

Are we Making Progress: If Not, Why Not?

Andy Grieve

Center of Excellence for Statistical Innovation, UCB Slough, UK

30th June 2021

12th EFSPI Leadership Meeting



Sara, UCB

What a time to be a Statistician



The weekly stats uncovered A series that goes behind the numbers in the news

<p>13 June 2021</p> <p>What were some of the collateral effects of lockdowns? David Spiegelhalter and Anthony Masters</p> <p>Hospital waiting lists rise, but traffic accidents fall - Covid's consequences will emerge in time, but it's not all quantifiable</p> <ul style="list-style-type: none"> • Coronavirus - latest updates • See all our coronavirus coverage <p>0:00:00</p>	<p>2 May 2021</p> <p>Will Covid-19 vaccines reduce virus transmission? David Spiegelhalter and Anthony Masters</p> <p>Vaccinated people can still get infected, but they are less likely to pass it on</p> <p>0:00:00</p>	<p>March 2021</p> <p>Don't fear the AstraZeneca jab, the risks are minimal David Spiegelhalter and Anthony Masters</p> <p>Health regulators have said there's no increased thrombosis risk from the Covid vaccine. But has the damage been done?</p> <p>0:00:00</p>
<p>6 June 2021</p> <p>Have more than 100% of older people been vaccinated? David Spiegelhalter and Anthony Masters</p> <p>To understand vaccine coverage, we need to know how many people there are</p> <p>0:00:00</p>	<p>25 April 2021</p> <p>Covid, false positives and conditional probabilities... David Spiegelhalter and Anthony Masters</p> <p>An 18th century chessman's legacy is central to understanding the pandemic</p> <p>0:00:00</p>	<p>March 2021</p> <p>Speedy Covid tests are very useful, but not conclusive David Spiegelhalter and Anthony Masters</p> <p>Behind the numbers: why the devices being used in England's schools need another test to confirm positive cases</p> <p>0:00:00</p>
<p>30 May 2021</p> <p>Why is the new Covid variant spreading? David Spiegelhalter and Anthony Masters</p> <p>The Virus is now in a race with the vaccines and the Virus is winning</p> <p>0:00:00</p>	<p>18 April 2021</p> <p>Which countries have fared worst in the pandemic? David Spiegelhalter and Anthony Masters</p> <p>The 'league table' is changing and it's not over yet</p> <p>0:00:00</p>	<p>March 2021</p> <p>How do we track and measure new variants of coronavirus? David Spiegelhalter and Anthony Masters</p> <p>The UK's genome sequencing labs are at the forefront of global efforts to track and identify every single case</p> <p>0:00:00</p>
<p>27 June 2021</p> <p>Why most people who now die with Covid in England have had a vaccination David Spiegelhalter and Anthony Masters</p> <p>Don't think of this as a bad sign, it's exactly what's expected from an effective vaccine</p> <p>0:00:00</p>	<p>11 April 2021</p> <p>How big are the blood-clot risks of the AstraZeneca jab? David Spiegelhalter and Anthony Masters</p> <p>Young people have as much chance of obtaining the jab as of getting serious blood clots from the AstraZeneca vaccine</p> <p>0:00:00</p>	<p>February 2021</p> <p>Both Covid jabs are working well in the real world, not just the lab David Spiegelhalter and Anthony Masters</p> <p>Behind the numbers: the policy of giving as many first jabs as possible is already curbing hospital admission rates</p> <p>0:00:00</p>
<p>20 June 2021</p> <p>Is there an 'acceptable' risk of death? David Spiegelhalter and Anthony Masters</p> <p>The pandemic has led to discussion of what are unacceptable risks to life and what measures are needed to push those down</p> <p>0:00:00</p>	<p>4 April 2021</p> <p>How is it possible that the number of deaths is now so low? David Spiegelhalter and Anthony Masters</p> <p>The weekly death toll in England and Wales from all causes is below average over the past 50 years</p> <p>0:00:00</p>	<p>February 2021</p> <p>Is 12 weeks between Covid jabs too long? David Spiegelhalter and Anthony Masters</p> <p>Behind the numbers: there are good reasons to believe the UK's vaccination experiment will work</p> <p>0:00:00</p>
<p>9 May 2021</p> <p>How good are we at predicting the pandemic? David Spiegelhalter and Anthony Masters</p> <p>Models have been useful, especially as humans are far too optimistic and confident</p> <p>0:00:00</p>	<p>28 March 2021</p> <p>The UK's randomised coronavirus trials are a global success story David Spiegelhalter and Anthony Masters</p> <p>For once there's a view: the Recovery programme has used the NHS to test many Covid treatments, saving lives worldwide</p> <p>0:00:00</p>	<p>February 2021</p> <p>Is Covid more deadly and contagious than seasonal flu? David Spiegelhalter and Anthony Masters</p> <p>Behind the numbers: the short answer is yes, and scientists still have much to learn about it</p> <p>0:00:00</p>



