

Making evidence-based medicine work for individual patients

Prof dr Neal Maskrey

Keele University
ACTA, University of Amsterdam





Joan. Aged 84 years

PMH: MIs x2; heart failure;
presumed osteoporosis (#hip,
Colles #; gout, CRF.

Rx:

Simvastatin

Digoxin

Furosemide

Allopurinol

Alendronate

Ca & Vitamin D

Bisoprolol

Ramipril

Aspirin

Lansoprazole

New problem:

Atrial fibrillation

Chad₂Vasc₂ score 5

Has-Bled score 3

**Joan is your next patient.
What would you want to
discuss in your consultation
with Joan?**

Atrial fibrillation

NICE CG 180

- Use the [CHA2DS2-VASc](#) stroke risk score to assess stroke risk in people with any of the following:
 - symptomatic or asymptomatic paroxysmal, persistent or permanent atrial fibrillation
 - atrial flutter
 - a continuing risk of arrhythmia recurrence after cardioversion back to sinus rhythm.
- Use the [HAS-BLED](#) score to assess the risk of bleeding in people who are starting or have started anticoagulation. Offer modification and monitoring of the following risk factors:
 - uncontrolled hypertension
 - poor control of international normalised ratio (INR) ('labile INRs')
 - concurrent medication, for example concomitant use of aspirin or a non-steroidal anti-inflammatory drug (NSAID)
 - harmful alcohol consumption.
- When discussing the benefits and risks of anticoagulation, explain to the person that:
 - for most people the benefit of anticoagulation outweighs the bleeding risk
 - for people with an increased risk of bleeding the benefit of anticoagulation may not always outweigh the bleeding risk, and careful monitoring of bleeding risk is important.
- Do not withhold anticoagulation solely because the person is at risk of having a fall.

Atrial fibrillation

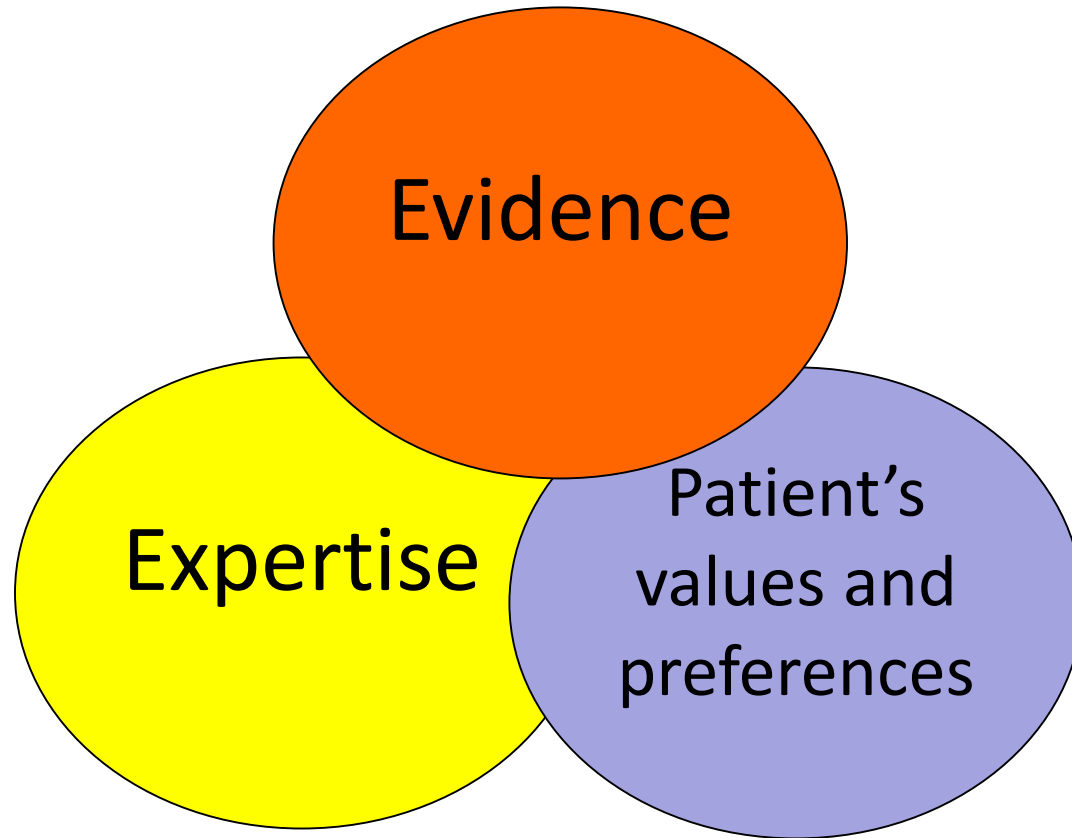
NICE CG 180

- Do not offer stroke prevention therapy to people aged under 65 years with atrial fibrillation and no risk factors other than their sex (that is, very low risk of stroke equating to a [CHA2DS2-VASc](#) score of 0 for men or 1 for women).
- Anticoagulation may be with apixaban, dabigatran etexilate, rivaroxaban or a vitamin K antagonist.
- Consider anticoagulation for men with a [CHA2DS2-VASc](#) score of 1. Take the bleeding risk into account.
- Offer anticoagulation to people with a [CHA2DS2-VASc](#) score of 2 or above, taking bleeding risk into account.
- Discuss the options for anticoagulation with the person and base the choice on their clinical features and preferences.

What is evidence-based medicine?

EBP is "the conscientious, explicit and judicious use of current best evidence in **making decisions** about the care of the **individual patient**. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research."

