



Ninewells Hospital & Medical School

"How to get better data on Medicines post licensing"

Tom MacDonald



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28th International Conference on Pharmacoepidemiology & Therapeutic Risk Management
August 23-26, 2012
CCIB Barcelona, Spain

**SCHOLARSHIP
APPLICATION**

ICPE 2012

DEADLINE: MARCH 19, 2012

[CLICK HERE](#)

Jointly Sponsored By:

The International Society for Pharmacoepidemiology (ISPE)
The International Society for Pharmacovigilance (ISoP)
European Association for Clinical Pharmacology and Therapeutics (EACPT)



ISPE Fun!



Competing Interests Statement

I have lots of
competing interests



Some day things will be perfect

If we try

Some day things will be perfect

And no one will ever die

Some day risk will be zero

My, oh my

Some day pills will be magic

And they'll taste of apple pie

The 7 Ages of Man



How do we decide?

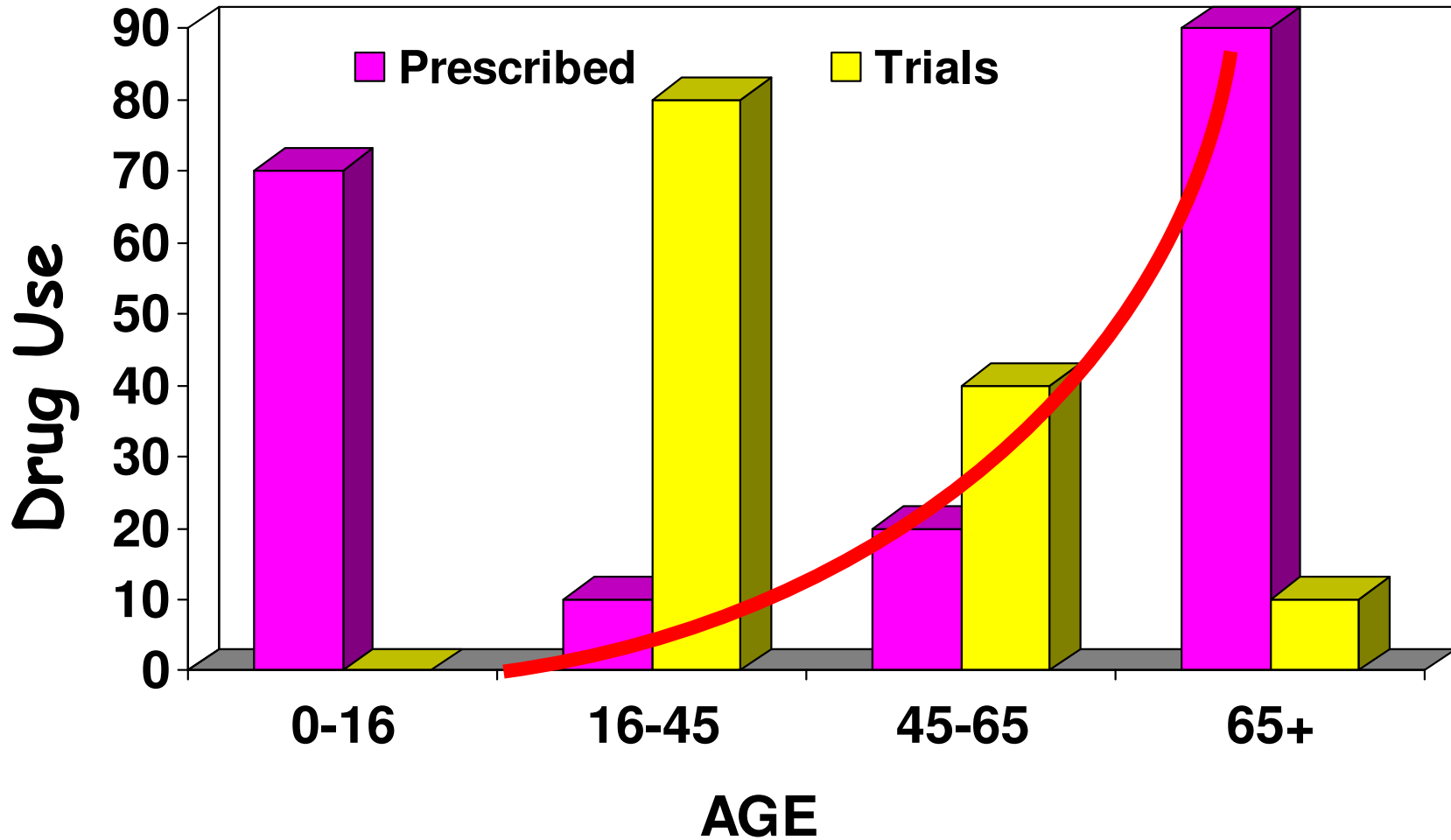


THIS IS FINE, I CAN SEE ALL THE EVIDENCE I NEED FROM HERE



Willet

Evidence : Practice Paradox



— Disease / severity



The New England Journal of Medicine

Statin Intolerance in Trials
5%

Statin Intolerance in Practice
20%

NEJM 2011;365:2250-1

Observational Studies

LA RAYA

HEIGHT ABOVE
SEA THE LEVEL
14172- FEET

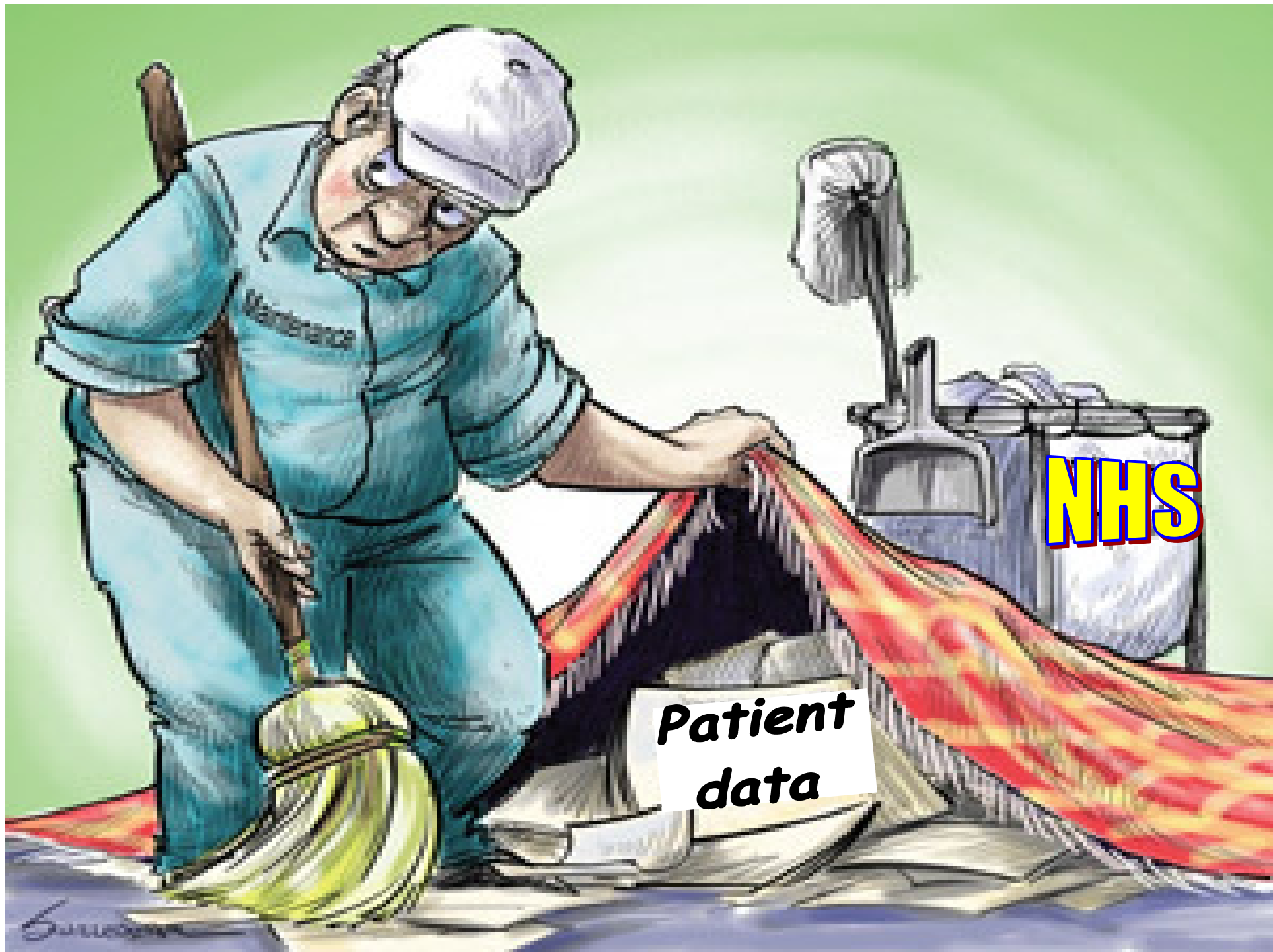


UK NHS

2009

- 61,792,000 in NHS
- 5,194,000 in NHS(iS)

