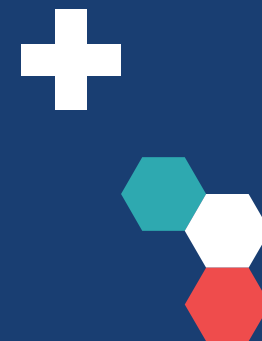


Designing effective infographics, data visualisation, and visual abstracts



Gavin Hubbard,
Communications Lead, NIHR ARC OxTV
Communications Manager, NDPCHS
gavin.hubbard@phc.ox.ac.uk

- Trained in Medical Biochemistry (Uni of Surrey)
- Worked in clinical trials developing various types of assays for biologics
- Read and wrote about science in my spare time, occasionally got paid for it
- Somehow convinced company to pay for me to do a MSc in Science Communication (Uni of West England), even though completely unrelated to my role
- Left company (lol) to become a freelance science writer / communicator (3 years)
- Expanded out into developing graphics alongside writing, mostly out of interest and a way to add more visual appeal to the blog I ran.
- Decided freelance is too much work and a salary is nice
- Joined Uni of Ox dept Primary Care Health Sciences (2015)
- Started giving you this presentation...

A

Out-running “Bad” Diets: Beyond Weight Loss There Is Clear Evidence Of The Benefits Of Physical Activity

1 Viewed through the lens of a **strict weight loss approach to health, a dietary approach** to reduce energy intake is **more effective for weight loss** (in the short term) and is more likely to promote weight loss maintenance than an exercise alone approach. However, a **combination of diet and physical activity improves either practice in isolation.**

2 Evidence shows that **you can out-exercise/out-work poor nutritional choices...**

BUT most people do not since they are either unmotivated, unwilling, or cannot practically perform enough physical activity to do so.

3 Being **physically active and, in particular, attaining an adequate level of fitness, is associated with many health benefits** (including reduced risk for all-cause mortality) **that are unlikely to be achieved through diet, alone.**

4 **Physical Exercise & Higher Levels Of Cardiovascular Fitness Can Help...**

- ✗ Hypertension
- ✗ Cardiovascular Disease
- ✗ Type 2 Diabetes
- ✗ Common Cancers
- ✗ All-cause Mortality

B

7 SIMPLE TIPS TO GET AN ACCURATE BLOOD PRESSURE READING

- PUT CUFF ON BARE ARM**
Cuff over clothing adds 10–40 mm Hg
- DON'T HAVE A CONVERSATION**
Talking adds 10–15 mm Hg
- EMPTY BLADDER FIRST**
Full bladder adds 10–15 mm Hg
- SUPPORT ARM AT HEART LEVEL**
Unsupported arm adds 10 mm Hg
- SUPPORT BACK**
Unsupported back adds 5–10 mm Hg
- KEEP LEGS UNCROSSED**
Crossed legs add 2–8 mm Hg
- SUPPORT FEET**
Unsupported feet add 5–10 mm Hg

Sources: Pickering, et al. *Circulation*, 2005 and O'Brien, et al. *J Hypertens*. 2003

- Words (or info) with Graphics
- Graphics do little to enhance the content
- Too much text
- Too cramped

- Graphics enhance understanding of the info
- Image tells a story on its own
- More space and easier to interpret



- Uses visual cues to better communicate information

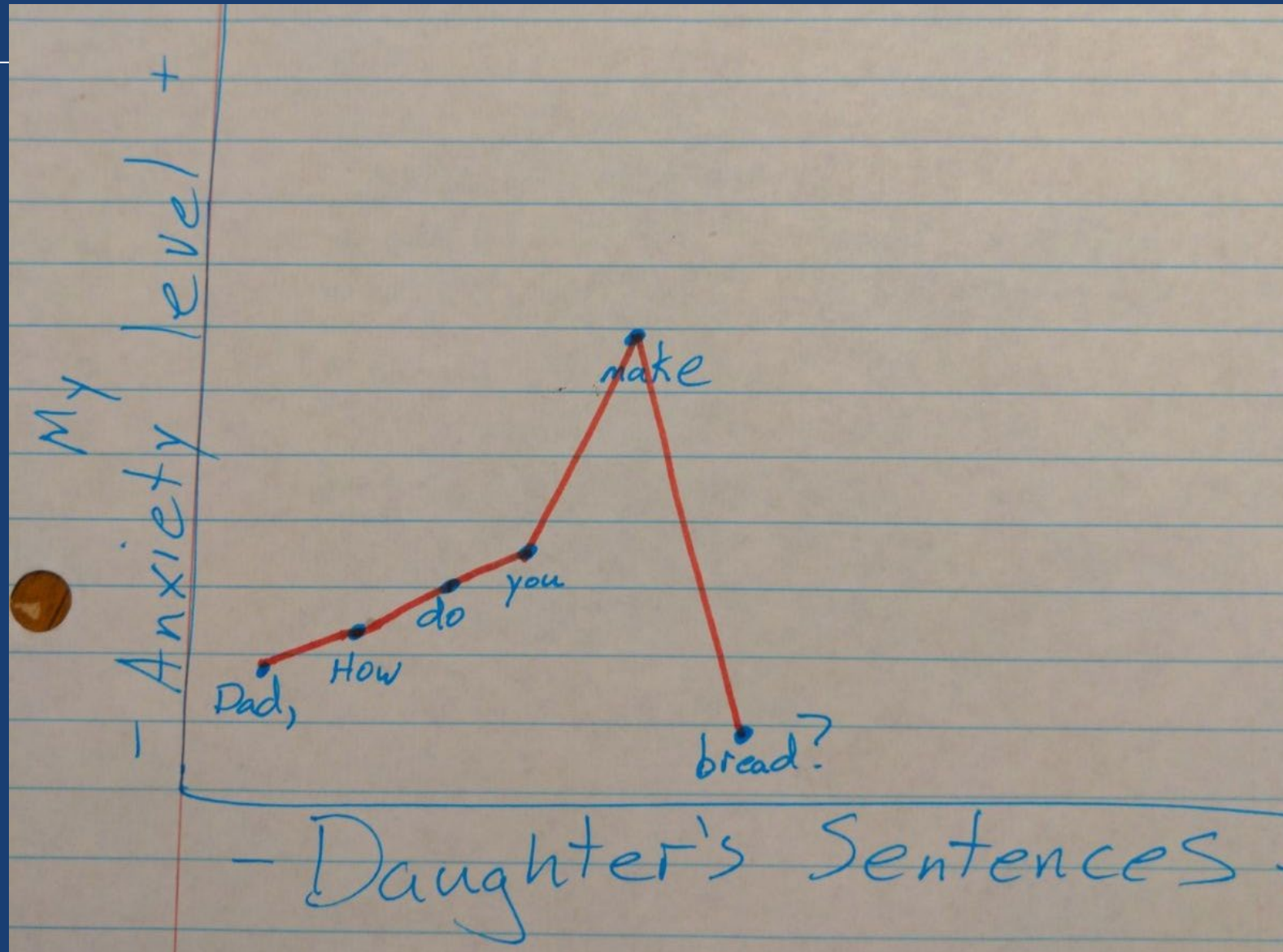


- Simplifies how information is presented



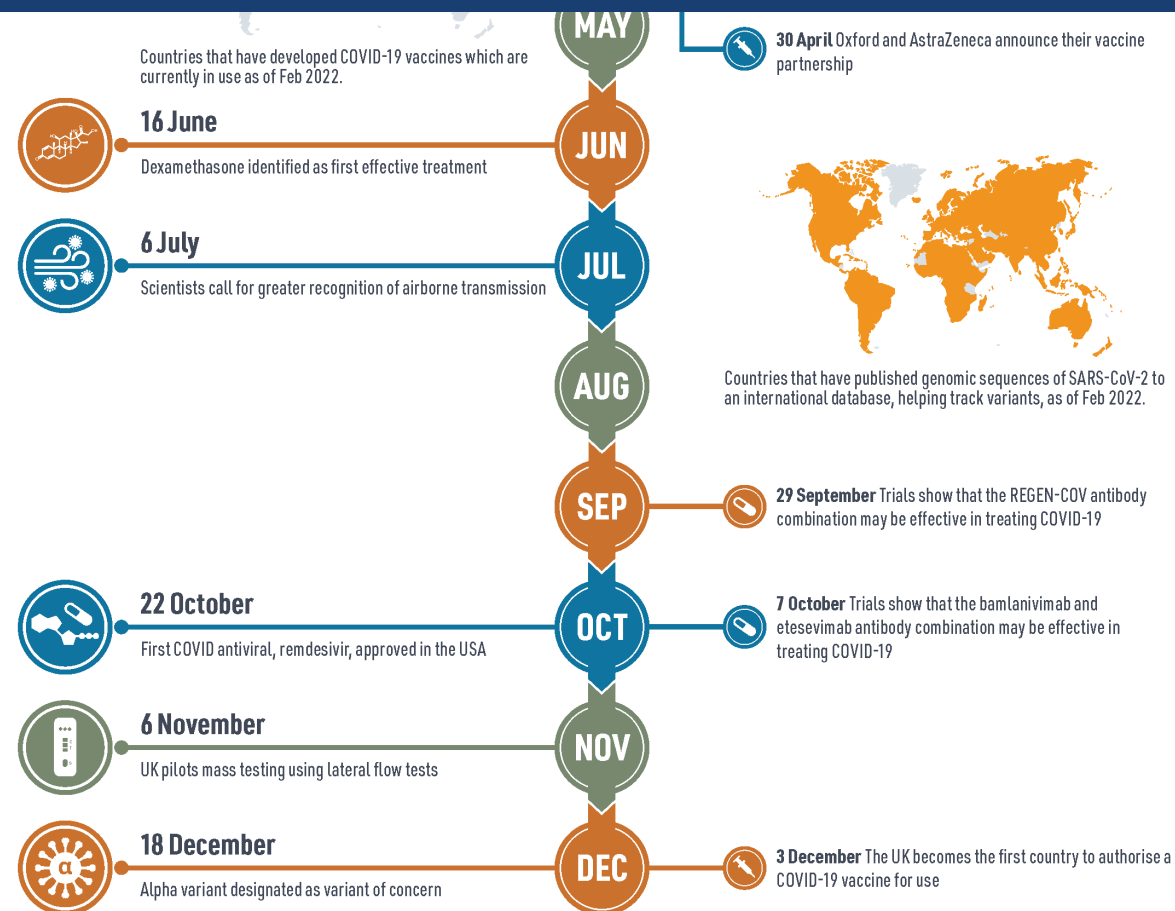
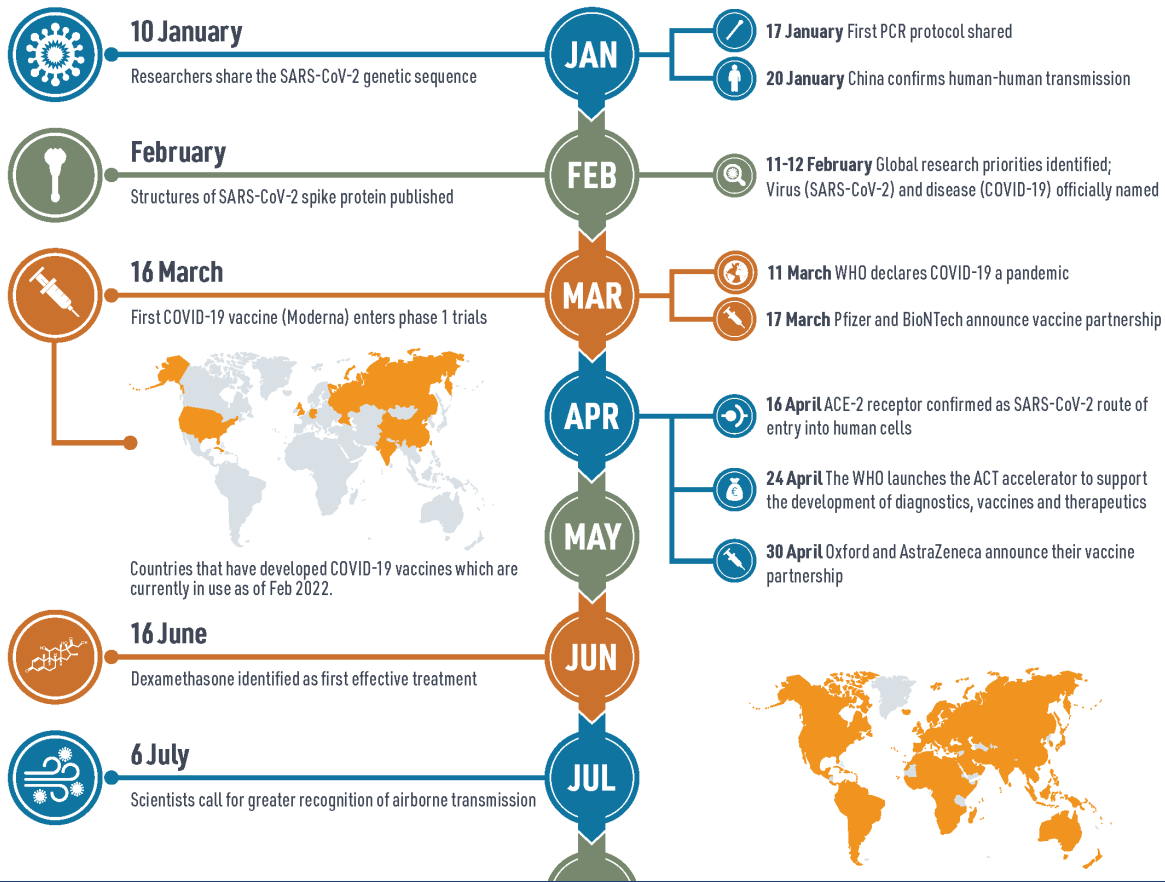
The data in the infographic brings insights and connections between things, sometimes surprisingly, and THAT is the story you're telling.