Making Statisticians Count

PHARMACEUTICAL STATISTICS

Pharmaceut. Statist. 2002; **1**: 35–43 (DOI:10.1002/pst.005)

Do statisticians count? A personal view

A. P. Grieve*[†]

*Statistical Research Centre Pfizer Global Research and Development Sandwich, Kent
CT13 9NJ, UK*



Grieve's Laws of Influential Statisticians

1st Law - Design, Design, Design (D³)

2nd Law - Pre-Planning Prevents P . . . Poor Performance (P⁶)

3rd Law - when dealing with clients be – Assertive, Aggressive, Arrogant (A³)

My Career

The Decisions

- First Work Experience
 - I was analyzing data
 - I was studying Rheumatology
- Would I like to work in a laboratory?

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- Investment
 - Research
 - Training
 - Management
- Development
 - Research
 - Research
 - Management
- I believe in...
 - In development

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- The Middle
 - Multi-
 - Correction
 - Mathematics
 - Bayesian
- In 1980 enlightened
- Toxicology
- Brief to
 - Multi-
 - Correction
 - Mathematics
 - Bayesian

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Career to date

Roles

- Team Leader
- Project statistician
- Professor

Manager

- Consultant

Areas

- Drug Discovery
- Planning
- Epidemiology
- Pharmacokinetics/dynamics
- Pre-clinical Toxicology
- Health Economics
- Human Resources
- Finance
- Pharmaceutical/Development
- Academic Liaison/Sponsorship

Companies / Countries

- UK
- German
- Switzerland
- US
- Belgian

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Pfizer Rotation Scheme for New MSc Recruits

| In 1st year, new MSc recruits rotated through 4 statistics Groups

| Pre-Clinical
Early Development
Late Development
Statistical Programming

| Chance of experiencing different areas, different types of statistics, different discipline / professionals

| As part of the scheme each colleague had to present on what they were currently working on – what's an SOP for ?

| Eg. SOP for analysing crossover designs specifies a Senn-like approach to carryover – leave it out of the model.

Question – Now.

| "It's no good running a pig farm badly for 30 years while saying 'really, I was meant to be a ballet dancer.' By that time, pigs will be your style."

Quentin Crisp

An evening with Quentin Crisp, 1975-1999.

External Engagement – Year 12 Students from Local Schools



Life is our Life's Work

YEAR 12 – STATISTICS AT PFIZER DAY

Monday, 23 June 2003

Rotation Plan

Session	Time	Helicopter Experiment 502/G.16	Design Issues Crossover etc 506/1.3	Consultancy & Communication 509/G.230	Analysis of Tasting Coke & Viagra Data 509/G.233	Graphical Presentation of Data 507/2.01	Room
1	11.15 - 12.00	A	D	B	E	C	
2	12.00 - 12.45	B	E	C	A	D	
3	13.30 - 14.15	C	A	D	B	E	
4	14.15 - 15.00	D	B	E	C	A	
5	15.15 - 16.00	E	C	A	D	B	

Encourage participation:

- Professional societies
- Industry bodies
- Presentation at conferences
- Publication
- Academia
- Pro Bono work

Protocol DNDi-FEX-09-HAT Version 1.0 Fexinidazole



Drugs for Neglected Diseases *initiative*

CLINICAL STUDY PROTOCOL

An open-label study assessing effectiveness, safety and compliance with fexinidazole in patients with human African Trypanosomiasis due to *T.b. gambiense* at any stage



Influencing

- “I would rather have a mathematician than a philosopher which is why I have a mathematician in my office”
- “The technology is available to anyone”
- “I think we need to dispel the myth that statistics are just numbers”
- “It is a complex analysis of experience and influence”

DIA Tokyo, October 2006

- Actuaries – relatively small but significant opportunities
- Accountancy – of absurdity, auditing, tax, great
- Statistics should be used to support, control and influence

Tokyo University of Science, 4th October 2006

- Statistics below the line
- ◆ “Some people ask what has happened”
- ◆ “Some people ask what has happened”
- ◆ “Some people ask what has happened”

A.P.Grieve

 parliamentlive.tv

 HOME
  EVENT GUIDE

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Public Administration and Constitutional Affairs Committee
 Tuesday 24 November 2020 Meeting started at 9.00am, ended 11.08am



FDA/PhRMA Workshop Washington, DC, November 13/14 2006: 23

