

Northern Constellation Conference

The Peltzman Effect: Unintended Consequences During a Global Pandemic

May 8th, 2020

Ken Milne

Disclosures:

No grants or consulting fees

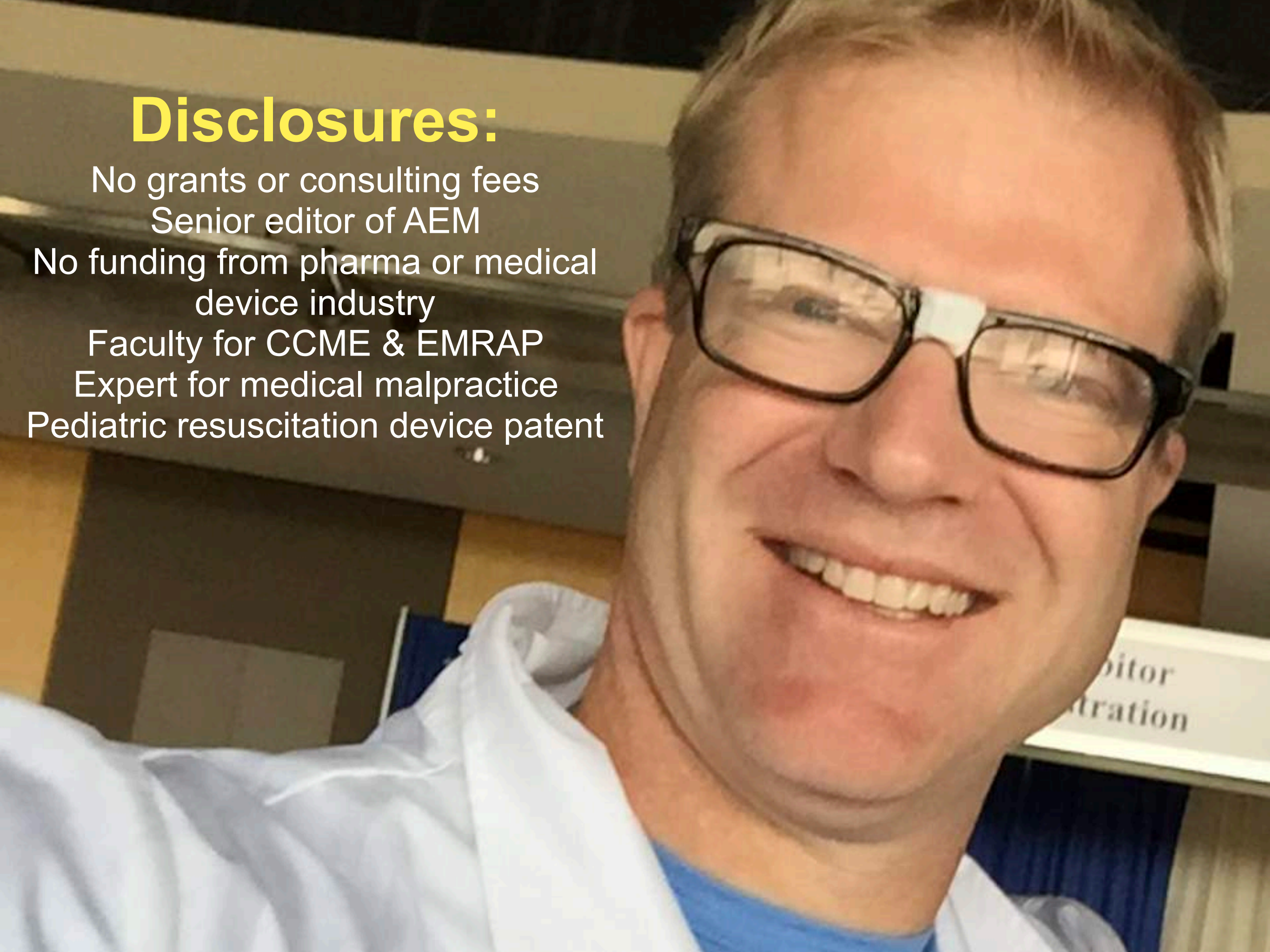
Senior editor of AEM

No funding from pharma or medical
device industry

Faculty for CCME & EMRAP

Expert for medical malpractice

Pediatric resuscitation device patent



COVID Times



Objectives:

Discuss EBM

Critical Appraisal

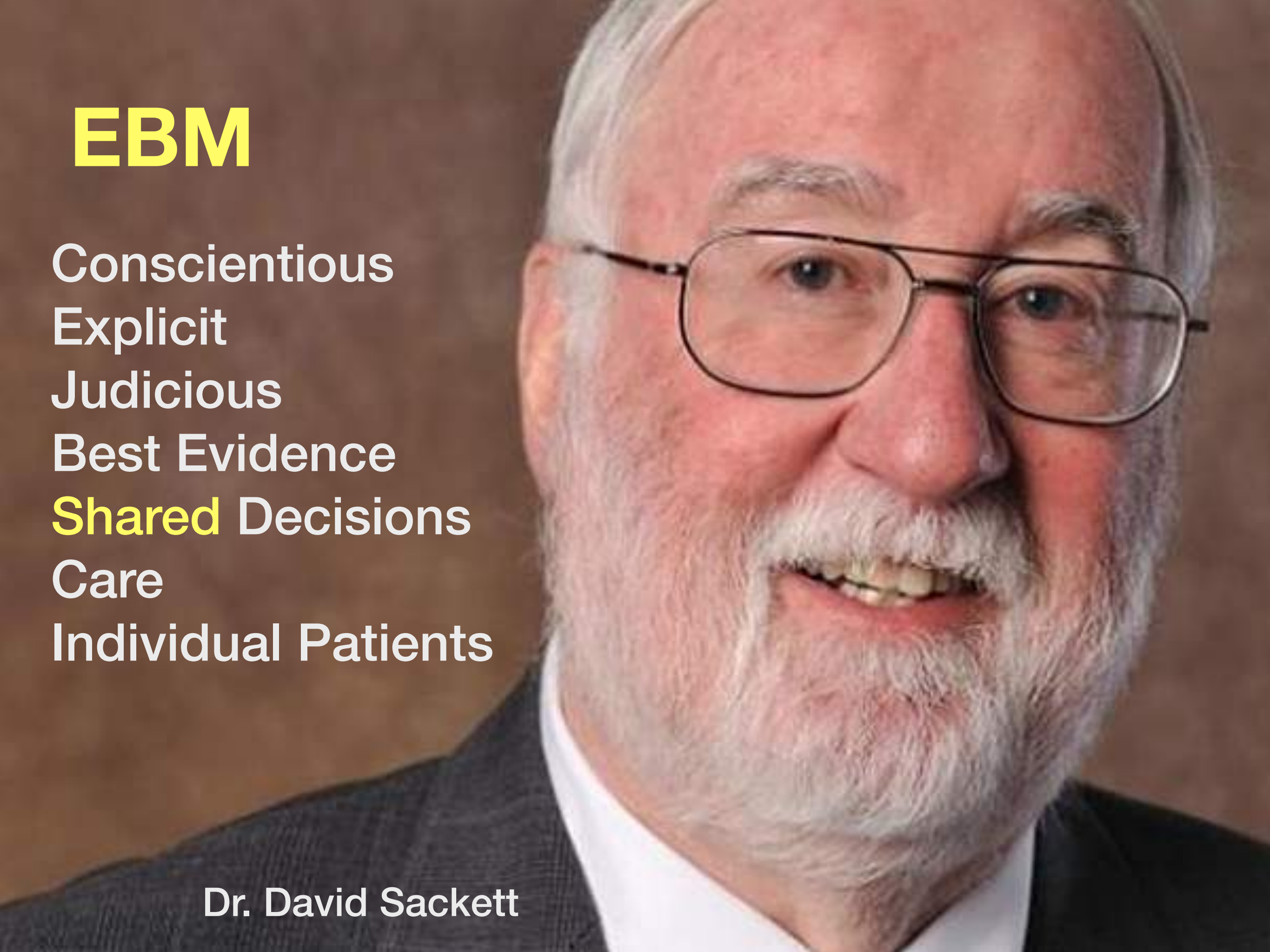
Peltzman Effect



EBM

Conscientious
Explicit
Judicious
Best Evidence
Shared Decisions
Care
Individual Patients

Dr. David Sackett





Sackett et al BMJ 1996

Levels of Evidence

- Systematic Review
- Appraised Topics
- Appraised Article
- RCT
- Cohort Study
- Case Report
- Expert Opinion

n=1



Systematic Review Meta Analysis



GIGO (Garbage In - Garbage Out)

Parachute Trial

Smith & Pell BMJ Dec 2003



Hayes et al.

