Data and Statistical Careers in Public Health Scotland

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Public Health Scotland

A quick bit about Scott

Graduated in 1994 with degree in Maths & Statistics from Edinburgh

Active in the Royal Statistical Society – strongly recommend getting involved

26 years in the public sector;
24 within the NHS

What I'll cover today....

1. Introduction to health statistics in Scotland

2. Describing the wide variety of work of our analysts

3. Some audience participation with official statistics!

4. Our future direction

5. Applying for jobs and preparing for interview

Health & Care Statistics in Scotland

- Majority of health statistics in Scotland produced by Public Health Scotland (www.publichealthscotland.scot)
- Production of official statistics is an important part of our remit, recognised in the 2008 Official Statistics (Scotland) order
- One of the largest employers of analytical staff in Scotland
- PHS employs c1,100 people, of which c500 are in data and statistical roles

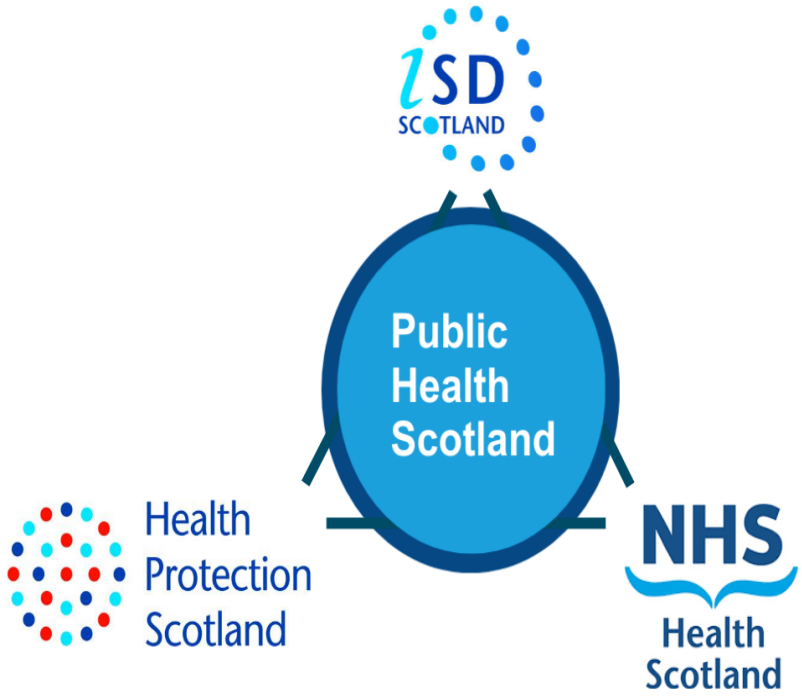
Every statistician has a favourite graph.....

Genuine parliamentary question.....

How heavy was Scotland's heaviest baby?

Introducing Public Health Scotland

Scotland's Public Health Reform includes the creation of a new national public health body called Public Health Scotland



Background - why the time is right

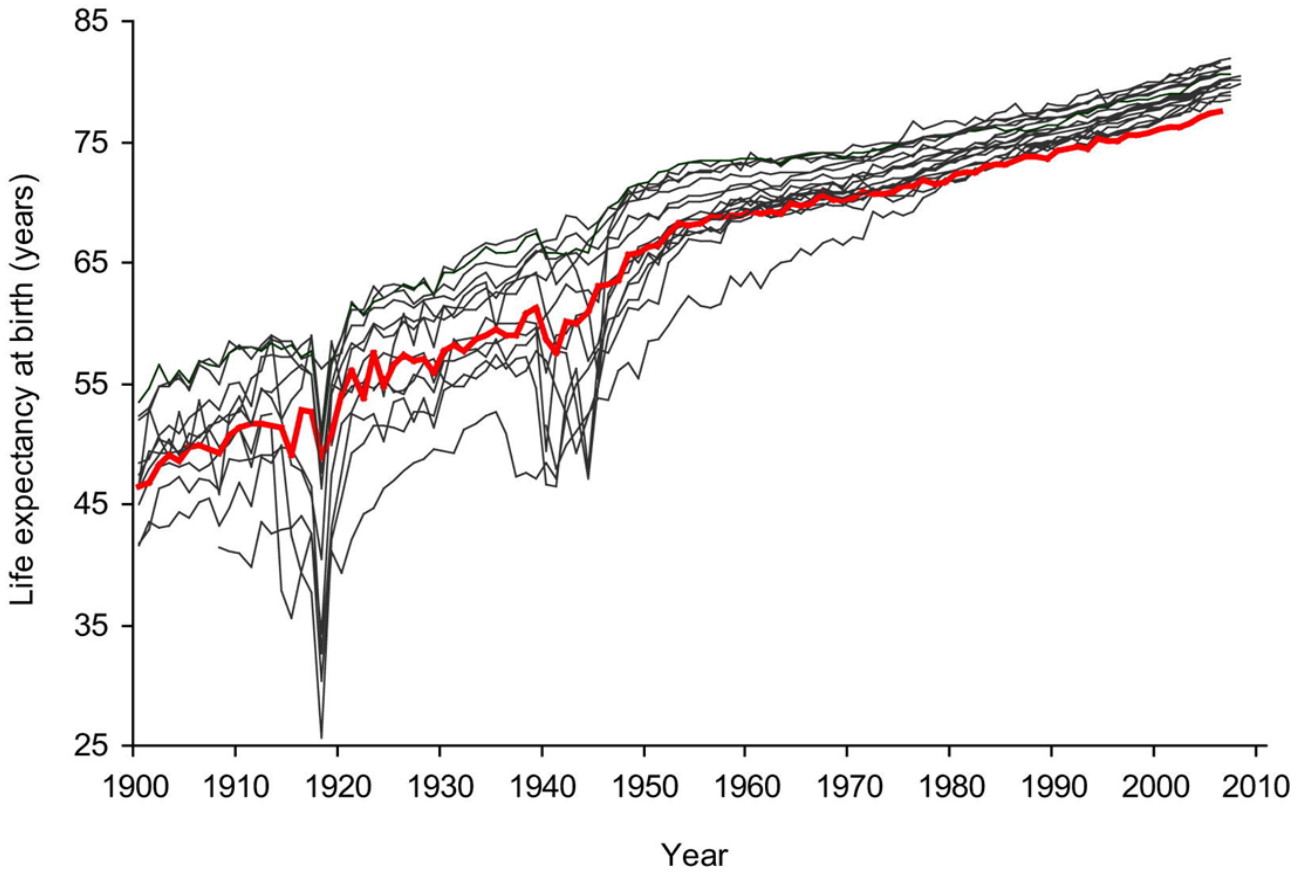
- Scotland has one of the world's best performing health services
- But we also suffer from some of the poorest health in the western world – challenges include:
  - Poor mental wellbeing
  - Health inequalities
  - Drug-related deaths
- Poverty and reductions in funding for public services are increasingly impacting on our health and how long we are living for
- New and emerging diseases like COVID-19 and climate change are threatening health across the globe

Who do we work with?