EXAMPLES



CHEM VS COVID TIMELINE

KEY MILESTONES IN THE FIGHT AGAINST THE PANDEMIC IN 2020



View the full interactive Chem vs. COVID timeline at: www.rsc.li/chemvscovid

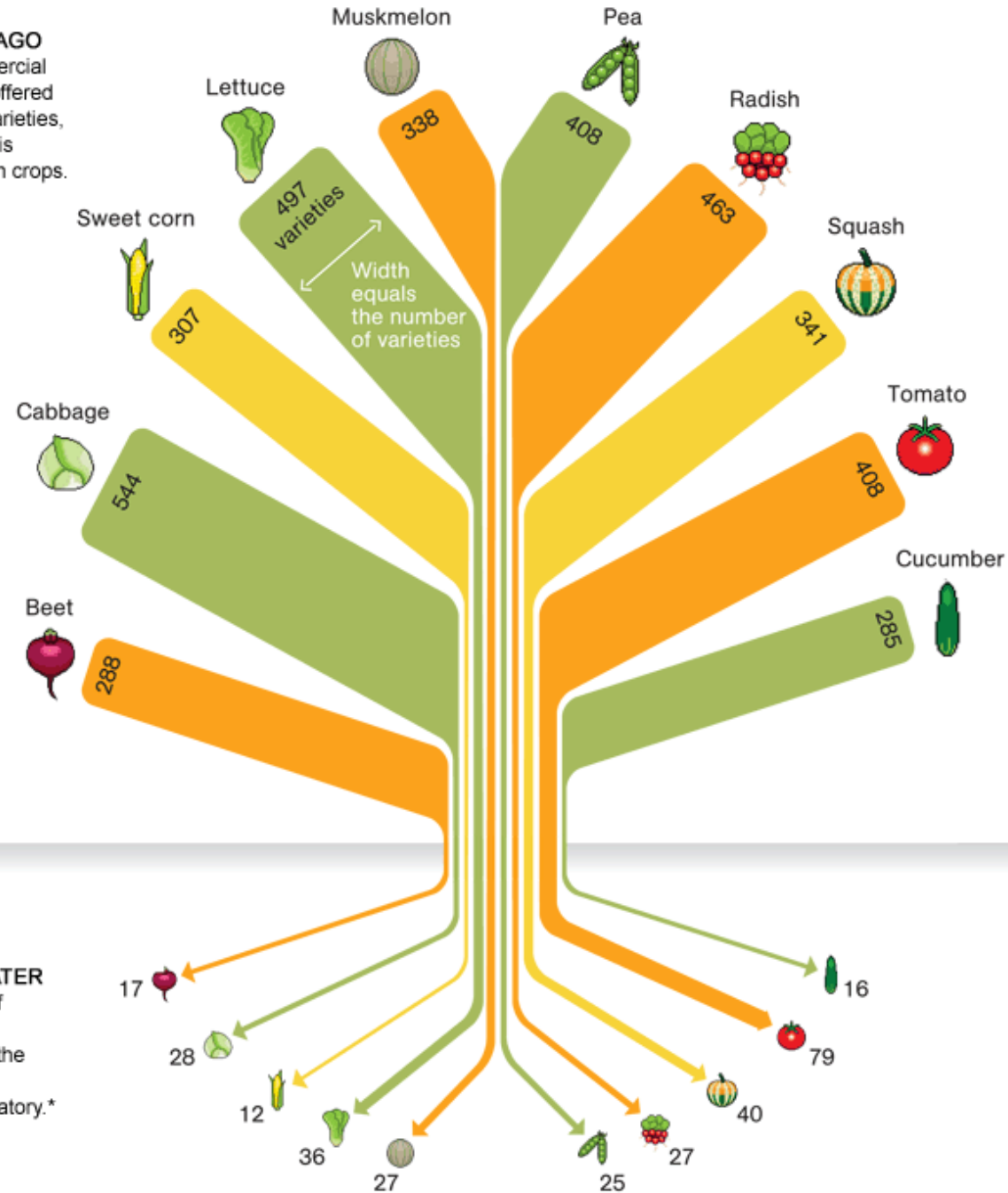


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EXAMPLES

A CENTURY AGO
 In 1903 commercial seed houses offered hundreds of varieties, as shown in this sampling of ten crops.



80 YEARS LATER
 By 1983 few of those varieties were found in the National Seed Storage Laboratory.*

<http://ngm.nationalgeographic.com/2011/07/food-ark/food-variety-graphic>

* CHANGED ITS NAME IN 2001 TO THE NATIONAL CENTER FOR GENETIC RESOURCES PRESERVATION

JOHN TOMANIO, NGM STAFF. FOOD ICONS: QUICKHONEY
 SOURCE: RURAL ADVANCEMENT FOUNDATION INTERNATIONAL

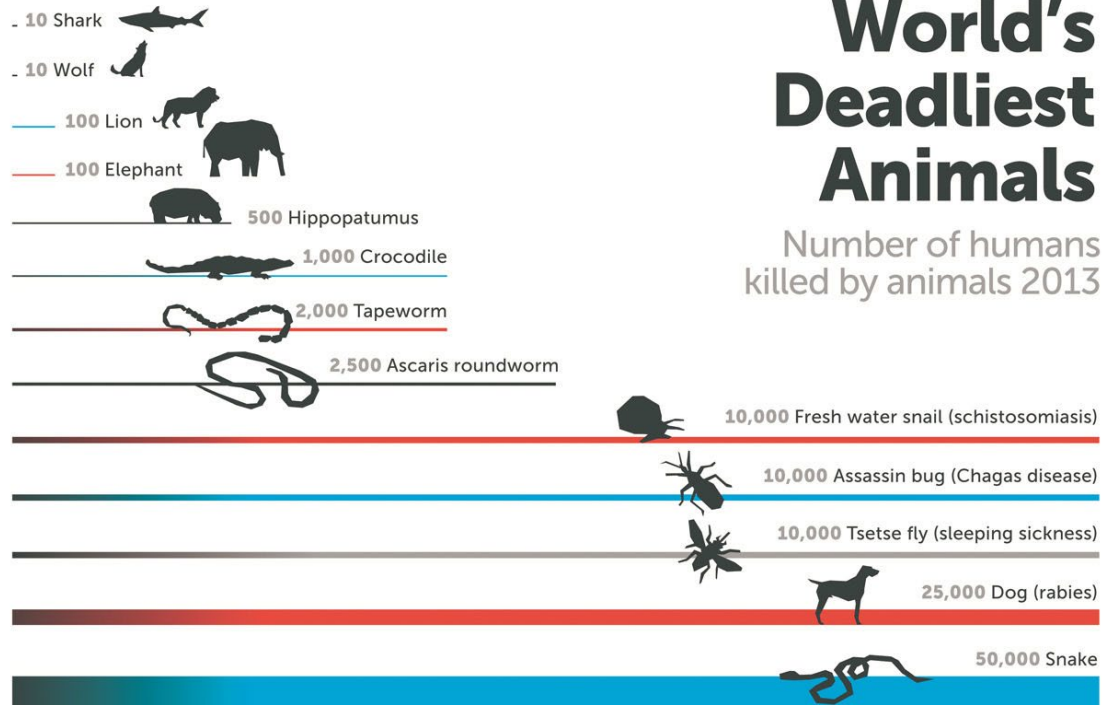
EXAMPLES



Number of deaths | Killer

World's Deadliest Animals

Number of humans killed by animals 2013



475,000
People

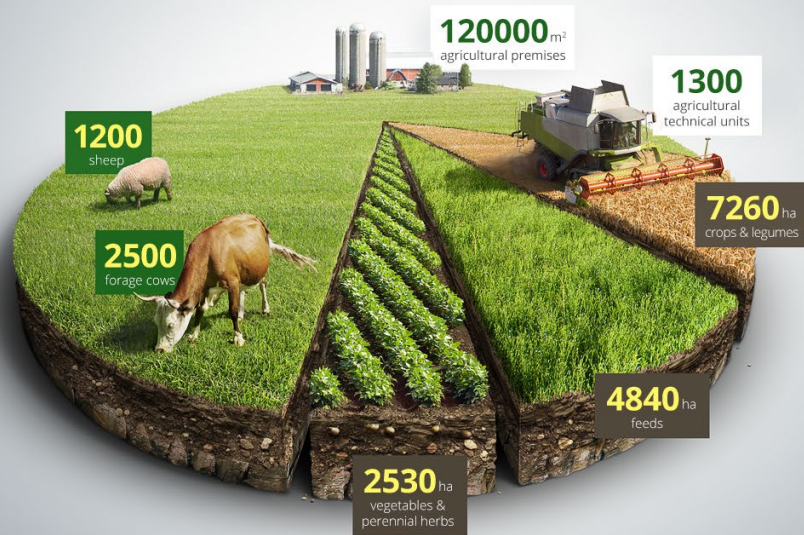


1,300,000
Mosquito

<https://www.gatesnotes.com/health/most-lethal-animal-mosquito-week>

EXAMPLES

Land bank
70000
hectares



Gross gathering
69265
ton per annum

70%
48607 t.

3%
1734 t.



Legumes

4%
2640 t.



Vegetables

8%
5500 t.



Potatoes

15%
10784 t.



Cereals

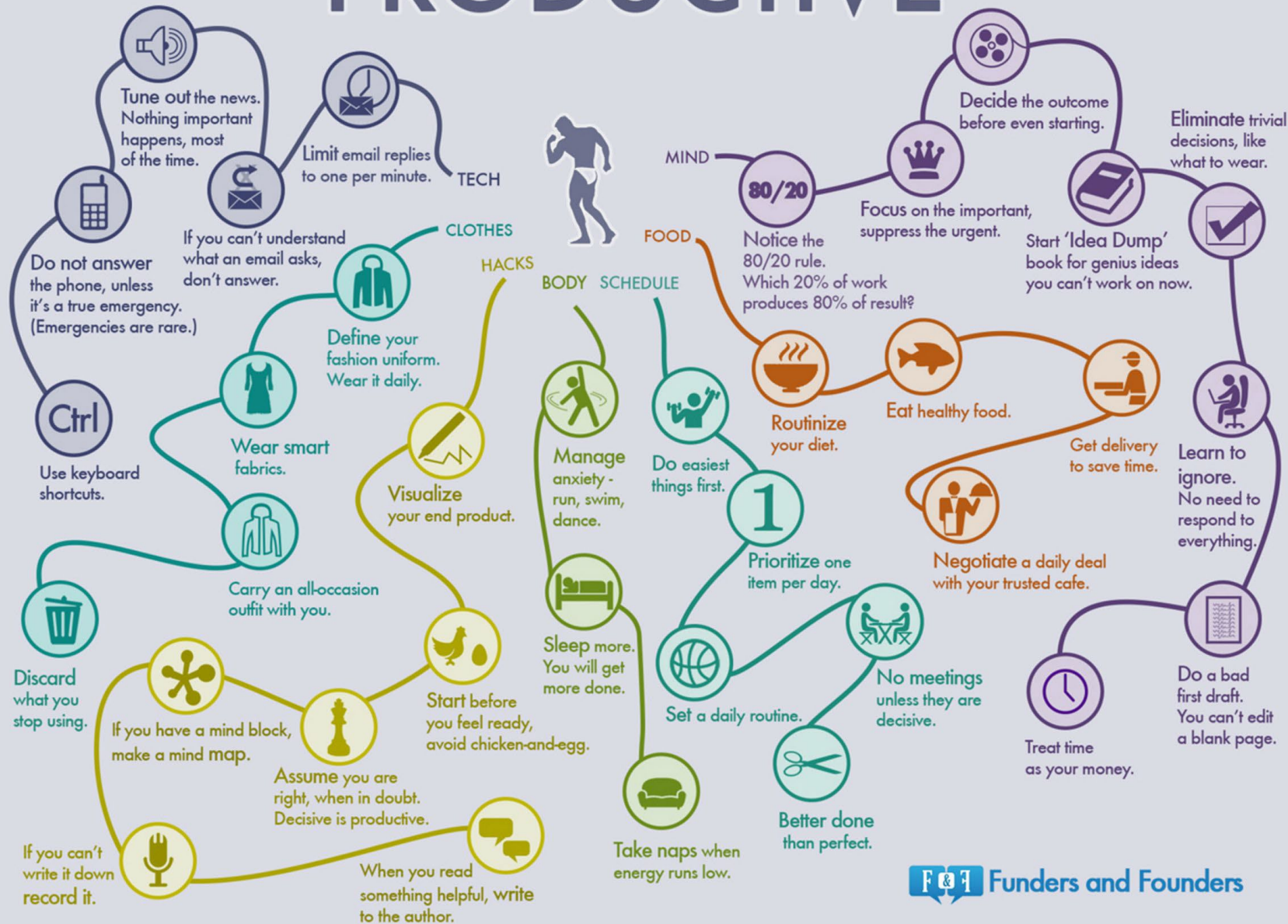


Forage

<https://www.behance.net/gallery/6659287/Agricultural-infographics>

HOW TO BE PRODUCTIVE

by Anna Vital



<https://blog.adioma.com/how-to-be-productive-infographic/>

- Infographics tell a premeditated story to guide the audience to a conclusion (subjective)
- Data visualisations let the audience draw their own conclusions (objective)

DIFFERENCE BETWEEN INFOGRAPHICS AND DATA VISUALISATIONS

	Infographics	Data viz
Complexity	Generally quite simple, targeting a layman audience	Vary in complexity depending on the type of data.
Includes narrative or story telling	Usually	No. Any narrative is usually external to the visualisation (think charts in a paper)
Design and aesthetics	Often a lot of design, thought and work goes into making it visually appealing	<i>Usually</i> not a lot of design, i.e. just what R, Stata or Excel can spit out with a few visual tweaks...
Includes meta data (units, source, definitions)	Sometimes (but good practice include sources and units as a minimum)	As with narrative, usually external to the data visualisation itself.
Includes graphics	Generally yes, as they are what gives the visual appeal and impact	Sometimes. May depend on use and audience.
Interactive	Increasingly so online, but still plenty of 'in print' infographics.	Increasingly so online.
Time take to complete	Can take quite a while to get right.	Generally not long and can be automatically produced by software.