CMAJ Jan 2018



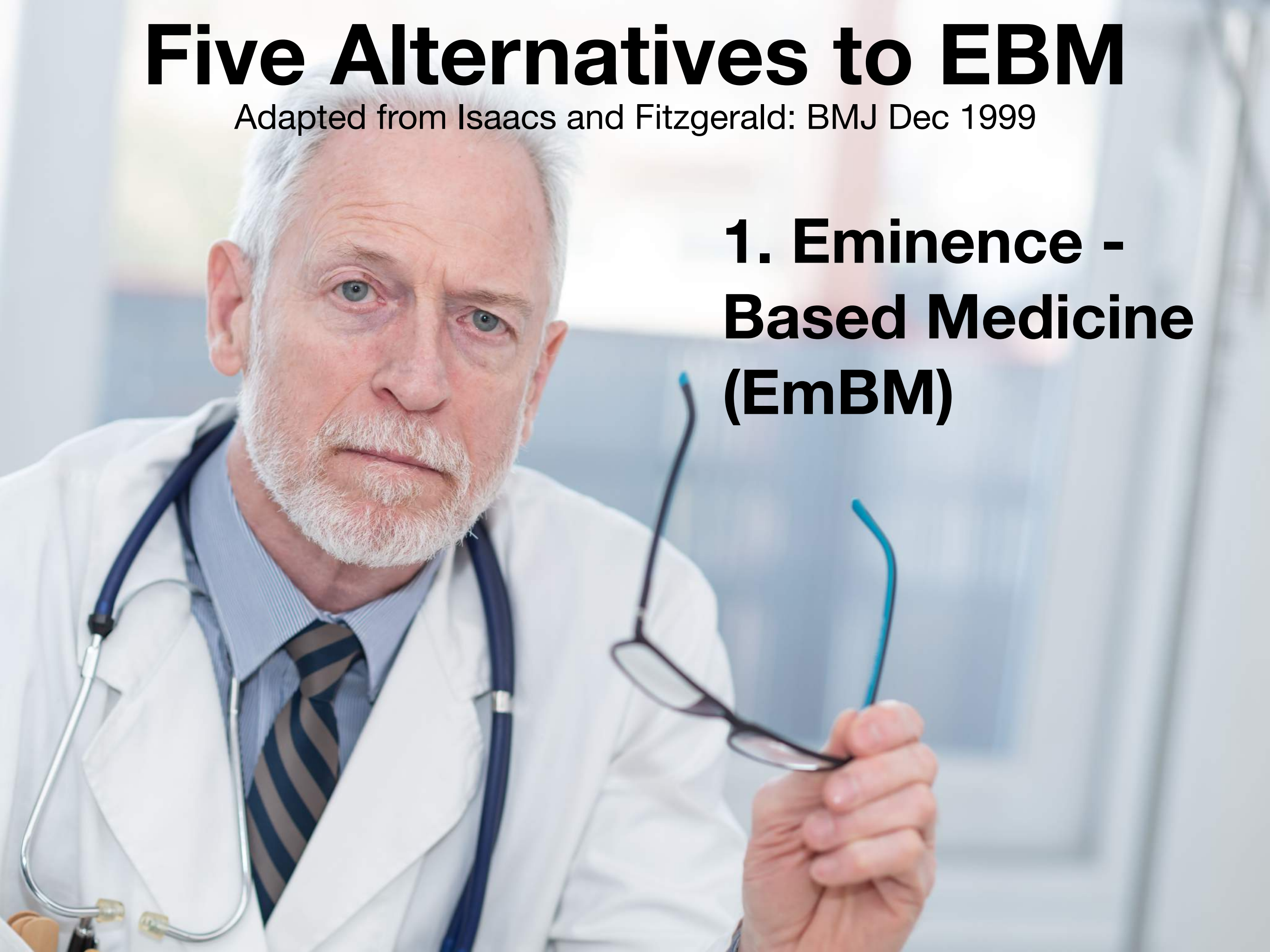
Parachute Trial

Yeh et al Dec 2018

Five Alternatives to EBM

Adapted from Isaacs and Fitzgerald: BMJ Dec 1999

1. Eminence - Based Medicine (EmBM)



2. Vehemence-Based Medicine (VBM)




3. Eloquence - Based Medicine (EIBM)



4. Nervous- Based Medicine (NBM)





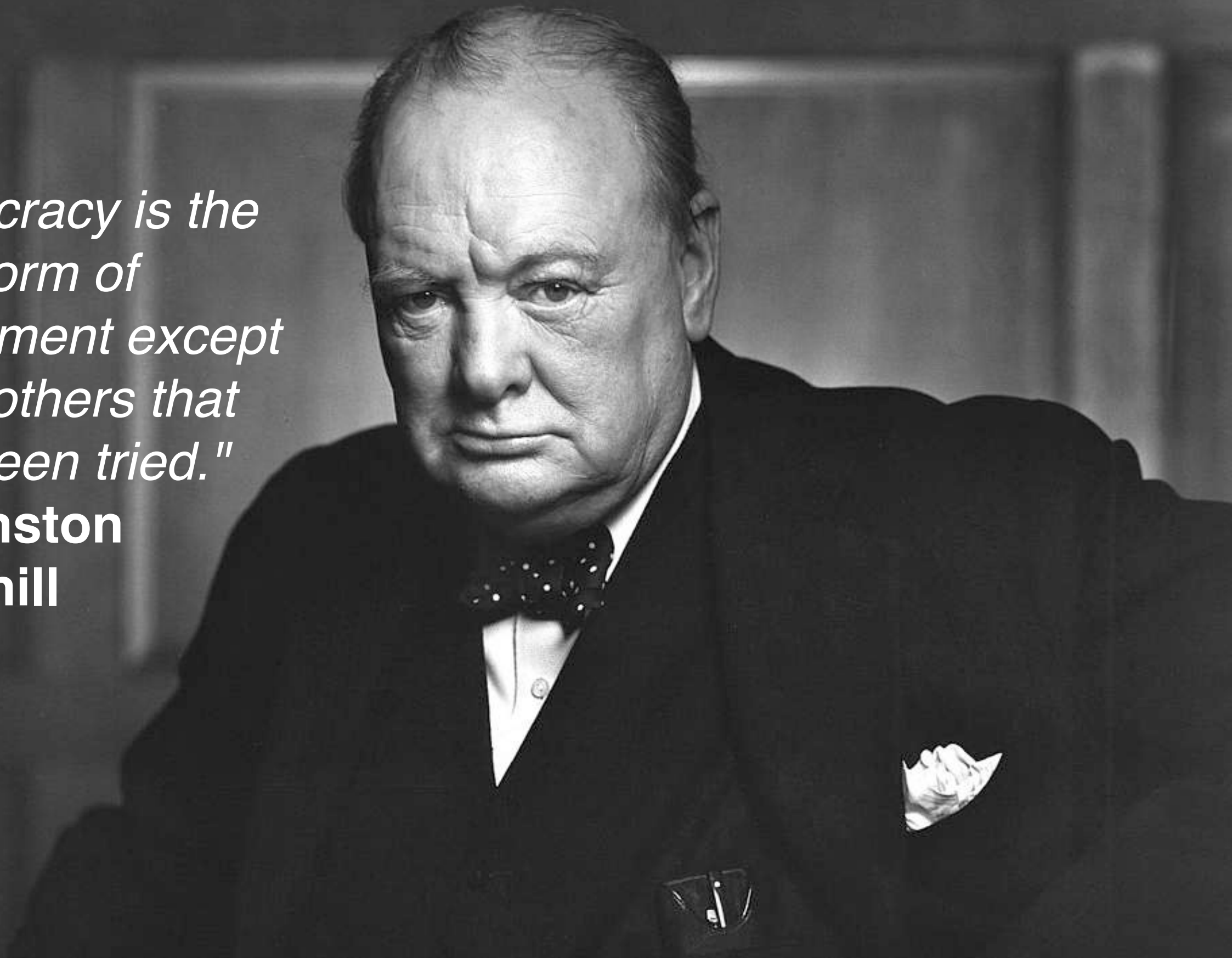
5. Confidence-Based Medicine (CBM)*

*** Restricted to Surgeons**

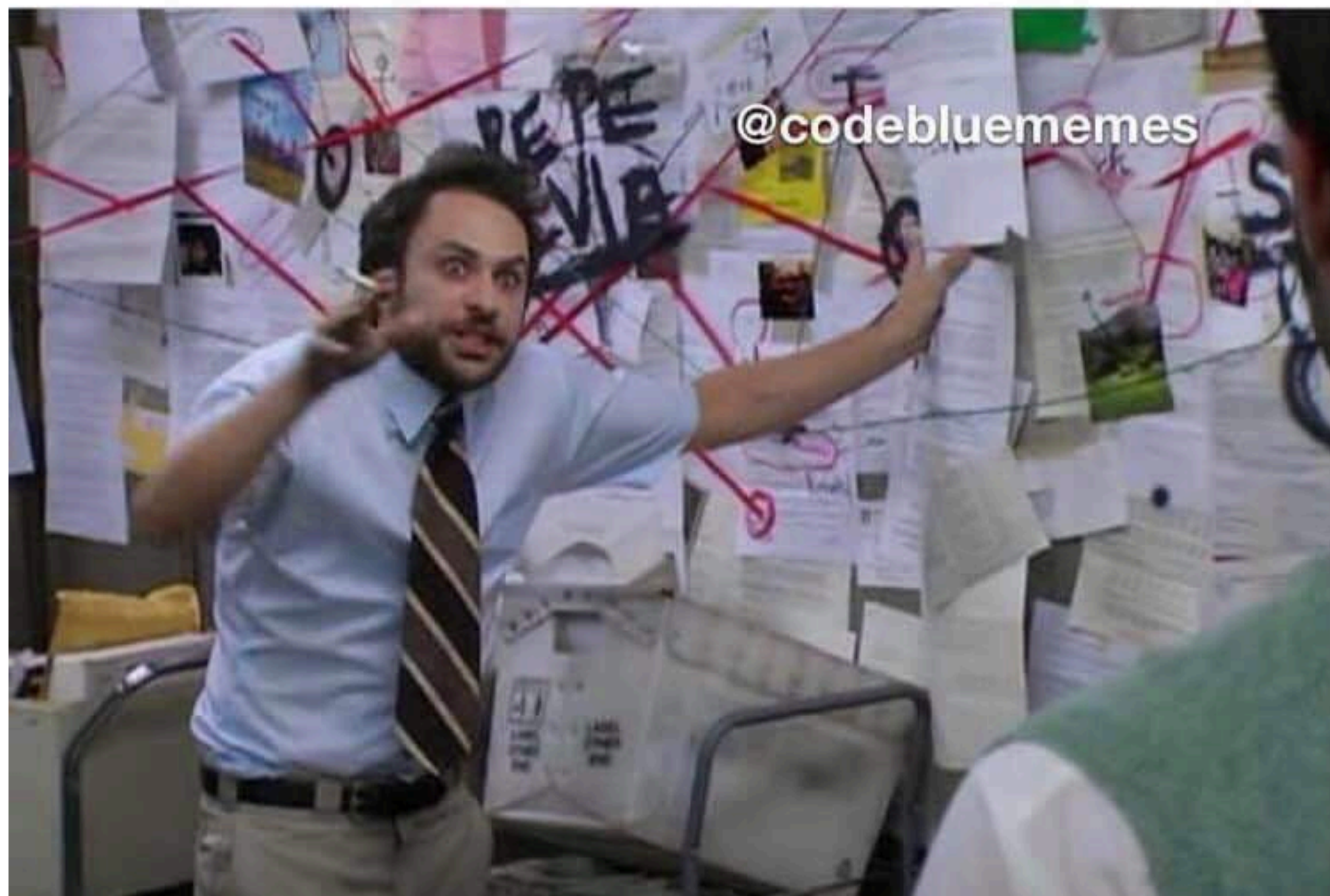
EBM is the Worst...

"Democracy is the worst form of government except all the others that have been tried."

Sir Winston Churchill



Me trying to explain the COVID-19 policies that were changed 6 times today to the oncoming shift



5 Step of Critical Appraisal



Step 1: PICO

P

I

C

O

Population

Describes a particular group of patients; may include primary problem, disease, or coexisting conditions

