

The use of behavioural science theory and evidence in interdisciplinary antimicrobial resistance research



Dr. Annegret Schneider

UCL Centre for Behaviour Change

NIHR HPRU in Evaluation of Interventions



@Annegret_S

LeSPAR - Workshop on Diagnostics for Antimicrobial Resistance

20th November 2017



Who we are

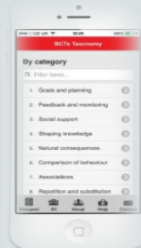
- Core team of researchers, trainers & practitioners in behaviour change
- A cross-disciplinary community of academic experts at UCL & beyond
- Global network of over 4,000 contacts

Our aims

To harness the breadth and depth of academic expertise in behaviour change to address key societal challenges by

- Increasing the quantity and quality of behaviour change research
- Translating that expertise to policy-makers, practitioners, industry, NGOs and researchers

Resources



What we do

Training

- International Summer Schools and workshops

Teaching

- MSc Behaviour Change

Research

- Methods and theories of behaviour change
- Behaviour change interventions applied to real world issues

Consultancy

- Behaviour change expertise provided to public, private and charity sector organisations

Events

- Annual Conference, public talks and seminars

First 3 key areas in UK's 2013-18 AMR strategy are all behaviours

- 1) Improve **hygiene practices** to stop the spread of infectious diseases
- 2) Reduce the overuse or false **prescription** of antimicrobial drugs
- 3) Increase **adherence to evidence-based guidelines**

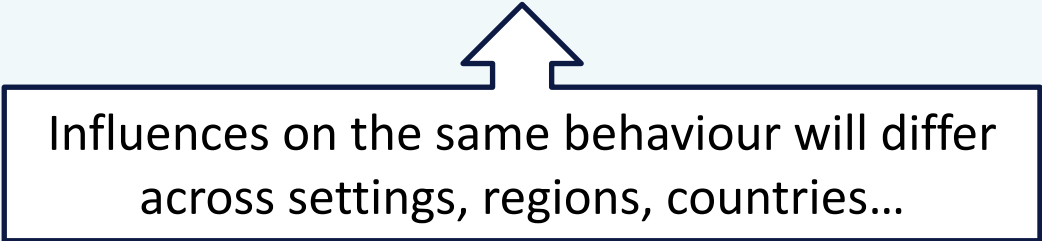


UK Five Year Antimicrobial Resistance Strategy 2013 to 2018



Effective behaviour change

- Requires understanding behaviour **in context**

A diagram consisting of a rectangular box with a dark blue border. Inside the box, the text 'Influences on the same behaviour will differ across settings, regions, countries...' is written in a dark blue, sans-serif font. An arrow, also in dark blue, points from the top center of the box upwards towards the word 'context' in the bullet point above.

Influences on the same behaviour will differ
across settings, regions, countries...

- **Why** are behaviours as they are?
- **What needs to change** for the desired behaviour/s to occur?

Behavioural science frameworks and tools



The Behaviour Change Wheel (BCW)

Systematic framework for designing and evaluating interventions

- 1) Understand behaviour
- 2) Identify intervention options
- 3) Identify intervention content



www.behaviourchangewheel.com

Step 1: Understand behaviour

- Define problem in behavioural terms considering all relevant behaviours
- Prioritise and select intervention target behaviour
- Example:

Improving hospital hygiene practice	Impact if changed	Likelihood of change	Potential spillover effects
Engaging in hand hygiene	<ul style="list-style-type: none"> • Very promising 	<ul style="list-style-type: none"> • Promising 	<ul style="list-style-type: none"> • Promising
Keeping sterile items in packaging until use	<ul style="list-style-type: none"> • Unpromising but worth considering 	<ul style="list-style-type: none"> • Very promising 	<ul style="list-style-type: none"> • Unpromising but worth considering