Sackett D, 1996

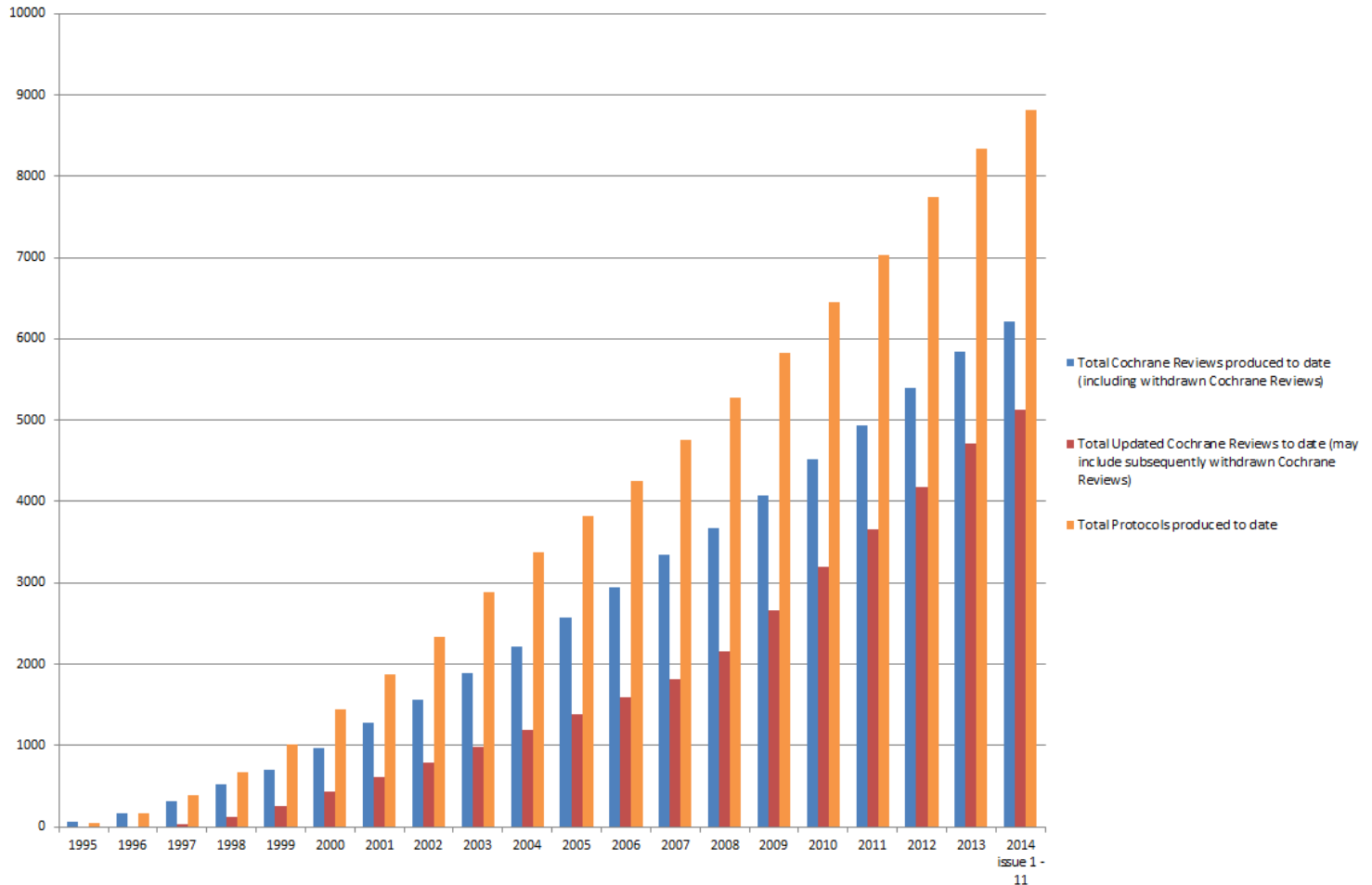


Evidence

Expertise

Patient's
values and
preferences

What is evidence-based medicine?





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Acute heart failure (CG187)

October 2014

Acute kidney injury (CG169)

August 2013

Acute upper gastrointestinal bleeding: management (CG141)

June 2012

Acutely ill patients in hospital (CG50)

July 2007

Advanced breast cancer (update) (CG81)

July 2014

Alcohol-use disorders: Diagnosis and clinical management of alcohol-related physical complications (CG100)

June 2010

Alcohol-use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence (CG115)

February 2011

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New criteria for diagnosis of **infective endocarditis**: utilization of specific echocardiographic findings

DT Durack, AS Lukes, DK Bright, DE Service - The American journal of ..., 1994 - Elsevier
purpose: This study was designed to develop improved criteria for the diagnosis of **infective endocarditis** and to compare these criteria with currently accepted criteria in a large series of cases. patients and methods: A total of 405 consecutive cases of suspected **infective ...**
Cited by 2362 [Related articles](#) [All 8 versions](#) [Cite](#) [Save](#)

Proposed modifications to the Duke criteria for the diagnosis of **infective endocarditis**

JS Li, DJ Sexton, N Mick, R Nettles... - Clinical infectious ..., 2000 - cid.oxfordjournals.org
Abstract Although the sensitivity and specificity of the Duke criteria for the diagnosis of **infective endocarditis** (IE) have been validated by investigators from Europe and the United States, several shortcomings of this schema remain. The Duke IE database contains ...
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Infective endocarditis in the antibiotic era

PI Lerner, L Weinstein - New England Journal of Medicine, 1966 - Mass Medical Soc
IMPORTANT contributions to our knowledge and understanding of **infective endocarditis** were made by a number of students of this disease in the first third of this century. Thayer, 1 among others, preferred the term **infective endocarditis** for this disorder, giving it equal ...
Cited by 715 [Related articles](#) [All 6 versions](#) [Cite](#) [Save](#)

... of **Infective Endocarditis** Guidelines From the American Heart Association: A Guideline From the American Heart Association Rheumatic Fever, **Endocarditis**, and ...

W Wilson, KA Taubert, M Gewitz, PB Lockhart... - Circulation, 2007 - Am Heart Assoc
Guidelines From the American Heart Association: A Guideline From the American Heart Association Rheumatic Fever, **Endocarditis**, and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on ...
Cited by 1893 [Related articles](#) [All 16 versions](#) [Cite](#) [Save](#) [More](#)

Infective endocarditis: an analysis based on strict case definitions

CF Von Reyn, BS LEVY, RD ARBEIT... - Annals of Internal ..., 1981 - Am Coll Physicians
Methods Charts were reviewed on 123 patients discharged from the hospital from 1 January 1970 to 29 June 1977 with a diagnosis of active **infective endocarditis**. The entire hospital course of each patient was reviewed. The following data were abstracted from the ...
Cited by 837 [Related articles](#) [All 3 versions](#) [Cite](#) [Save](#)

[HTML] Guidelines on the prevention, diagnosis, and treatment of **infective endocarditis** (new version 2009)

[G Habib](#), B Hoen, P Tornos, F Thuny... - European heart ..., 2009 - Eur Soc Cardiology

What is evidence-based medicine?

EBP is "the conscientious, explicit and judicious use of current best evidence in **making decisions** about the care of the **individual patient**. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research."

Sackett D, 1996



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BMJ. 2003 Dec 20;327(7429):1459-61.

Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials.

