

Research on changing behaviour within/beyond the health care setting

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Key behaviours contributing to antibiotic stewardship

- preventing infections occurring and spreading
- reducing inappropriate antimicrobial demand and use

(by targeting health professional and/or public behaviour)

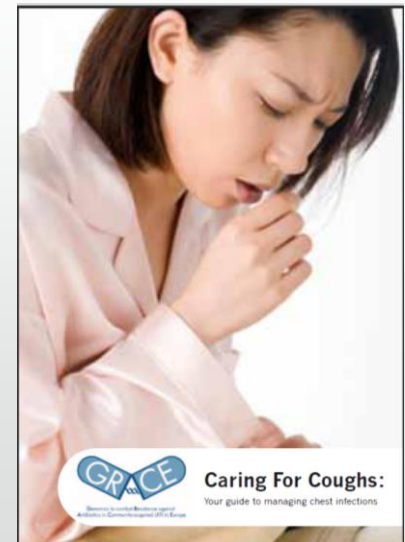


Antimicrobial stewardship - changing risk-related behaviours in the general population

Reducing inappropriate antimicrobial demand/use

EU-funded project led by Paul Little, primary care: 'GRACE/INTRO'

- web-based GP education (plus patient booklet) to reduce antibiotic prescribing/resistance across Europe
- intervention created in English by CAHP team, translated/modified for Spain, Poland, Belgium, Netherlands
- trialled in 246 practices, successfully reduced prescribing ca. 20% (Lancet, 2014)
- about to be disseminated via CLAHRC



Using the LifeGuide software to develop the intervention

Add a comment and click "Save"

Comments about this page

Sarah Tonkin-Crine on 08 June 2010 at 22:45:32

i think paul said he didnt want the malhotra paper and if we did include it it should be linked to costello on the next page?

INTRO_GP1 on 15 June 2010 at 14:50:31


learn more slides are better than central pages because they have less text on them and are easier to read

INTRO_GP2 on 16 June 2010 at 14:27:52

agree with content of slides and think resistance is important

INTRO_GP3 on 17 June 2010 at 10:38:34

Not interested in background pages, already know that resistance is a problem, just want to be told what to do



INTRO

Internet Training for Antibiotic Use

1. The Problem for Healthcare

Antibiotic Use and Resistance

- The European Commission and the World Health Organisation have identified antibiotic resistance as a major public health concern.
- More than 80% of all antibiotics are prescribed in the community, and at least 80% of these are probably unnecessary.

[Learn More about the association between antibiotic use and resistance](#)

- Rates of complications are not significantly higher in countries with low prescribing rates than in countries that prescribe more antibiotics.
- There is good evidence that in countries where fewer antibiotics are prescribed, there are lower levels of antibiotic resistance.
- The antibiotic resistance levels in your own local area are linked to local rates of antibiotic prescribing.

[Learn More about local antibiotic use and resistance](#)

- Antibiotics can have long lasting effects upon resistance.

[Learn More about the long lasting effects of antibiotics](#)

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Reducing inappropriate antimicrobial demand/use

‘Internet Dr’

(with Paul Little, Mike Moore, Judy Joseph, Steph Hughes)

- Web-based self-care advice for respiratory symptoms to reduce GP consultations (hence antibiotic use)
- Successfully trialled in students and primary care
- Included in CLAHRC rollout of INTRO

The screenshot shows a web-based self-care advice interface. At the top, there is a navigation bar with three links: 'Home', 'Doctor's Questions', and 'Treatment Options'. Below the navigation bar, there is a text box that reads: 'So that we can give you the right advice, we ask you a few questions about your symptoms. After you click "Next" at the end of the page, your answers will be saved. This means you can go back to check your answers if you want to.' Below this text box, there are three questions with radio button options. The first question is 'What is your body temperature?' with four options: 'Below 37.5°C (99.5°F)', 'Between 37.5°C and 38.4°C (99.5°F and 101.1°F)', 'Between 38.5°C and 39°C (101.3°F and 102.0°F)', and 'Above 39°C (102.2°F)'. The second question is 'How long have you had a fever?' with two options: 'Less than 3 days' and '3 days or more'. The third question is 'Are you vomiting or do you have diarrhoea?' with two options: 'Yes' and 'No'. Below these questions, there is a fourth question: 'Do you have a sore throat, runny/stuffy nose?' with two options: 'Yes' and 'No'. At the bottom of the form, there is a 'BACK' button with a left-pointing arrow.