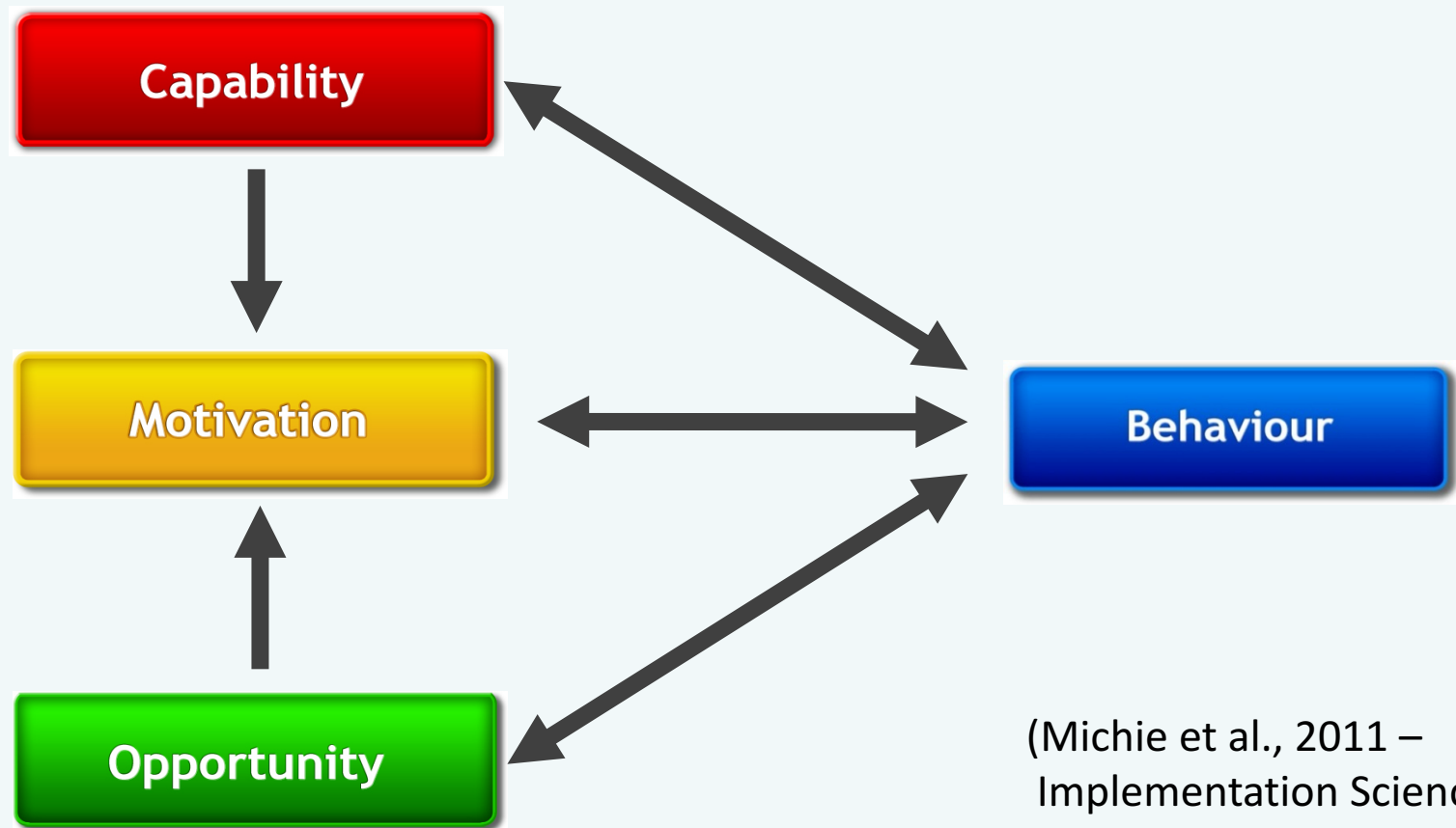
Step 1: Understand behaviour

- Specify target behaviour
- Examples:

Behaviour	What?	Who?	Where/when?
Engaging in hand hygiene	<ul style="list-style-type: none"> • Hand washing • Glove use • ? 	<ul style="list-style-type: none"> • Hospital staff • Visitors • ? 	<ul style="list-style-type: none"> • High risk situations • ? • ?
Prescribing fewer antibiotics	<ul style="list-style-type: none"> • Provide information • ? 	<ul style="list-style-type: none"> • GPs • Pharmacists • ? 	<ul style="list-style-type: none"> • Sore throat • ? • ?