- Somewhere between an infographic and a data viz...
- A visual summary of the info in an abstract, meant to convey the key findings in a shorter format.

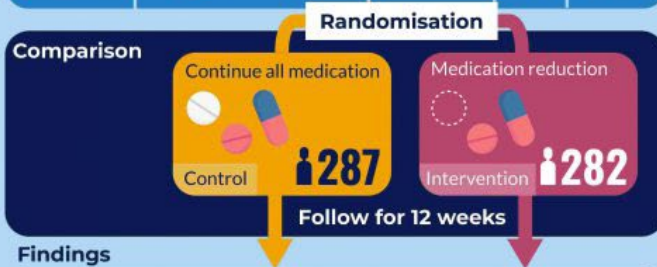


Is it safe to deprescribe blood pressure lowering medications in older adults?

Results from the OPTiMISE trial

Summary This trial suggests that antihypertensive medication reduction can be achieved without substantial change in blood pressure control in some older, multi-morbid patients with hypertension.

Population Patients aged 80+, taking 2 or more antihypertensives with well controlled systolic blood pressure (150mmHg or less).



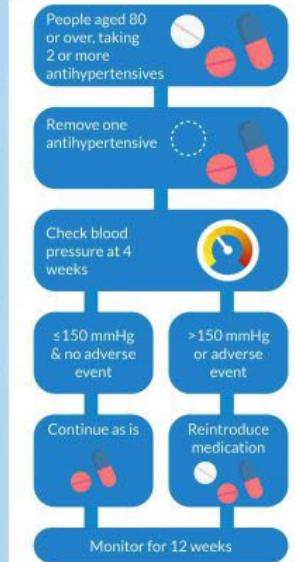
Findings **Primary outcome** Is medication reduction similar to usual care with regard to short-term systolic blood pressure control (<150 mmHg)?



Result: Yes – primary outcome met.



OPTiMISE Deprescribing algorithm



Caveat: The long-term impacts of medication reduction remain unknown, and were not examined by this study.

Healthcare professionals should exercise caution when considering whether or not to deprescribe blood pressure medication.

Contact: Co-chief investigator, Dr James Sheppard, james.sheppard@phc.ox.ac.uk



Reference: Sheppard JP, Burt J, Lown M, et al. Effect of antihypertensive medication reduction vs usual care on short-term blood pressure control in patients with hypertension aged 80 years and older: the OPTiMISE randomized clinical trial. *JAMA*. 2020; 323(20):1-13. doi:10.1001/jama.2020.4871

1. The data
2. The audience
3. The key message
4. The medium
5. The design

Step One: The Data

- Have some data/information that says something
- Or that you can say something about.
- Include your sources if you want people to think your infographic is reliable! (reference)

Step Two: The audience

- An infographic should be focused on the needs of your target audiences and how you will reach them.
- Is an infographic appropriate? Is there a better way?
- Consider how appropriate the framing is for your audience and avoid exaggeration or scare-mongering.

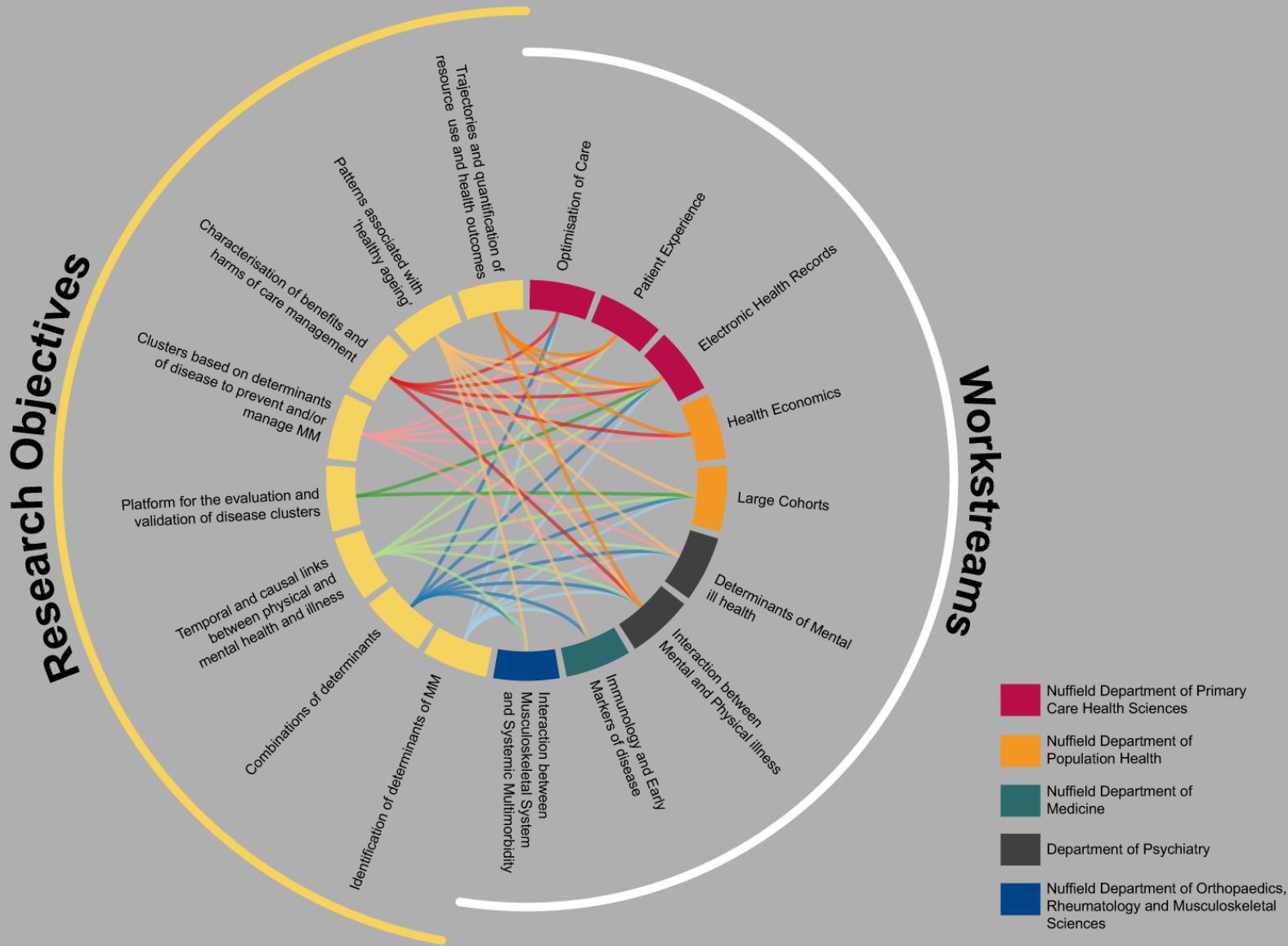
Step Three: The key message

- What do you want the audience to understand? (Risk? Trends? How common?)
- How do you want them to feel? (Positive? Motivated? Afraid?)
- What do you ideally want them to do? (Tell others, change their behaviour, give money?)
- Consider also spelling out your key message in words.

Step Four: The medium

- How will people see your infographic, primarily?
e.g. will it be a leaflet, postcard, online via social media, a web page etc
- You can *plan* for more than one at a time.
e.g. Design with 'sections' in mind that might be more easily chopped up and reused in different formats, such as social media

Research Objective and workstream linkages

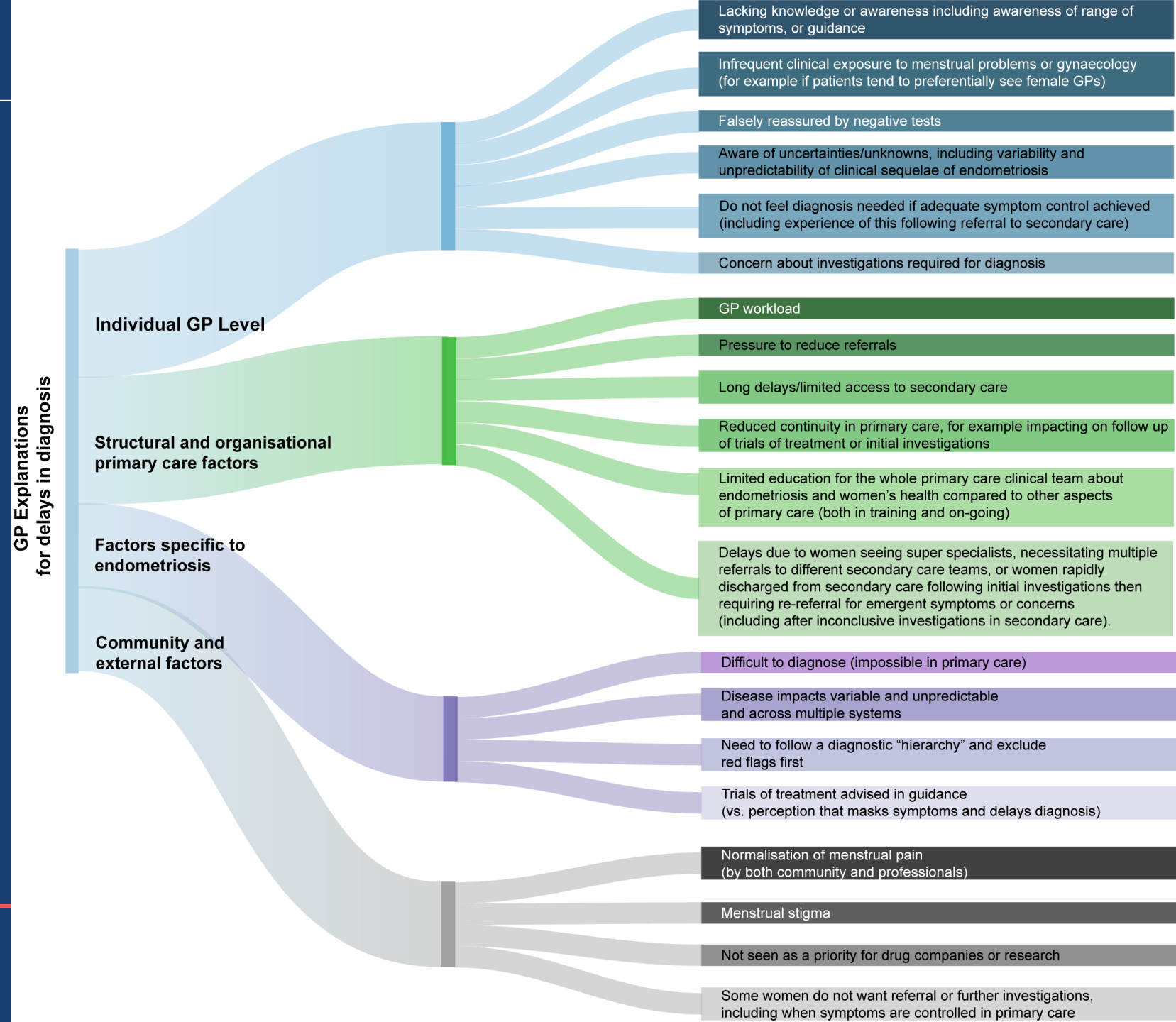


Remember:
Infographics
don't have to be
numerical data!

They can show
more qualitative
or relationship
oriented
information as
well.

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Step Five: The design (1)

- *Clarity and accuracy are more important than aesthetics**.
- **Infographics are not clip art. They are not necessarily easy to do, and they must fit your data and story.**

Step Five: The design (2)

1. **Get to the essence of what your data shows**

Try to distil it into one short sentence.

2. **What is/are the insight(s)?**

What is the question and the answer to this meaningful information that people didn't know about?

3. **Create the narrative**

What's the story behind the insights? Start connecting the dots between questions/answers and insights.

4. **Create a visual analogy**

You're not telling your narrative, you're showing it.

5. **Make a sketch**

Rough it out on paper, to see how it might work. You're first ideas are likely to be obvious and boring or cliché, so try at least a few different things before committing to anything.

6. **Create the layout**

Keep it simple and make sure there's a clear path for people to navigate through it (start to finish of the story).