Home Doctor's Questions Treatment Options

So that we can give you the right advice, we ask you a few questions about your symptoms. After you click "Next" at the end of the page, your answers will be saved. This means you can go back to check your answers if you want to.

What is your body temperature?
[If you want to find out if you have a fever, click here.](#)

☐ Below 37.5°C (99.5°F)
☐ Between 37.5°C and 38.4°C (99.5°F and 101.1°F)
☐ Between 38.5°C and 39°C (101.3°F and 102.0°F)
☐ Above 39°C (102.2°F)

How long have you had a fever?

☐ Less than 3 days
☐ 3 days or more

Are you vomiting or do you have diarrhoea?

Yes ☐ No ☐

Do you have a sore throat, runny/stuffy nose?

Yes ☐ No ☐

BACK

Preventing infections occurring and spreading

Behaviour to reduce transmission of pandemic flu

DoH-funded inter-institution collaboration, led by PHE
(Influence)

- Developed/evaluated (using mixed methods)
messages to promote vaccination uptake, antiviral use

Behaviour to reduce transmission of respiratory infection in the home

- Handwashing intervention: PRIMIT

PRIMIT WEBSITE: INCREASING HAND-WASHING TO LOWER TRANSMISSION OF INFECTIONS



RANDOMISED CONTROLLED TRIAL

- Aim to lowering number of illnesses & severity at home
- 20,066 participants over 3 winters
- Households of 2 or more
- Measures at baseline, 1, 2 & 3 months
- Colds, flu & gastrointestinal viruses
- Sample cross-checked with GP notes & nasal swabs

WEBSITE LAYOUT

- 4 sessions across 3.5 weeks
- Tunnelled section then menu
- Tailored content: demograph, daily handwashing level, feedback
- 4 types of content: motivational, information, planning, tailored

SESSION 1, TUNNELLED PAGES, MOTIVATION



VIRUS DEFENCE

Simple steps to reduce colds and flu

Why Try to Lower the Risk of Catching Colds and Flu?

No-one likes getting colds or flu, but we get used to putting up with them.

By using the simple ideas on this website you can actually cut down on how many colds you and your family get each year, and how bad they are.

Cut Down on Colds and Flu Now!



© Laura Cumming 2008

Protect Your Health

This is really important if anyone in your house is more at risk from colds and flu - **for example young children, older people, or people with poor health or breathing difficulties such as asthma.**

It may take a bit of practice for you and your family to use the ideas on this website.

But once you have learnt them they will become habits that you'll do easily.

And they will help protect you from catching colds and flu every year.

 [BACK](#)

[NEXT](#) 

MOTIVATION



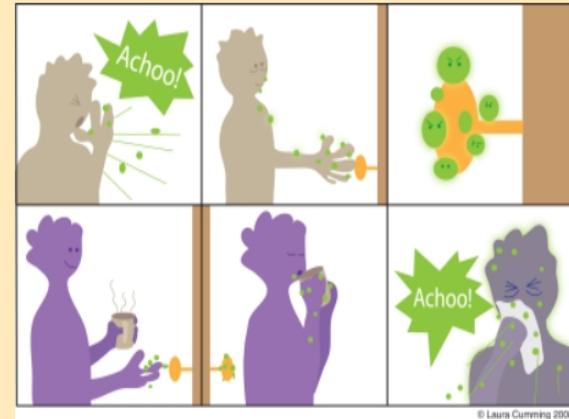
VIRUS DEFENCE

Simple steps to reduce colds and flu

Why Washing Your Hands is the Best Way to Protect Yourself and Others

Viruses live for hours outside the body:

- they settle on surfaces after being breathed out
- they get on infected people's hands when they cough and sneeze, or touch their face
- they are on surfaces touched by infected people's hands



You can pick them up by:

- touching an infected surface e.g. a cup, door handle, stair rail, computer keyboard, shop counter, money
- then touching your face either **consciously** like scratching an itch, or **automatically** like rubbing your eyes.

It is very easy to touch your face without noticing that you are doing it.