We work in partnership with a range of organisations:

- Scottish Government
- Scottish Parliament
- NHS Health Boards
- Local Authorities
- Health & Social Care Partnerships
- Universities
- Voluntary Sector
- Public
- Media

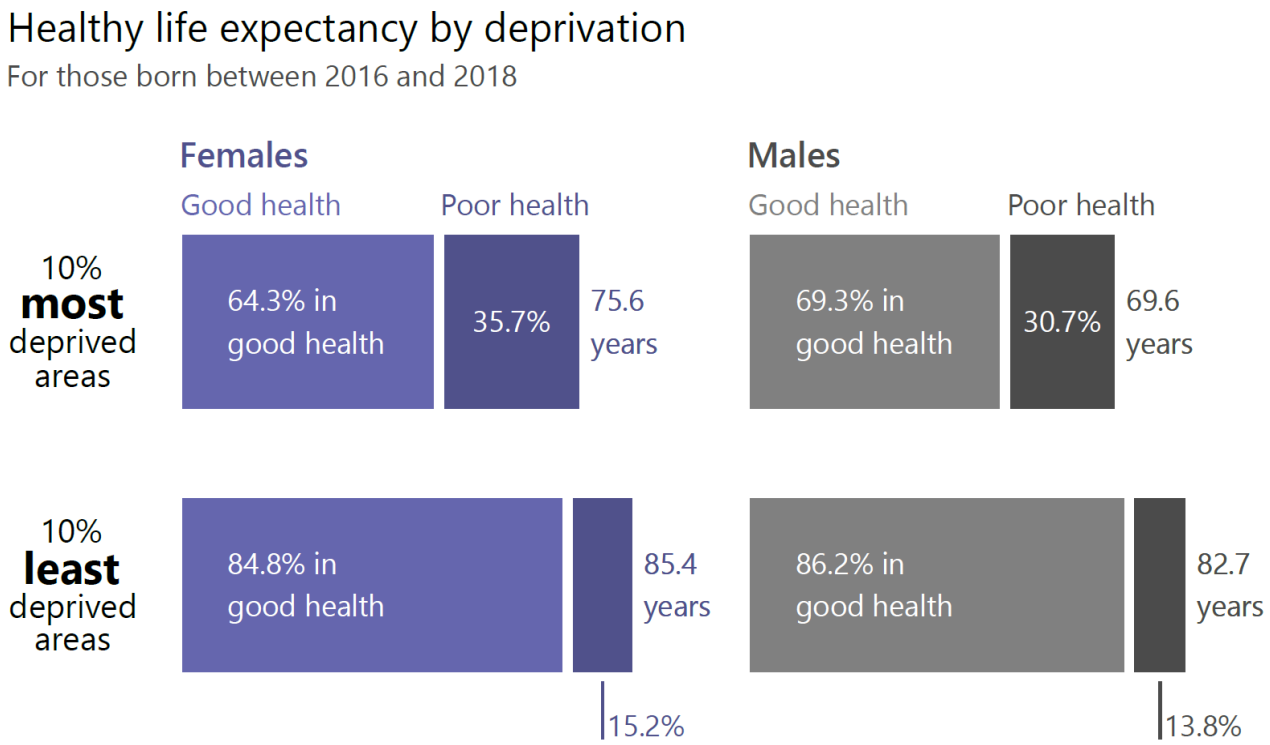
Life expectancy in Scotland v Europe



Red line is Scotland, life expectancy was increasing (but slower than other countries); more recently it has stalled

Let’s delve deeper into the data…..

People in the **most deprived areas** have fewer years of good health and **die younger**



Careers in Public Health Scotland

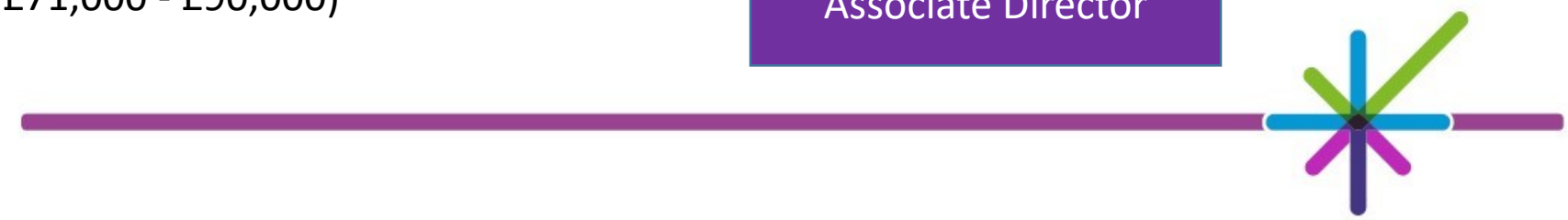
- Two main offices in Edinburgh and Glasgow, but all staff have been working from home during COVID pandemic
- Greater focus on local support with staff based locally in NHS Boards, local authorities and Scottish Government
- Clear career structure from new graduate to Service Manager
- Good terms & conditions, including pension

Terms and conditions

- 37.5 Hours per week
- 27 days annual leave, rising to 29 after 5 years, 33 after 10 years
- Flexible working hours
- Up to 2 “flexi” days additional leave per 4 weeks
- Good pension scheme (average salary)
- Many “family friendly” policies
- Opportunities for career breaks

Our career structure

Band 5 (£25,000 - £32,000)	Information Analyst	
Band 6 (£32,000 - £39,000)	Senior Information Analyst	Senior Information Development Manager
Band 7 (£39,000 - £46,000)	Principal Information Analyst	Principal Information Development Manager
Band 8B (£59,000 - £64,000)	Service Manager	Information Consultant
Band 8C/8D (£71,000 - £90,000)	Head of Service / Associate Director	



Our career structure

Band 5
(£25,000 - £32,000)