<http://www.statistics.gov.uk/>

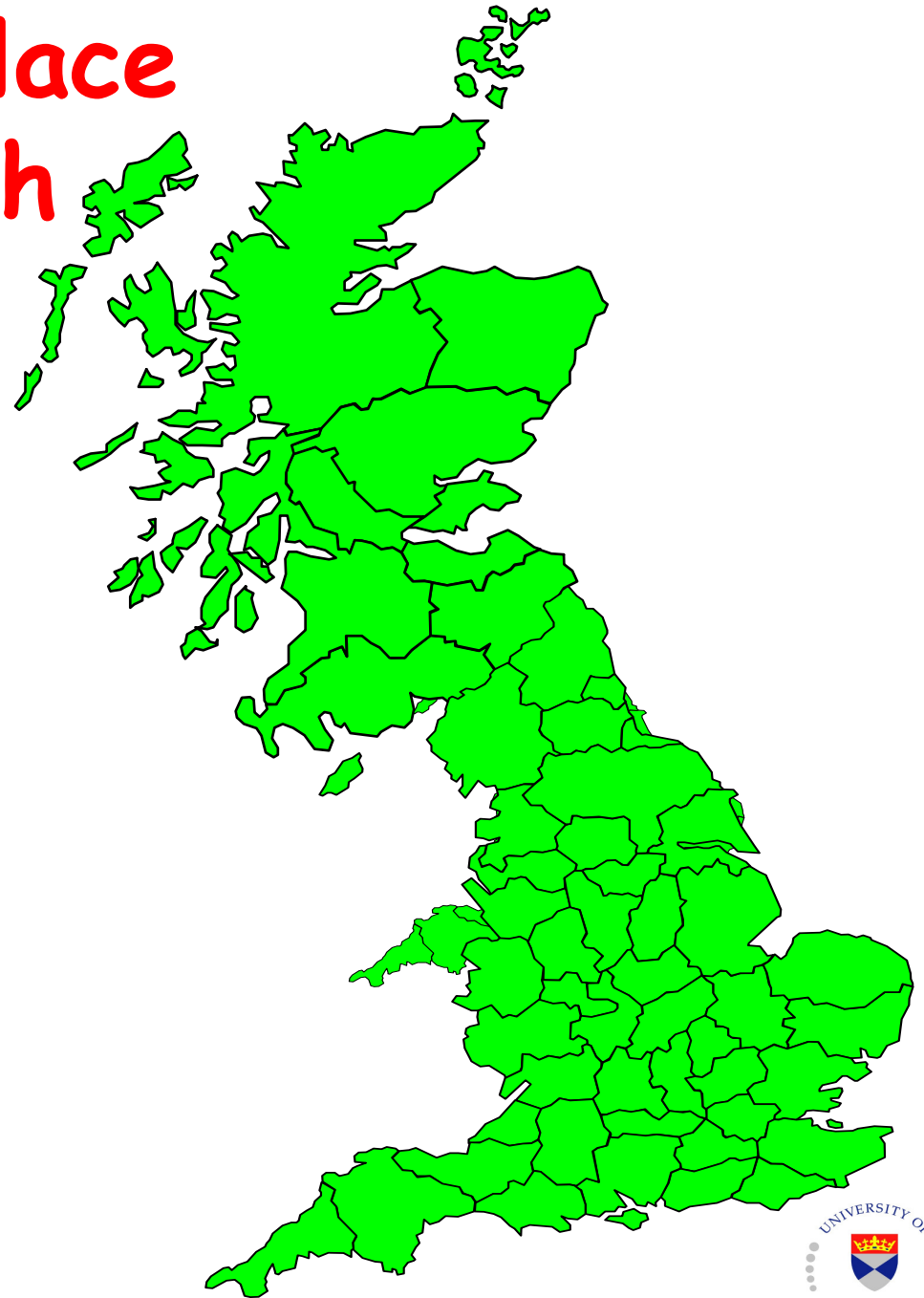


NHS

**Patient
data**

NHSiS: Great Place to do Research

Hospital
Diagnoses
Death
Certification
Prescribing
Lab data
Joined-up NHS



Parky



GPRD⁺

Much more than *the* database



The Database



Links



Research Services



Interventional



Risk Management

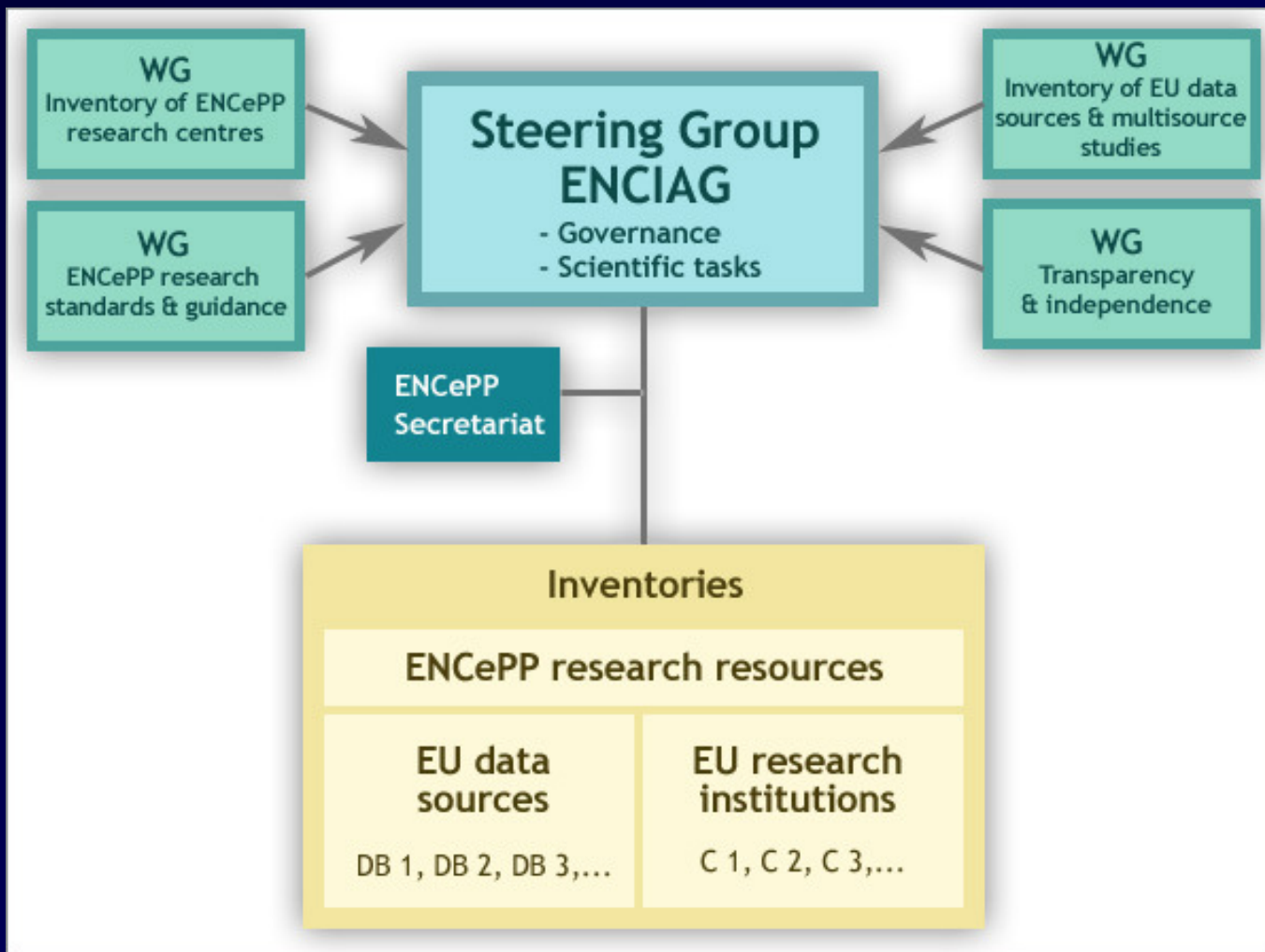


Global

Info@gprd.com www.gprd.com



ENCEPP Network



FDA Sentinel Network

- PMS observational data
 - Medical records

**100,000,000 patients by
2012**

- Health plans
- Insurers
- Medicaid & Medicare

NEJM 2009;361645-7

Un-consented Data: Increasingly Bureaucratic



Consent





Help us to 'keep tabs on the jabs'

We are undertaking a study to find the best way of learning from the public about their experience of the SWINE FLU vaccine.

If you have been offered the swine flu vaccine, whether you decided to have it or not, you could help us with this study.

If you have any symptoms after the swine flu 'jab' we would be interested to hear from you. You can email us on info@safetyswineflu.co.uk or telephone us on the number below. We also want to hear from people who have no problems following the 'jab'.

If you are interested and would like more information, please ask at your GP practice for an information leaflet.

These methods of studying vaccination have not been tried before and we would like your help.

Call us on **0800 917 3509**, or go to **www.safetyswineflu.co.uk**

version:3 26/10/2009

Swine flu  Vaccination



eContact

- Dedicated website
<https://www.safetyswineflu.co.uk>
- Online / paper registration
 - Patient information sheets
 - Consent
 - **Monthly follow-up**
- Automated email or SMS

Scottish scientists using real-time feedback to make vaccination safer

SHÂN ROSS

SCOTS scientists have used texts and e-mails to collect details "in near real time" to monitor any side effects of vaccinations. Researchers at Dundee University said yesterday that the rapid reporting of data, from thousands of people who received the 2009-10 swine flu vaccination in Scotland, could add another layer of safety to future vaccination campaigns.