If your fingers have viruses on them and then you touch your eyes, nose or mouth you are likely to infect yourself. Our eyes have tear drains that flow into the nose and so can pass a virus down into it.

PLANNING

How Often Do You Wash Your Hands?

If you think about **how much you have washed your hands over the last week**, which circle best describes each activity? Please click on one circle for each activity.

WASHING YOUR HANDS INCLUDES USING A HAND GEL OR USING SOAP AND WATER

Over the last week, I washed my hands:	almost never	some times	quite often	very often	almost always
Before I ate a meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Before I ate snacks (e.g. crisps, sweets, fruit)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
when I went to the toilet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
when I came into the house (e.g. after work, shopping, travelling)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
after I had been close to someone who had a cold or flu	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
after blowing my nose or sneezing/coughing on my hands	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

 [BACK](#)

[NEXT](#) 

PLANNING, TAILORED


Are You Happy With Your Plan?

**This plan aims to help you wash your hands MORE than you already do
- the more you wash your hands, the better protected you and your family are from colds and flu.**

To increase your handwashing simply think about times when it is easy to wash them.

For example, if you usually wash your hands 'some times' before eating snacks, why not try washing them 'quite often' from now on?

If you would like to have another go at making your commitment, just click on the 'back' button below.

 [BACK](#)

[NEXT](#) 


PLANNING, TAILORED

A GOOD PLAN!

You have chosen a plan that will help to protect you and your family from cold and flu viruses.

Next, you can decide how you would like to use your plan to help remind you to wash your hands.



 **BACK**

NEXT 

PLANNING

Helping Remind You to Wash Your Hands

Now you can decide what you think would be the best way to use your plan and help remind you to wash your hands.


For example, you could:

[Print a copy of your plan](#)
([click here](#))

- Put it up around your house
- Sign it and keep a copy
- Show it to someone else and ask them to help remind you



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 [BACK](#)

[NEXT](#) 

FURTHER SESSIONS, TUNNELLED PAGES

Would You Shake This Hand?



Probably not!

The funny thing is that if your hands were this dirty you would feel too embarrassed to touch other people - or too disgusted to touch your own face.


But it is hard to know if hands are dirty just by looking at them - they can have lots of viruses on them but still look clean

It's a bit like cleaning your teeth - other people can't always tell if they are clean just by looking, but you know they feel smooth and shiny after they have been brushed.

When you wash your hands you can tell they are clean because they smell nice, and feel soft and smooth. That is when you can be confident that they are cleaner and safer.

But remember - we use our hands so much that it doesn't take long for them to become dirty again - **and that is why it is good to wash them regularly**

[BACK TO MENU](#)

[NEXT PAGE](#) 

RCT FINDINGS

- Handwashing 10+ times a day at final measure:
 - 53.1% of intervention group
 - 36.6% of control group
- Fewer consultations in intervention group
- Fewer gastrointestinal infections in intervention group
- No effects of gender, age, deprivation on outcomes

How did the PRIMIT website change hand hygiene behaviour? Analysis of behaviour change in study of 19000 people

A **P**RImary care trial of a
website based Infection
control intervention to
Modify **I**nfluenza-like
illness and respiratory
infection **T**ransmission

Ben Ainsworth, Mary Steele, Beth Stuart,
Judith Joseph, Paul Little & Lucy Yardley

Relationship of TPB constructs to hand-washing

- Used pre-post questionnaires to determine associations

Construct	Change across time M (SD)	Association with change in behaviour
Intention	+0.94 (1.2)	$r_{(6050)} = .46$
Attitude	+0.47 (.97)	$r_{(6049)} = .30$
Perceived Behavioural Control	+0.59 (1.6)	$r_{(5959)} = .17$
Perceived Risk	+0.12 (1.36)	$r_{(5938)} = .11$
Subjective Norms	+0.73 (1.61)	$r_{(5957)} = .26$

