RISK FACTORS	Zero				One				Two			
BMI	35	30	25	20	35	30	25	20	35	30	25	20
Female												
50	2	3	3	3	4	4	5	5	6	6	7	8/1
60	5	6	6	7/2	7	9	10/1	10/4	11/1	13/2	14/2	16/6
70	8/1	9/2	10/2	11/4	11/2	13/3	15/4	17/7	16/4	18/6	21/7	25/12
80	14/4	16/5	19/7	21/11	20/8	23/10	27/13	31/20	28/14	33/18	38/22	43/32
Male												
50	2	2	2	2	3	3	4	4	4	5	6	6
60	3	4	4	4	5	6	6	7/1	7	8	10/1	10/2
70	4	5/1	6/1	6/2	6	7	8/2	9/4	8	10	12/4	13/6
80	6/2	7/3	9/4	9/5	9/4	11/5	13/7	14/10	13/7	16/9	19/12	21/16

Risk factors - Previous fracture “atraumatic”, Parent hip fracture, Smoker, Rheumatoid arthritis, Glucocorticoids - now or more than 3 months, >3 drinks a day

<https://therapeuticseducation.org/tools>

FRAX[®]

WHO Fracture Risk Assessment Tool

Misguided beliefs

Patients believe CVD “prevention” drugs produce a 70% absolute benefit over 5 years when at most only ~ 20-30% benefit is possible over a lifetime



Clin Med 2002;2:527-33



Risk of future illness CVD risk/benefit

(most people don't benefit despite a lifetime of treatment)



Assume a person's lifetime risk of CVD is that of a male with two CVD risk factors - roughly 50% (NEJM 2012;366:321-9)

Assume that with multiple risk factor modification we can reduce that risk relatively by 60% (VERY optimistic)

Risk goes from 50% ➡ 20%



30% of individuals BENEFIT



70% DO NOT despite a LIFETIME of treatment

Prescriber September 2015

Symptoms

You primarily need to know IF it works

Safety, cost and convenience

Older medications first - safety

Head-to-head studies are uncommon

Doses in the CPS are “wrong”

N-of-1 studies

Let the patient tell you

Symptom NNTs

PPIS, sildenafil - NNT ~2

NSAIDs, opioids - pain NNT ~3-5

Steroids - sore throat - NNT ~ 3, Bell's palsy - NNT ~10

Antibiotics - acute COPD exacerbation - NNT ~ 5

Topical antibiotics - bacterial conjunctivitis - NNT ~7

Antidepressants - severe depression - NNT ~10

Ipratropium - asthma attack - NNT ~11

Cholinesterase inhibitors - ADAS-Cog >4 - NNT ~10

Sleeping pills - improvement in sleep quality - NNT ~13

But you need to know what goes on in the placebo group

	If person “responds”, what is the % chance it was the medication	
Response in the placebo group	If Benefit 10% - NNT 10	If Benefit 20% - NNT 5
0%	~100%	~100%
20%	~33%	~50%
40%	~20%	~33%

Diagnosis

Likelihood Ratios

LRs are basically a ratio of the probability that a test result is correct to the probability that the test result is incorrect.

Pre-test probability (%)

➡ apply a LR

➡ post-test probability (%)

Rapid Antigen Group A Streptococcus Test to Diagnose Pharyngitis: A Systematic Review and Meta-Analysis

$$LR + = 10.8$$

$$LR - = 0.15$$

General practice clinic in Canada - people with a sore throat who have Strep ~10%

Prevalence	If positive Post test probability	If negative
1%	~10%	~0.2%
10%	~60%	~2%
40%	~90%	~10%

Table 4. Likelihood ratios and the impact on post test probabilities (modified by McGee 2002)⁸

Likelihood ratios		Approximate changes in post-test probabilities	
Values between 0 and 1 decrease the probability of disease			
0.1	Strong evidence	Large	-45%
0.2		Moderate	-30%
0.3			-25%
0.4		-20%	
0.5	Weak evidence	Slight	-15%
Likelihood ratio = 1		None	0%
Values greater than 1 increase the probability of disease			
2	Weak evidence	Slight	+15%
3			+20%
4			+25%
5		Moderate	+30%
6	+35%		
8		+40%	
10	Strong evidence	Large	+45%