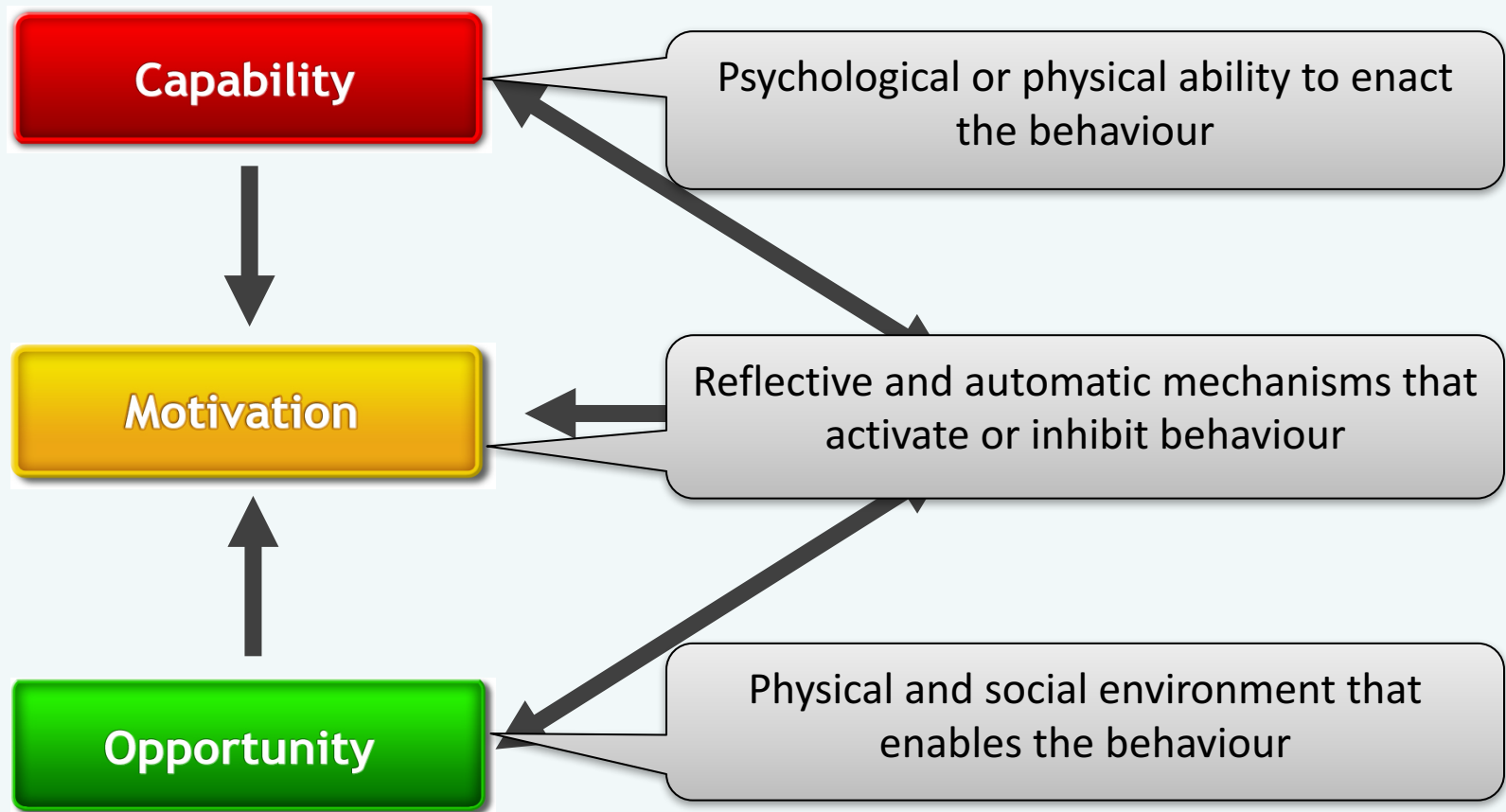
Step 1: Understand behaviour

- Identify what needs to change for the behaviour/s to occur?
- **COM-B model** - Behaviour as an interaction between 3 conditions