Smith GC, Pell JP.

Department of Obstetrics and Gynaecology, Cambridge University, Cambridge CB2 2QQ. gc2s2@cam.ac.uk

Republished in:

Int J Prosthodont. 2006 Mar-Apr;19(2):126-8.

OBJECTIVES: To determine whether parachutes are effective in preventing major trauma related to gravitational challenge. **DESIGN:** Systematic review of randomised controlled trials. **DATA SOURCES:** Medline, Web of Science, Embase, and the Cochrane Library databases; appropriate internet sites and citation lists. **STUDY SELECTION:** Studies showing the effects of using a parachute during free fall. **MAIN OUTCOME MEASURE:** Death or major trauma, defined as an injury severity score > 15. **RESULTS:** We were unable to identify any randomised controlled trials of parachute intervention. **CONCLUSIONS:** As with many interventions intended to prevent ill health, the effectiveness of parachutes has not been subjected to rigorous evaluation by using randomised controlled trials. Advocates of evidence based medicine have criticised the adoption of interventions evaluated by using only observational data. We think that everyone might benefit if the most radical protagonists of evidence based medicine organised and participated in a double blind, randomised, placebo controlled, crossover trial of the parachute.



National Institute for
Health and Clinical Excellence

Issue date: October 2009

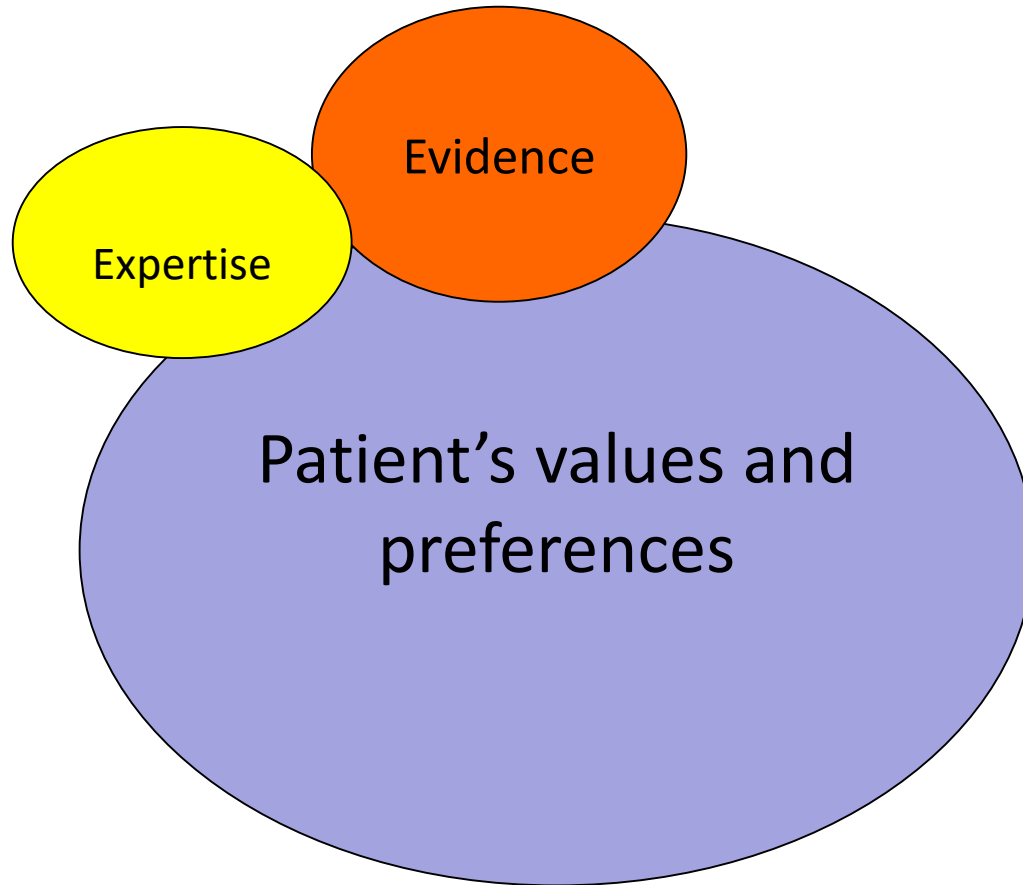
Public Health Guidance

Jumping out of airplanes

NICE clinical guideline 90
Developed by the National Collaborating Centre for Mental Health

“If you have to
do this, always
use a parachute”





Two sources of expertise

Clinician's expertise	Patient's expertise
Diagnosis	Experience of illness
Disease aetiology	Social circumstances
Prognosis	Attitude to risk
Treatment options	Preferences
Outcome probabilities	Values



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**Joan is your next patient.
What would you want to
discuss in your consultation
with Joan?**

Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: implications for pay for performance.

Boyd et al. JAMA. 2005 Aug 10;294(6):716-24.



- For a hypothetical 79-year-old woman with chronic obstructive pulmonary disease, type 2 diabetes, osteoporosis, hypertension, and osteoarthritis, we aggregated the recommendations from the relevant guidelines.
- The hypothetical patient would be prescribed 12 medications and a complicated nonpharmacological regimen.
- Adverse interactions between drugs and diseases could result.



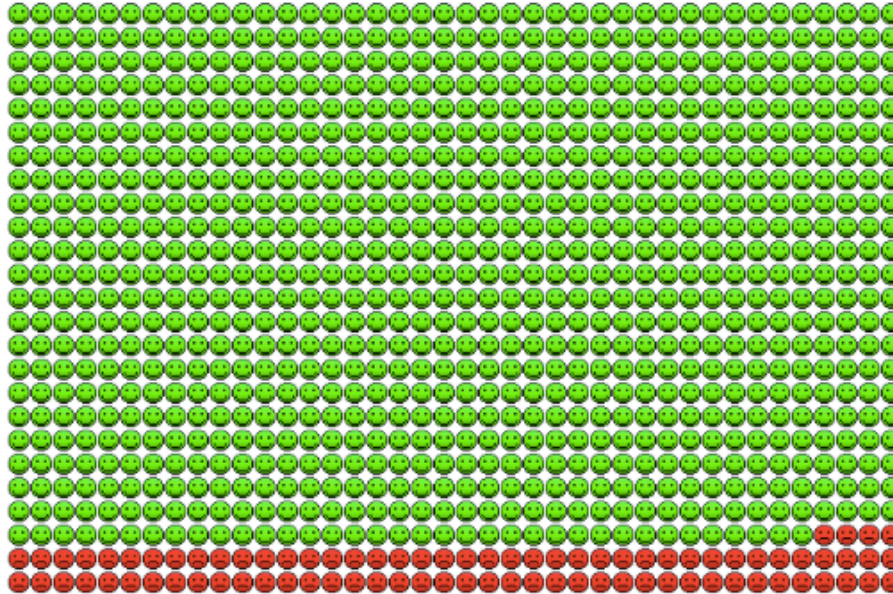
Atrial fibrillation

Chad₂Vasc₂ score 5

Has-Bled score 3

In the next year, if there were 1000 people with a Chad₂vasc₂ score of 5, how many would have a stroke?