Useful apps and on-line tools

MedCalX - calculate likelihood ratios from sensitivity and specificity AND post-test probability calculator



ROGERS 6:56 PM 83%

< Back Likelihood Ratios ⓘ

Sensitivity 90 %

Specificity 85 %

LR (pos) 6

LR (neg) 0.12

ROGERS 6:55 PM 83%

< Back Post-test Probability (LR) ⓘ

Pre-test probability 25 %

Likelihood Ratio 8

Post-test probability 72.7 %

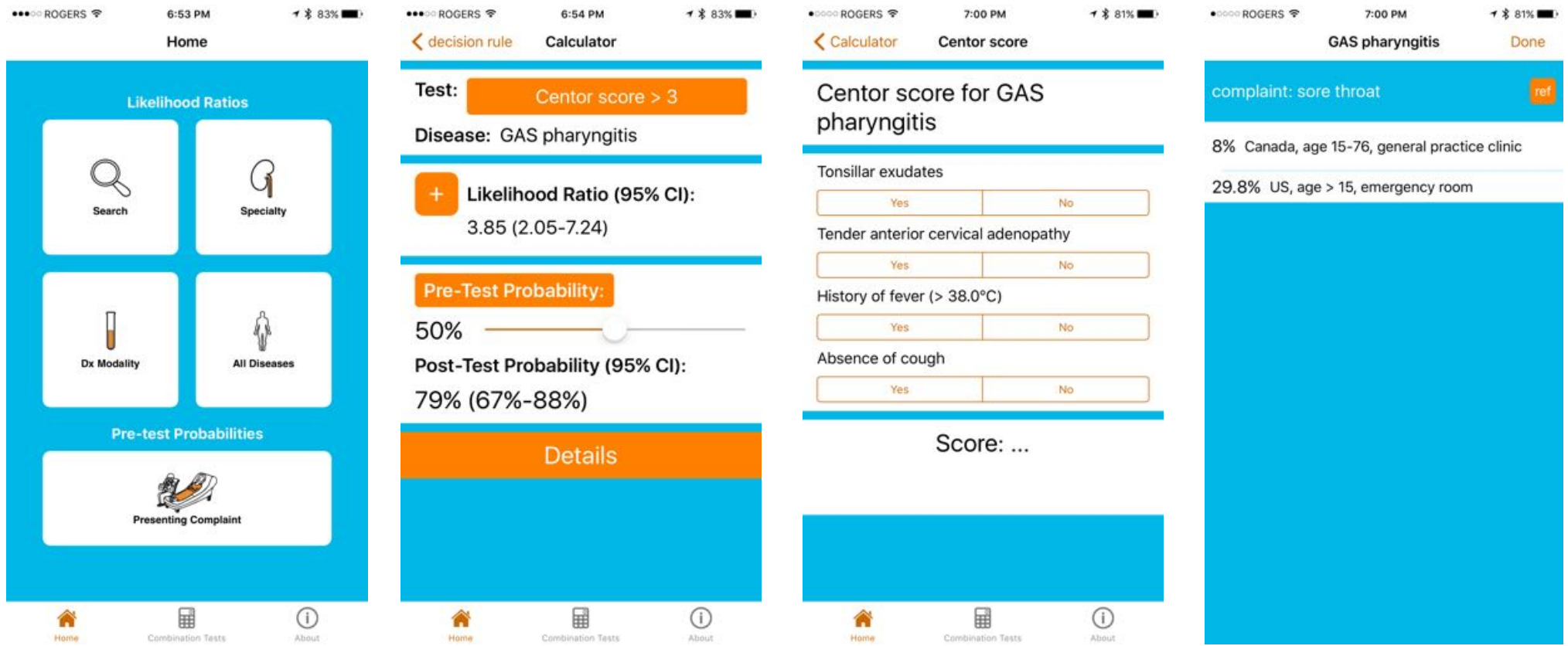
7	8	9
4	5	6
1	2	3
0	.	ⓧ

%

7	8	9
4	5	6
1	2	3
0	.	ⓧ

Useful apps and on-line tools

DxLogic - listing of LR and pre-test probabilities and a post-test calculator



Irdatabase.com - home of DxLogic

Useful apps and on-line tools

<http://www.thennt.com/home-lr/>

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Diagnosis (LR) Reviews

You'll find all of our diagnostic/likelihood ratio reviews, arranged by medical specialty, organ system, and alphabetically.