7. **Make it beautiful**

*Clarity and accuracy are the most important, BUT, if you can, make something that **people will want to look at it**, not something that **you want them to look at**. Err on the side of minimalism.*

Step Five: The design (3)

- *Your first ideas will probably be pants...*
- *Steal from others: look around online for designs, colour schemes, font pairings etc that you like.*
- *Take what you like, but **don't copy them wholesale.** Smash together the ideas you like, see if they work.*

Step Five: The design (4)

Colours:

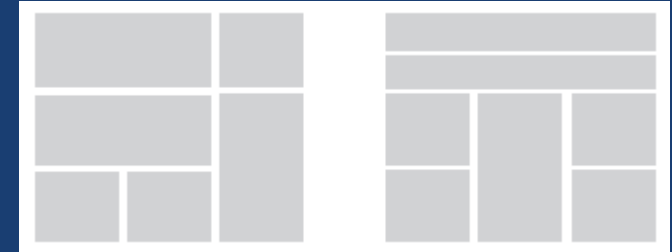
- *Keep to 3-5 colours, max.*
- *Use colours with consistency and purpose, to focus attention*
- *If colours are key to understanding your infographic, be careful with their choice.*

PRIMARY COLOUR

SECONDARY COLOUR PALETTE

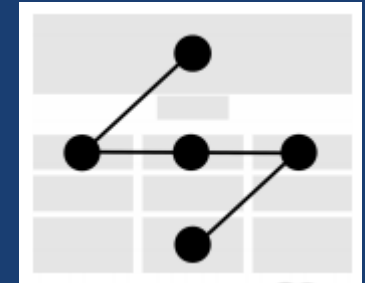
<p>C 100 M 80 Y 27 K 11</p> <p>Pantone 7687 C</p> <p>R 25 G 62 B 114</p> <p>Hex #193E72</p>	<p>C 1 M 75 Y 66 K 0</p> <p>Pantone 7416 C</p> <p>R 234 G 93 B 78</p> <p>Hex #EA5D4E</p>	<p>C 1 M 50 Y 86 K 0</p> <p>Pantone 715 C</p> <p>R 242 G 147 B 48</p> <p>Hex #F29330</p>	<p>C 0 M 19 Y 60 K 0</p> <p>Pantone 1345 C</p> <p>R 254 G 212 B 122</p> <p>Hex #FED47A</p>	<p>C 69 M 62 Y 0 K 0</p> <p>Pantone 7456 C</p> <p>R 102 G 103 B 173</p> <p>Hex #6667AD</p>	<p>C 73 M 10 Y 33 K 0</p> <p>Pantone 631 C</p> <p>R 46 G 169 B 176</p> <p>Hex #2EA9B0</p>	<p>C 72 M 7 Y 71 K 0</p> <p>Pantone 7723 C</p> <p>R 70 G 168 B 108</p> <p>Hex #46A86C</p>	<p>C 37 M 19 Y 20 K 2</p> <p>Pantone 5517 C</p> <p>R 172 G 188 B 195</p> <p>Hex #ACBCC3</p>
<p>80%</p> <p>R:71 G:89 B:137</p> <p>Hex #475989</p>	<p>80%</p> <p>R:236 G:124 B:114</p> <p>Hex #EC7C72</p>	<p>80%</p> <p>R:246 G:171 B:93</p> <p>Hex #F6AB5D</p>	<p>80%</p> <p>R:255 G:220 B:151</p> <p>Hex #FFDC97</p>	<p>80%</p> <p>R:132 G:130 B:190</p> <p>Hex #8482BE</p>	<p>80%</p> <p>R:111 G:186 B:192</p> <p>Hex #6FBAC0</p>	<p>80%</p> <p>R:121 G:185 B:137</p> <p>Hex #79B989</p>	<p>80%</p> <p>R:190 G:202 B:208</p> <p>Hex #BECAD0</p>
<p>60%</p> <p>R:116 G:124 B:163</p> <p>Hex #747CA3</p>	<p>60%</p> <p>R:242 G:188 B:149</p> <p>Hex #F29E95</p>	<p>60%</p> <p>R:249 G:193 B:135</p> <p>Hex #F9C187</p>	<p>60%</p> <p>R:255 G:229 B:178</p> <p>Hex #FFE5B2</p>	<p>60%</p> <p>R:162 G:160 B:208</p> <p>Hex #A2A0D0</p>	<p>60%</p> <p>R:155 G:203 B:208</p> <p>Hex #9BCBD0</p>	<p>60%</p> <p>R:161 G:202 B:166</p> <p>Hex #A1CAA6</p>	<p>60%</p> <p>R:206 G:214 B:219</p> <p>Hex #CED6DB</p>
<p>40%</p> <p>R:162 G:164 B:193</p> <p>Hex #A2A4C1</p>	<p>40%</p> <p>R:244 G:189 B:184</p> <p>Hex #F4BDB8</p>	<p>40%</p> <p>R:252 G:214 B:176</p> <p>Hex #FCD680</p>	<p>40%</p> <p>R:255 G:238 B:205</p> <p>Hex #FFEECD</p>	<p>40%</p> <p>R:193 G:191 B:225</p> <p>Hex #C1BFE1</p>	<p>40%</p> <p>R:193 G:221 B:224</p> <p>Hex #C1DDE0</p>	<p>40%</p> <p>R:196 G:221 B:197</p> <p>Hex #C4DDC5</p>	<p>40%</p> <p>R:223 G:227 B:231</p> <p>Hex #DFE3E7</p>
<p>20%</p> <p>R:208 G:208 B:224</p> <p>Hex #D0D0E0</p>	<p>20%</p> <p>R:248 G:221 B:219</p> <p>Hex #F8DDDB</p>	<p>20%</p> <p>R:253 G:235 B:216</p> <p>Hex #FDEBD8</p>	<p>20%</p> <p>R:255 G:246 B:230</p> <p>Hex #FFF6E6</p>	<p>20%</p> <p>R:224 G:223 B:241</p> <p>Hex #E0DFF1</p>	<p>20%</p> <p>R:225 G:238 B:240</p> <p>Hex #E1EEF0</p>	<p>20%</p> <p>R:226 G:238 B:227</p> <p>Hex #E2EEE3</p>	<p>20%</p> <p>R:239 G:241 B:243</p> <p>Hex #EFF1F3</p>
NIHR Navy	NIHR Coral	NIHR Orange	NIHR Yellow	NIHR Purple	NIHR Aqua	NIHR Green	NIHR Grey

Step Five: The design (5)



Alignment:

- *align the various elements of your infographic, i.e. on a grid, with similar spacing between them*
- *helps to guide the reader through the infographic*
- *Colour breaks – Good way of organising data and sectioning off information without relying entirely on headings. Also helps to break the monotony.*



Fonts:

- use
- head
- If yo
- bold
- Seal
- com
- Dov
- Gen
- info

Bucket List



Travel around the world.

Traveling – it's the single best activity that exposes you to new cultures, broaden your mind, and move out of your comfort zone.



Learn a new language.

Learning a new language is never easy but it's so satisfying when you are able to converse with someone in a foreign language!



Start your own business.

The idea of starting a business is appealing to a lot of people and can be very rewarding.



Conquer your biggest fear.

We all have fears, and these fears can be overcome. For the most part, our fears are irrational.

Bucket List



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Step Five: The design (7)

Add a focal point:

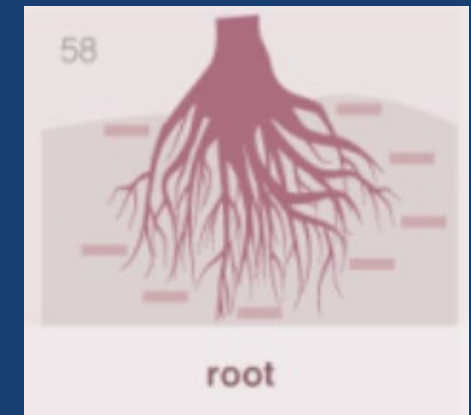
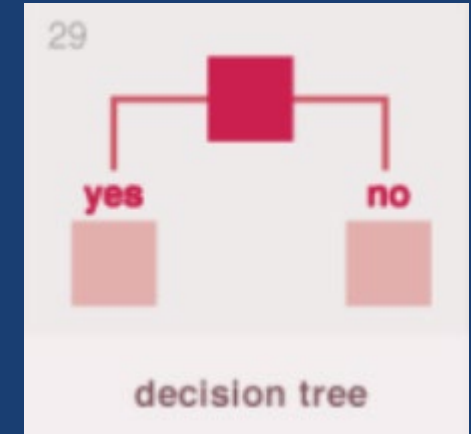
- *a memorable image that reinforces the message*
- *a key statistic or information picked out in a larger font*
- *every good infographic has a hook or primary take-away*



Step Five: The design (8)

Fancy or plain?:

- If comprehension is most important (such as in a medical environment or when an immediate decision is needed to be made) then plainer infographics will be more effective.
- Fancy or embellished infographics will however have a wider appeal.



What kind of chart?

Show the individual parts that make up a whole:

- Pie chart
- Stacked bar
- Stacked column

Understand how the data is distributed:

- Scatter plot
- Line chart
- Bar chart

Analyse trends:

- Line chart
- Bar chart

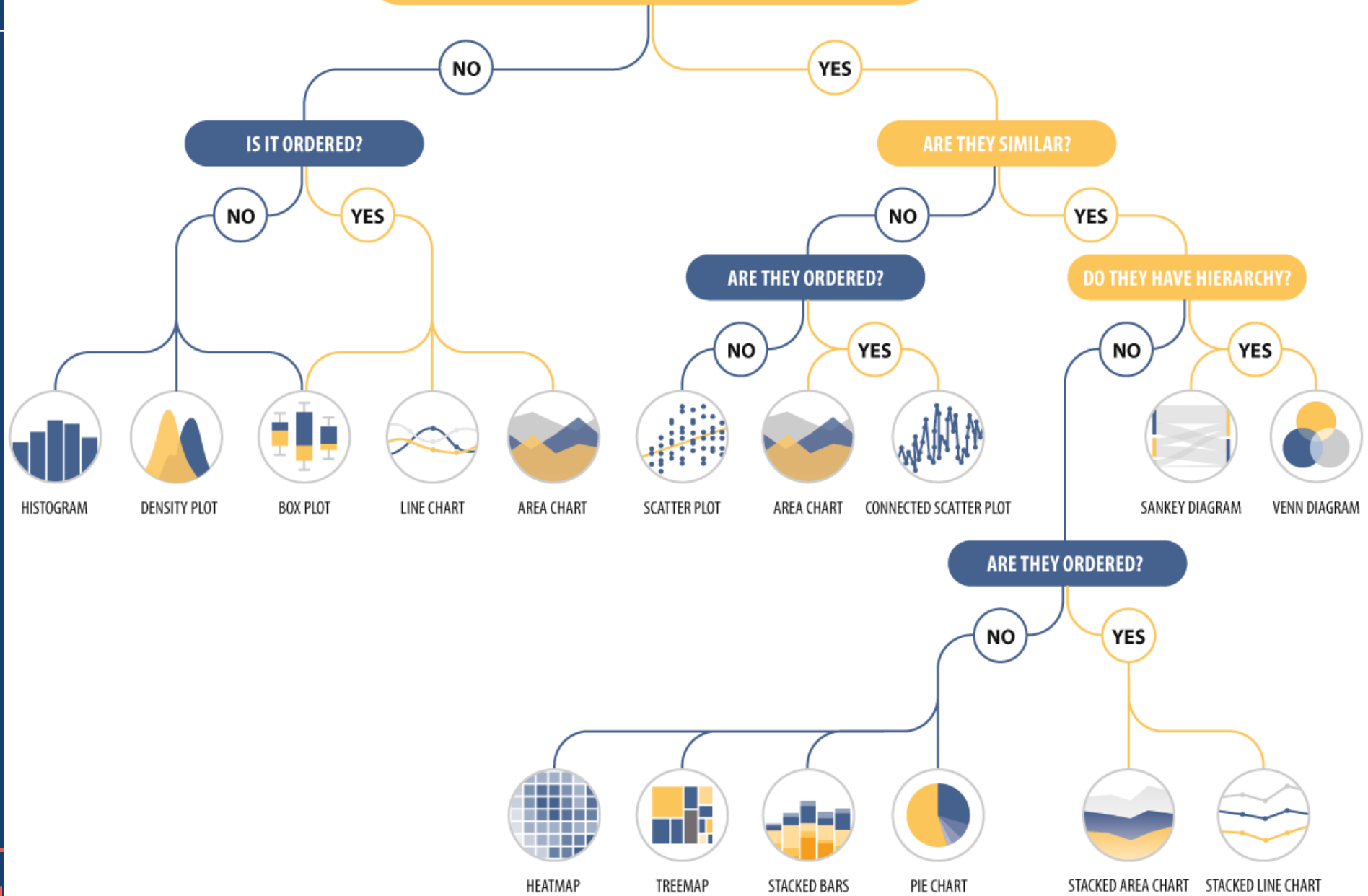
Show/ the relationship between data sets:

- Line chart
- Scatter plot
- Bubble chart

Compare values:

- Bar chart
- Line chart

DO YOU HAVE MORE THAN ONE VARIABLE?