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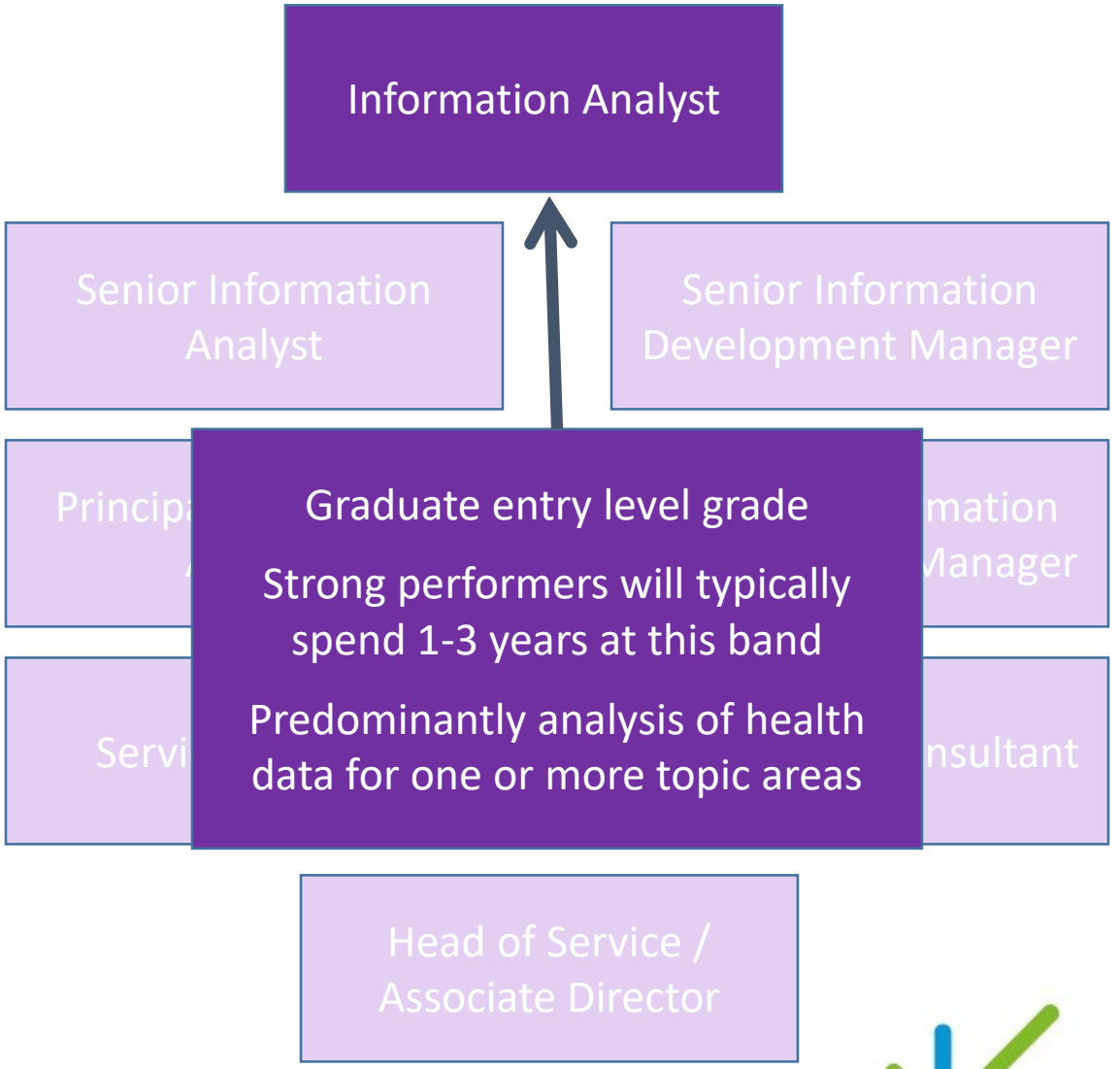
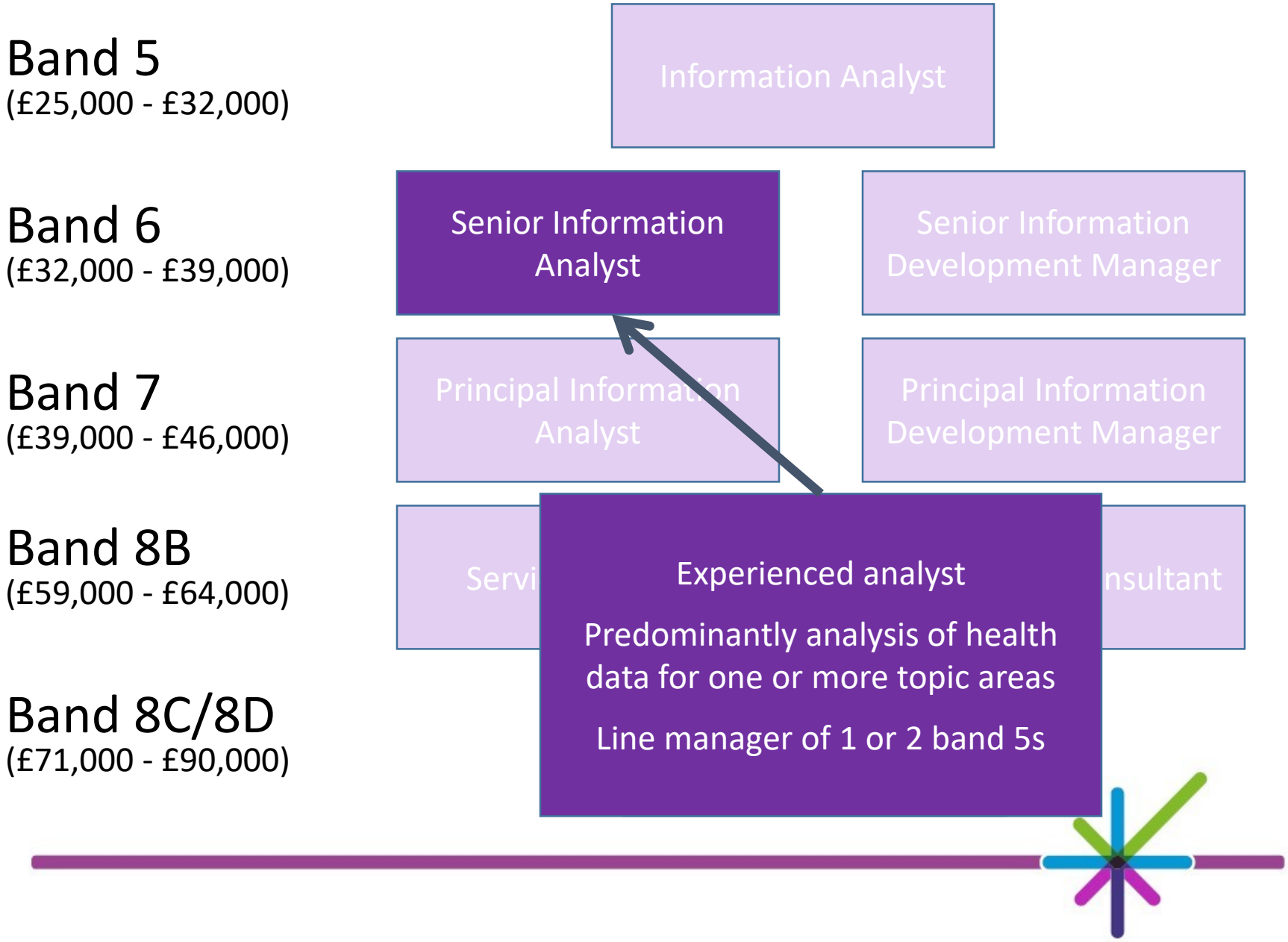


Our career structure



Our career structure

Band 5
(£25,000 - £32,000)

Information Analyst

Band 6
(£32,000 - £39,000)

Senior Information Analyst

Band 7
(£39,000 - £46,000)

Principal Information Analyst

Lead for a key statistics area (can be multiple teams), up to 10 staff

Role will still involve analysis but becoming more managerial and strategic

Band 8B
(£59,000 - £64,000)

Service Manager

Band 8C/8D
(£71,000 - £90,000)

Head of Service / Associate Director

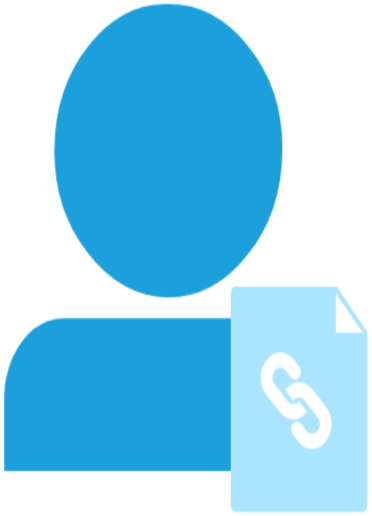
Public Health Scotland – What We Do

Scotland has some of the best health data in the world.
Few countries have information which combines:

High quality data

Consistency

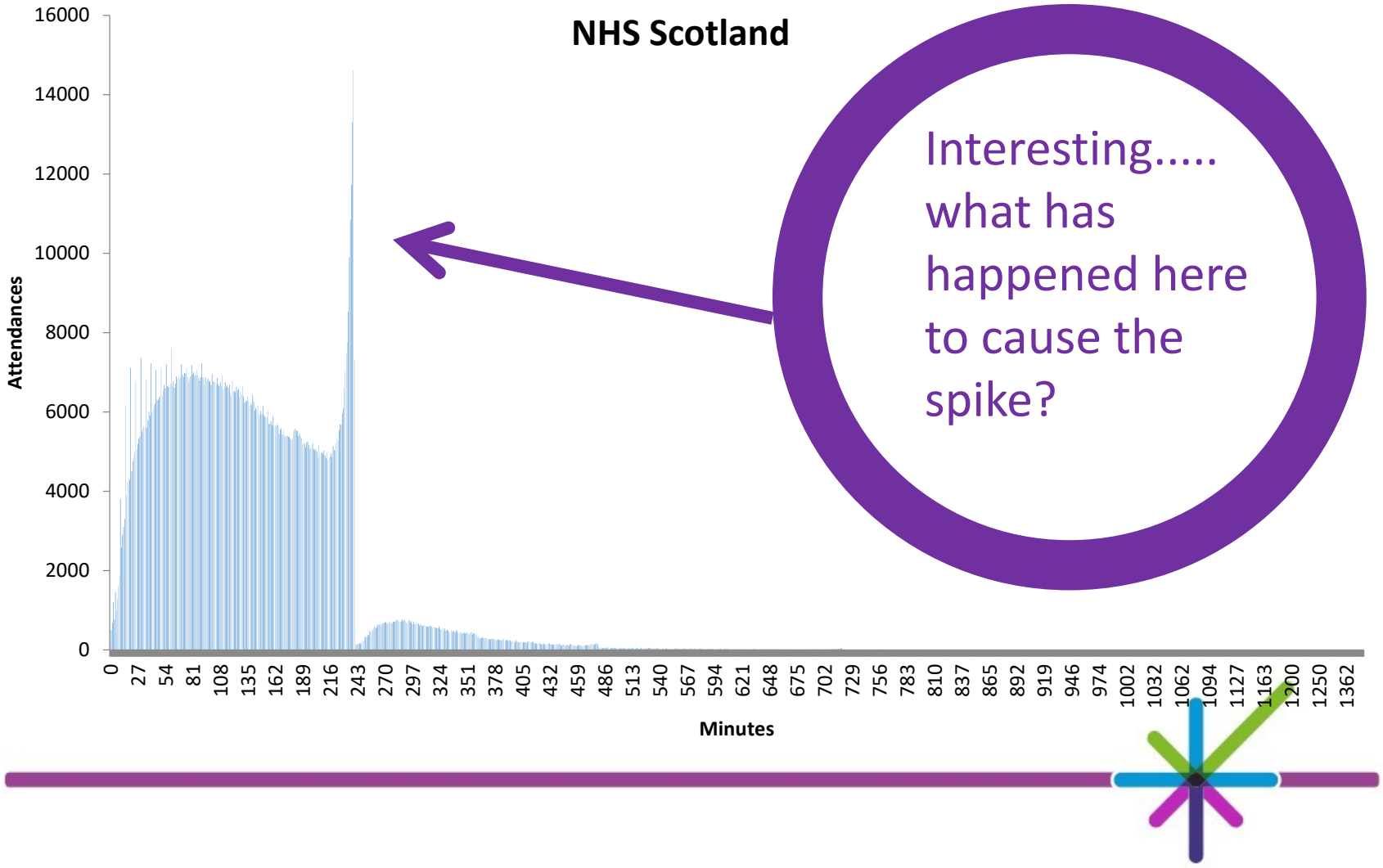
National coverage



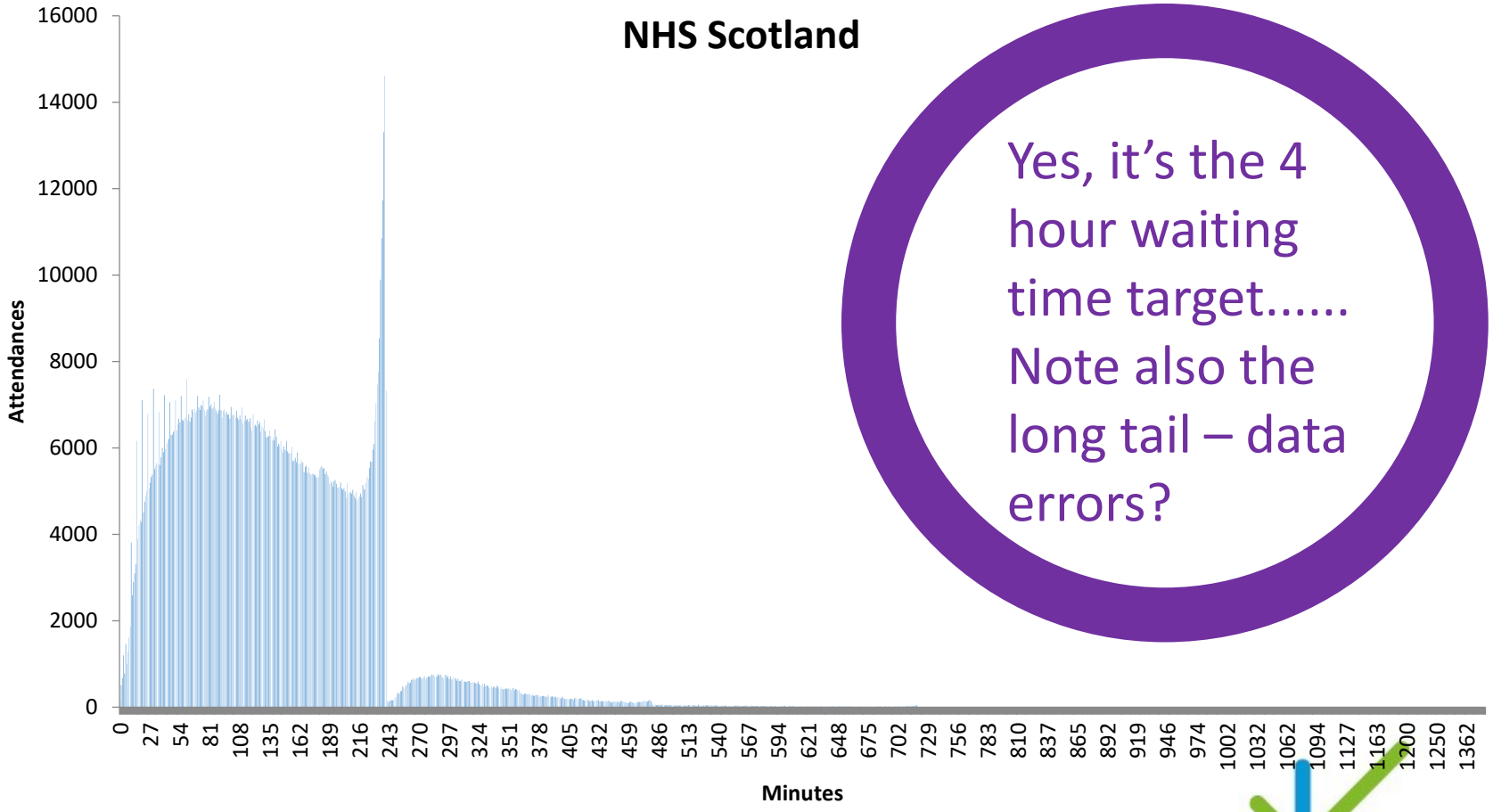
Ability to link data for patient based analysis

Your chance to win some glory with the help of official statistics……

A&E Waiting Times



A&E Waiting Times



Yes, it's the 4 hour waiting time target..... Note also the long tail – data errors?

Beware the outlier.....

Genuine parliamentary question.....