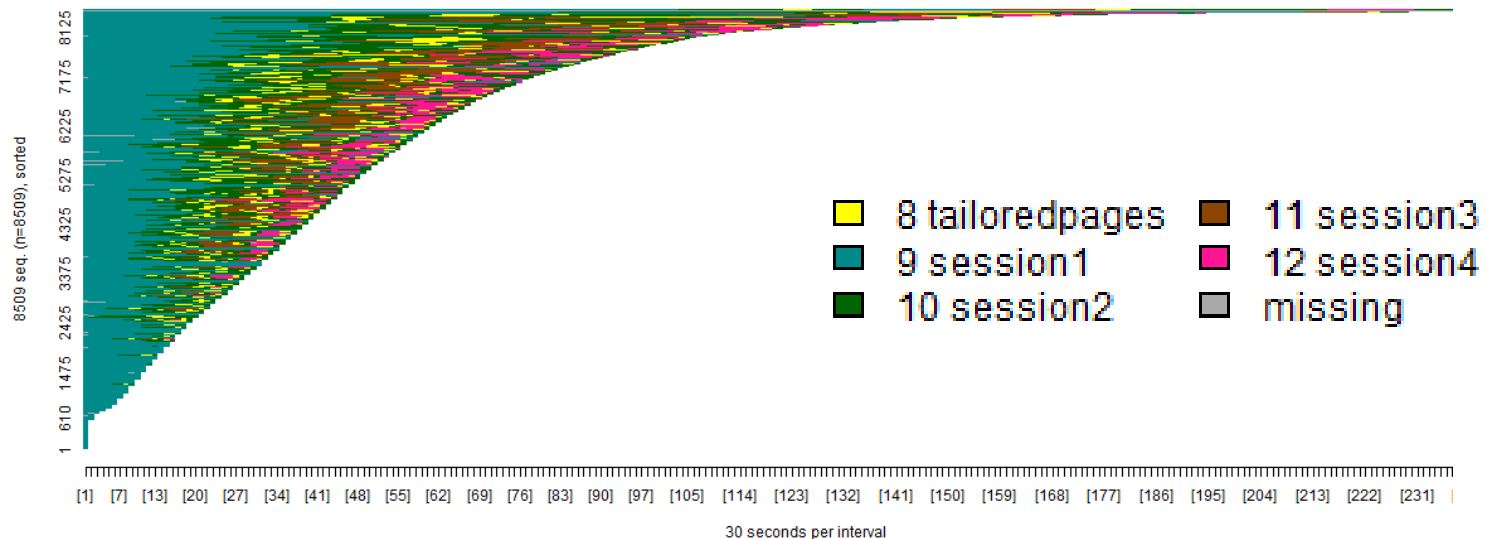
What mediated behaviour change?

Usage Analysis

3 ways to investigate:

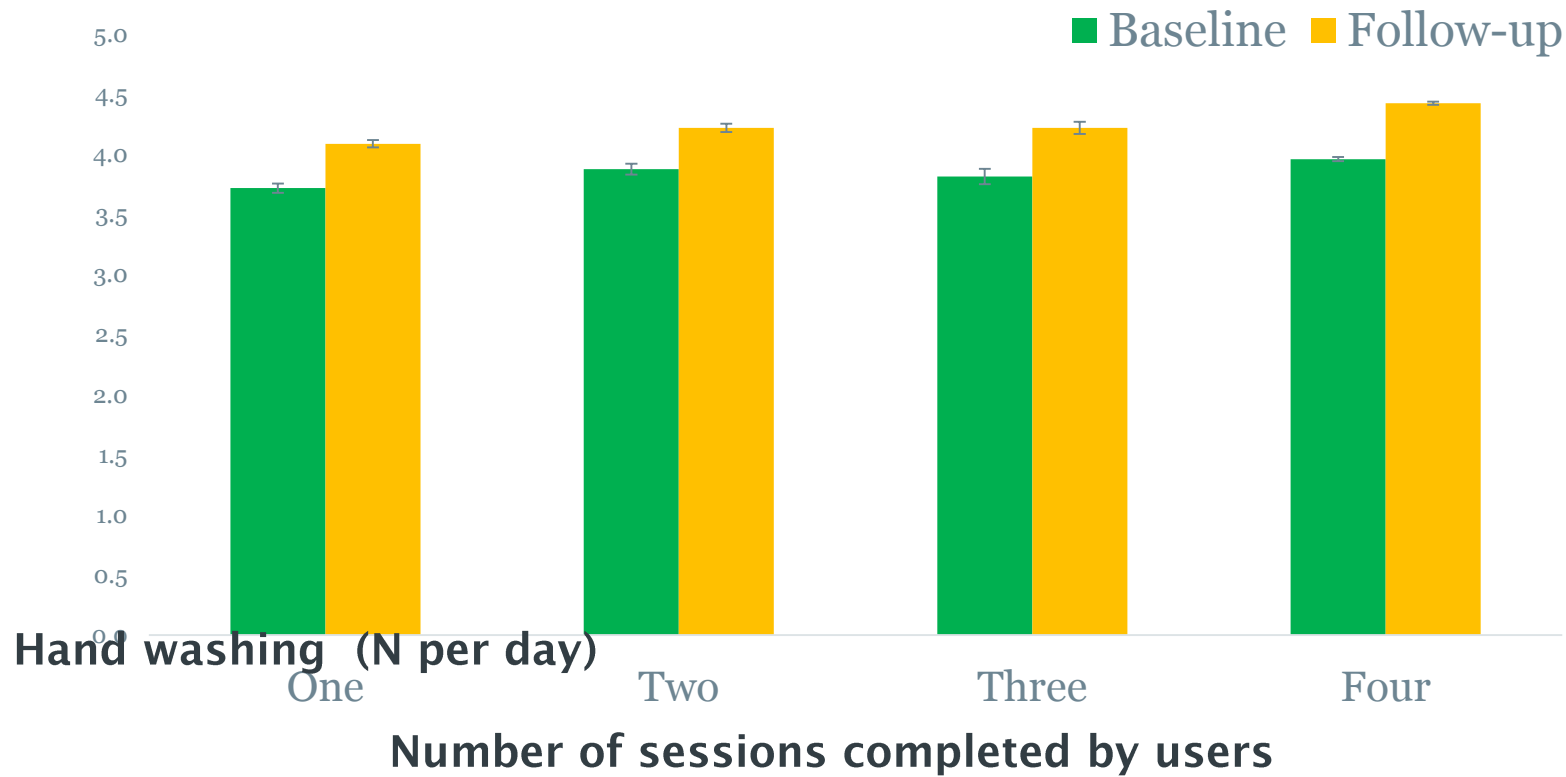
- **Website session usage (did any session / pattern of sessions lead to hand-washing increase?)**
- Content (did any particular content lead to hand-washing increase?)
- Population demographics (Did individual differences lead to different use of the website?)

Website usage (Sessions 1 - 4)



Session visited	Number (/8993)	%
1	8843	98.3
2	6636	73.8
3	5411	60.2
4	4850	54.0

Website usage (sessions 1 to 4— in relation to behaviour)



- Similar outcomes observed regardless of whether users logged in 1-4 times (*overall effect size $h_p^2 = .003$*).
- Supports notion that ‘impact’ is in first session.
- No difference between groups for intention change across 16-weeks ($F = 2.2, p = .09$)

What mediated behaviour change?


Usage Analysis

3 ways to investigate:

- Website session usage (did any session / pattern of sessions lead to hand-washing increase?)
- **Content (did any particular content lead to hand-washing increase?)**
- Population demographics (Did individual differences lead to different use of the website?)

What mediated change in handwashing? _

PRIMIT Intervention Design

 **VIRUS DEFENCE**
Simple steps to reduce colds and flu

Pandemic Flu Quiz - Find Out the Facts

Information from the World Health Authority (WHO) - the world experts on health

Q - What is pandemic flu?

A - An outbreak of flu is called a pandemic if the virus is a new type that has not been in circulation before.

Because it is a new virus **no one is immune to it.**

This means that it **spreads much faster** than normal flu, making it harder to treat.

Q - How serious is it?

A - No one can predict how serious a pandemic will be, even after it has started.

Normal flu viruses that are around each winter kill people of all ages every year. In a pandemic more people are likely to catch it, meaning more people are at risk.


If lots of people are ill at the same time your doctor or hospital will have problems treating everyone. **This is why it is particularly important to try and avoid catching it at all.**

Q - Could I be immune to it?

A - As the virus is new, no one has immunity to it.

If a new pandemic starts and you have had normal flu or

Information pages

 **VIRUS DEFENCE**
Simple steps to reduce colds and flu

Cutting Down on Viruses - Cutting Down on Colds and Flu

Obviously it is impossible to avoid cold and flu viruses completely - so most people think it is purely luck whether they catch them.