Headings

- Like a headline, it needs to grab attention, be easily readable and relevant
- Generally, keep it high in contrast and large
- They play a role in how an infographic is viewed

Types of Headings

- **Subject:** “Obesity in the UK”
- **Message:** “1 in 10 British children are obese”
- **Question:** “What is the state of childhood obesity in the UK?”
- **Fear:** “The childhood obesity crisis”
- **Hopeful:** “Childhood Obesity: complex but conquerable”
- **Call:** “Help kids to be healthy, not heavy”

Software for making infographics

Installable Software

- **Adobe Creative Cloud**
(£££ subscription)
- **Affinity Designer**
(£ one time purchase, and actually really good...)
- **PowerPoint/ Excel**
(Really, it can be fine! It's just more fiddley)
- **inkscape.org – Open source alternative to Adobe Illustrator**
(Free)

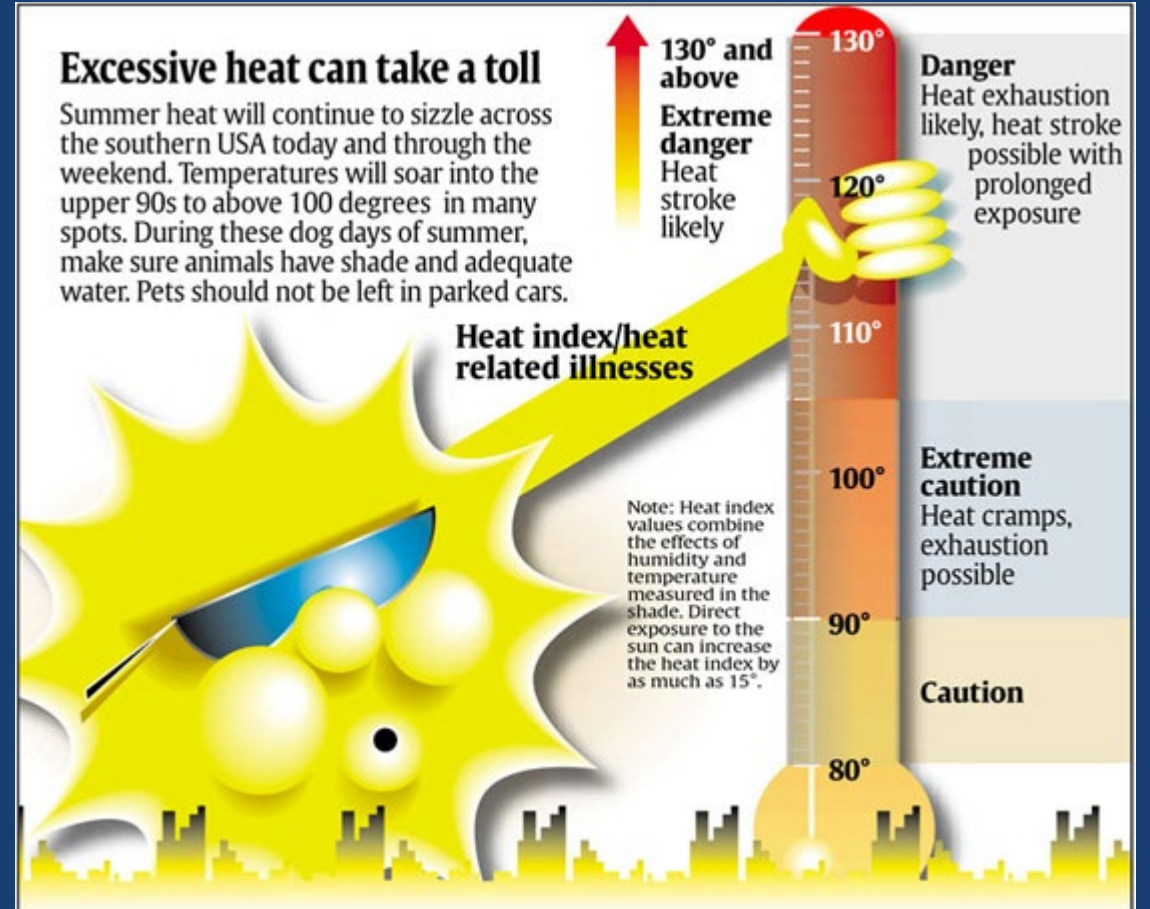
Online Options

- **Adobe Spark**
(Free!)
- **Piktochart.com**
(Free with limits, or £ subscription)
- **biteable.com/infographic**
(Free trial and £ subscription)
- **canva.com/create/infographics**
(Free trial and £ subscription)
- **boxy-svg.com**
(Free, but basic)

Common errors...

Not running it past people before publishing it...

(Though I struggle to believe this wasn't deliberate...)



Sources: National Weather Service; American Red Cross

By Doyle Rice and Julie Snider, USA TODAY

Common errors..

Not proof reading*:

numbers, including some that featured a bucket and bells brigade of performers who beat rhythms on buckets and trash cans with drums sticks and hammer mallets. PHOTO BY JENNIFER STULTZ

MENTORING DAY

Students get first-hand job experience

By Gale Rose
grose@pratttribune.com

Eager students invaded businesses all over Pratt Tuesday, October 24 as they looked for future job opportunities on Disability Mentoring Day.

The 97 students from 12 schools fanned out across Pratt and got first hand

experience what it would be like to work at those 40 businesses. They asked questions and got some hands on experience with various operations.

Paola Luna of Pratt High School, Gina Patton of Kingman High School and America Fernandez of St. John chose the Main Street Small An-

imal Veterinarian Clinic for their business. Students got a tour of the facility, learned what happens in an examination, got to handle various animals and watched a snake eat a mouse.

Luna said she was interested in animal health and wanted to know more about caring for hurt an-

imals. Patton likes all kinds of animals and said she learned a lot from the experience. Watching the snake eat the mouse impressed her the most.

Fernandez wants to become a veterinarian and enjoyed learning everything that veterinarians

SEE MENTORING, 6

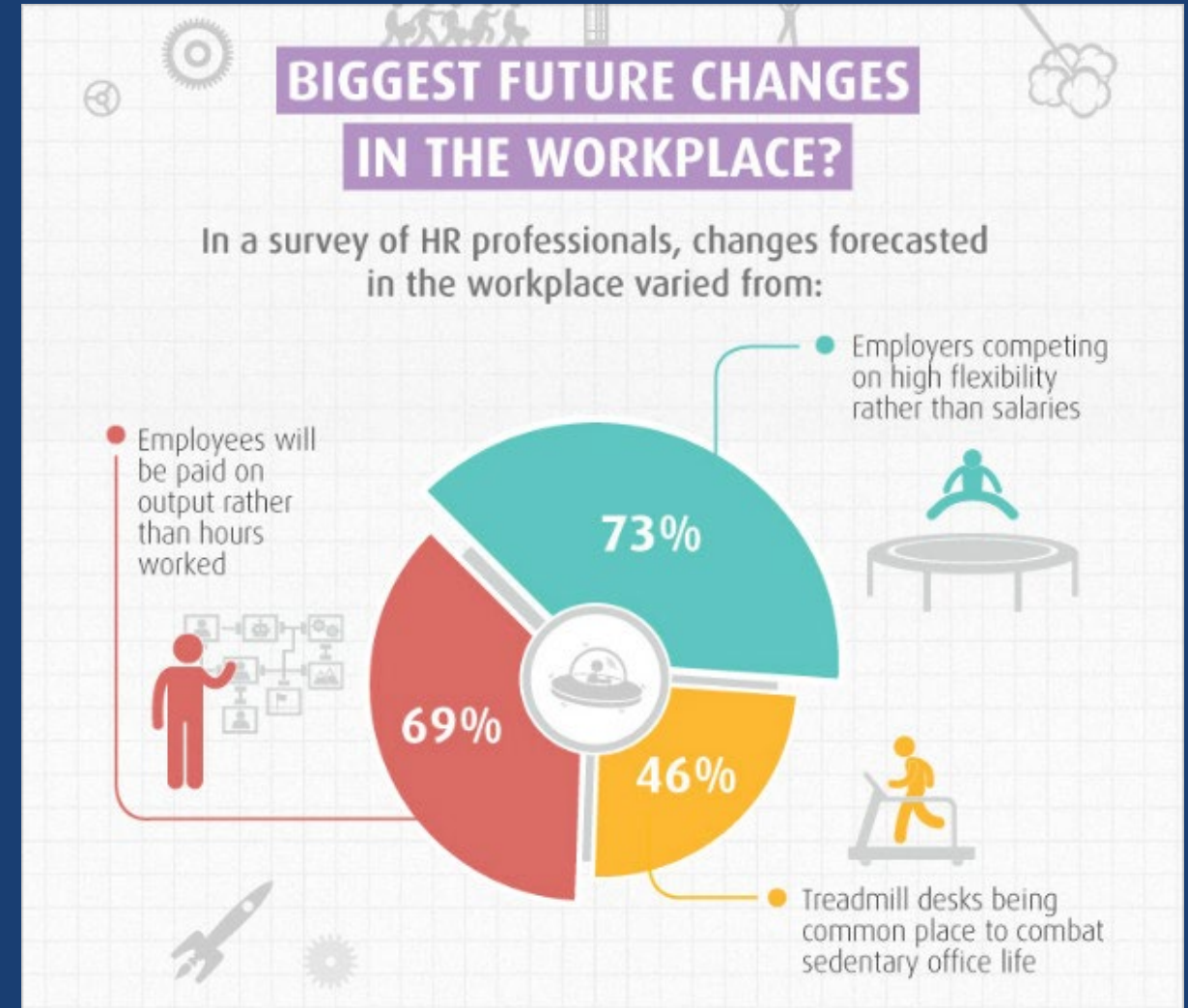
ing Meyer
ty Commissioner

- Hospital Pharmacist for 41 years
- 4 years Commissioner for Pratt Planning and Zoning Board of Appeals
- 3 years Pratt City Commission
- Graduate of Pratt High School and KU School of Pharmacy
- Past Member and President of Civic Groups and Organizations
- Experience and Knowledge of Financial Responsibility and Budgeting
- Supports Family Values, Education, and Business Growth
- Common Sense Approach for the Sustained Progress of Pratt

* Hyphens are important...

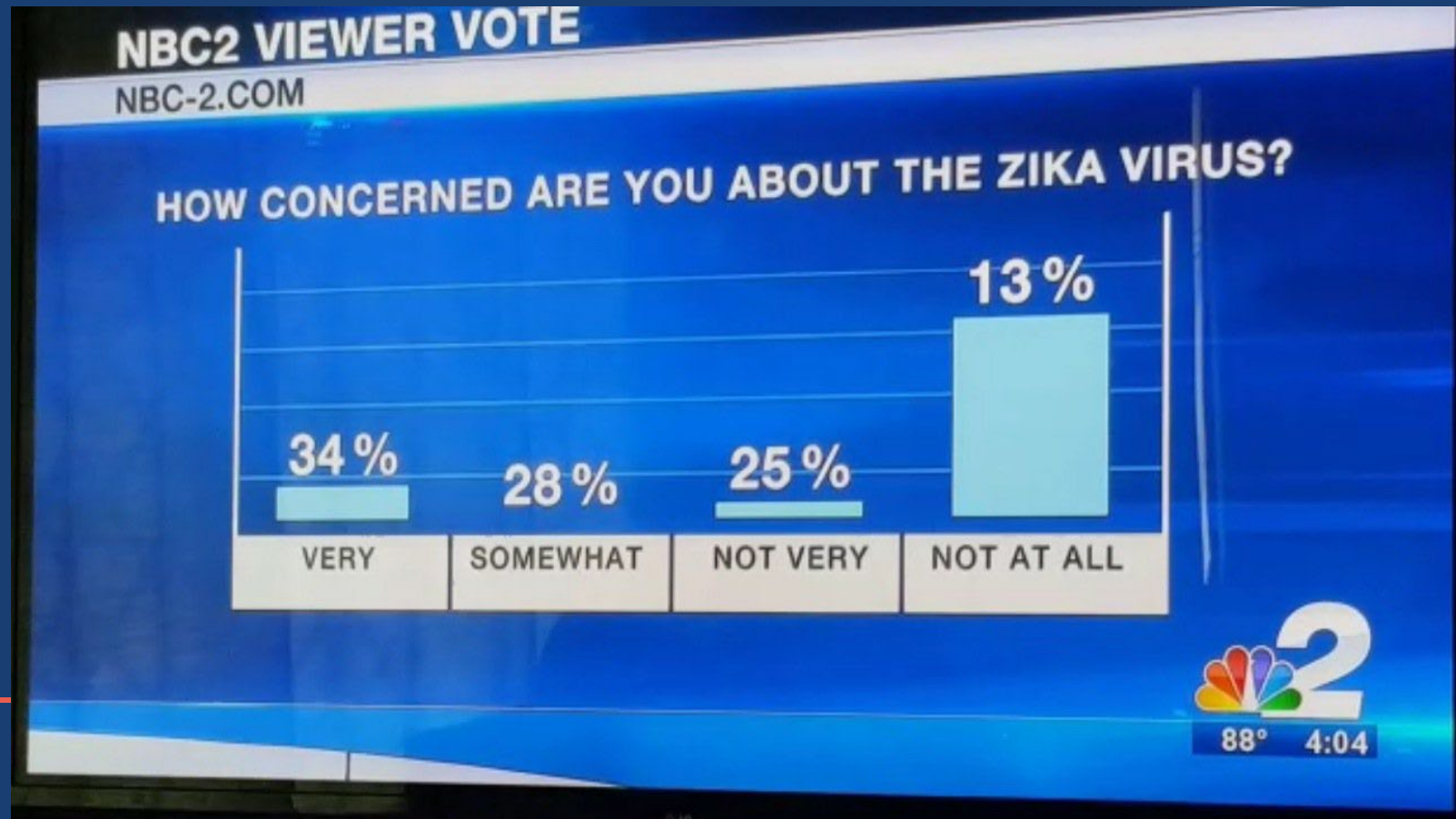
In *faux*graphics

Something doesn't add up...