Diagnosis (LR) Reviews by Specialty

- Cardiology**
 - Aortic Dissection
 - Deep Venous Thrombosis (DVT)
 - Dyspnea Due to Heart Failure (With Chronic Respiratory Disease)
 - Dyspnea Due to Heart Failure (Without Chronic Respiratory Disease)
- Critical Care**
 - Aortic Dissection
 - Deep Venous Thrombosis (DVT)
- Geriatrics**
 - Hypovolemia
- Hematology**
 - Deep Venous Thrombosis (DVT)
- Infectious Disease**
 - Malaria in Returning Travelers
 - Osteomyelitis in Diabetic Patients
 - Pertussis (Whooping Cough)
 - Streptococcal Pharyngitis
- Neurology**
 - Hemorrhagic Stroke
 - Migraine

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Streptococcal Pharyngitis

Diagnostics and Likelihood Ratios, Explained

Positive Findings (Patient Has This)

Symptoms	Increased Disease Probability (Positive Likelihood Ratio)
Strep exposure in the past 2 weeks	1.3+ (1.3-2.8)
Myalgias	1.4+ (1.3-2.7)
No cough	1.3-1.7
History of sore throat	1.0-1.1
Reported fever	0.97-2.6
Headache	0.81-2.6
Nausea	0.76-3.1
Duration <3d	0.72-3.5

Signs on Physical Exam

Signs on Physical Exam	Increased Disease Probability (Positive Likelihood Ratio)
Tonsillar exudates	1.4+ (1.8-6.0)
Pharyngeal exudates	2.1+ (1.4-3.1)
Tonsillar or pharyngeal exudates	1.8+ (1.5-2.3)
Any Exudates	1.5-2.6
Tonsillar swelling/enlargement	1.4-3.1
Palatine petechiae	1.4+ (0.48-3.1)
Ant. Cervical lymph node tenderness	1.3-1.9
Measured temp >37.8°C	1.3-3.0
Male sex	0.87+ (0.72-1.05)
No coryza	0.86-1.6
Measured temp >=38.3°C	0.68-3.9
Pharynx injected	0.66-1.63
Ant. Cervical lymph node swollen/enlarged	0.47-2.9
Rash	0.06-35

Quicker Clinical History (Ignoring Age Modification)

Quicker Clinical History (Ignoring Age Modification)	Increased Disease Probability (Positive Likelihood Ratio)
4 Points	6.3+
3 Points	2.1+
2 Points	0.75
0 Points	0.16
1 Point	0.3

Negative Findings (Patient Doesn't Have This)

Symptoms	Decreased Disease Probability (Negative Likelihood Ratio)
Duration <3d	0.15-2.2
Reported fever	0.55-1.6

RELATED REVIEWS
OTHER EBM RESOURCES
MDCalc
BMJ Evidence Updates
JAMA Evidence - The Rational Clinical Exam Series

Useful apps and on-line tools

<http://getthediagnosis.org/>

GetTheDiagnosis.org: A Database of Sensitivity and Specificity

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GetTheDiagnosis is a collaborative database for health professionals to share knowledge on the **sensitivity** and **specificity** of history questions, physical exam findings, and lab and imaging tests. You can use it to look up sensitivity and specificity, or submit an entry of your own from the literature!

We are currently up to **300** diagnoses and **1102** findings, for a total of **1624** entries! Follow our [newest entries](#) with our [RSS feed](#).