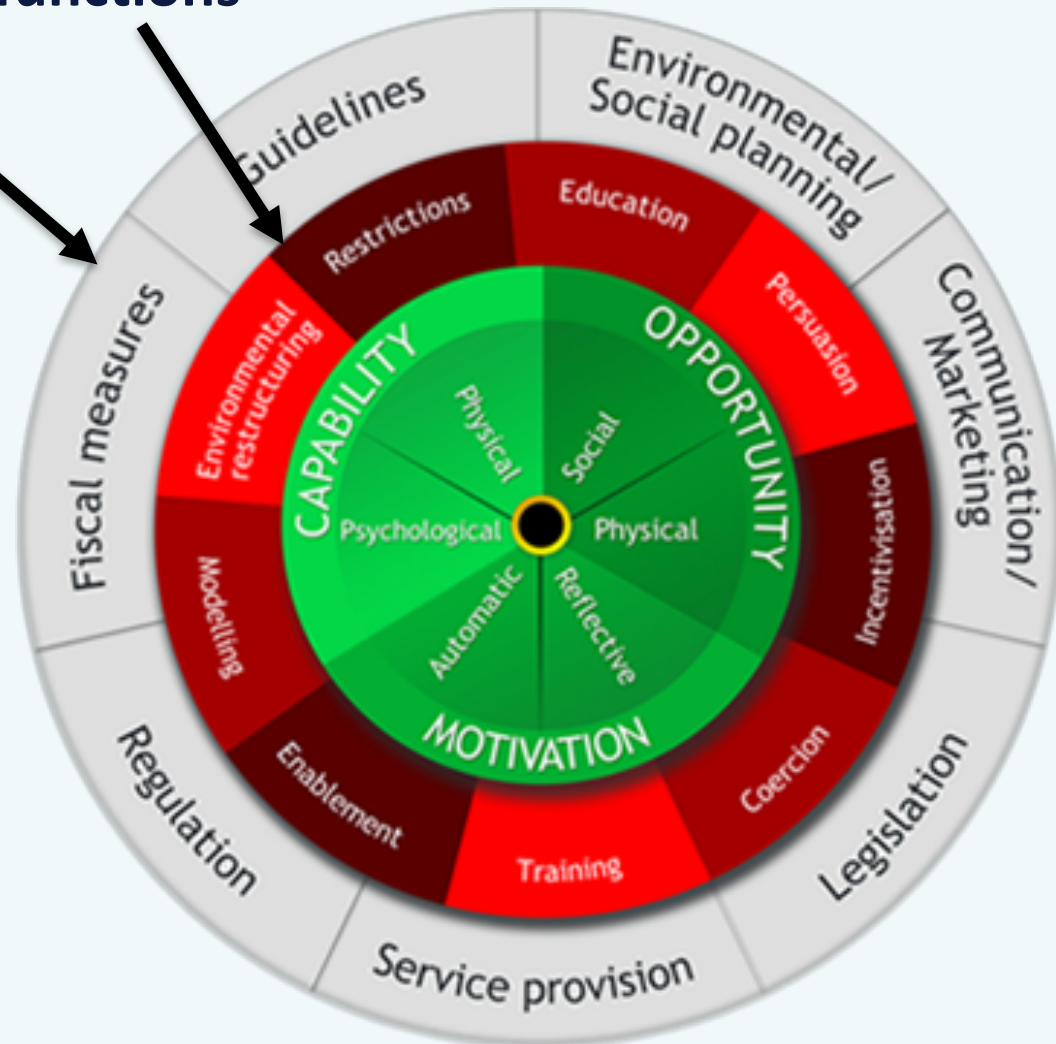
Step 1: Understand behaviour

- Identify what needs to change for the behaviour/s to occur?
- **COM-B model** - Behaviour as an interaction between 3 conditions



Step 2: Identify intervention options

- Select intervention **functions** & **policy categories** considering range of options



Step 2: Identify intervention options

To change

Capability



Motivation



Opportunity

Consider one or more of

Education - Training - Enablement

**Education - Persuasion - Incentivisation -
Coercion - Training Environmental
Restructuring - Modelling - Enablement**

**Training - Restriction - Environmental
Restructuring - Modelling - Enablement**

Step 3: Identify intervention content

- Behaviour change techniques (BCTs):
 - 'Active ingredients' to bring about change
 - Discrete, low-level components of an intervention that on their own have potential to change behaviour
- BCT examples:

Capability

- Goal-setting
- Self-monitoring
- ...

Motivation

- Incentives
- Focus on past success
- ...

Opportunity

- Social support
- Prompts/ cues
- ...

Step 3: Identify intervention content and mode of delivery

- 93 item BCT Taxonomy v1 – common language



Page	Grouping and BCTs	Page	Grouping and BCTs
1	1. Goals and planning	8	6. Comparison of behaviour
	1.1. Goal setting (behavior) 1.2. Problem solving 1.3. Goal setting (outcome) 1.4. Action planning 1.5. Review behavior goal(s) 1.6. Discrepancy between current behavior and goal 1.7. Review outcome goal(s)		6.1. Demonstration of the behavior 6.2. Social comparison 6.3. Information about others' approval
		9	7. Associations
			7.1. Prompts/cues

No.	Label	Definition	Examples
1. Goals and planning			
