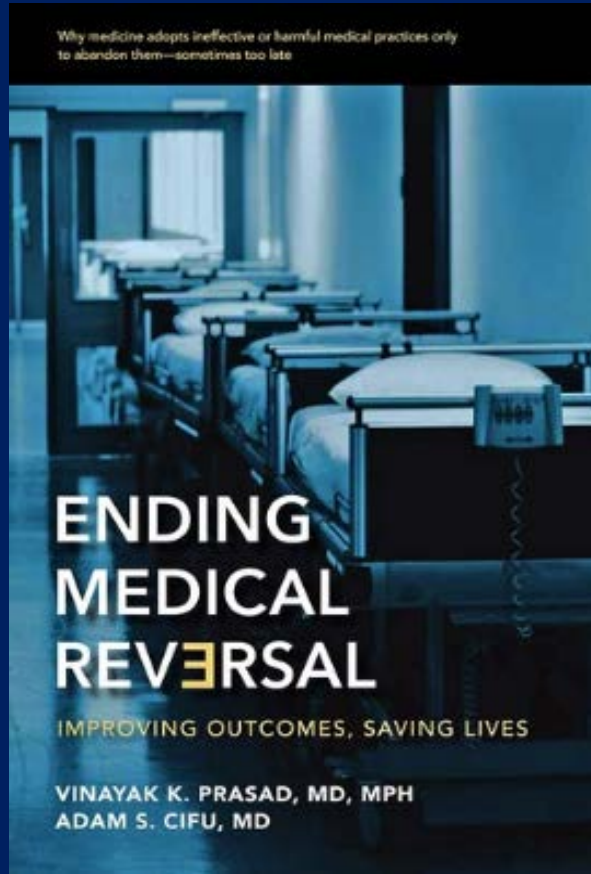


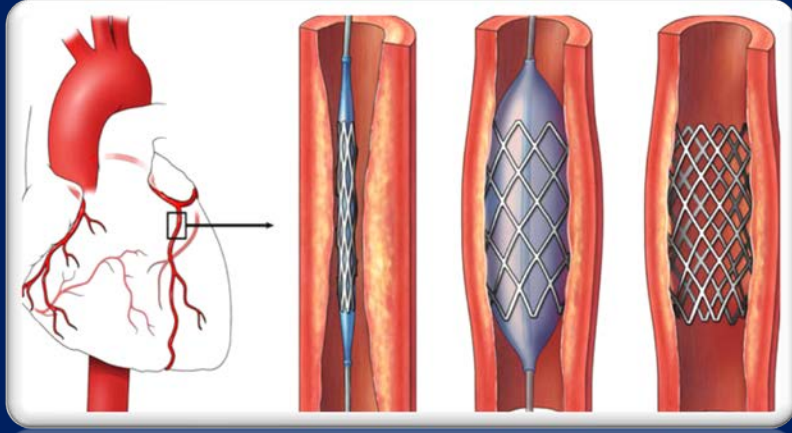


what if. ...the evidence changes?



New evidence
... contradicts current clinical
practice

Pain management for chest tightness



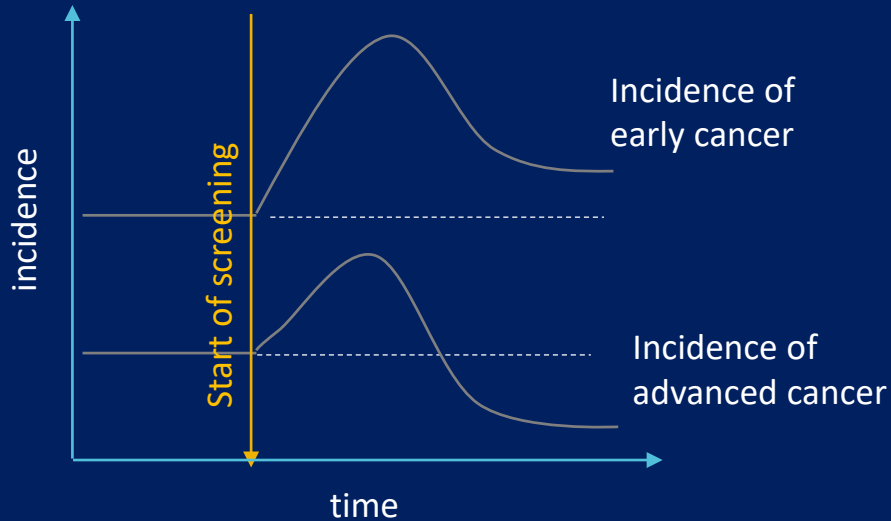
stents used to unblock arteries
for stable angina
vs
medication

less invasive treatment can suffice.