Helicobacter pylori: Sensitivity and Specificity

Introduction: From UpToDate (<http://www.utdol.com/online/content/topic.do?topicKey=acidpep/4732>):

The ACG guidelines made the following conclusions:

- Testing for H. pylori should be performed only if the clinician plans to offer treatment for positive results.
- Testing is indicated in patients with active peptic ulcer disease, a past history of documented peptic ulcer or gastric MALT lymphoma.
- The test-and-treat strategy for H. pylori (ie, test and treat if positive) is a proven management strategy for patients with uninvestigated dyspepsia who are under the age of 55 years and have no "alarm features" (bleeding, anemia, early satiety, unexplained weight loss, progressive dysphagia, odynophagia, recurrent vomiting, family history of GI cancer, previous esophagogastric malignancy).
- Deciding which test to use in which situation relies heavily upon whether a patient requires evaluation with upper endoscopy and an understanding of the strengths, weaknesses, and costs of the individual test.

[[Edit Diagnosis](#)] [[Merge dx](#)] [[Add prevalence](#)]

Tags: [Gastrointestinal Problem Infection](#) [Tag this Diagnosis](#)



The sensitivity and specificity of findings for Helicobacter pylori are listed below. See the left navigation bar to change the display.

Sensitive and Specific Findings

Finding	Sensitivity	Specificity	Comments, Study
Antral biopsy urease test ↗	90%	95%	[sens/spec is per UpToDate] One reason for lack of specificity: If specimen contains less common non-pylori gastric helicobacters, which give only weakly positive results in the biopsy urease test. Positive identification of these bacteria requires visualization of the characteristic long, tight spirals in histologic sections. • Adapted from Harrison's Online Chapter 144. Helicobacter pylori infections Study: Am J Gastroenterol. 2007 Aug;102(8):1808-25. PMID 17608775
Urea breath test ↗	93%	92%	in patients with an UGIB. Study: Am J Gastroenterol. 2006 Apr;101(4):848-63. PMID 16494583

Specific Findings

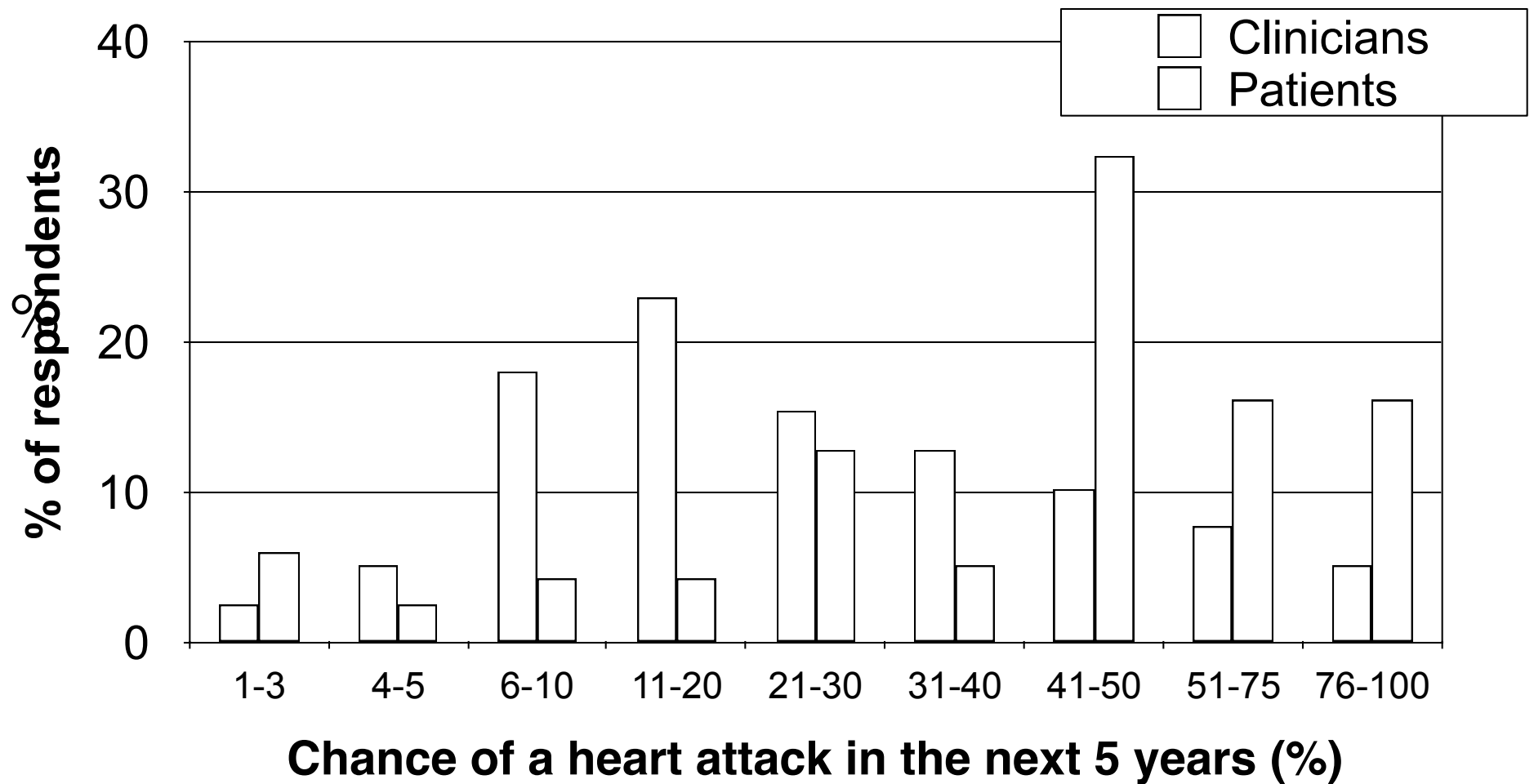
Finding	Sensitivity	Specificity	Comments, Study
Biopsy culture ↗	45%	98%	In addition to diagnosis, biopsy culture allows for determination of antibiotic sensitivity Study: Am J Gastroenterol. 2006 Apr;101(4):848-63. PMID 16494583
Rapid urease test ↗	67%	93%	in patients with UGIB. Study: Am J Gastroenterol. 2006 Apr;101(4):848-63. PMID 16494583
Biopsy histology ↗	70%	90%	in patients with UGIB. Study: Am J Gastroenterol. 2006 Apr;101(4):848-63. PMID 16494583