Example: Cardiac arrest patients

Intervention

Includes main intervention, prognostic factor, or exposure

Example: Who received CPR

Comparator

Describes the main alternative
Example: Compared with no CPR

Outcome

What is being accomplished, improved, measured

Example:
1. Neurologically intact survival
2. Survival to discharge
3. ROSC

Step 1: Population



Step 1: Intervention



Step 1: Control

placebo

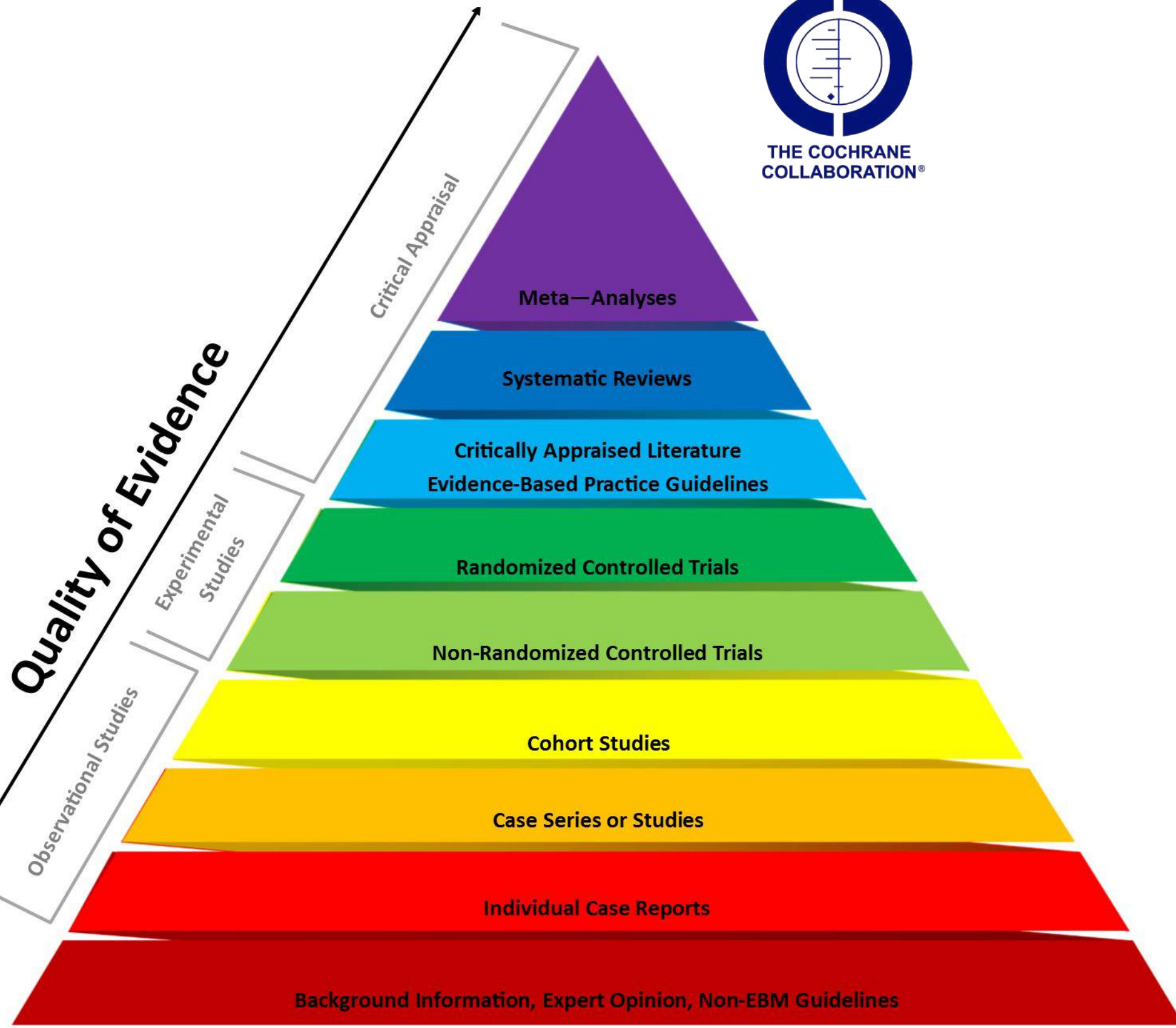


Step 1:
Outcomes
(DOOs, LOOs,
MOOs or **POOs**)

Step 2: Search Strategy



Step 3: Least Biased



Step 4: Critically Appraise

Checklist



Step 5: Practice Changing?



NNT & NNH



Burden of Proof

Cognitive Biases

ANCHORING EFFECT

Relying too much on the initial piece of information offered when making decisions

"The first test seemed OK. Do we need to look any more?"

AVAILABILITY HEURISTIC

Overestimating the importance and likelihood of events given the greater availability of information

"I saw something very similar to this on LinkedIn. We need to take it seriously"

BANDWAGON EFFECT

Uptake of beliefs and ideas increases the more that they have already been adopted by others

"The whole department knows there's no problem here"

BELIEF BIAS

Basing the strength of an argument on the believability or plausibility of the conclusion

"I didn't quite follow your argument but the conclusion seems about right"

BLIND SPOT BIAS

Viewing oneself as less biased than others

"Let's ignore Sarah's views on this one. She's biased"

CLUSTERING ILLUSION

Erroneously overestimating the importance of small clusters or patterns in large data

"This is the second week in a row that this has happened. There must be a problem"

CONFIRMATION BIAS

Focusing on information that only confirms existing preconceptions

"We did loads of simulations. Most of them showed there's no problem"

COURTESY BIAS

Giving an opinion/conclusion that is viewed as more socially acceptable so as to avoid causing offence/controversy

"The last time we discussed this the meeting lasted for hours. Let's move on"

ENDOWMENT EFFECT

The tendency for people to ascribe more value to things merely because they already own/have them

"I know it will cost a fortune to fix but it cost us £15,000. We can't just throw it away."

"The conveyor belt broke three times last month. It's pretty unlikely it'll happen again."

GAMBLER'S FALLACY

Believing that future probabilities are altered by past events, when in fact they are unchanged

"Let's just get the deal done ASAP"

HYPERBOLIC DISCOUNTING

Preferring a smaller, sooner payoff over a larger, later reward

"This worked fine in the factory in the Korea, it should work fine here"

ILLUSION OF VALIDITY

Overestimating our ability to make accurate predictions, especially when data appears to tell a coherent "story"

"Looks like we've run out of time to discuss this"

OSTRICH EFFECT

Avoiding negative financial information by pretending it doesn't exist

"We made a good call on that one"

POST-PURCHASE RATIONALISATION

Tendency to retroactively ascribe positive attributes to an option one has selected

"Our competitors are only doing well because their products are cheap"

REACTIVE DEVALUATION

Devaluing an idea because it originated from an adversary or opponent

"Now we've got the new equipment we can cut the time spent on maintenance"

RISK COMPENSATION

Taking bigger risks when perceived safety increases; being more careful when perceived risks increases

"If it ain't broke - don't fix it"

STATUS QUO BIAS

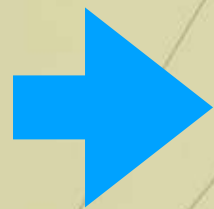
Preferring the current state of affairs over change

"Dave from tech is worried - but frankly the tech team are always pessimists"