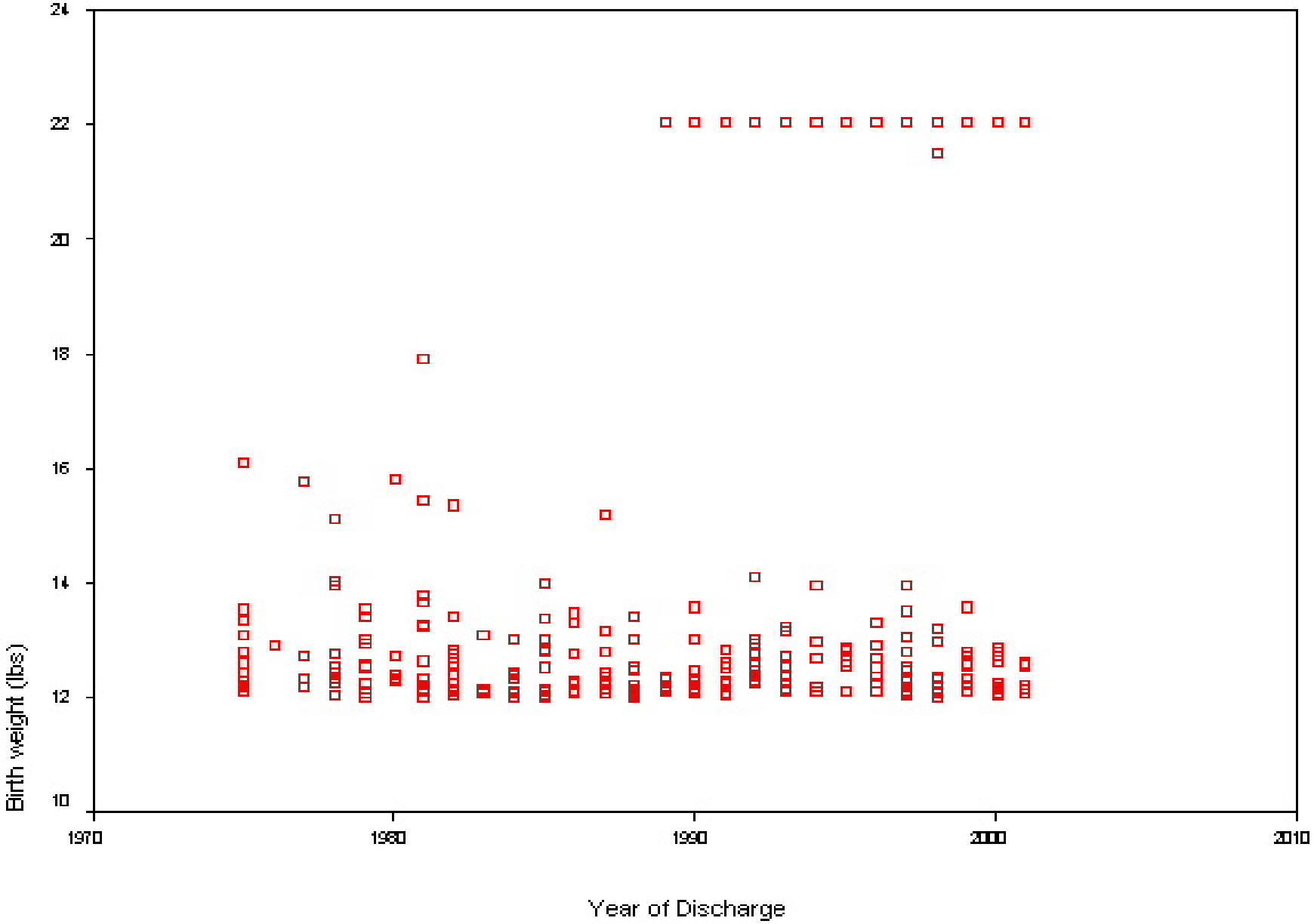
How heavy was Scotland's heaviest baby?

Is this even plausible?

Genuine parliamentary question…..

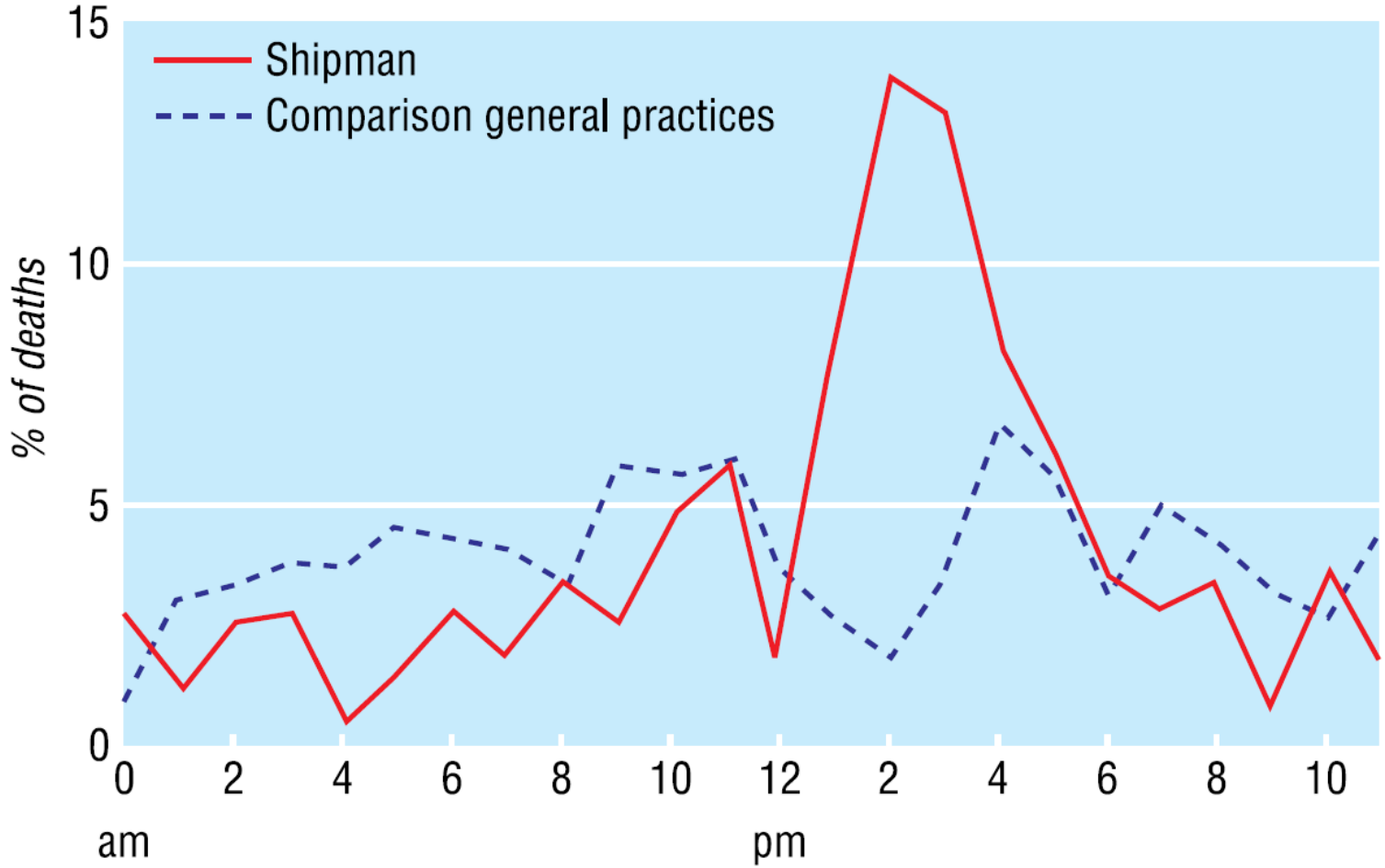
How heavy was Scotland's heaviest baby? 22lbs

Birth weights recorded as 12lbs +



Outlier always worth investigating.....