The data, published in the *British Journal of Clinical Phar-*

"Our study indicates that vaccination is generally safe"

Prof Tom MacDonald

macology, also showed "no significant safety issues" in patients exposed to the vaccine.

The majority of the 3,754 participants were e-mailed once a month, and a few contacted by text, letter and phone, for seven months and asked if they had experienced any serious medical problems which they believed were related to the vaccine.

While there are long-standing mechanisms for collecting data about side-effects once a vaccination or medicine starts to



Vaccination can be a pain but a body of knowledge indicates it is safe

Picture: Ruby Washington/NYT

be used, the processes are often slow, and it can take months or years before the data is analysed and the results made known.

Professor Tom MacDonald, lecturer in clinical pharmacology at the university, who suggested the study, said the project had provided inexpensive high-quality data whose methodology would be of interest to bodies such as the World Health

Organisation. In 2009, the UK government recommended that some groups of people should be vaccinated against swine flu because the disease was spreading quickly worldwide.

To meet the timescales, vaccines were moved more rapidly than usual through the test and production phases, leading to fears this could trigger unwanted reactions.

Led by Dr Isla Mackenzie from the medicines monitoring unit at the University of Dundee and Dr Deborah Layton from the independent academic drug safety research unit in Southampton, the team collected data from participants at the time they were vaccinated, and a further 312 people who were offered vaccination, but declined.

Dr Mackenzie said: "We asked

people to let us know whether they had any serious health problems following being offered swine flu vaccination.

"We also followed up a group of pregnant women who were offered swine flu vaccination to check whether there were any problems with their pregnancies or their babies."

Dr Mackenzie added: "The use of web-based technology in the study was successful in reducing costs and allowing the collection of high-quality data directly from patients. This method for near 'real-time' monitoring, with minimal additional workload for healthcare staff, should be considered as an additional tool for other safety studies."

Overall, researchers found no safety problems with swine flu vaccination, which fits with findings from the Medicines and Healthcare Products Regulatory Agency's safety monitoring.

Professor MacDonald, said: "Our study adds to the pool of data which indicates that vaccination is generally safe and in the interests of public health.

However, Joanna Karpasea-Jones, founder of the Vaccination Risk Awareness Network UK, said while using new technology was useful, the long-term effects of vaccines could take years to emerge.



Will you give me
(and Rob) access to
your personal
medical data....

Please?

memo
medicines monitoring unit
project

engaging patients
in medicine safety
and effectiveness

UNIVERSITY OF

DUNDEE

**we need people like
you to help make
medicines better**



healthy or ill, everyone counts



**join us
@**



MemoSafety.org

All UK Practices & Pharmacies

15,158 GP Practices

12,613 Pharmacies

Prospective Follow
Up Safety Studies

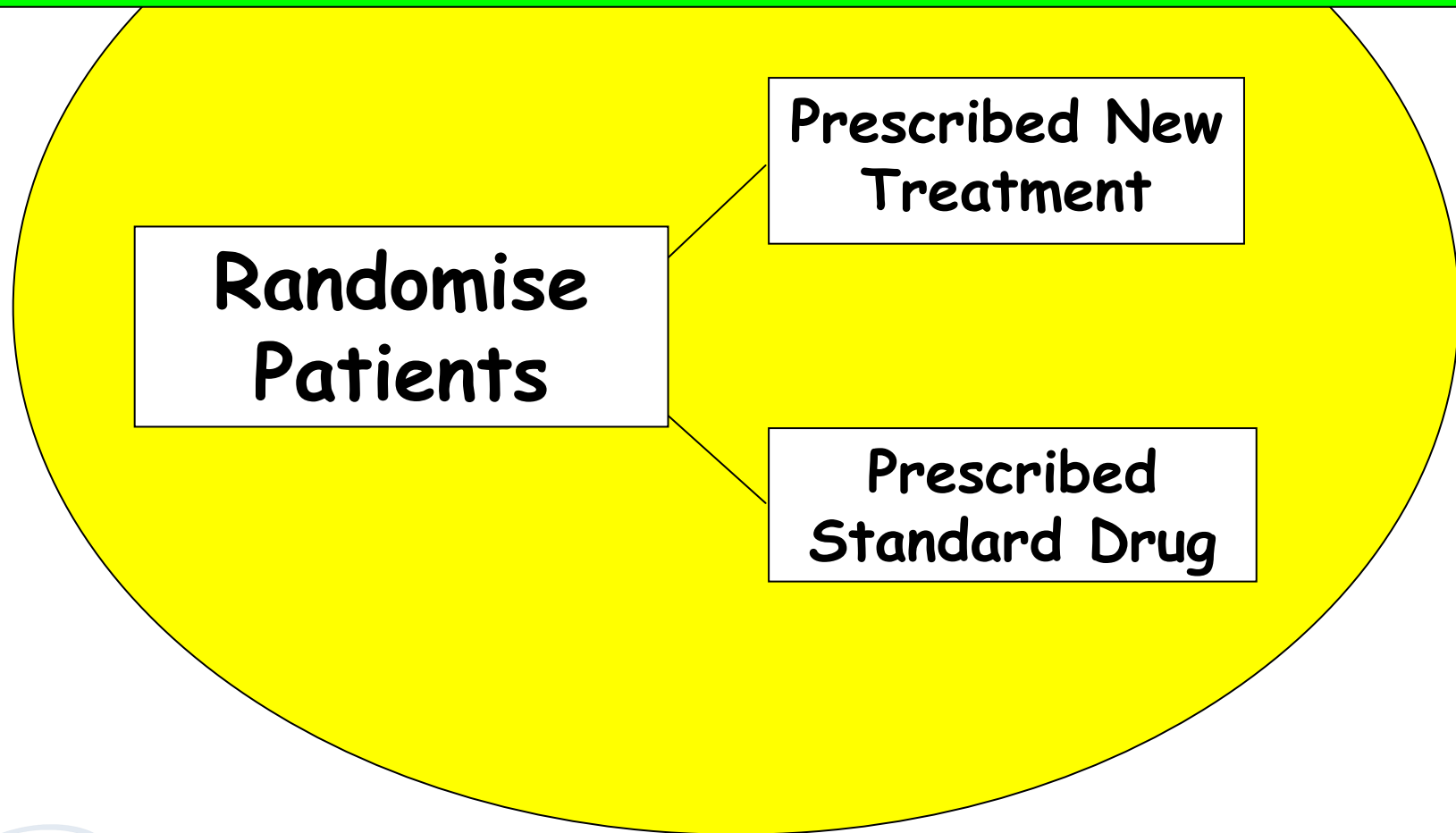
Large **CONSENTED**
Database



Catch-22

- Cannot get medicine used until cost-effective (and safe)
- Cannot get cost-effectiveness (or safety) data until medicine is used