1.1	<i>Goal setting (behavior)</i>	Set or agree on a goal defined in terms of the behavior to be achieved <i>Note: only code goal-setting if there is sufficient evidence that goal set as part of intervention; if goal unspecified or a behavioral outcome, code 1.3, Goal setting (outcome); if the goal defines a specific context, frequency, duration or intensity for the behavior, <u>also</u> code 1.4, Action planning</i>	Agree on a daily walking goal (e.g. 3 miles) with the person and reach agreement about the goal Set the goal of eating 5 pieces of fruit per day as specified in public health guidelines

Applying the Behaviour Change Wheel

- Design interventions and policies
- ‘Retrofit’ – Identify what is in current interventions & policies
- Framework for evaluation - How are interventions working?
- Structure for systematic reviews

Illustrative AMR example



Illustrative AMR example

- Aim:
 - Develop and test likely impact of a parent-targeted online intervention to reduce primary care visits using real-time paediatric RTI surveillance information
- Intervention development:
 - Behavioural analysis
 - resulted in intervention material and conceptual map

Common viral illnesses in children

Information and advice for parents and carers



University of
BRISTOL



What viruses are going around in your area?

How long will a viral illness last?

What are typical viral symptoms?

What can parents and carers do?

When to take your child to the doctor?

- Knowing what viruses are circulating in your local area might provide some clues as to why your child is ill and what the best thing is for you to do to help them.
- Please select your local area from the drop-down menu to find out what viral illnesses are currently circulating:

Location:

Select you local area

V

Week:

7 – 11 November 2016

V

Common viral illnesses in children

Information and advice for parents and carers



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When to take your child to the doctor?