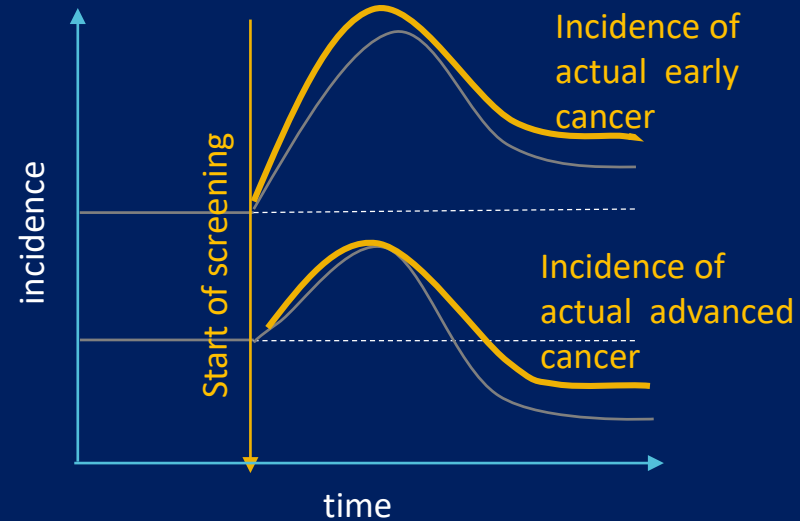
May temporarily improve chest pain but
doesn't help patients live longer

Screening test guidelines

how screening should work



what actually happened



Pain management for wear and tear on the knee

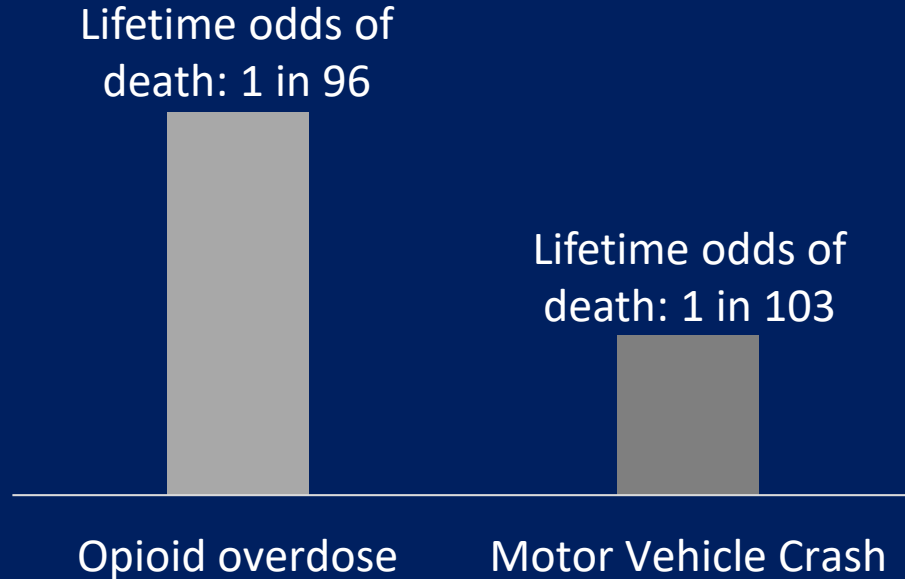


arthroscopic knee surgery
vs
physical therapy

less invasive treatment can suffice.

General pain management with opioids

varying prescribing approaches required.



Source: USA – National safety council

symptom of success

**new solutions
can lead to
new problems.**



what if. ...the evidence changes

replacement.

... new practice surpasses an existing standard of care

back to the drawing board.

... new practice is no better than current practice

reaffirmation.

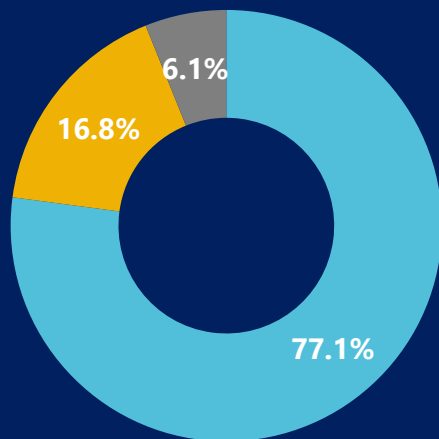
... existing practice is found to be better than a lesser standard

reversal.