Sensitive Findings

Finding	Sensitivity	Specificity	Comments, Study
Serology ↗	88%	69%	in patients with UGIB Study: Am J Gastroenterol. 2006 Apr;101(4):848-63. PMID 16494583
Stool antigen test ↗	87%	70%	in patients with UGIB Study: Am J Gastroenterol. 2006 Apr;101(4):848-63. PMID 16494583

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What is "High Risk"

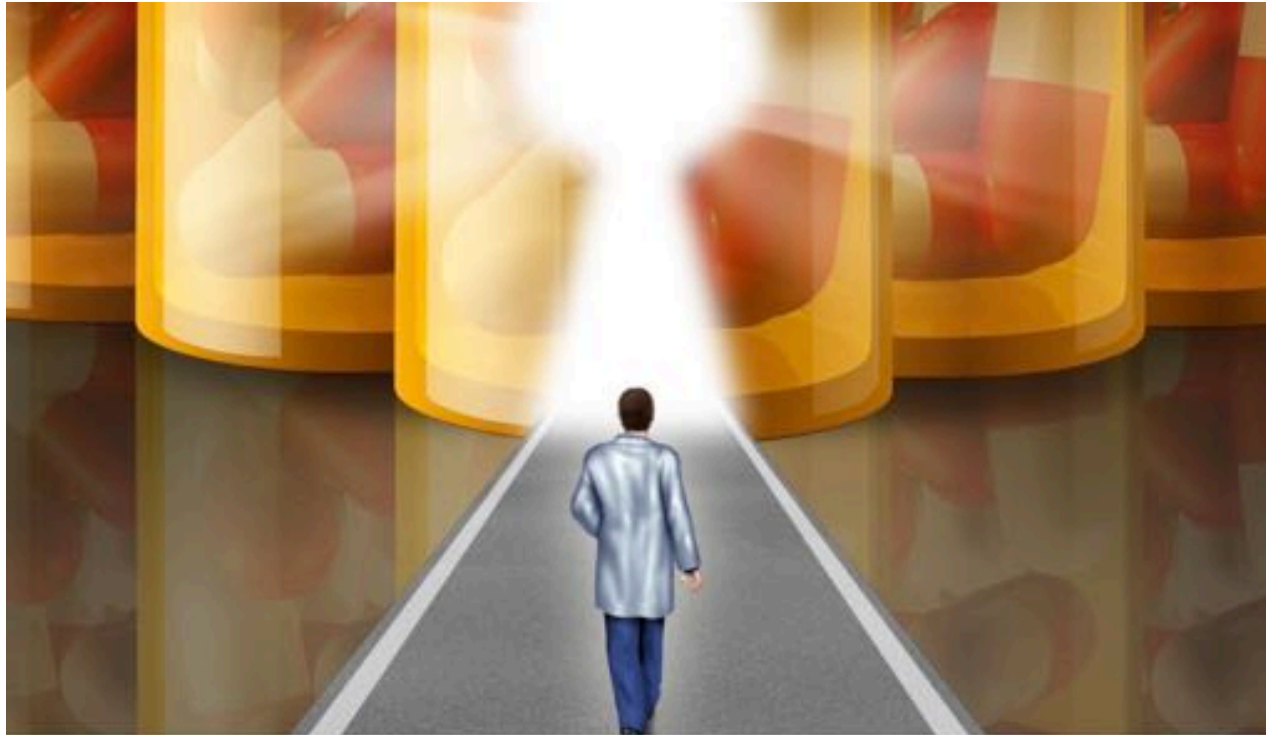


Beware of “qualitative quantification”

Qualitative descriptor	EU assigned frequency	Mean frequency estimated by participants (n=200)
Very common	>10%	65% (24.2)
Common	1–10%	45% (22.3)
Uncommon	0.1–1%	18% (13.3)
Rare	0.01–0.1%	8% (7.5)
Very rare	<0.01%	4% (6.7)

Values are mean (SD).

Shameless self promotion



PREVIOUS YEARS' REGISTRANT TESTIMONIALS:

"This course definitely changed my practice"

"This is the most influential course I have ever attended"

"Nice to hear evidence instead of marketing messages"



28TH ANNUAL
Best Science Medicine Course
Formerly The Drug Therapy Decision Making Course – 25 years
Friday, April 7, 2017 and Saturday, April 8, 2017
The Fairmont Waterfront – 900 Canada Place Way, Vancouver, BC

April 7/8, 2017 - the Fairmount Waterfront
<http://bestsciencemedicine.com>

Schedule

FRIDAY, APRIL 7, 2017

07:00 Registration (Muffins & Coffee) Chairs – Mike Allan and James McCormack

"Laugh yourself into stitches" (Twelfth Night) THE START

08:00	Bless thee, bully doctor!	Robert Rangno
08:05	Shakespeare brings greetings from afar	Christopher Gaze
08:20	Much ado about nothing – and so much more	Mike Allan and James McCormack

"The game is afoot" (King Henry IV - Part 1) CVD

09:00	Urgent BP numbers – "all's well that ends well?"	Julian Marsden
09:20	Lowering BP numbers – is there "too much of a good thing?"	Mike Allan
09:40	Questions	
09:50	Bleeding in patients on antithrombotic therapy – "The short and the long of it"	Peter Loewen
10:10	Questions	
10:20	Refreshment Break	

"It was Greek to me" (Julius Caesar) COMMUNICATION

10:40	Speaking with patience – "Knock, knock! Who's there?"	Tracy Monk
11:00	Communication of evidence – "what's in a name?"	James McCormack
11:20	Questions	
11:30	"The Comedy of Errors" in medicine and how to prevent them	Kam Shojania
11:50	"Make short shrift" of 5 key pediatric studies	Tina Korowmyk
12:00	Questions	
12:10	Lunch	

"Eaten me out of house and home" (King Henry IV – Part II) POTPOURRI

13:00	"The short and the long of it" – Two award winning resident presentations	Medical Residents
13:20	NSAIDs myths – "All that glitters is not gold"	Adrienne Lindblad
13:40	Preventing infections in hospital – "Out, damned spot! Out"	Victor Leung
14:00	Questions	
14:20	Refreshment Break	