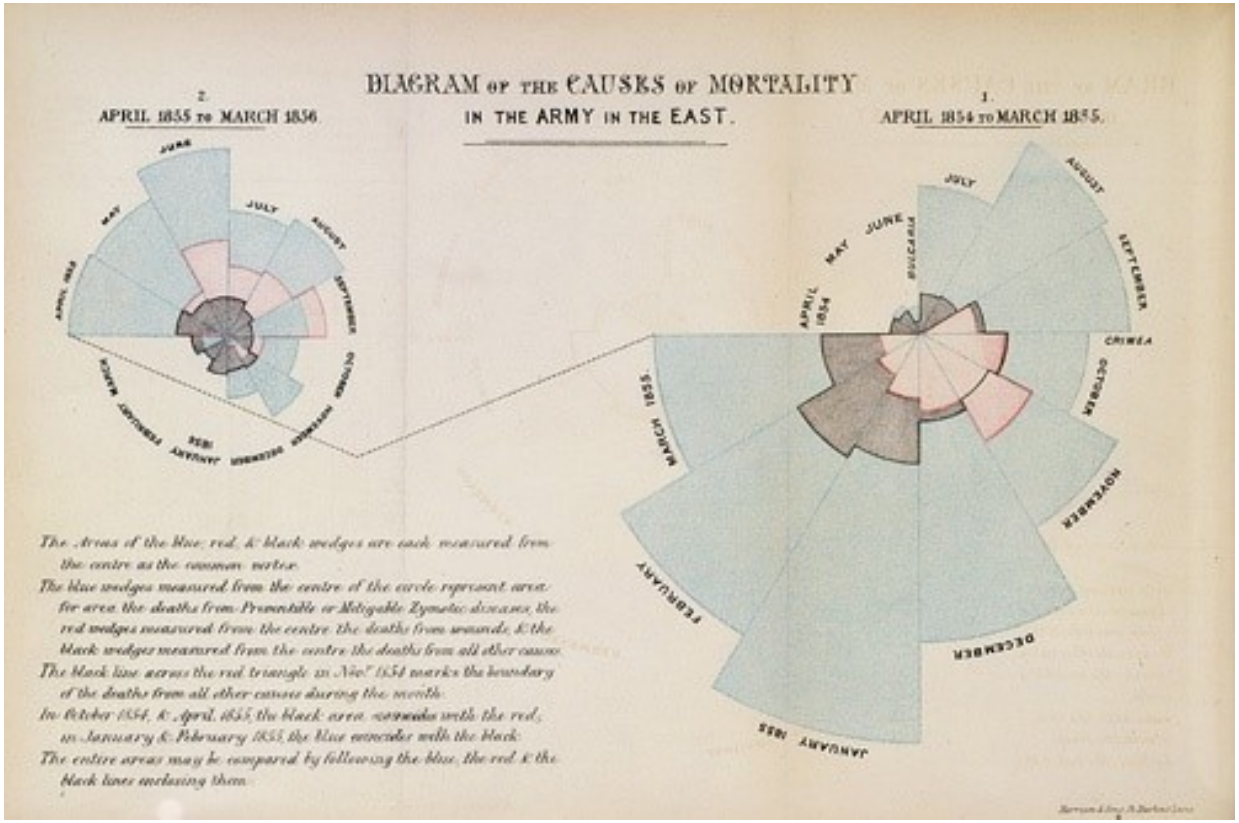
Distribution of death by time of day:



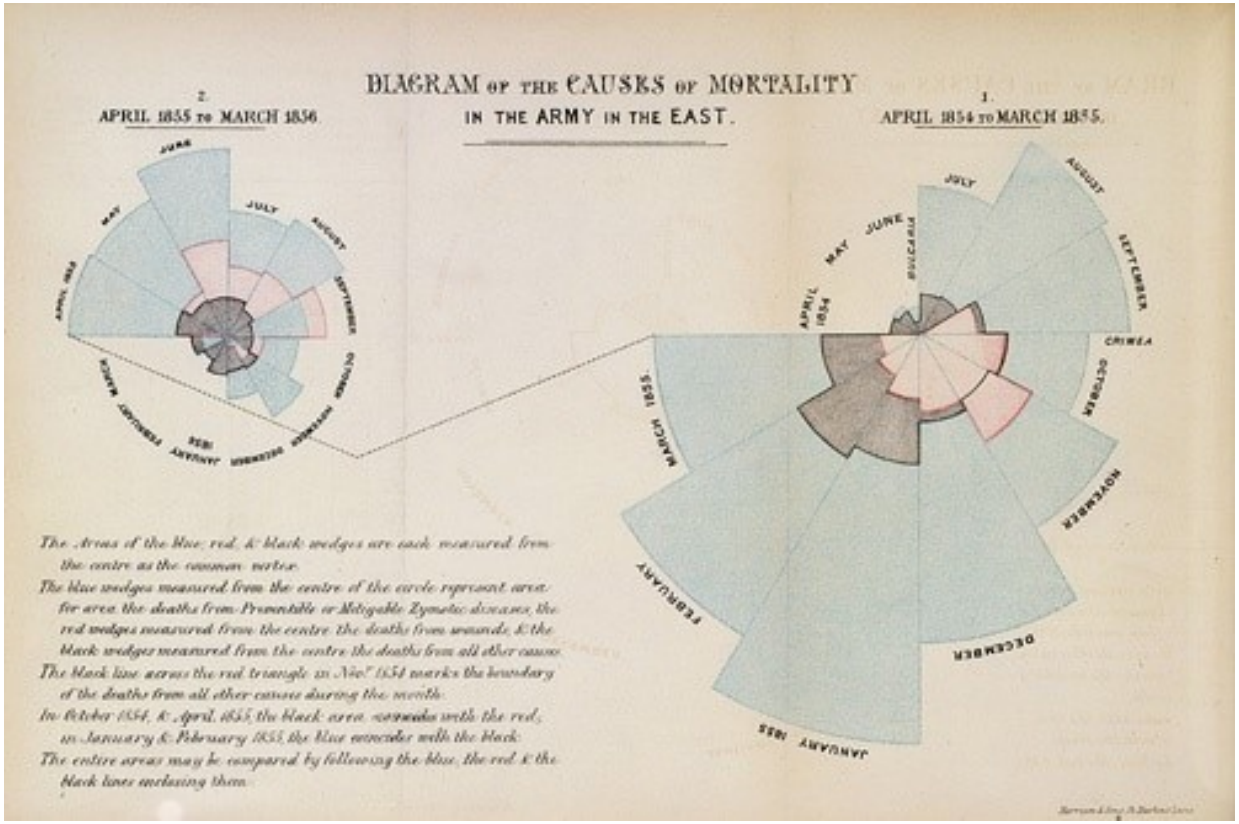
BMJ 2003;326:274. Baker et al

Data visualisation is not new

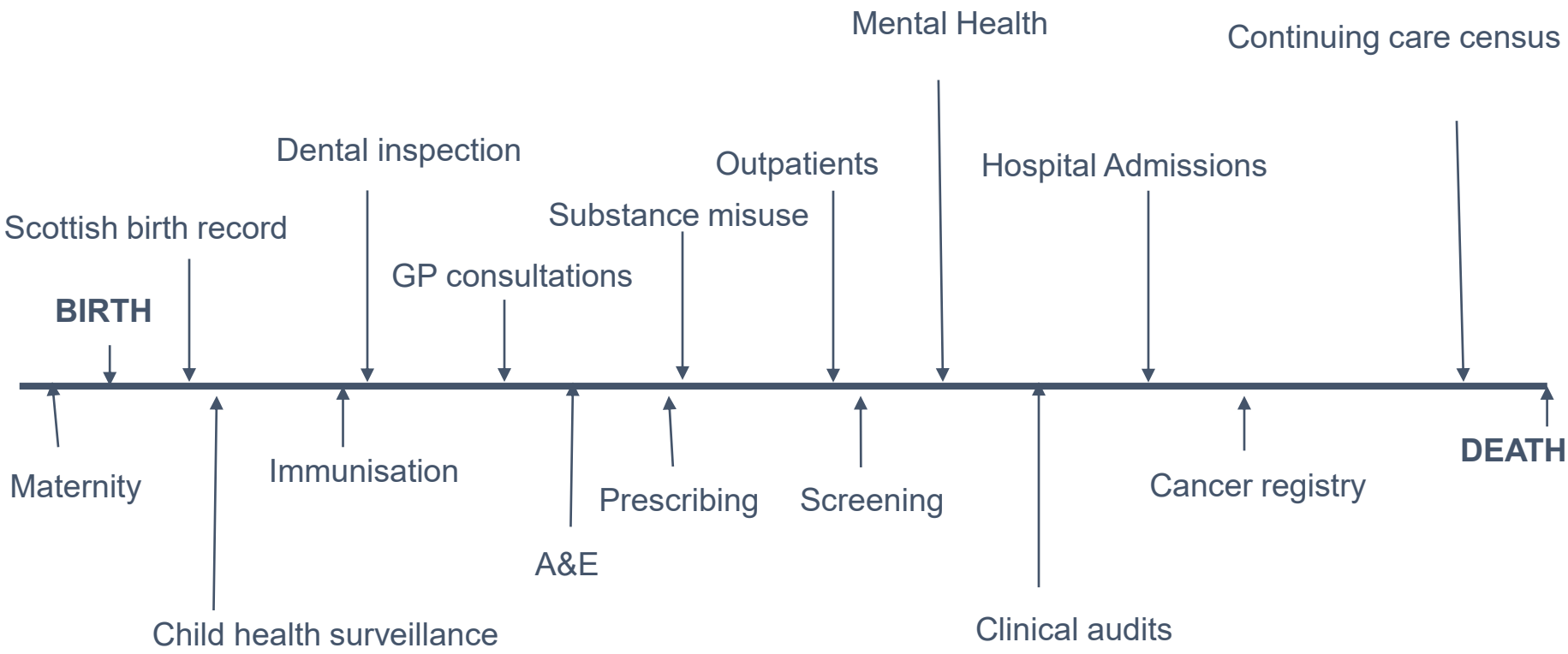
Whose famous visualisation is this?