... existing practice is found to be no better than a lesser therapy

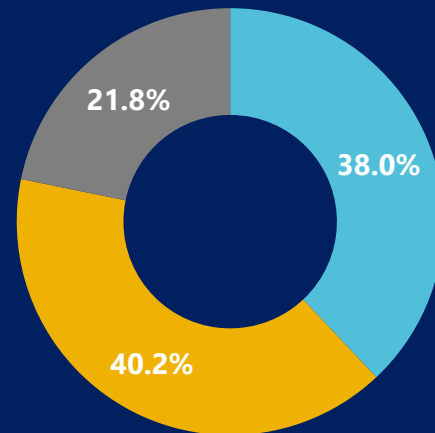
literature testing new practice

■ Replacement ■ Back to drawing board ■ Inconclusive



literature testing existing practice

■ Reaffirmation ■ Reversal ■ Inconclusive





Transition
time for
change

over 10 years.

why is the transition time so long?



Semmelweis effect
is a metaphor for
the tendency to reject new evidence
or new knowledge
because it contradicts
established norms

why is the transition time so long?

doctors aren't trendy.

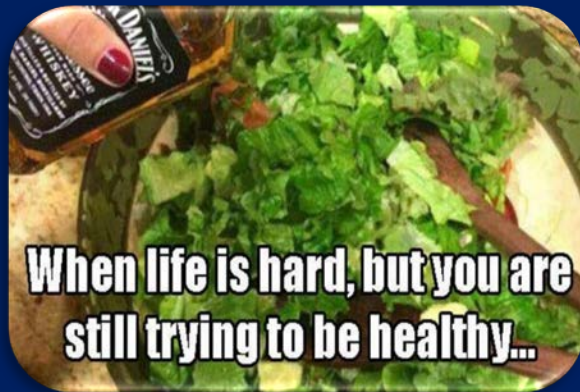


doctors have vested interests.



But ...

patients may demand inappropriate treatments.



feeling better is misleading.



and ...

**doctors
don't agree.**



**doctors
get sued.**



**why is it so difficult
to abandon
old evidence?**

public sentiment.



He's one of the busiest men in town. While his door may say *Office Hours 2 to 4*, he's actually on call 24 hours a day.

The doctor is a scientist, a diplomat, and a friendly sympathetic human being all in one, no matter how long and hard his schedule.

According to a recent Nationwide survey:
**MORE DOCTORS SMOKE CAMELS
THAN ANY OTHER CIGARETTE**

Scientists/Physicists
/Researchers

Celebrities/Kardashians/
Conspiracy theorists/etc



**Taking antibiotics
for colds and flu?**

There's no point.



**Colds and flu are caused by
a virus and antibiotics do
not work on viruses.**



talk to your GP or pharmacist or visit www.bbc.co.uk

foresight
dialogues 2009



complexity of evidence.

surrogate end points

- Easier to show a drug improves bone density ... than to show it decreases fractures
- Easier to show a drug reduces blood pressure ... than to show it decreases rate of stroke
- Easier to show a statin reduces cholesterol ... than to show it decreases heart disease

Improving the numbers does not necessarily translate to what we care about

helping people live longer and better.

what if.

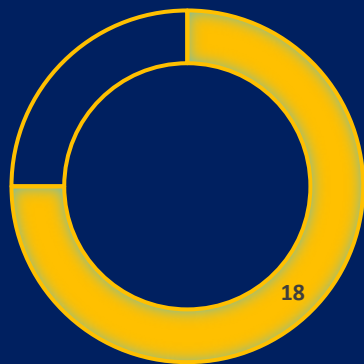
... some intervention could decrease the rate of hospitalization while paradoxically increasing the rate of death?

purity of evidence

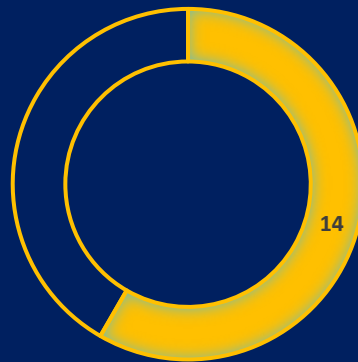
24K: PURE GOLD



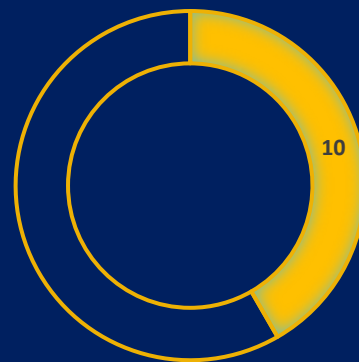
18K: 75% GOLD



14K: 58% GOLD



10K: 42% GOLD





// A new scientific truth
does not triumph by convincing its opponents
and making them see the light,
but rather because its opponents eventually die,
and a new generation grows up
that is familiar with it. //