But you don't catch an infection from just one virus - you get ill when lots of viruses enter your body and you cannot cope with them.

You can't avoid picking up all viruses, but if less viruses get into your body, you will have a chance to fight them back.

This means you don't have to avoid ALL viruses. But by avoiding more you can cut down the risk of catching colds and flu.

Less Viruses = Less Illness

If you follow the simple advice in this website you are more likely to avoid catching colds and flu.



Motivational pages

 **VIRUS DEFENCE**
Simple steps to reduce colds and flu

When Could You Wash Your Hands More?

The more you wash your hands, the better protected you and the people you live with are from colds and flu.

To help do this you can choose your own hand washing plan.

This plan can help you wash your hands **MORE** than you do already:

- by committing to washing your hands at certain times
- and then helping to remind you when to wash them


Below is the table showing how much you have washed your hands **UP TO NOW**.

To choose your plan you can click on a new button to show how much you want to wash them **IN THE FUTURE**.

Remember: washing your hands includes using an antibacterial hand gel, or soap and water

I will try to wash my hands:	almost never	some times	quite often	very often	almost always
Before I eat a meal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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If-then planning

 **VIRUS DEFENCE**
Simple steps to reduce colds and flu

Using Hand Gels

Antiseptic hand gels are now part of everyday hospital routines. Doctors and Nurses use them many times during a day, visitors use them when they enter the hospital, and gel dispensers can be seen throughout the buildings.

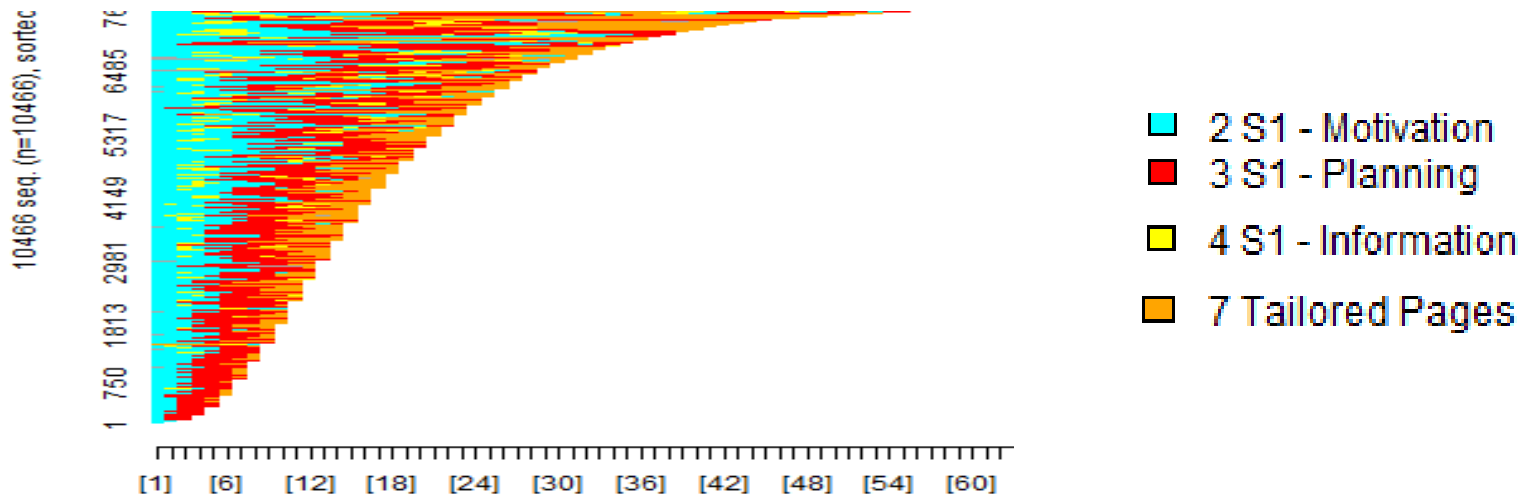
But they are also available in hand sized bottles from supermarkets and pharmacists so that they can be used by everyone, at home or on the go.