STEREOTYPING

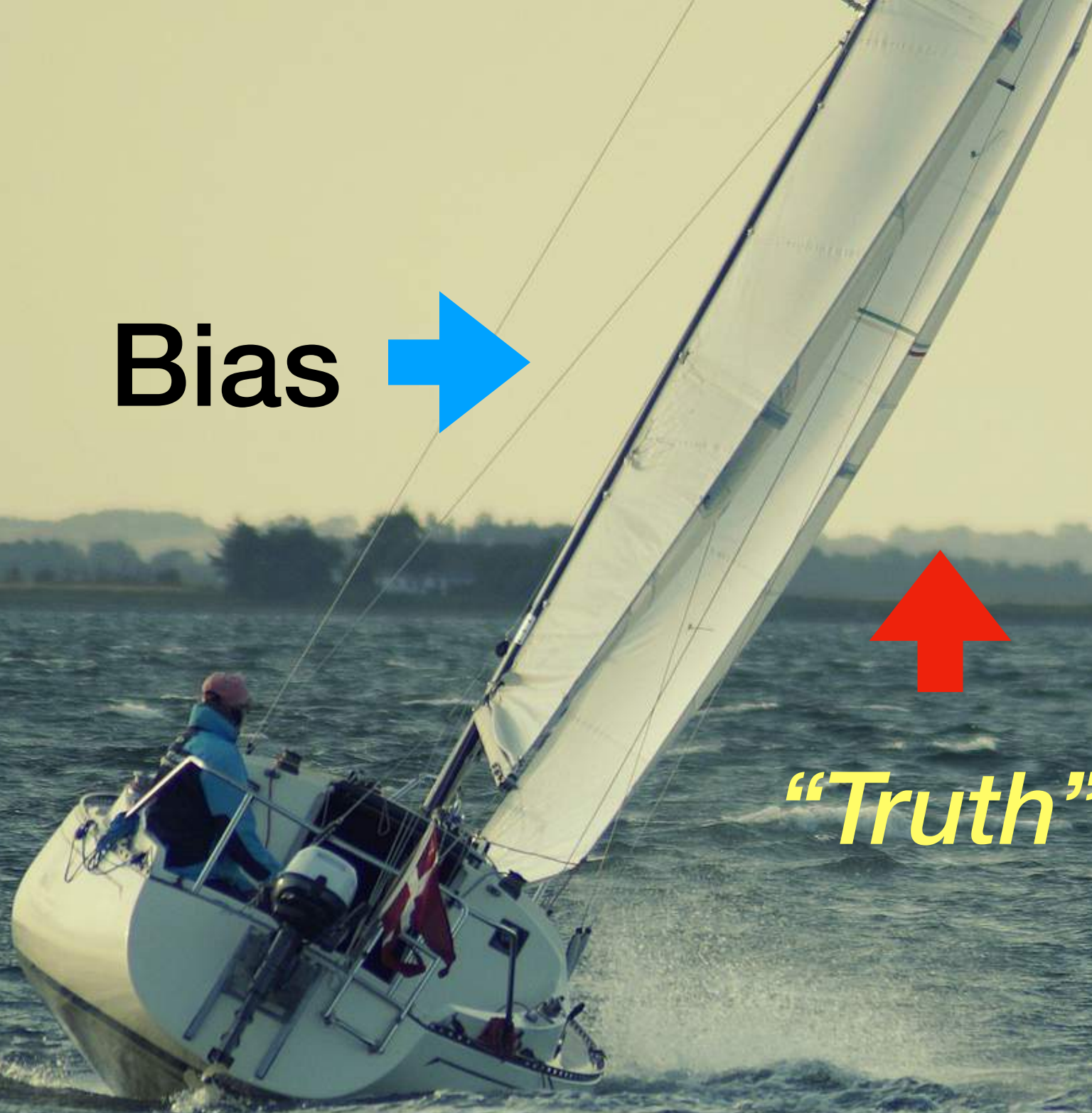
Assuming a person has characteristics because they are a member of a group

Bias



“Truth”