Max Planck
Theoretical physicist

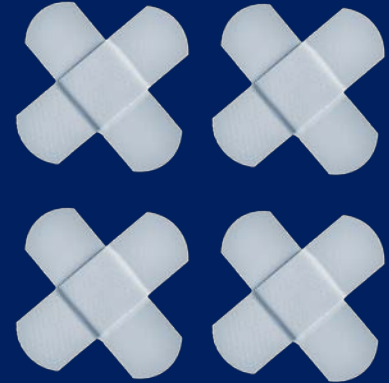
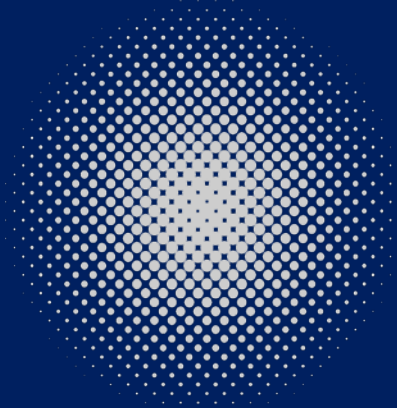
strong evidence

**large
enough.**

**method
sound enough.**

**important
enough.**

**results
replicated.**



smoothing the transition to good evidence

reform medical education.

support doctors in transfer of skills.

rather than rewarding discovery, reward replication.

fee-for-service vs salaried doctors.

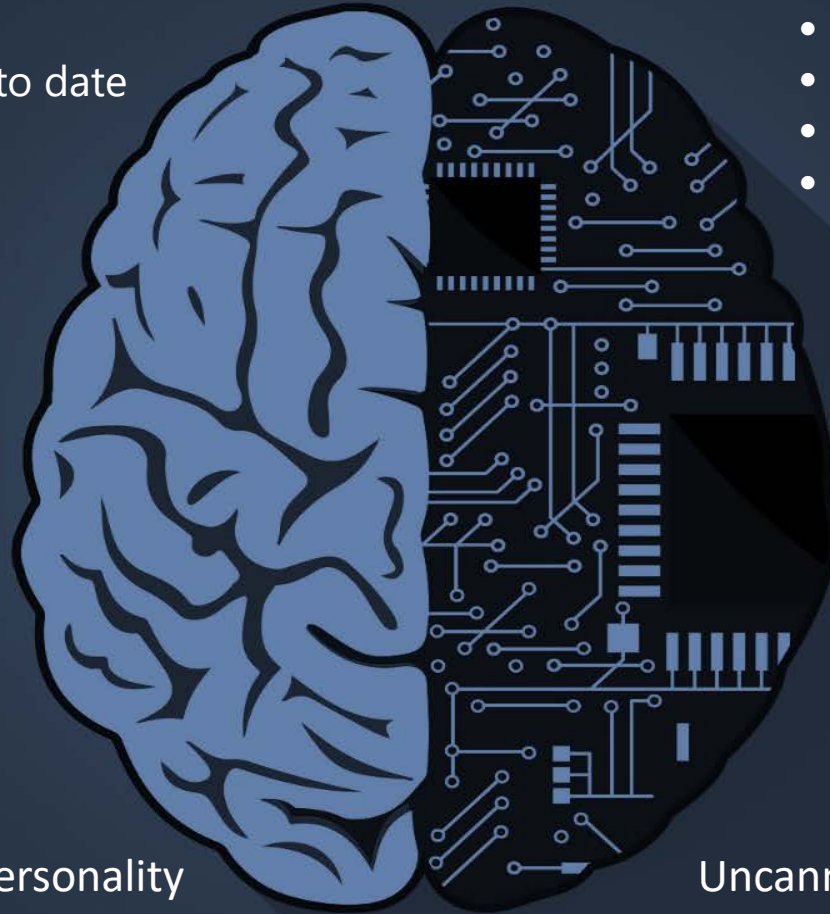
different processes for approval of guidelines/drugs/devices/apps.



what if.

... machines can help

- Limited storage
- Don't always stay up to date
- Forget
- Have biases



- Can handle large data
- Constantly learning
- Don't forget
- Built for optimization however still open to manipulation

Personality

Uncanny



what if.

... I said

thank you.