Florence Nightingale, 1854



Data from (pre) cradle to grave



Most of our data sets offer 100% coverage

http://www.isdscotland.org/About-ISD/About-Our-Statistics/ISD-Statement-of-Administrative-Sources-v2.0-Mar2012.pdf

Huge variety of topic areas

Population Health:
Cancer
Health Disease
Stroke
Child Health

Health Improvement:
Scottish Public Health Observatory
Drugs & Alcohol
Mental Health

Quality Indicators:
Hospital Mortality
Clinical Profiles
Hospital Activity

Resources
Workforce Statistics
NHS Costs

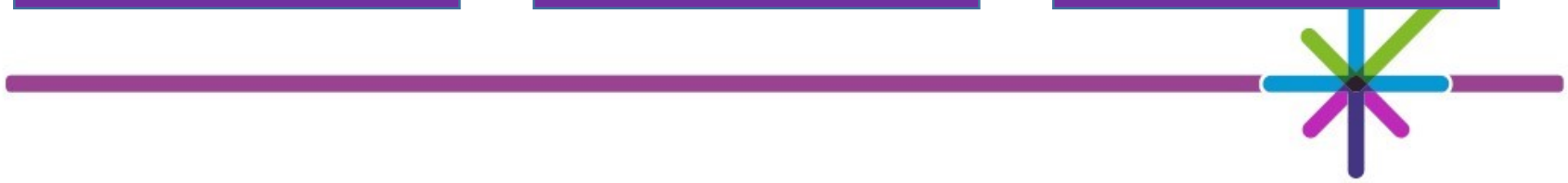
Prescribing
Prescribing & remuneration

Service Access
Waiting Times
GP Out of Hours

Pathways
Hospital Care
Primary (GP) Care
Dental

Integration
Social Care
Intermediate Care
Community Care

Audits
Wide range of clinical audits



...and statistical services

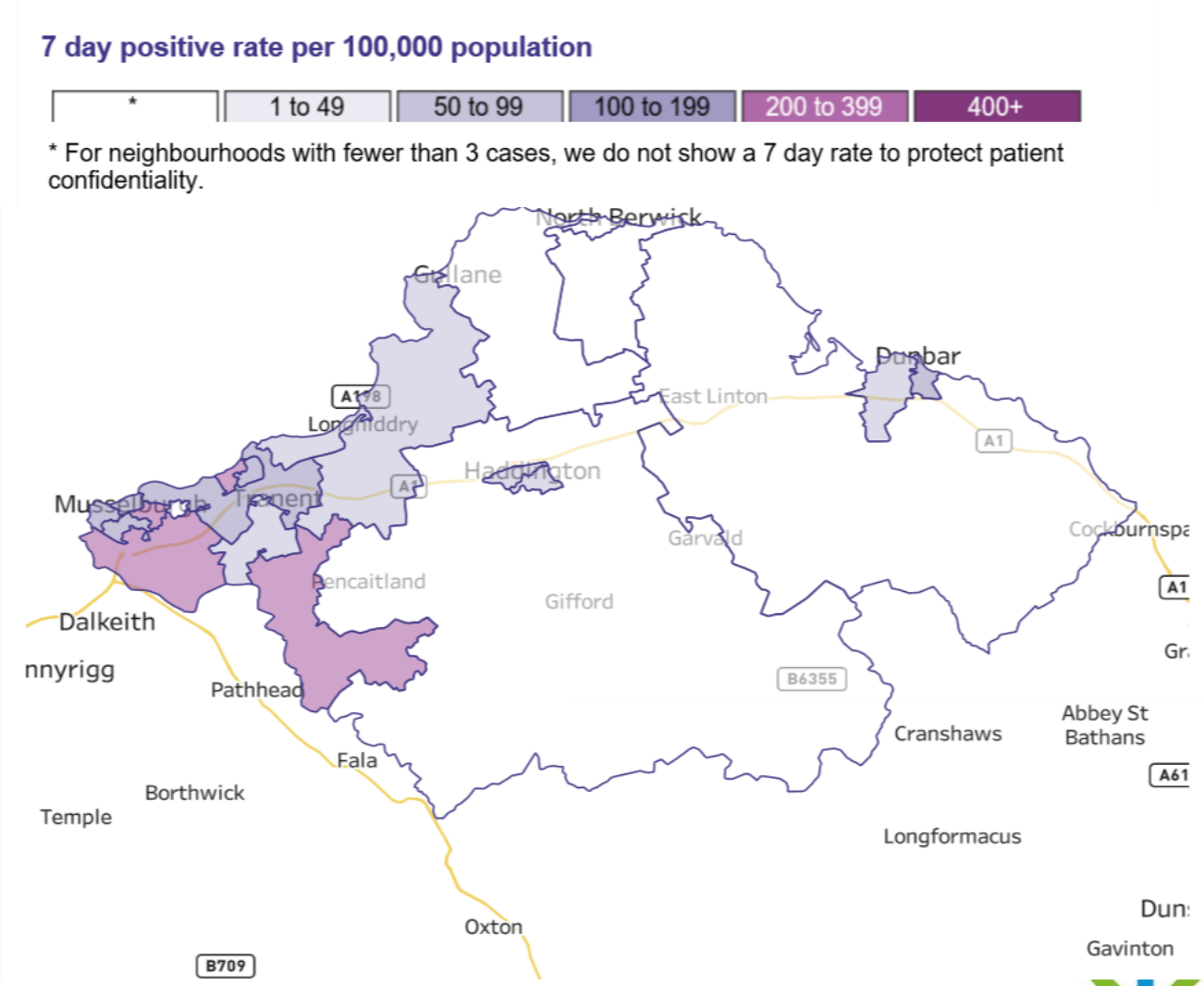
Placements in NHS Boards e.g. NHS Lothian	Placements in Local Authorities e.g. North Lanarkshire	Placements with Scottish Government e.g. within Policy Directorates
Surveys e.g. Substance misuse prevalence	Clinical Trials	Bespoke projects and analyses for a range of customers
Record Linkage Service	Joint working with Academia e.g. Farr Institute	Support to Health Protection Services

What is our data used for?