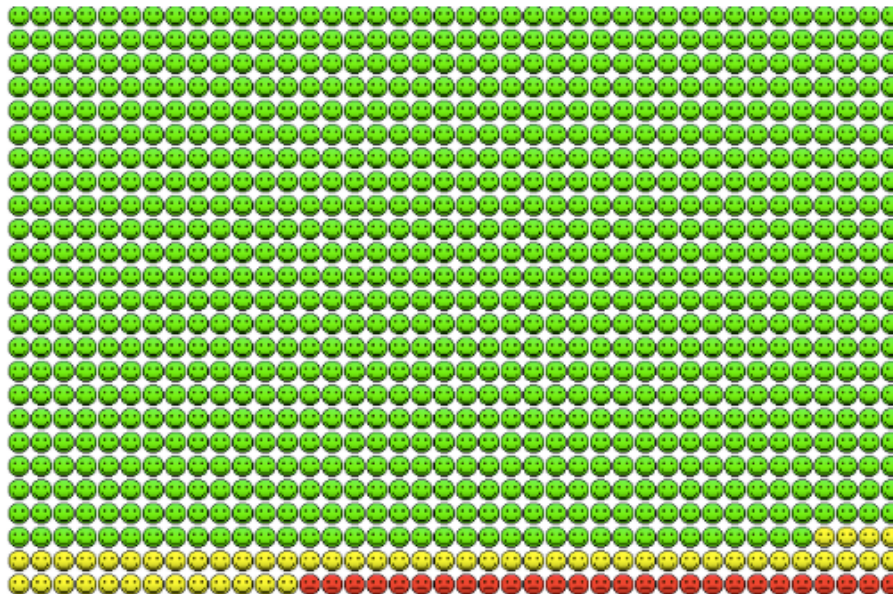
No treatment: CHA₂DS₂-VASc score 5



If 1000 people with AF and a CHA₂DS₂-VASc score of 5 take no anticoagulant, over 1 year on average:

- 916 people will not have an AF-related stroke (the green faces)
- 84 people will have an AF-related stroke (the red faces).

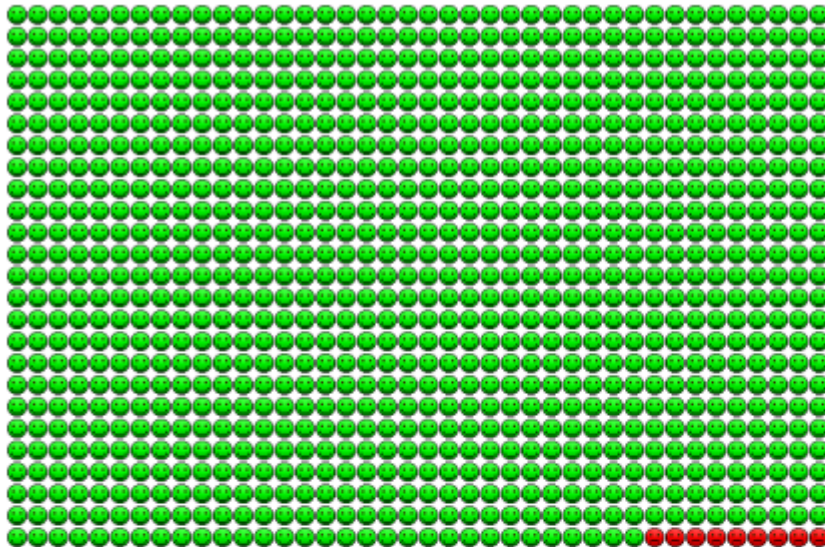
Anticoagulant: CHA₂DS₂-VASc score 5



If all 1000 people take an anticoagulant, over 1 year on average:

- 916 people will not have an AF-related stroke (the green faces), but would not have done anyway
- 57 people will be saved from having an AF-related stroke (the yellow faces)
- 27 people will still have an AF-related stroke (the red faces).

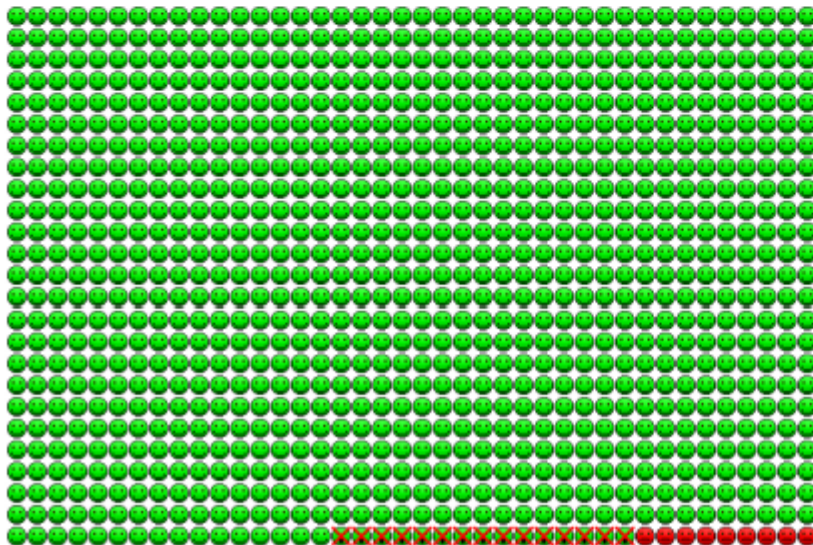
No treatment: HAS-BLED score 3



If 1000 people with AF and a HAS-BLED score of 3 take no anticoagulant, over 1 year on average:

- 991 people will not have a major bleed (the green faces)
- 9 people will have a major bleed (the red faces).

Anticoagulant: HAS-BLED score 3



If all 1000 people take an anticoagulant, over 1 year on average:

- 976 people will not have a major bleed (the green faces)
- 9 people will have a major bleed (the red faces), just as they would have done anyway
- An extra 15 people will have a major bleed (the green faces with the red cross).