Random Noise



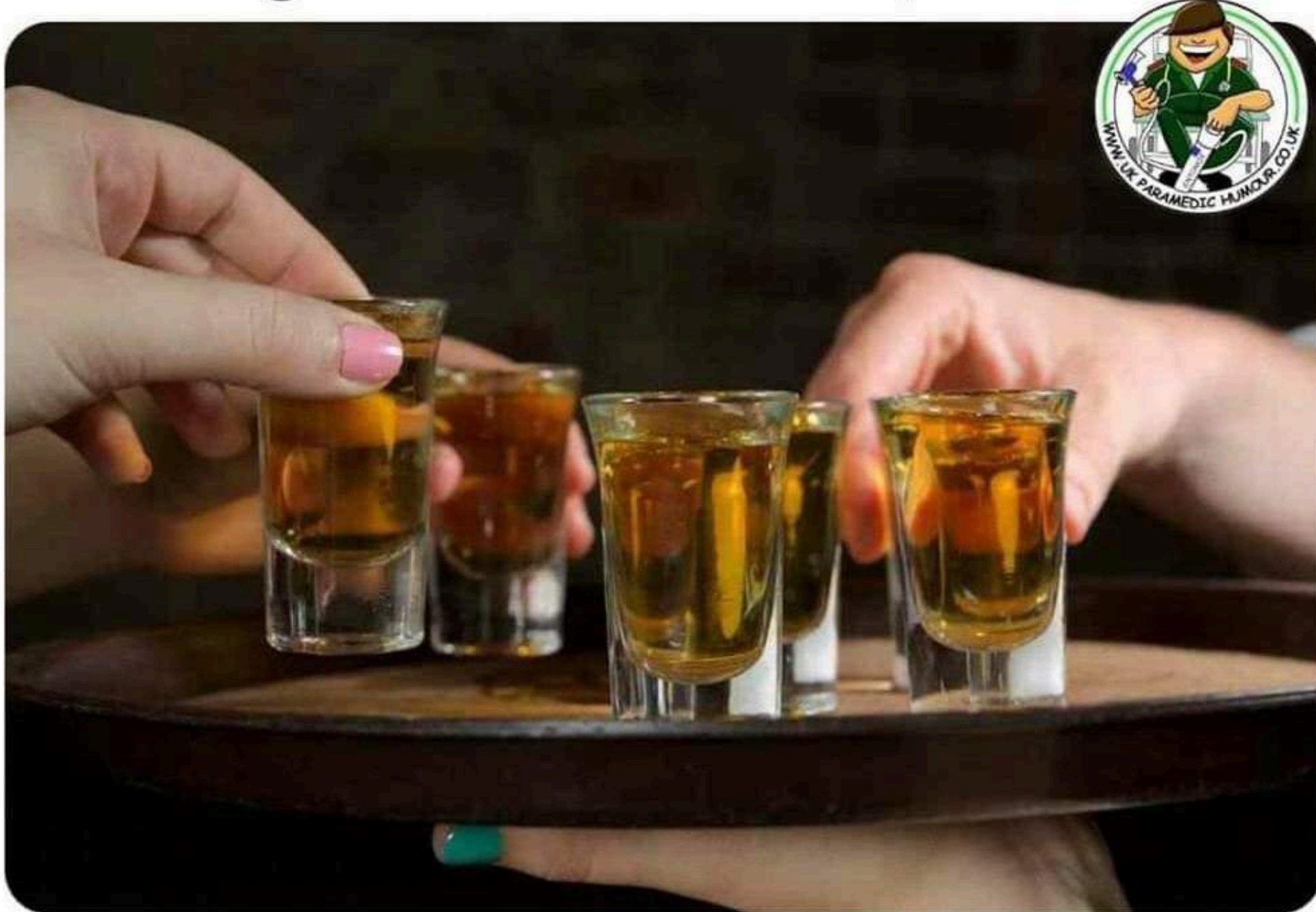
Dr. Andrew Worster

A middle-aged man with glasses and a maroon shirt is sitting at a table, holding a white sign with both hands. He is looking directly at the camera with a slight smile. The sign he is holding has the text "It all depends!". To his right, a portion of another person wearing a pink shirt is visible. In the foreground, there is a white cup with a blue and yellow logo and some papers on the table. The background is a plain green wall with a white radiator and a light switch.

It all depends!