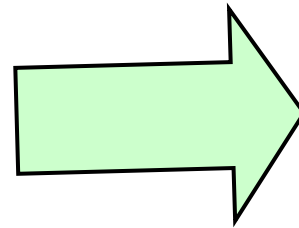
Streamlined Study: 25% of 'normal' cost



Randomised Treatments Prescribed



Research e-pharmacy





Streamlined Safety Studies



University
of Glasgow

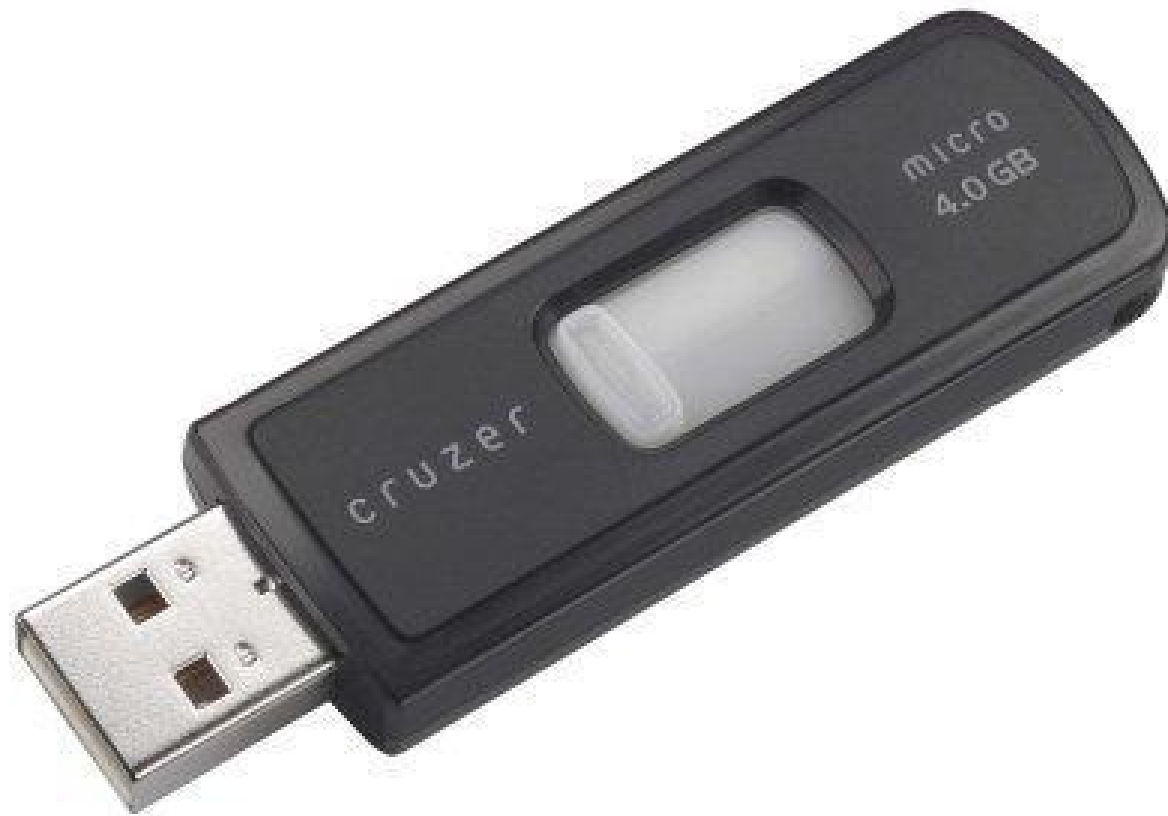


UNIVERSITY
OF ABERDEEN



KING'S
College
LONDON

Patient Search Tool



'Generic' Trial Infrastructure

10 Centres & 660 family practices UK, Denmark & Netherlands





BMJ 2008;337:1085-7

UK health research to be rehabilitated

Government welcomes report on reform of 'complex and scattered' regulation



When asked whether a new regulator could end up being just another layer of bureaucracy, he said;

"If it ends up like that you can shoot me."

Problem

< 50% Practices Participate
in primary care research

Problem

Write to 100 suitable
subjects, randomise 14

Mr Average





Few Socioeconomic 5

Few Very Old

Paying Patients to Participate?

Suitable Subjects identified
from search of GP or
Hospital records

Invitation letter with
incentive payment

Number screened

Invitation letter with
no incentive payment

Number screened



**Could I get
Randomised?**

“ I received this much needed treatment because someone else took part in a vital research trial. ”



- home
- about clinical trials
- taking part in clinical trials
- links
- media

You are here: [Home](#) | Introduction

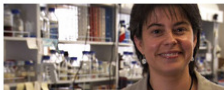


"We are all in this continually find o service."

BJCP British Journal of Clinical Pharmacology

Medical research – do we really need it?

Medicine, it is often said, is as much an art as a science. Certainly there was a time, not so long ago, when the healing art, Potions and procedures whose value was at best dubious and at worst positively we live in more enlightened times. Vast improvements in our knowledge of how the body works, in the dramatic medical advances that have occurred in the past hundred or so years. The scope and pace that no person can take it all in. Even specialists working in a single field of medicine can find it hard to



With so much knowledge around it is easy to think that doctors are Yet we all know how far this is from the truth. The evidence is all which we have no treatments, or only poor ones. Even in conditions available we see the need to reduce the chance of side effects and better ways. We will never get to the stage when we know all the

It's a surprise to most people to learn that much of medical practice as it now stands is not based on the ways that things have always been done. Often such treatments have their roots in days when it was about testing treatments and one simply got on with the job of tackling a particular problem in a particular this became accepted treatment. Particularly in the past decade health professionals have realised the need to improve what we do for their patients. Revisiting these treatments with the aim of giving them a why medical research will always have a lot of work to get through.