In *faux*graphics

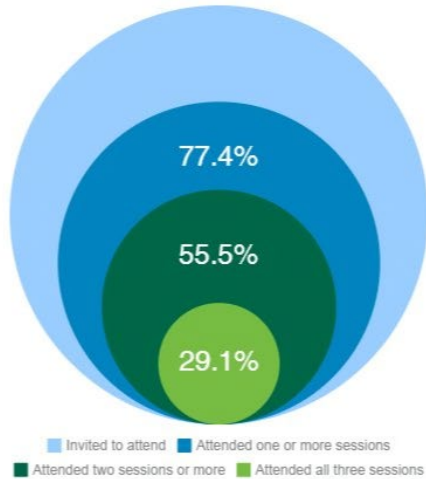
Just plain not caring about your job anymore...



Original

Corrected

Attendance of Type 2 Diabetes prevention programme



People who attended two sessions

62% less likely to get diabetes during the 3-year study compared to people given usual care

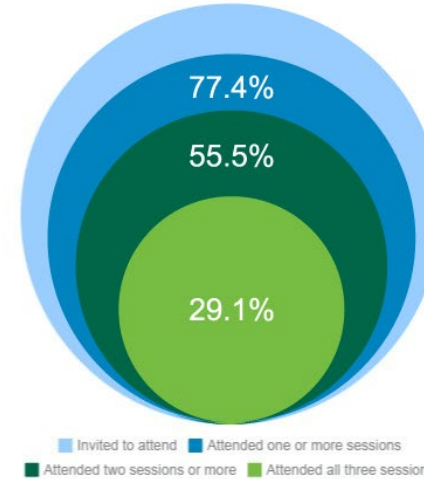
People who attended three sessions

88% less likely to get diabetes during the 3-year study compared to people given usual care

People were less likely to attend one or more sessions if they: smoked, had a higher BMI, were younger, were female, were from deprived areas

For more information visit: discover.dc.nihr.ac.uk/portal/home

Attendance of Type 2 Diabetes prevention programme



People who attended two sessions

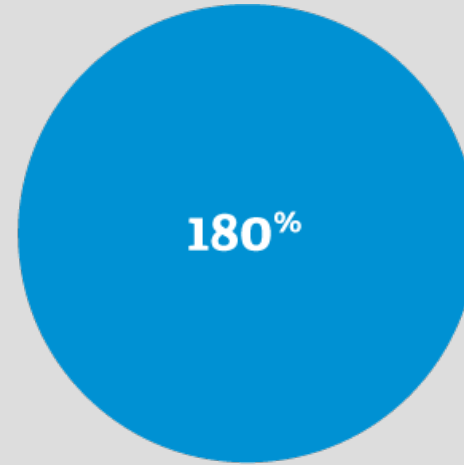
62% less likely to get diabetes during the 3-year study compared to people given usual care

People who attended three sessions

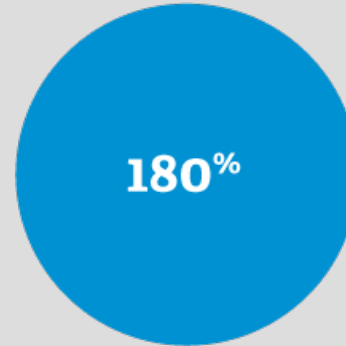
88% less likely to get diabetes during the 3-year study compared to people given usual care

People were less likely to attend one or more sessions if they: smoked, had a higher BMI, were younger, were female, were from deprived areas

For more information visit: discover.dc.nihr.ac.uk/portal/home



Based on radius - misleading as exaggerates difference

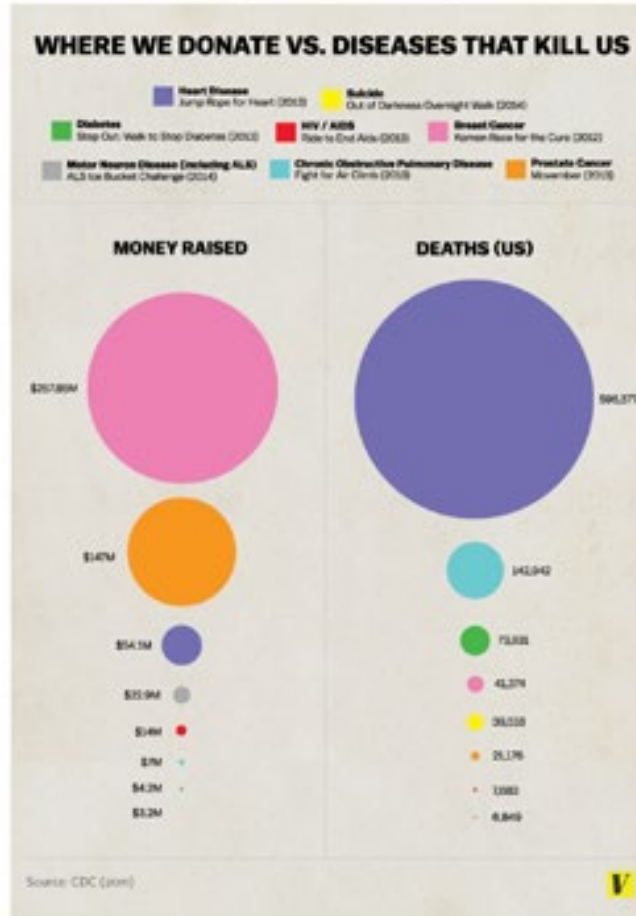


Based on area - more correct as a circle, but still difficult to compare them properly by eye.

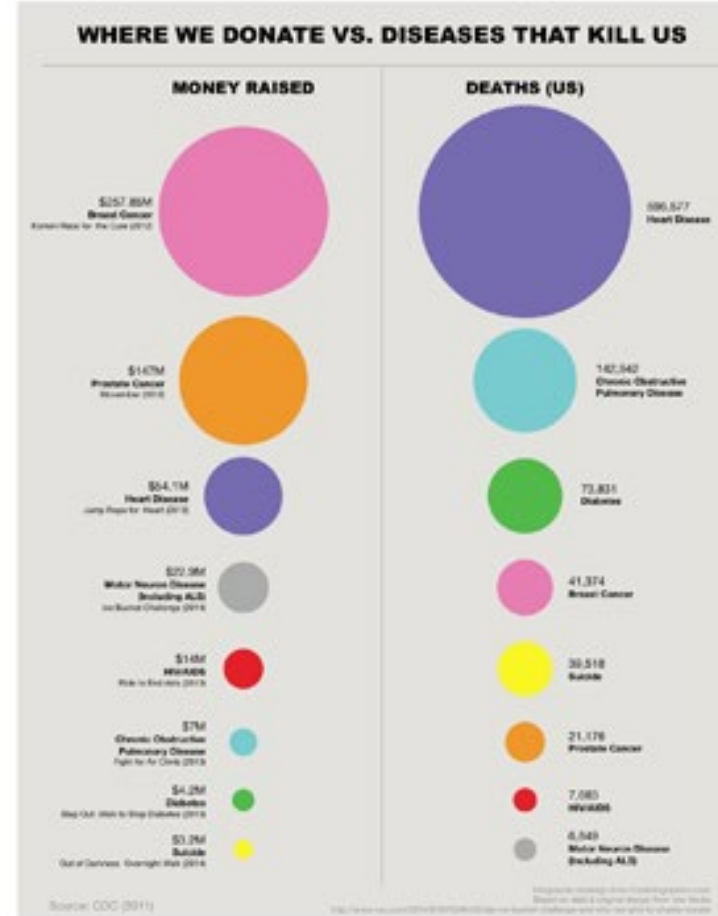
Neither is the best way to compare two numbers

That radius / area thing again...

Original Design

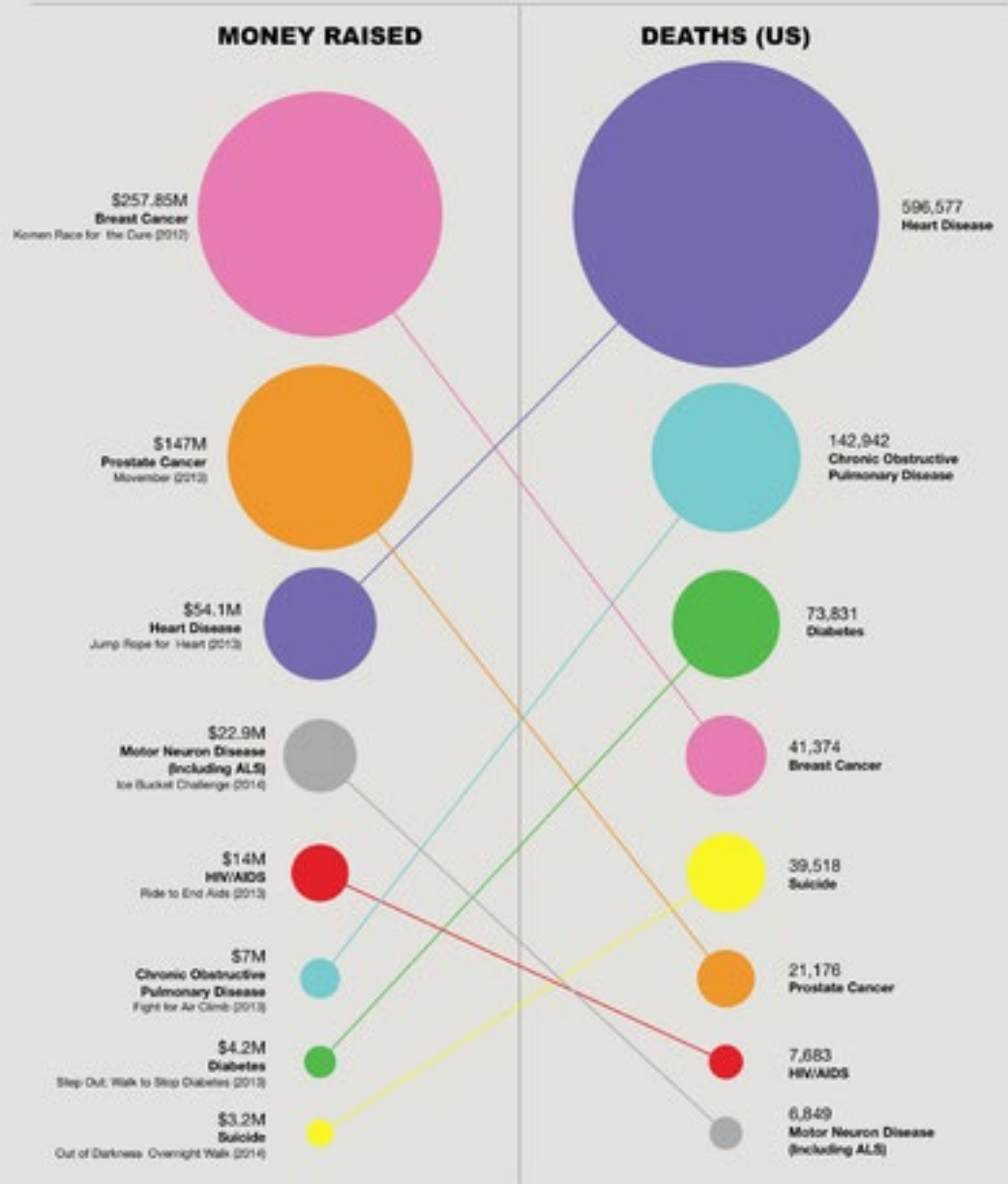


Corrected Design



That radius / area thing again...