What does Joan need?



“I don’t want any more tablets. I feel ill all the time. I am unsteady on my feet. I need help with shopping. I need help getting into the shower in the morning. At the moment I can’t stand and cook; how am I going to get a meal?”

“I don’t want warfarin. My husband was on warfarin and it was awful. I’m not interested in your pictures of benefits and risks. I’m 84 now; tell me which of my tablets are controlling my symptoms and let’s stop the rest. I’ll take my chances now”

Communicate better.

Conversation can “solve” most complex problems.

More data doesn't.

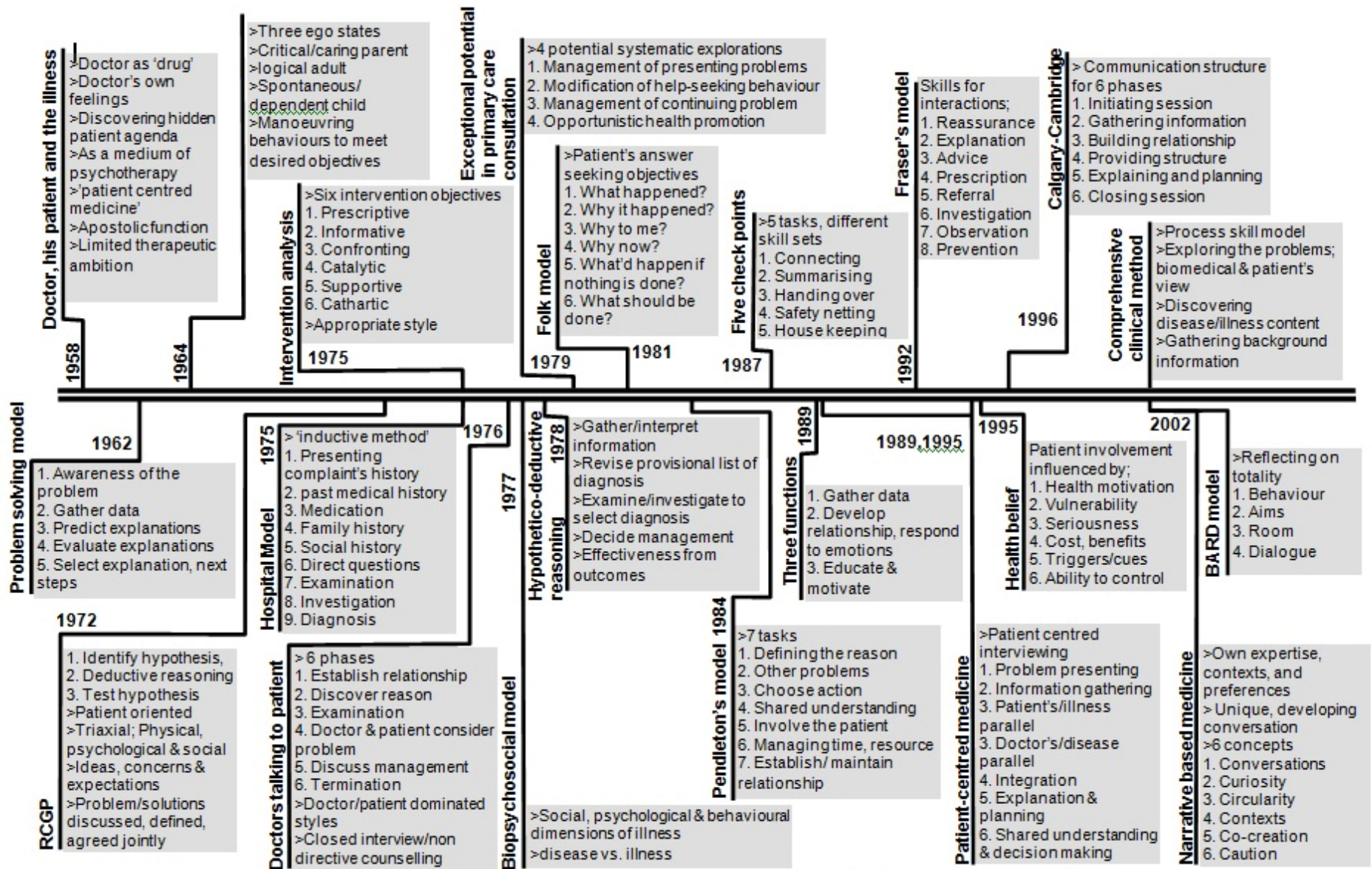
Knowing Stuff

Knowing Stuff

Knowing Stuff

Knowing Stuff

Communication
skills



Calgary Cambridge Guide

School of Clinical Medicine, University of Cambridge
OSCE STATION – GATHERING INFORMATION: MATURITY ONSET DIABETES

Process grid	<i>Good Yes (2)</i>	<i>Adequate Yes but (1)</i>	<i>Not done/ inadequate No (0)</i>
1. Greets patient and obtains patient's name			
2. Introduces self, role and nature of interview, obtains consent			
3. Demonstrates interest and respect , attends to patient's physical comfort			
4. Uses appropriate opening question (e.g. "What problems brought you to hospital today?")			
5. Listens attentively, allowing patient to complete statements without interruption and leaving space for patient to think before answering or go on after pausing			
6. Checks and screens for further problems (e.g. "so that's headaches and tiredness, what other problems have you noticed?")			
7. Encourages patient to tell the story of the problem(s) from when first started to the present in own words			
8. Uses open and closed questions , appropriately moving from open to closed			
9. Facilitates patient's responses verbally and non-verbally e.g. use of encouragement, silence, repetition, paraphrasing, interpretation			
10. Picks up verbal and non-verbal cues (body language, speech, facial expression, affect); checks out and acknowledges as appropriate			
11. Clarifies statements which are vague or need amplification (e.g. "Could you explain what you mean by light headed?")			
12. Periodically summarises to verify own understanding of what the patient has said; invites patient to correct interpretation or provide further information			
13. Uses clear, easily understood language , avoids jargon			
14. Actively determines patient's perspective (ideas, concerns, expectations, feelings, effects on life)			
15. Appropriately and sensitively responds to and further explores patient's perspective			
16. Demonstrates appropriate non-verbal behaviour e.g. eye contact, posture & position, movement, facial expression, use of voice			
17. Acknowledges patient's views and feelings; is not judgmental			
18. Uses empathy to communicate appreciation of the patient's feelings or predicament			
19. Provides support , expresses concern, understanding, willingness to help			
20. Progresses from one section to another using signposting , includes rationale for next section			
21. Structures interview in logical sequence , attends to timing , keeps interview on task			