The popular view of medical research is that it is something that only goes on in hospitals or in laboratories That is partly the truth but by no means all of it. What we need to know most is how well do our treatments These treatments could be drugs, surgical techniques, appliances, therapies, medical gadgets or anything care. This is where we all come in. To be sure how well treatments work, how safe they are and how to do a lot more studies involving people who already have the sort of conditions that we are trying to

This is what the 'Get Randomised' campaign is all about.

[What are randomised clinical trials?](#)

Promoting public awareness of randomised clinical trials using the media: the 'Get Randomised' campaign

Isla S. Mackenzie, Li Wei, Daniel Rutherford, Evelyn A. Findlay, Wendy Saywood, Marion K. Campbell¹ & Thomas M. MacDonald

Medicines Monitoring Unit (MEMO), University of Dundee, Dundee and ¹Health Services Research Unit, University of Aberdeen, Aberdeen, UK



Professional

About Clinical Research Participation

Provide Education to Staff and Volunteers

Facts & Figures

- Basic Facts and Figures
- Facts & Figures for...
- Charts and Graphs

- Patient Perspectives
- CISCRP Surveys & Reports
- Research Participation

Articles

- AWARE for All
- Medical Heroes
- Communicate Trial Information

- The Participant Network
- CISCRP Catalog
- CISCRP Store

Clinical Research Recognizes Everyday People



Medical heroes can be found in everyday places

Advancements in clinical research are the basis for the discovery of new medical treatments. To learn more about clinical research visit www.ciscrp.org or call 1-800-488-8888. Together we can make a difference.

Medical Heroes'



Medical heroes can be found in everyday places

Advancements in clinical research are the basis for the discovery of new medical treatments. To learn more about clinical research visit www.ciscrp.org or call 1-800-488-8888. Together we can make a difference.

Click the images to view each ad.

Click [here](#) to listen to the radio ad.
View the Public Service Announcement

Learn more about how your organization can be more involved in our Medical Heroes Campaign.

http://www.ciscrp.org/professional/medheroes_campaign.html



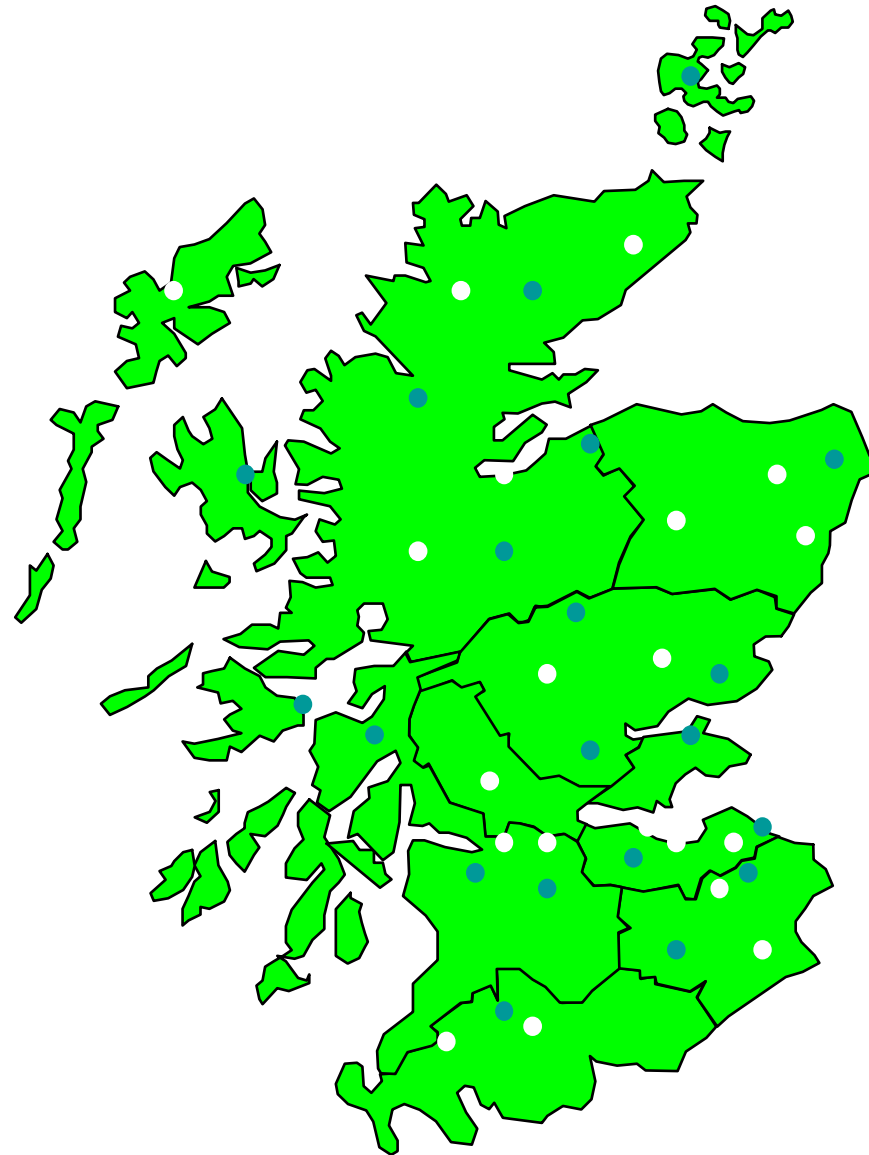
“Investigators should develop and improve methods to help decision makers appraise the evidence”

Harveian oration at the Royal College of Physicians, London
www.rcplondon.ac.uk/pubs/brochure.aspx?e=262