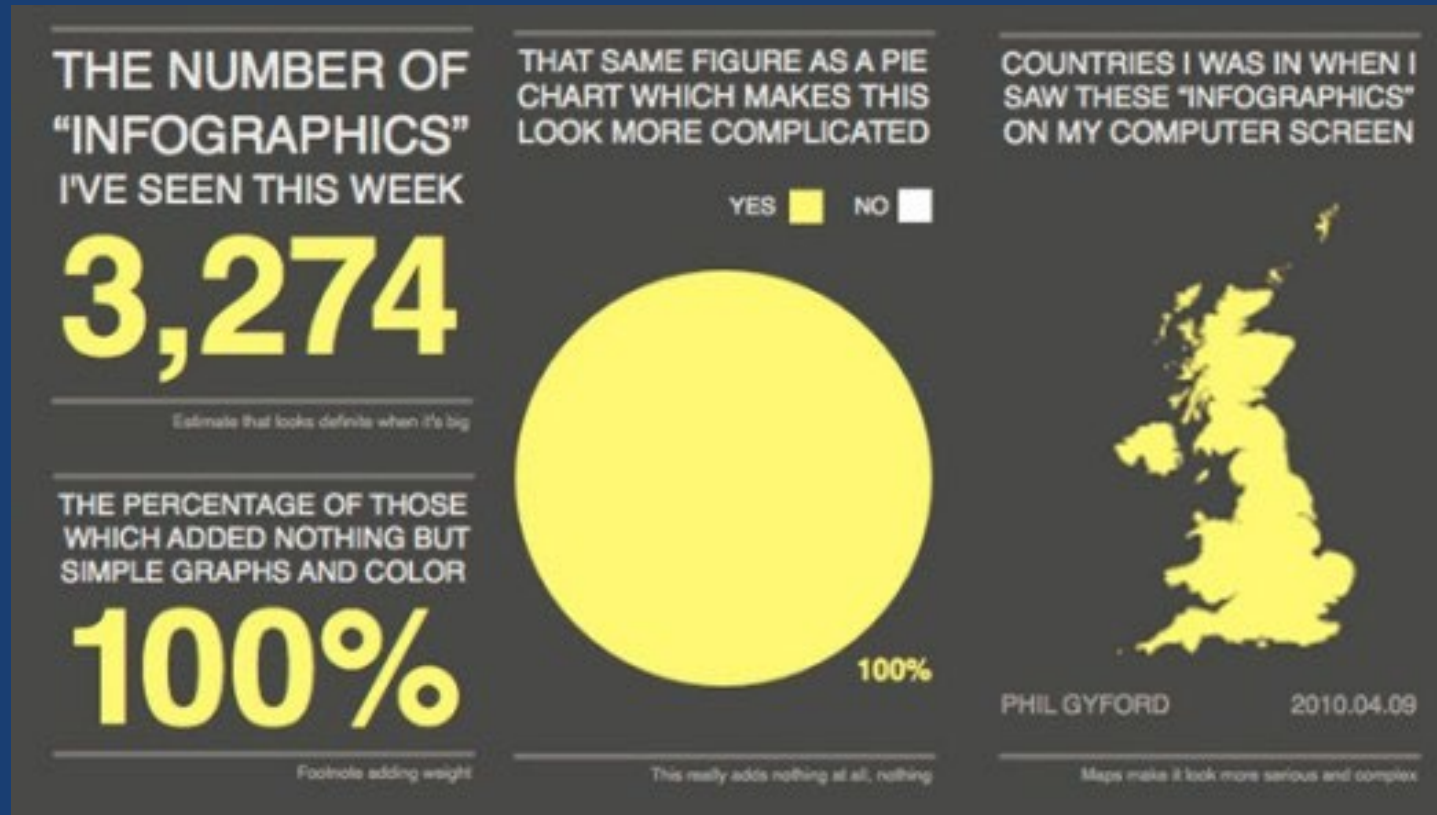
WHERE WE DONATE VS. DISEASES THAT KILL US



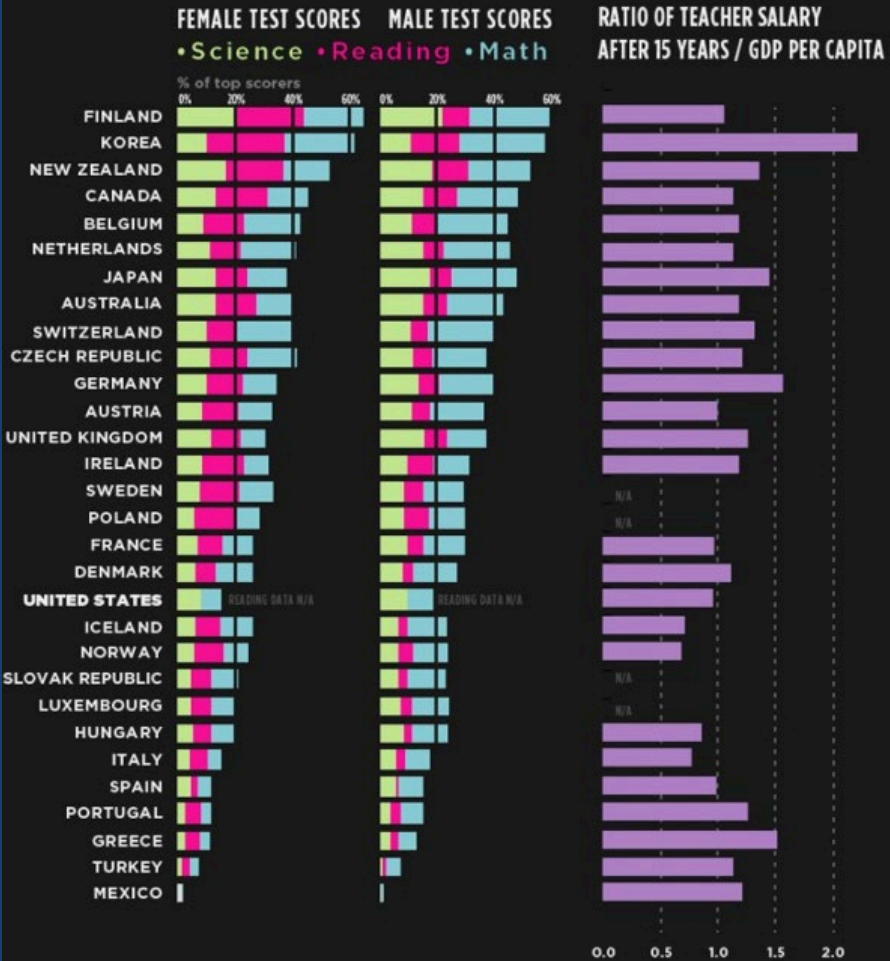
Source: CDC (2011)

Infographic redesign from Caslerlographics.com
Based on data & original design from Vox Media
<http://www.vox.com/2014/6/20/6040435/ice-bucket-challenge-and-why-we-give-to-charity-donate>

A focus on graphic design rather than information design



DO BETTER PAID TEACHERS MAKE SMARTER STUDENTS?



Source: Education at a Glance 2009: OECD Indicators

I don't...I don't know...?



Just being wrong...

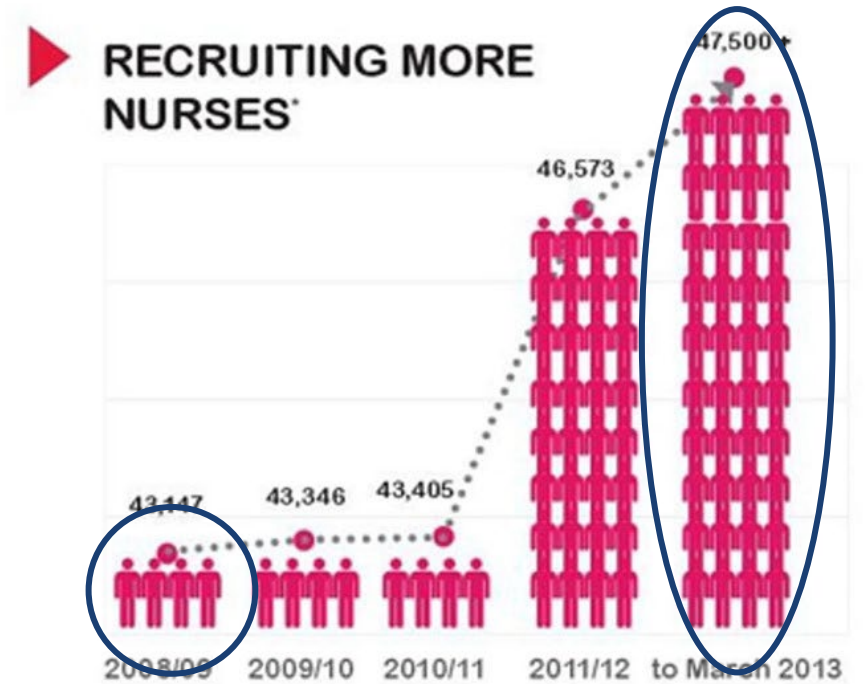
London?



So...

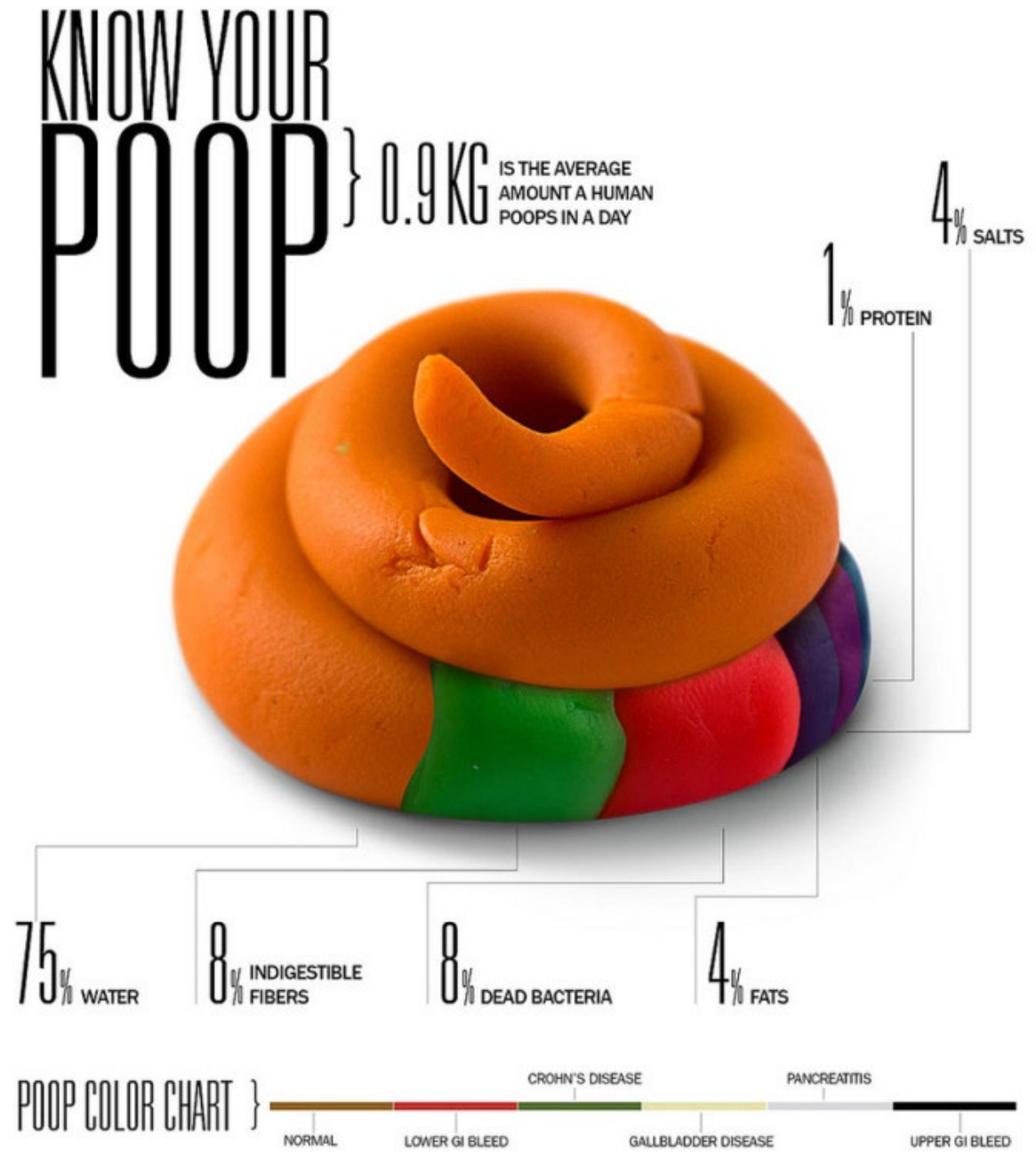
- four stick people stand in for about 43,000 nurses?
- But then 28 stick people stand in for an additional 3,000 nurses.
- This makes a 7% increase look like a 7000 % increase!

The NSW Health system is...



* Nursing headcount figures at June includes non casual staff and 3rd schedule

Being crap...