Scientific evidence supports the reasons for their use:

- **Effective:** hand gels with at least 60% alcohol in them will remove viruses from your hands. They are as good as using soap and water.
- **Gentle:** gels can be less drying to the skin than normal soap and water, so they are particularly good for people with sensitive skin.
- **Easy:** if gels are kept somewhere to hand, then they provide a very easy way to wash your hands without having to find a basin or sink. To wash your hands properly, the gel needs to be rubbed onto your hands for **at least 15 seconds**, however this is quicker than going to the bathroom.

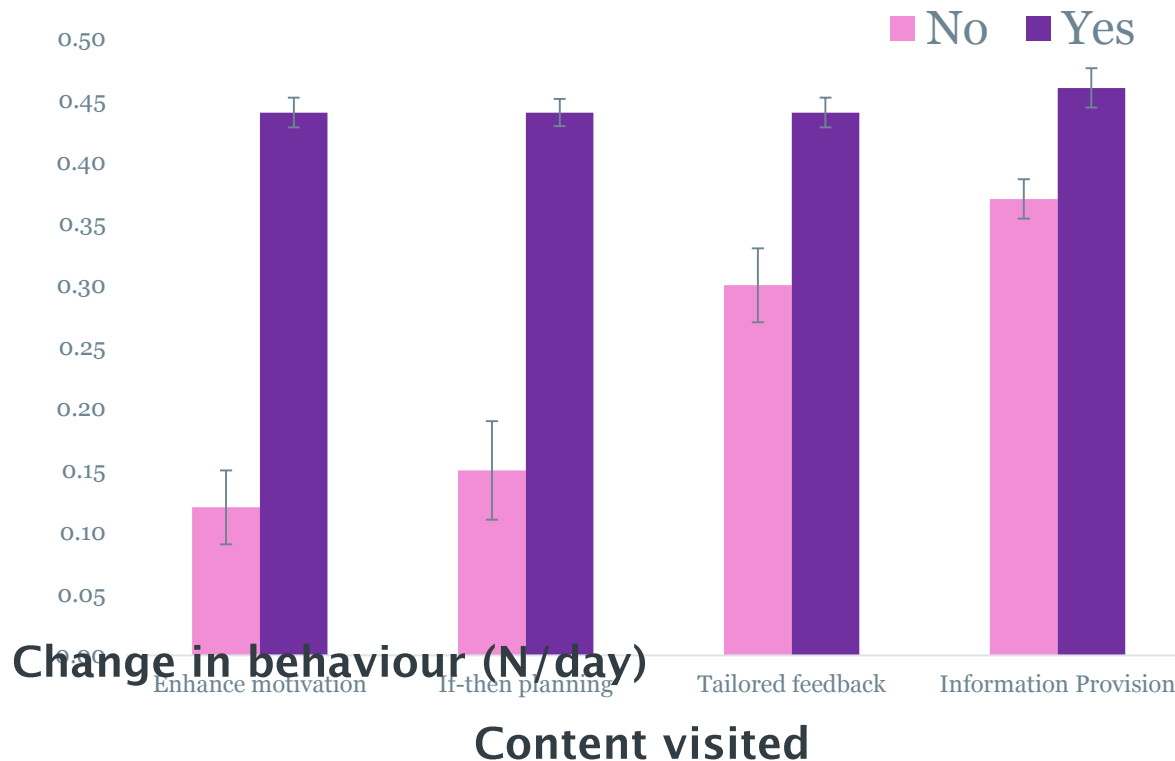
Tailored content

Website usage (Session 1 subdivision)



Lifeguide visualisation tool used to determine common usage pathway patterns.

Website usage (TPB Codings) – in relation to Session 1 outcome



Content	Effect size (d_{corr})
Enhance motivation	0.36
If-then planning	0.35
Tailored Feedback	0.33
Information Provision	0.11

- Note: confound of 'order effect' (i.e. users progress through website in specific order)