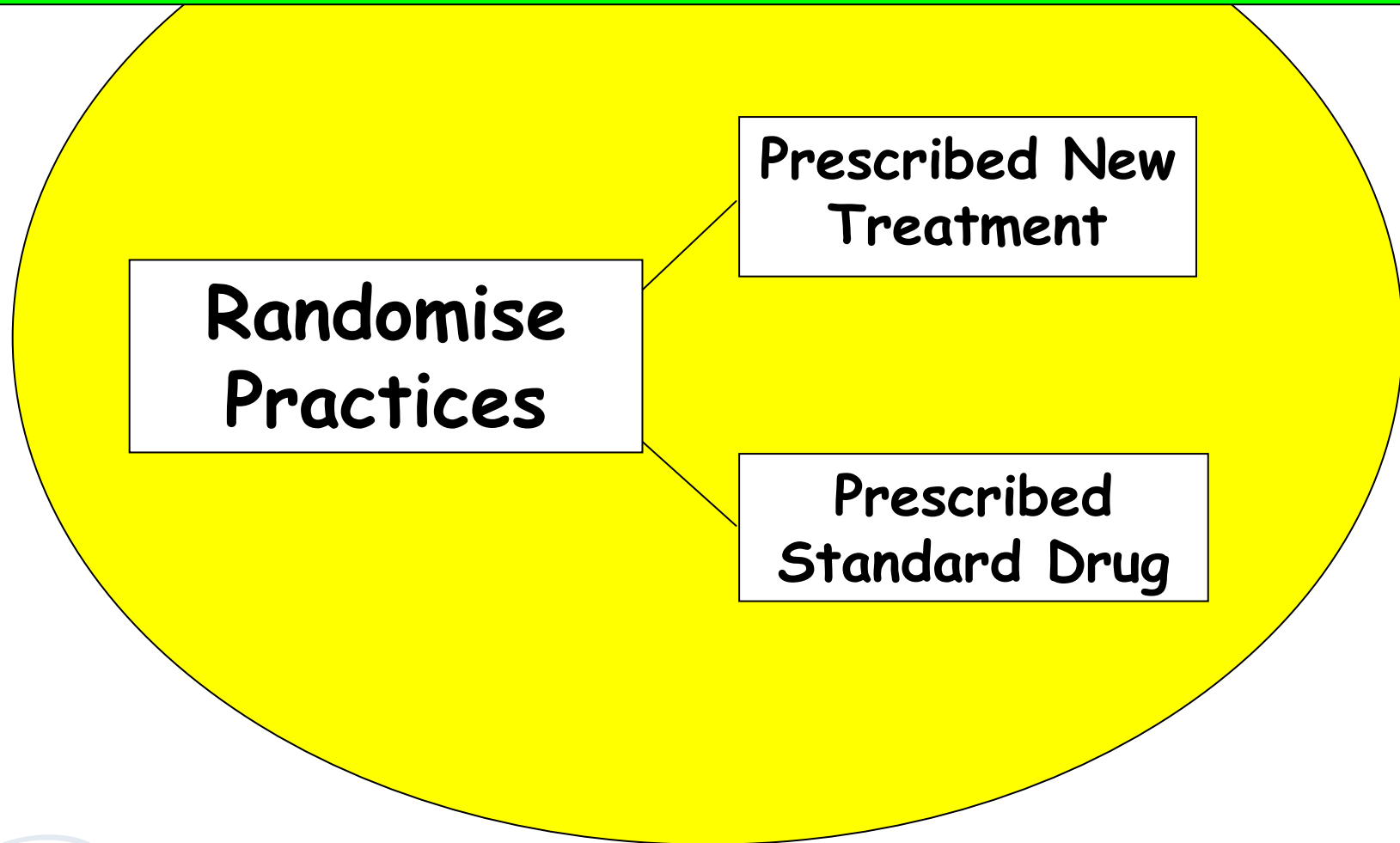


"My diabetic research shows that test subjects are 98% more likely to take their diabetic pills if the pills are covered in chocolate."

Randomized Prescribing



Randomise Practice Prescribing: 5% of 'normal' cost



Cluster randomized trials of prescription medicines or prescribing policy: public and general practitioner opinions in Scotland

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Keywords

cluster randomized trials, drug safety, effectiveness, public opinion, randomized policy design studies

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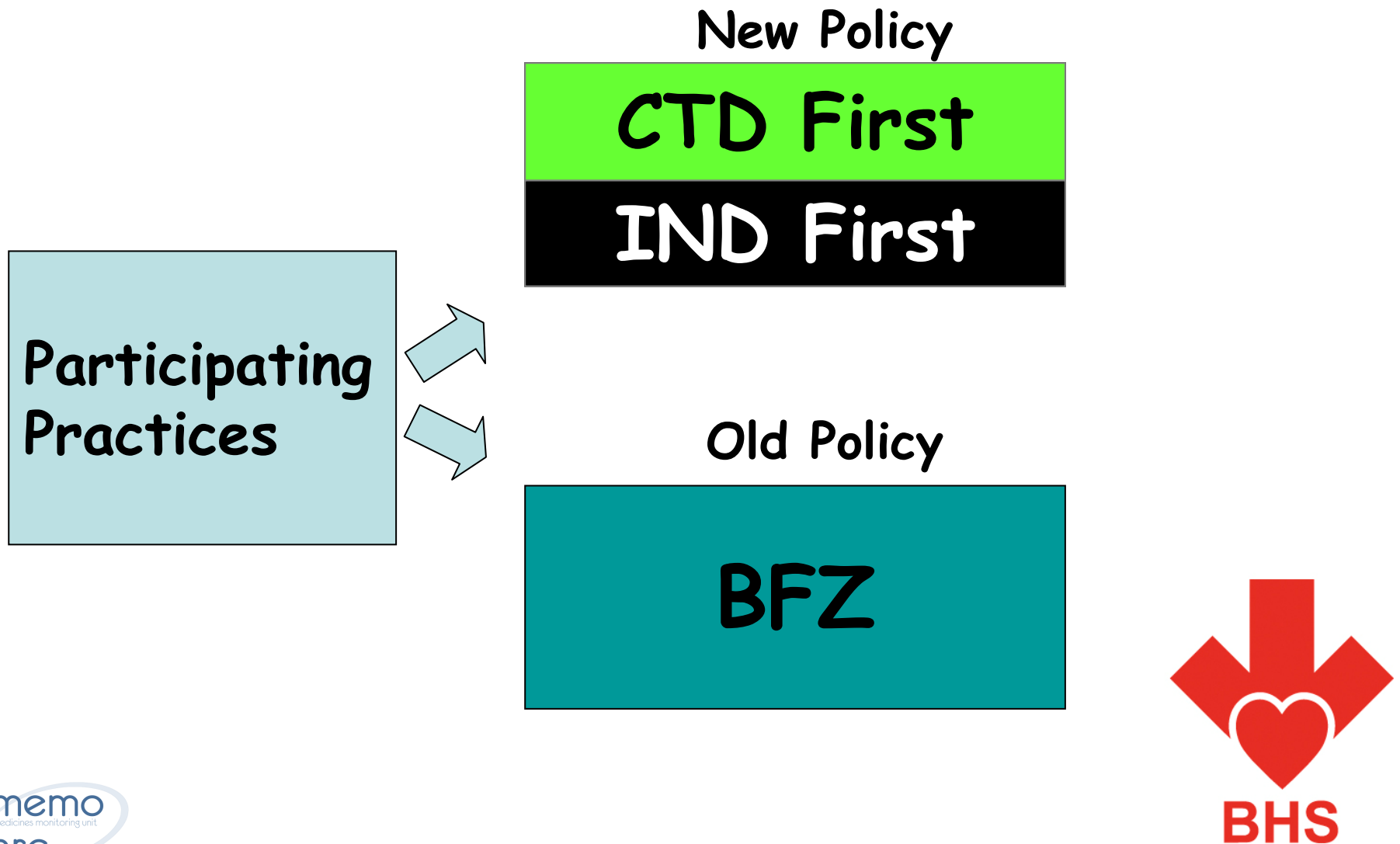
Accepted Article
Published Online