Content grid	<i>Yes (1)</i>	<i>No (0)</i>
Symptoms		
1. tired, few months		
2. septic spots		
3. rash		
4. thirst		
5. polyuria		
6. weight loss		
Other symptoms		
7. joint aches		
8. blurred vision		
Relevant functional enquiry		
9. no loss of appetite		
Ideas and thoughts		
10. diabetes		
11. hep C		
Concerns		
12. amputations or blindness		
Expectations		
13. tests		
Feelings		
14. to be taken seriously		
Past medical history		
15. migraine		
16. hepatitis		
17. asthma		
18. vitiligo		
Drugs		
19. atenolol		
20. two inhalers		

“Learning to consult by using a consultation skills checklist fills me with despair. Nothing is more bizarre or dispiriting than seeing GP registrars who tape checklists from their good consulting recipe books onto their computer monitors to ensure that they do everything that their assessment demands.”

MACKENZIE LECTURE

Who cares? The James Mackenzie Lecture 2006

David A Haslam

DOI: Published 1 December 2007

Article

Info

eLetters

PDF



This lecture has traditionally been on a clinical topic, and few aspects of the clinical activity of GPs are more important than the consultation. James Mackenzie was born in 1853 into a world which could not have been more different than ours. The technological, political, environmental, therapeutic, and medical changes since his time have been absolutely astonishing, although many

Learning a new skill

- **Instruction** (nodes of knowledge, stringing them together, effort required)
- **Demonstration** (seeing others do it routinely and well and seeing that it works)
- **Practice** (repeated, supportive feedback)
- **Assessment**




NICE chairman outlines basic qualities of a good GP

By David Millett on the 7 October 2016

[7 comments](#)

The ideal consultation model involves 'shutting up, listening, caring and knowing something', NICE chairman Professor David Haslam has told the RCGP annual conference.

 [Discuss on Doctors.net.uk](#)



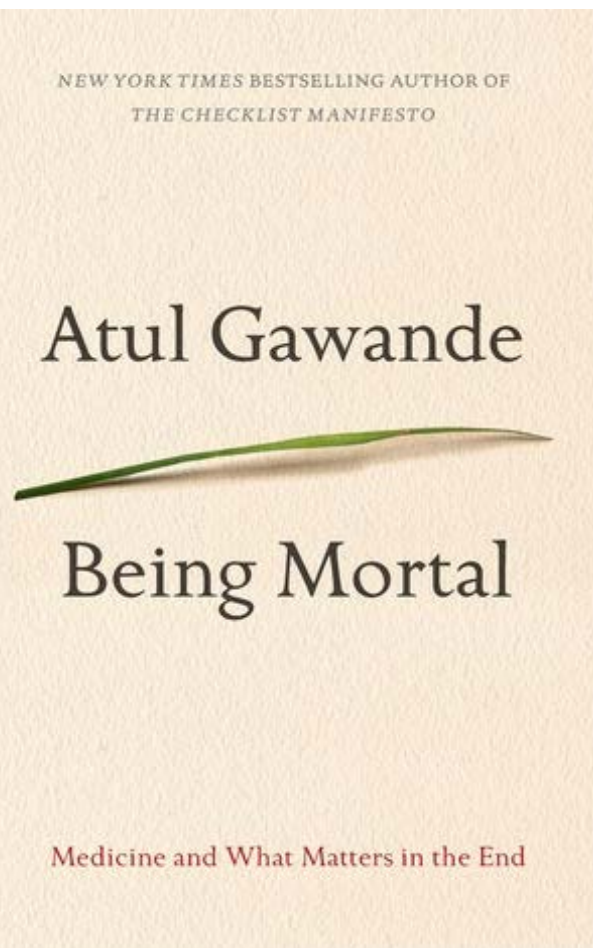
Dr Atul Gawande - 2014 Reith Lectures

Atul Gawande, MD, MPH is a practicing surgeon at Brigham and Women's Hospital and Professor of Public Health and Harvard Medical School.



In his lecture series **Medicine**, Dr Atul explores the nature of progress in medicine, a field defined by 'the messy intersection of human fallibility'.

Known for both his vivid storytelling, he is growing in importance in medicine and argues that the medical profession is bigger than simply survival.



“What is your **u**nderstanding of where you are with your illness?”

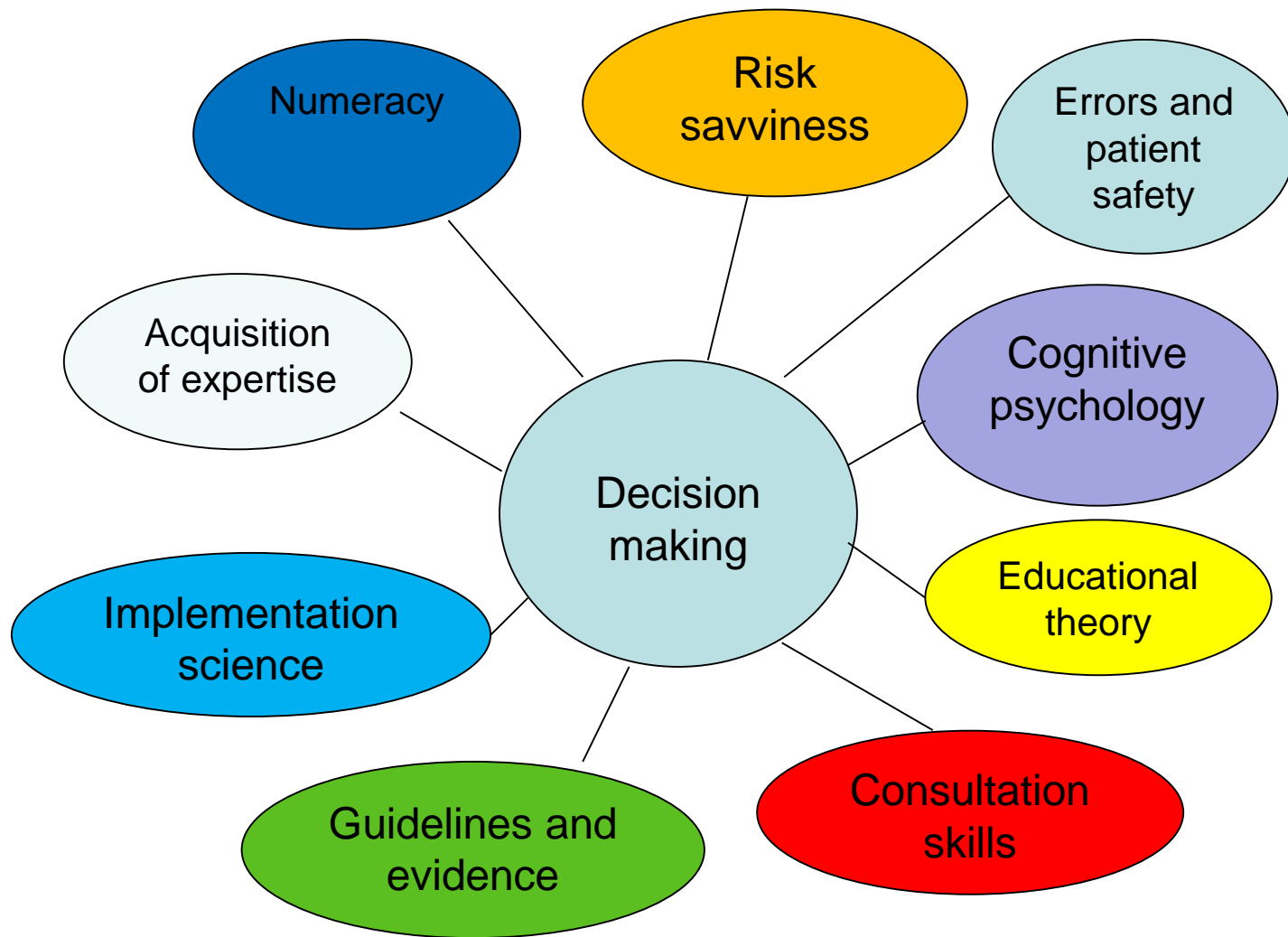
“What are your **f**ears and worries for the future?”