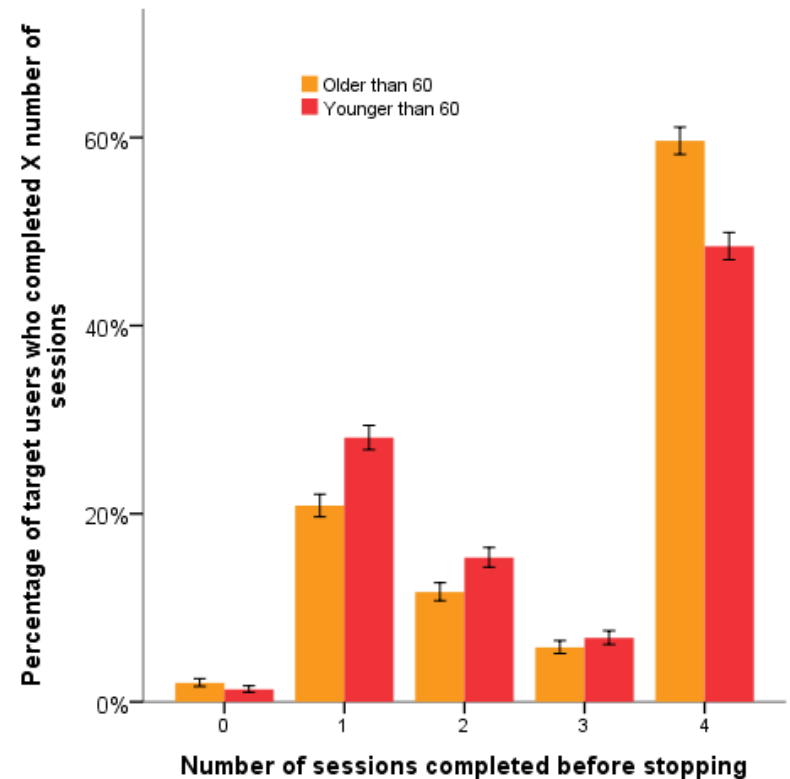
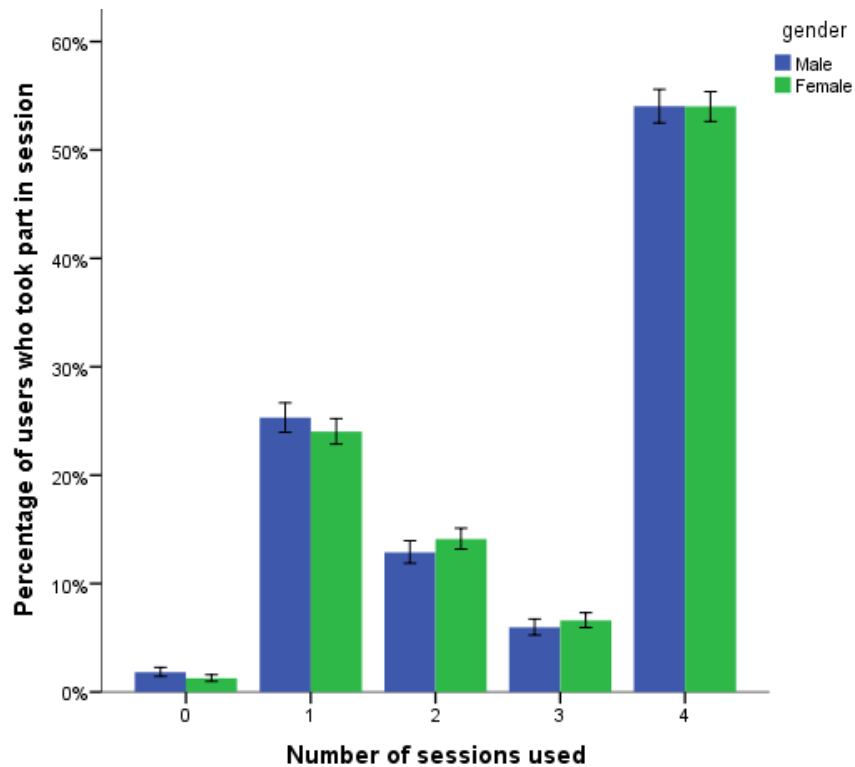
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- **Population demographics (Did individual differences lead to different use of the website?)**

Dose effect – did session 1 have a different effect in women vs. men, or in +40 vs -40



- No gender differences for number of sessions used.
- *Younger users more likely to use 1 or 2 sessions, but not to continue until end.*

Conclusions & Implications

- Importance of if-then planning for habitual behaviour
- Sustained engagement with website unnecessary
- Value of detailed usage analysis
 - more in-depth analysis can look at specific variables for specific interventions
- Interventions with less linear structure will allow better testing of specific components
 - not always possible.

Thank you for listening!