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CONCLUSIONS

The public in Scotland is broadly supportive of the concept of randomized policy design studies of medicines, while there is a spread of opinion among GPs.

Cluster Randomised



MHRA Clinical Trials Unit

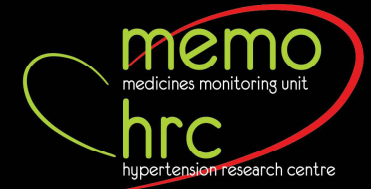
Not CTIMP Study

**Can we do internet
only studies?**

**Never or rarely see
patients?**

Is this a crazy idea?

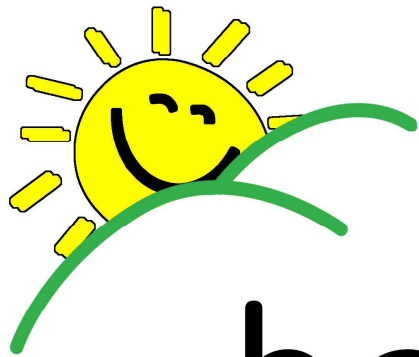




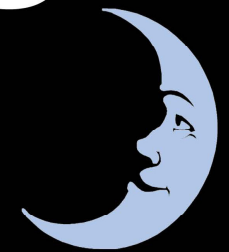
are you taking

blood pressure tablets?

morning vs evening



which is best



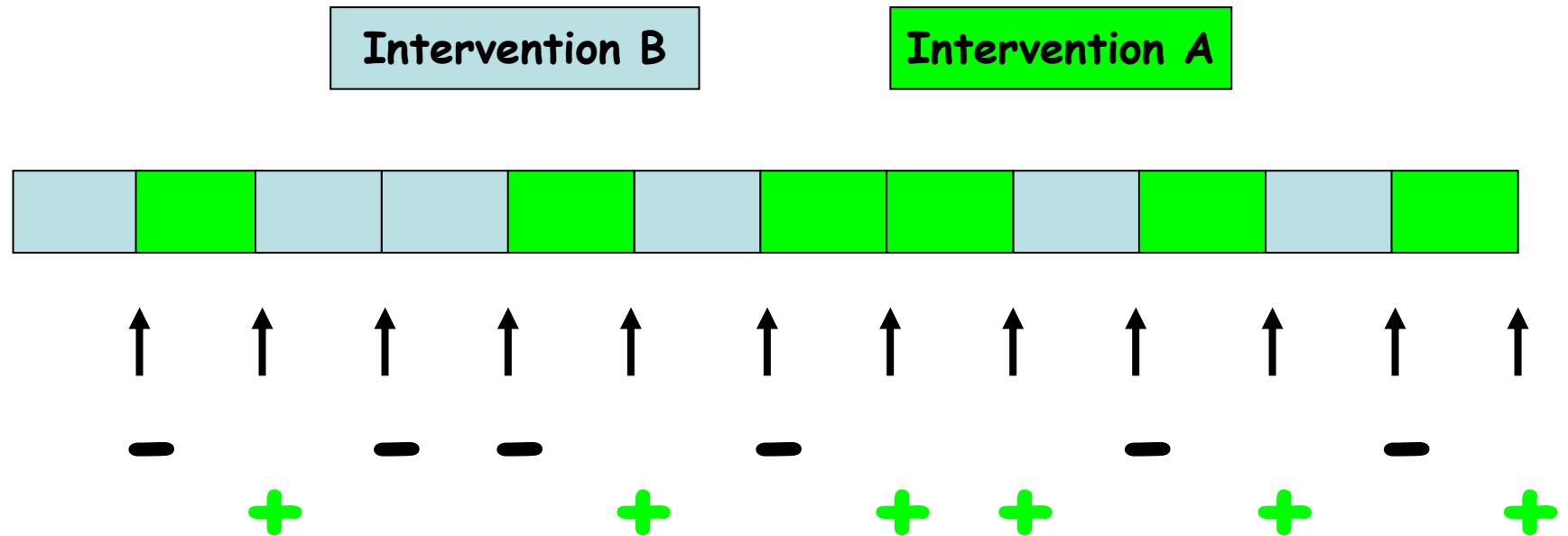
help us find out

www.TimeStudy.co.uk

How many subjects are required to show a statistically significant effect of an intervention v placebo or another intervention in a crossover study?

- 1**
- 6**
- 30**
- 100**
- >100**

N of One Crossover Studies



6 + v 6 - = $P < 0.05$ even with a non-parametric test

Trial of Therapy Always Useful

Lots of benefit: accept some risk

No benefit: accept no risk

Benefit : Risk Analysis





Balancing Benefit & Risks



If ignorance is bliss
then why aren't
more people happy?