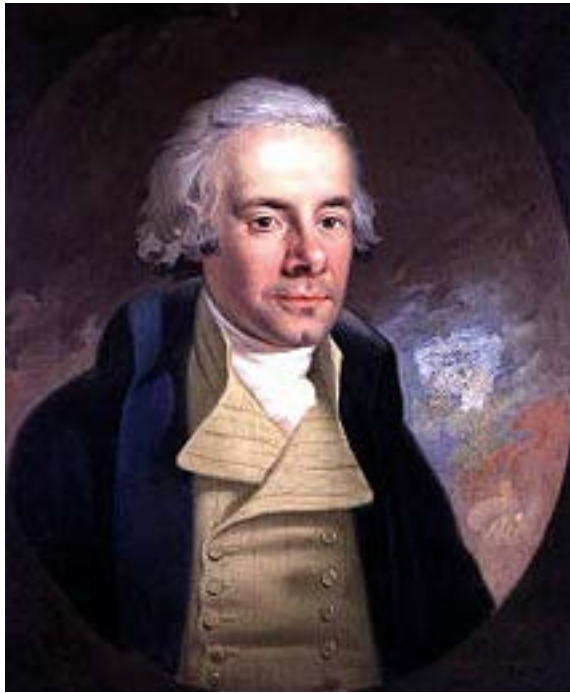
“What **o**utcomes would be unacceptable to you?”

“What are your goals if **t**ime is short?”

Plus these 2, from the ventriloquists.....

- 1. Try asking patients to tell you something about themselves.**
- 2. Encourage patients to learn about health and their illness.**





**I AM:
~~GAY~~
~~STRAIGHT~~
~~BISEXUAL~~
~~TRANS~~
... A PERSON**

Social movement, loosely organized but sustained campaign in support of a social goal, typically either the implementation or the prevention of a change in society's structure or values. Although social movements differ in size, they are all essentially collective. That is, they result from the more or less spontaneous coming together of people whose relationships are not defined by rules and procedures but who merely share a common outlook on society.

The Values and Value of Patient-Centered Care

Ronald M. Epstein, MD^{1,2} and Richard L. Street, Jr, PhD^{3,4}

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This article has been cited by other articles in PMC.

Patient-centered care has now made it to center stage in discussions of medicine's "quality chasm" report as 1 of 6 key elements of high-quality health planners, congressional representatives, and hospital public relations phrase in their lexicons. Insurance payments are increasingly linked to patient care. Lost in many of the discussions of patient-centered care, however, is the meaning of what it means to be patient centered. The originators of patient-centered health care were well aware of the moral implications of their work, viewing patients as unique living beings, and the obligation to care for them on their own terms, known as persons in context of their own social worlds, listened to, informed, and their care—and their wishes are honored (but not mindlessly enacted). There have been concerns that patient-centered care, with its focus on the individual, with an evidence-based approach, which tends to focus on populations, is being laid to rest; proponents of evidence-based medicine now accept that a good definition of what is meaningful and valuable to the individual patient.² Patient-centered evidence-based medicine, considers both the art of generalizations and the science of individualization. Patient-centered care is a quality of personal, professional, and organizational



Discussion paper: April 2015

Patient-centred professionalism in pharmacy

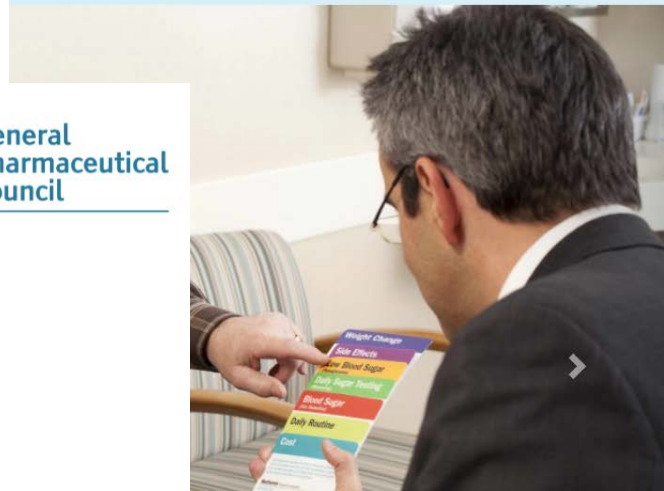
A review of the standards of conduct, ethics and performance

patients and carers into a full partnership relationship with clinicians in all clinical interactions.