New drinking game

Take a shot every time your Service changes their Covid-19 protocols





Peltzman Effect

The Effects of Automobile Safety Regulation
Journal of Political Economy 1975



Anti-Lock Breaks

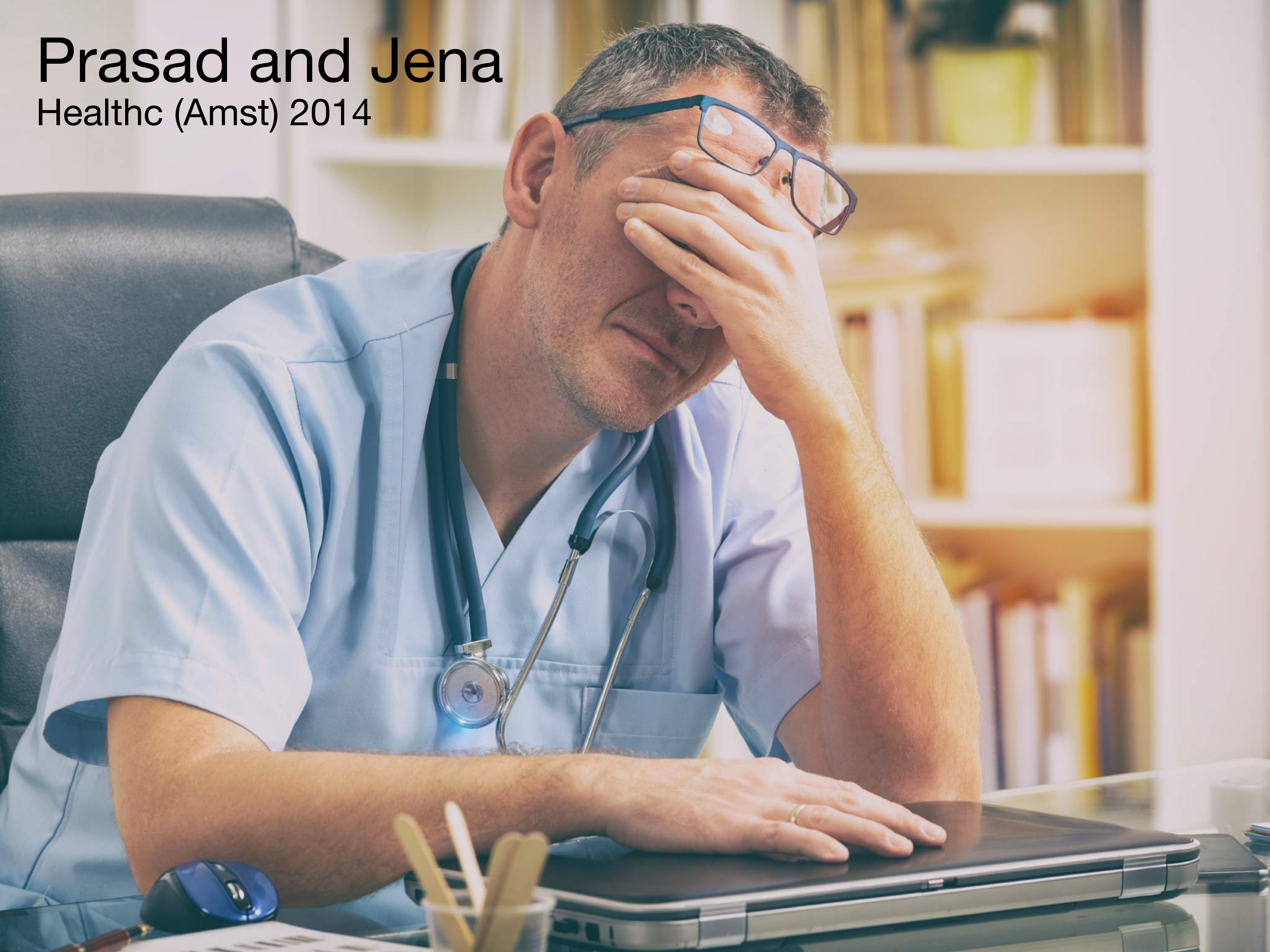


Condoms

Shelton JD. Ten myths and one truth about generalised HIV epidemics. Lancet 2006

Prasad and Jena

Healthc (Amst) 2014



COVID
Treatments:
Kitchen
Sink



A pair of blue nitrile gloves is shown from the wrist up, holding a white surgical mask horizontally. The mask has white elastic straps and a pleated center. The background is a solid, bright yellow. Overlaid on the mask is the text 'COVID19' in red and 'Masks 4 All?' in black.

COVID19
Masks 4 All?



Precautionary Principle

Greenhalgh et al BMJ April 2020

After a viral video shows a man being dragged off a bus, SEPTA reverses its coronavirus face mask requirement

by [Patricia Madej](#), Updated: April 10, 2020



Stay Home

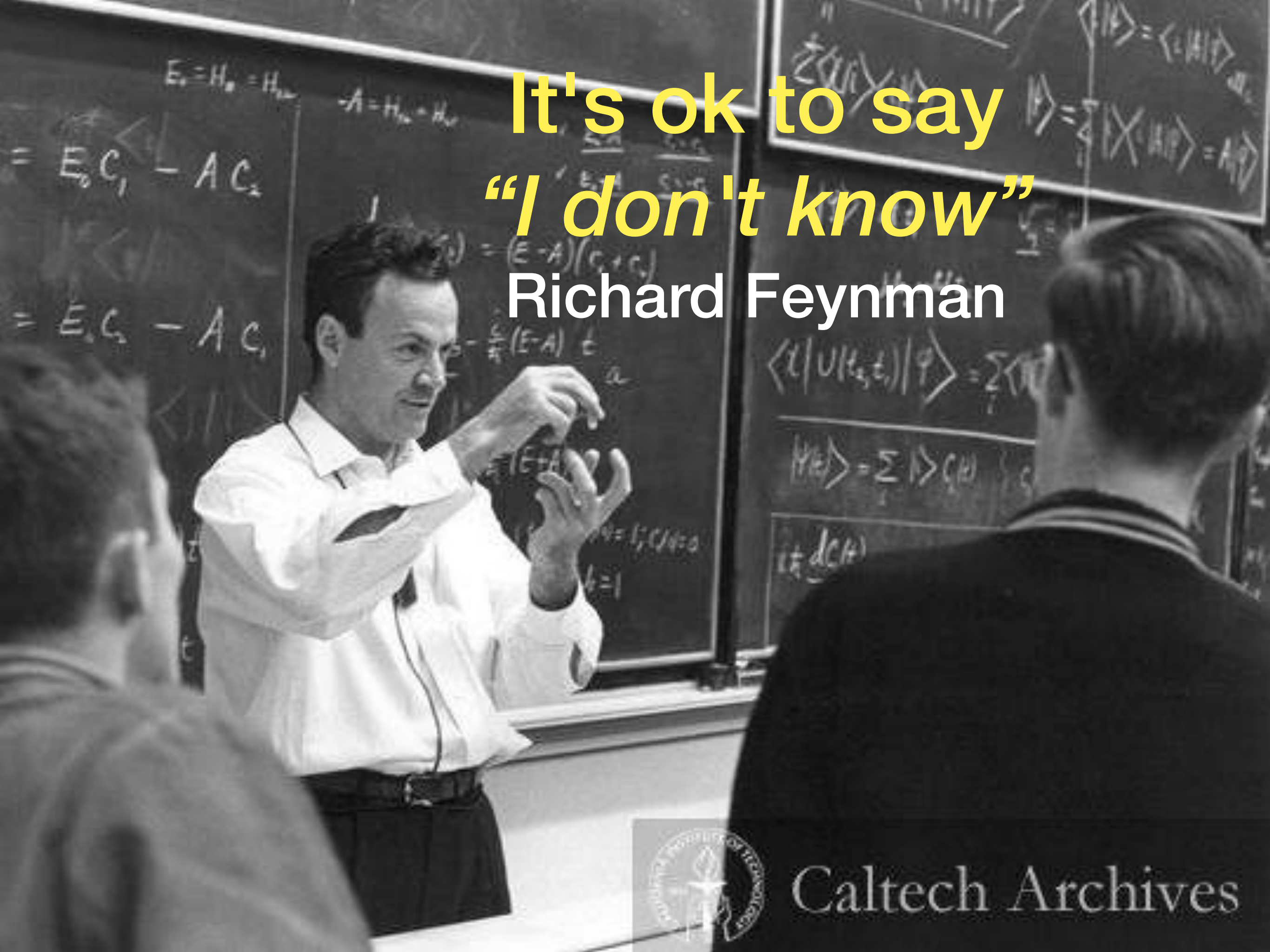




Stay
Home

It's ok to say
"I don't know"

Richard Feynman



Caltech Archives



Jeanne Lenzer & Shannon Brownlee

ISSUES.ORG

Pandemic Science Out of Control

Poor-quality research, media hype, lax regulatory oversight, and vicious...



A Reminder to Reason

Ivry Zagury-Orly &
Richard M.
Schwartzstein
April 28th, 2020



Questions?