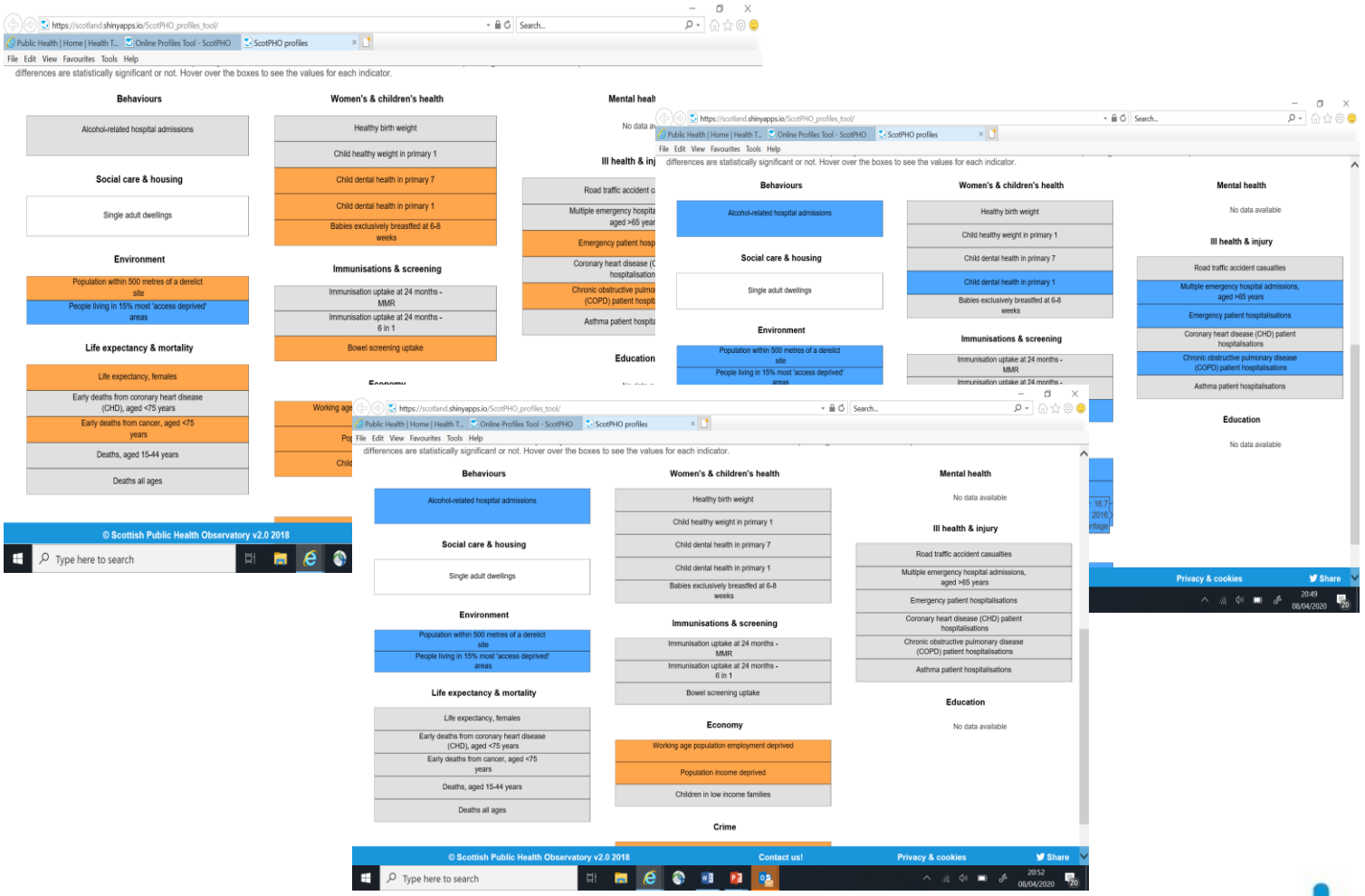
- Improving knowledge and understanding of diseases, e.g. epidemiology, prevention and control of diseases
  - Hugely topical – huge effort 7 days a week to support the COVID-19 response
- Determining policy
- Informing planning and decision making (at national and local levels)
- Performance improvement (comparing areas)
- Research

Our COVID-19 Daily Dashboard – 20 million+hits

https://public.tableau.com/profile/phs.covid.19#!/vizhome/COVID-19DailyDashboard_15960160643010/Overview



The context of “place” and “wellbeing”



Come and work for us (or work with us!)

- Strong analytical/statistical skills
- Experience in using software packages
  - We currently use R, Python (and SPSS)
- Ability to work in a team
- Ability to engage with customers who have little or no statistical experience
- Ability to work to tight (and unexpected) deadlines
- Potential to manage/supervise other staff/projects
- Innovative – willing to try new ideas
- Strong presentation/visualisation skills

Staff development is important

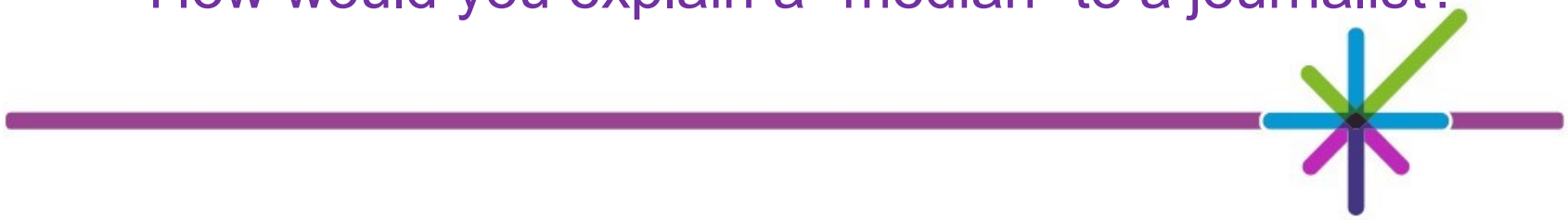
- All staff should participate in a performance appraisal process
- New career framework for analysts
- All staff should have a personal development plan
  - Mixture of “on the job” learning and formal courses
- Courses offered include:
  - Technical (software, statistics techniques)
  - Softer (presentation skills, dealing with people, personal effectiveness)
- Leadership Development or higher bands
- Team Development too

Some tips for your application - 1

- At new graduate level, typically get 100+ applications – make your one stand out!
  - Keep your job application succinct
  - Make sure your key strengths come through
  - Keep to the “person spec” for the post
- Preparing for the interview:
  - You will be asked to bring proof of eligibility to work in the UK – you must bring it or the interview won’t go ahead
  - It will be mostly competency-based questions with one technical question
  - For the competency-based questions, use the ‘STAR approach’ (Situation, Task, Action, Result)

Some tips for your application - 2

- Be prepared to explain your statistics experience to panel members with a statistics background – remember, the field of statistics is vast so the panel may not be familiar with your area of expertise
- Be prepared to explain a basic statistical concept to someone on the panel with no statistics experience. For example:
  - How would you explain a “confidence interval” to a health practitioner with no prior statistical experience?
  - How would you explain a “median” to a journalist?



But don’t just take it from me… Hear from our analysts…

https://m.youtube.com/watch?v=vzhGzBfrxow&feature=youtu.be

What do our staff like about working with Public Health Scotland?

- Variety of work
- Use of a variety of tools and innovation is encouraged
- Friendly and supportive environment
- Personal Development
- Flexible working
- Career progression

Interested in working for us?

- We recruit regularly
- Next Information Analyst recruitment begins in May (and runs approx. 3-4 times a year)
- www.publichealthscotland.scot/our-organisation/vacancies/
- Can be added to our mailing list for notifications of job adverts
- **phs.analystrecruitment@phs.scot**

Thank you for listening

Any questions?

www.publichealthscotland.scot

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