In SDM and SSM patients and clinicians work together to decide on the course of action taking into account the evidence (**professional perspective**) and the patient's own preferences (**patient perspective**) and attaching equal value to these. It is of relevance in most clinical decision making situations, since reasonable, competing options usually exist and therefore plenty of opportunity to involve patients in those decisions.

The evidence base is irrefutable – patients want to be more involved in decisions about their health and supported to manage illness better. Those who are more involved are less anxious, more satisfied, less likely to complain and tend to enjoy better outcomes and a better quality of life than those who are less involved.

Implementing this partnership approach requires changes to the way medicine is traditionally practised. These changes are about systems and organisational processes and also require new skills and a change in the roles of both health professionals and patients.



General
Pharmaceutical
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tered care

Spotlight: Patient Centred Care

This spotlight series of articles on patient centred care explores how doctors and patients can work collaboratively to improve the way healthcare is designed and delivered so that it better meets the needs and priorities of patients.

Empowered patients are driving a social movement and spearheading a shift in roles "as profound as women's liberation, racial equality, gay rights, and disability rights".

They are capable and motivated to help themselves and other patients to get better care and work with health professionals to improve services which are not well geared to meet the challenge of demographic change and the rise in number of people living



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with long term conditions where it is important that people take on a greater role in self managing their health and medical conditions.

1985 the a responsible body

Person-centred care in Europe: a cross-country comparison of health system performance, strategies and structures

Policy briefing
February 2016
Author: Giuseppe Paparella, Policy Officer

N. Maskrey. 6(2) Sc.A.

Wolstanton County Grammar School.

Physical Science Project Report 1970.

To attempt to measure the velocity distribution of β - particles.

Each coil was connected to the spot galvanometer placed inside the field and then moved to where there was no field.

$$\text{Charge } q = n \cdot \Delta\Phi = nAB$$

where n is the number of turns on the search coil

Φ is the flux

A is the area of the search coil

$$q = 0$$

$$+ eAn$$

By Neumann's law

$$E = - \frac{d\Phi}{dt} \quad (\text{-ve sign because of Lenz's law})$$

$$= \frac{eAn}{dt}$$

$$I = \frac{E}{R} \quad (\text{Ohm's law}) = \frac{eAn}{dt \cdot R}$$

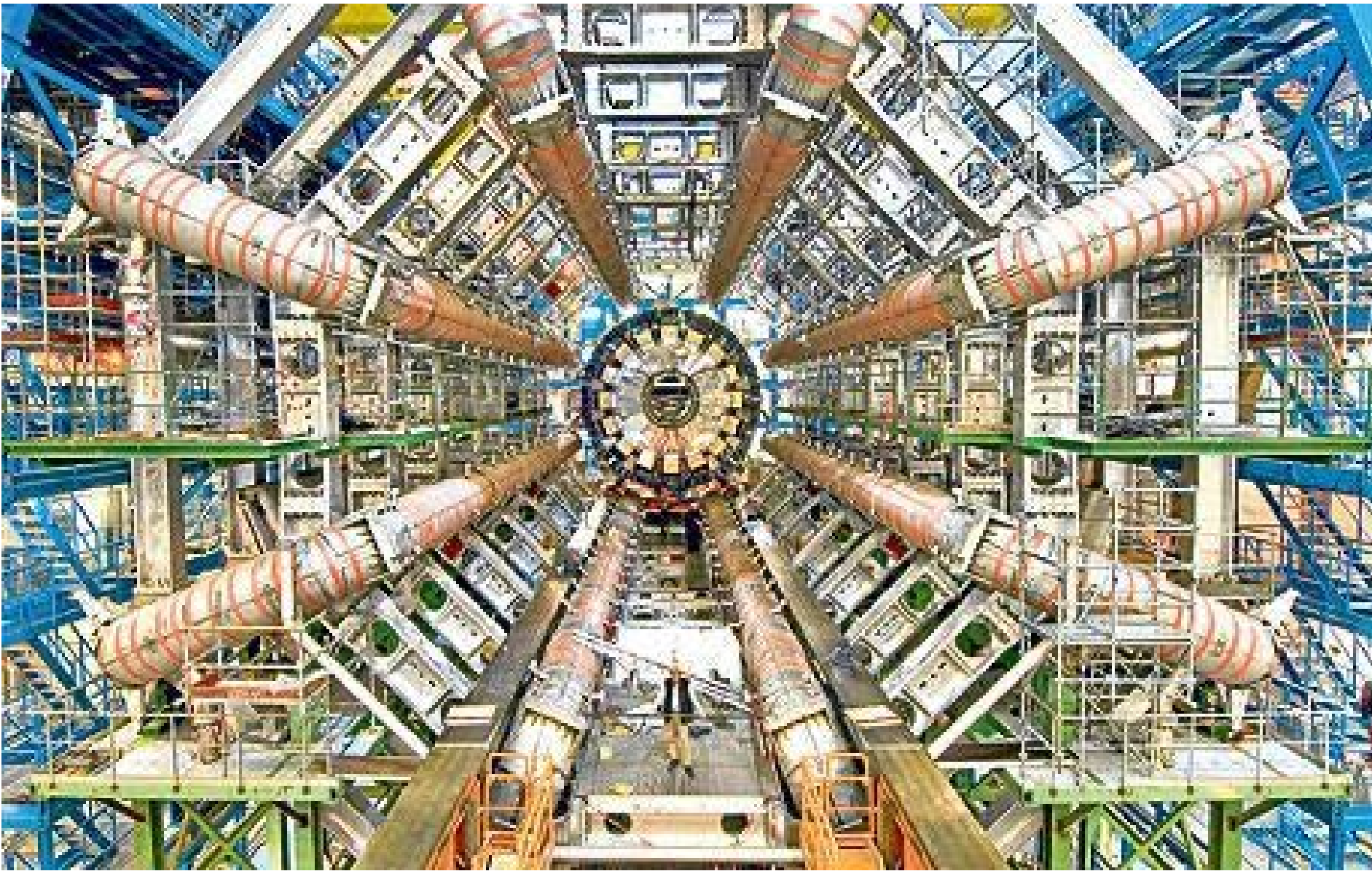
$$Idt = \frac{eAn}{R}$$

$$dQ = \frac{eAn}{R}$$

$$Q = \frac{eAn}{R}$$

$$Q_s = k \cdot \frac{eAn}{R}$$

(1)



Talking to people about their preferences and lives is like the large hadron collider - we know we should do it, we know roughly how we should do it, but we don't know what will happen when we do it routinely.

**Dee Mangan
Christchurch and McMaster**

Thank you
nealmaskrey@gmail.com