FIVE STEPS TO AN INFOGRAPHIC

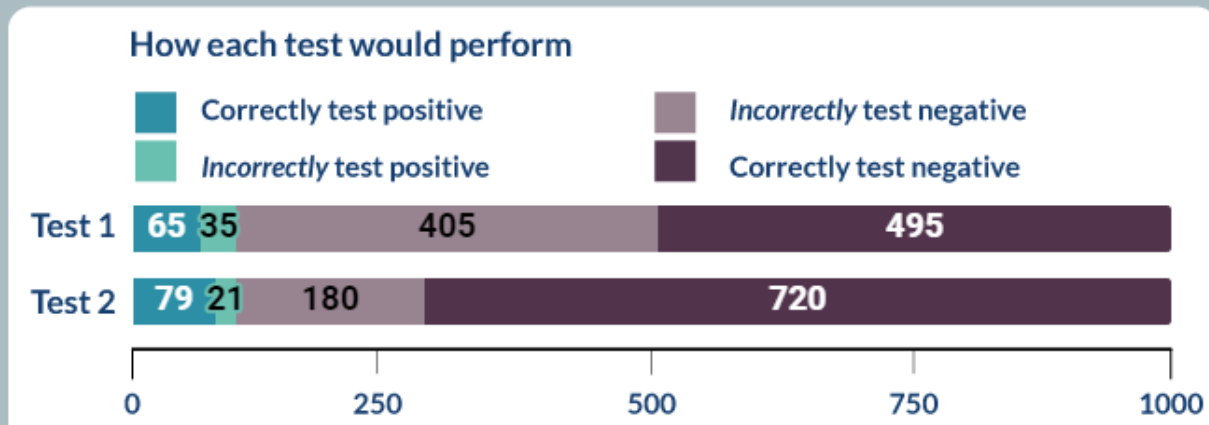
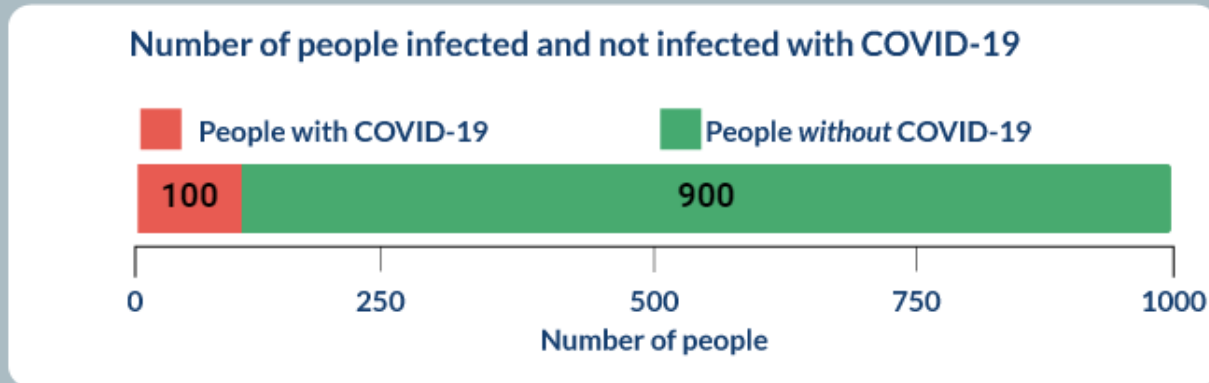
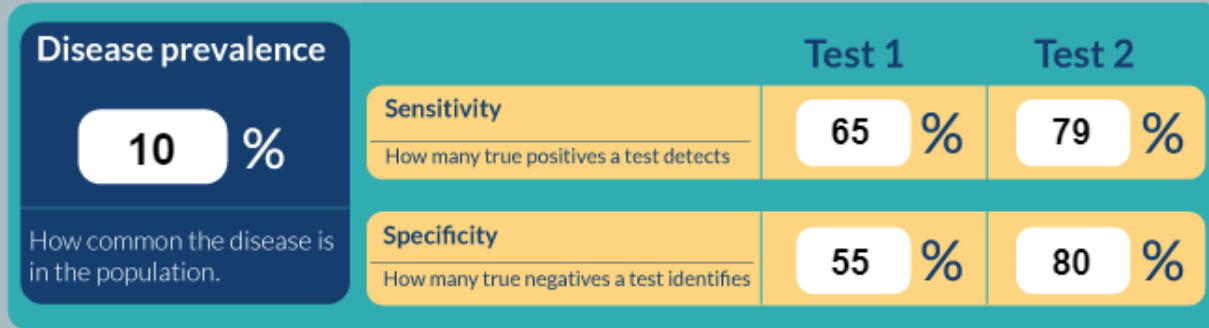
Interactive infographic

- Can be expensive
- Can increase understanding
- Look damn cool

Interactive COVID-19 Test Comparison Infographic



Explanatory words here. blah blah blah



Enter disease prevalence here (as a %)

10	
Diagnostic Test 1	Diagnostic Test 2
65	79
55	80

Enter sensitivity here (as a %)

Enter specificity here (as a %)

Thanks!

Contact:

gavin.hubbard@phc.ox.ac.uk

<https://www.arc-oxtv.nihr.ac.uk/>

Gimme Feedback!

<https://forms.office.com/r/D2LBDYyZYd>

THE DROPLET STUDY

10 GP PRACTICES



278 PATIENTS



50%: USUAL CARE



Weight loss advice from a health professional.

50%: LOW ENERGY TOTAL DIET REPLACEMENT (TDR)



About 800 calories per day from soups, shakes and bars for 8-12 weeks.

AFTER ONE YEAR...

● TDR

● BRIEF ADVICE

AVERAGE WEIGHT LOST



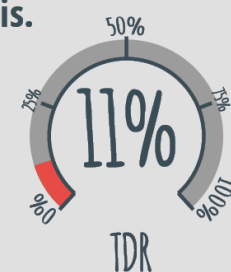
PROPORTION WHO LOST 10% OR MORE OF THEIR STARTING BODY WEIGHT



People in the total diet replacement group lost **over three times** as much weight as people given usual care, and nearly **half lost at least 10%** of their starting body weight.

Some people might, quite rightly, be concerned about how safe switching to a low energy diet is.

THE FREQUENCY OF MODERATE, OR WORSE, SIDE EFFECTS WAS ABOUT THE SAME FOR EITHER GROUP.



Overall, side effects were more common in the TDR group (52%) than in the brief advice group (30%).

THE MOST COMMON SIDE EFFECTS:



CONSTIPATION



HEADACHE



FATIGUE



DIZZINESS

Reference: *Doctor Referral of Overweight People to Low Energy total diet replacement Treatment (DROPLET): pragmatic randomised controlled trial.* Nerys M Astbury, Paul Aveyard, Alecia Nickless, Kathryn Hood, Kate Corfield, Rebecca Lowe, Susan A Jebb. *BMJ* 2018;362:k3760 <http://dx.doi.org/10.1136/bmj.k3760>



NUFFIELD DEPARTMENT OF
PRIMARY CARE
HEALTH SCIENCES

This research was supported by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care Oxford at Oxford Health NHS Foundation Trust and Cambridge Weight Plan Ltd. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, the Department of Health and Social Care or Cambridge Weight Plan Ltd.

Supported by
NHS
National Institute for Health Research

HOW CAN WE BEST HELP PEOPLE TO LOSE WEIGHT IN PRIMARY CARE?

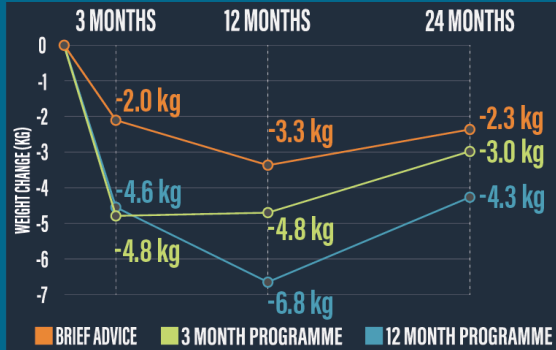
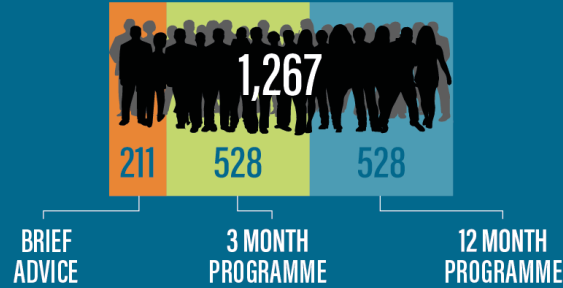
The WRAP study – Weight loss Referrals for Adults in Primary Care – examined if a behavioural weight loss programme, in this case WeightWatchers®, is better than brief advice, and how long a programme should last – 3 or 12 months?

It compared the costs and potential future health benefits of these programmes.

THE STUDY

1,267 participants were randomly assigned to receive either brief advice, or a referral to a weight loss programme for either 3 or 12 months.

Their weight was measured at 3, 12 and 24 months.



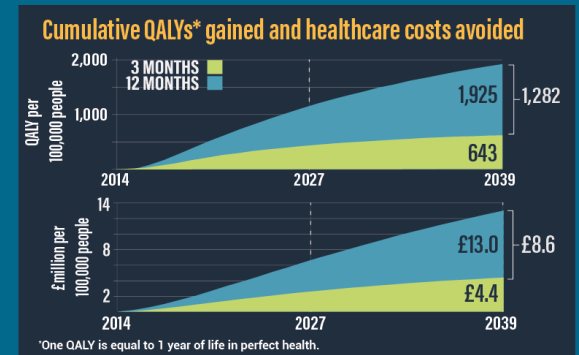
HOW MUCH WEIGHT DID PEOPLE LOSE?

GP referral to a weight loss programme led to significantly more weight loss than brief advice.

The longer programme led to greater weight loss at 12 and 24 months.

WHAT IS THE EFFECT ON FUTURE HEALTH?

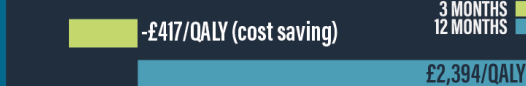
We assumed people regained all the weight they lost by year 5. Despite this, modelling suggests the weight loss programmes lead to greater health benefits and lower NHS costs over the next 25 years compared to brief advice. The longer programme is predicted to have much greater benefits.



Cost per kg weight lost vs. brief advice



Cost per QALY vs. brief advice (over 25 years)



ARE LONGER PROGRAMMES COST-EFFECTIVE?

The health economic analysis shows that a 3 month programme is likely to be cost saving relative to brief advice alone.

The 12 month programme is more expensive, but the greater health benefits mean it is very cost-effective by usual clinical standards*.

*NICE threshold for cost-effectiveness of £20,000/QALY



Reference:

Extended and standard duration weight-loss programme referrals for adults in primary care (WRAP): a randomised controlled trial
 Ahern et al. The Lancet, 2017. DOI: 10.1016/S0140-6736(17)30647-5

WHAT IS THE EFFECT ON FUTURE HEALTH?



BAFTA

The Birmingham Atrial Fibrillation Treatment of the Aged study

Atrial Fibrillation:

Impact on stroke

5x

Increased risk of stroke

12%

Of people aged over 75 years have atrial fibrillation

30%

Of strokes in those 75 and older due to atrial fibrillation

- Anticoagulant
- Very effective at reducing stroke risk
- Higher risk of haemorrhage
- Monitoring costs



Vs



- Antiplatelet agent
- Less effective than anticoagulants
- More convenient
- No monitoring costs

Randomised controlled trial comparing safety and stroke risk reduction between warfarin and aspirin in those >75 with atrial fibrillation in primary care populations.

280
Practices

76,380
>75 y/o screened

8,482
ECG and medicals

973
Patients recruited



Relative risk reduction for stroke Vs Aspirin



- Rapid updating of NICE and international guidelines of Stroke Prevention in Atrial Fibrillation.
- Removal of aspirin option
- Introduction of INR monitoring model

The SAFE study

What is the most cost-effective screening method for atrial fibrillation in Primary Care?

• 50 Practices (25 control, 25 intervention)  • 15,000 patients aged 65+  • 12 months

Screening

Opportunistic

A healthcare professional feels a patient's pulse during a consultation. If irregular, diagnoses AF or ECG to confirm.

Systematic (Targeted)

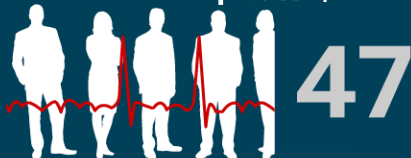
Use medical records to identify patients at high risk of developing atrial fibrillation (e.g. history of angina, diabetes, hypertension, etc).

Systematic (Population)

Screen everyone over the age of 65.

New cases identified

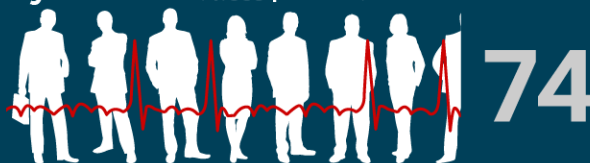
Control Group (4,936 patients)



Opportunistic (4,933 patients)



Systematic (4,933 patients)



Economic evaluation

(Incremental cost per additional case detected)

Opportunistic **£337**

Systematic (Targeted) **£3,520**

Systematic (Population) **£1,514**

Opportunistic screening is more cost-effective than systematic screening.

Changed NHS policy and international guidelines on detecting AF

A pharmacist-led information technology intervention for medication errors (PINCER):

72 PRACTICES
480,942 PATIENTS



CONTROL (36 PRACTICES)
**SIMPLE COMPUTER GENERATED
FEEDBACK FOR AT RISK PATIENTS**

INTERVENTION (36 PRACTICES)
**PHARMACIST-LED INFORMATION
TECHNOLOGY INTERVENTION
(PINCER)**

**AT 6 MONTHS:
PATIENTS IN PINCER WERE SIGNIFICANTLY
LESS LIKELY TO BE PRESCRIBED**

NSAIDs
**IF THEY HAD A HISTORY OF PEPTIC
ULCER WITHOUT GASTROPROTECTION**
(OR 0.58, 95% CI 0.38 - 0.89)

O=C(O)Cc1ccc(Nc2cc(Cl)ccc2Cl)cc1

**ACE INHIBITORS
OR A LOOP DIURETIC
WITHOUT APPROPRIATE MONITORING**
(OR 0.51, 95% CI 0.34 - 0.78)

CC(C)NCC(O)c1ccc(Cl)c(Cl)c1

β BLOCKERS
IF THEY HAD ASTHMA
(OR 0.73, 95% CI 0.58 - 0.91)

CC(C)N(CC(=O)S)C1CCCC1C(=O)O

**95% PROBABILITY
OF BEING COST EFFECTIVE**
IF WILLING TO PAY £75 PER ERROR AVOIDED

RECOGNISED AS ONE OF THE **NIHR SPCR**
TOP 10 ACHIEVEMENTS

DOWNLOADED BY 2,307 PRACTICES
ACROSS 196 CCGs
(29% OF ALL PRACTICES IN ENGLAND)

NICE National Institute for
Health and Care Excellence

INCLUDED IN 'MEDICINES OPTIMISATION
CLINICAL GUIDELINE'
(MARCH 2015)

RCGP Royal College of
General Practitioners

INCLUDED IN RCGP PATIENT SAFETY TOOLKIT
(JULY 2015)