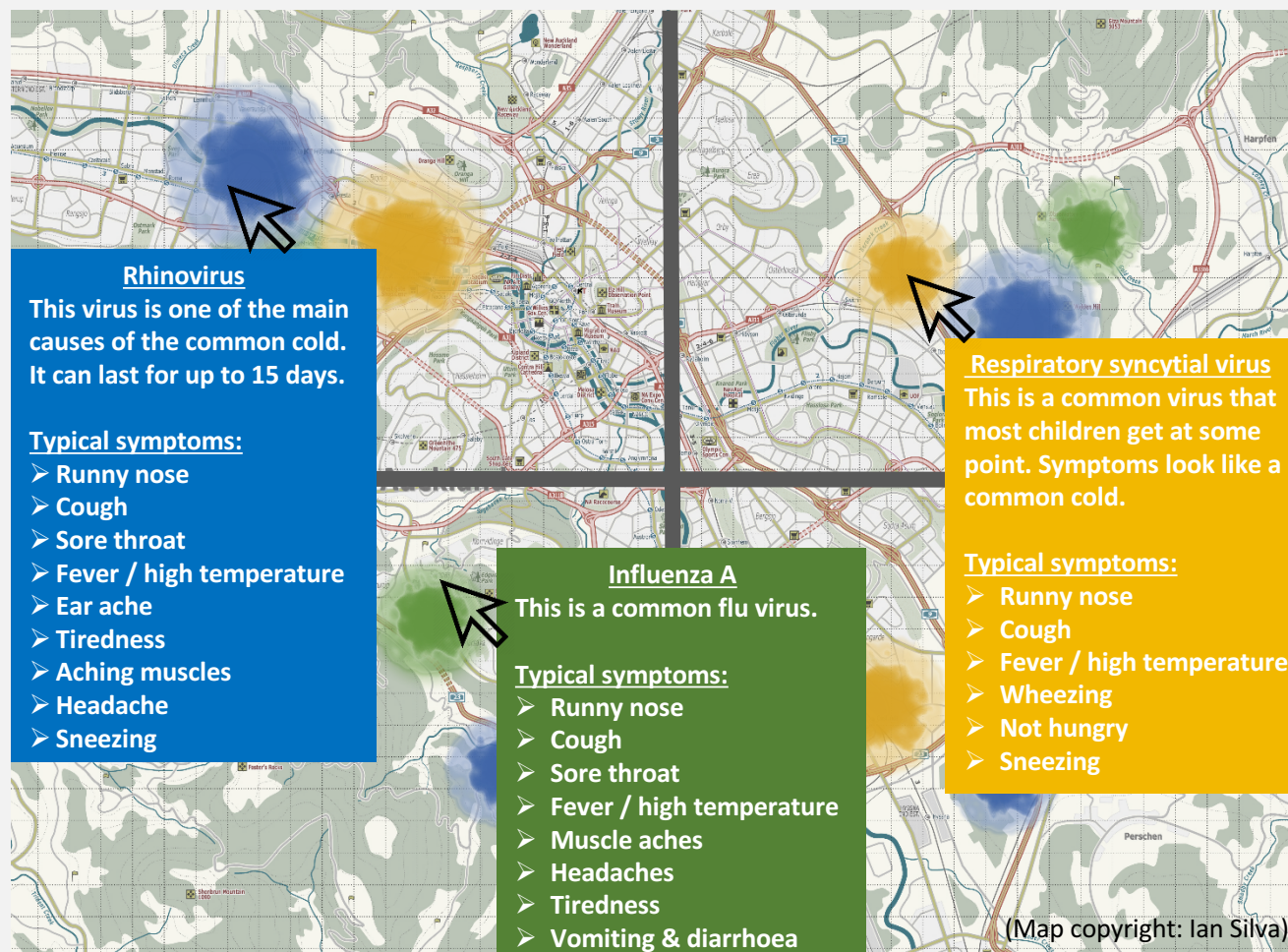
➤ Explanation:

- **Rhinovirus**
- **Respiratory syncytial virus**
- **Influenza A**

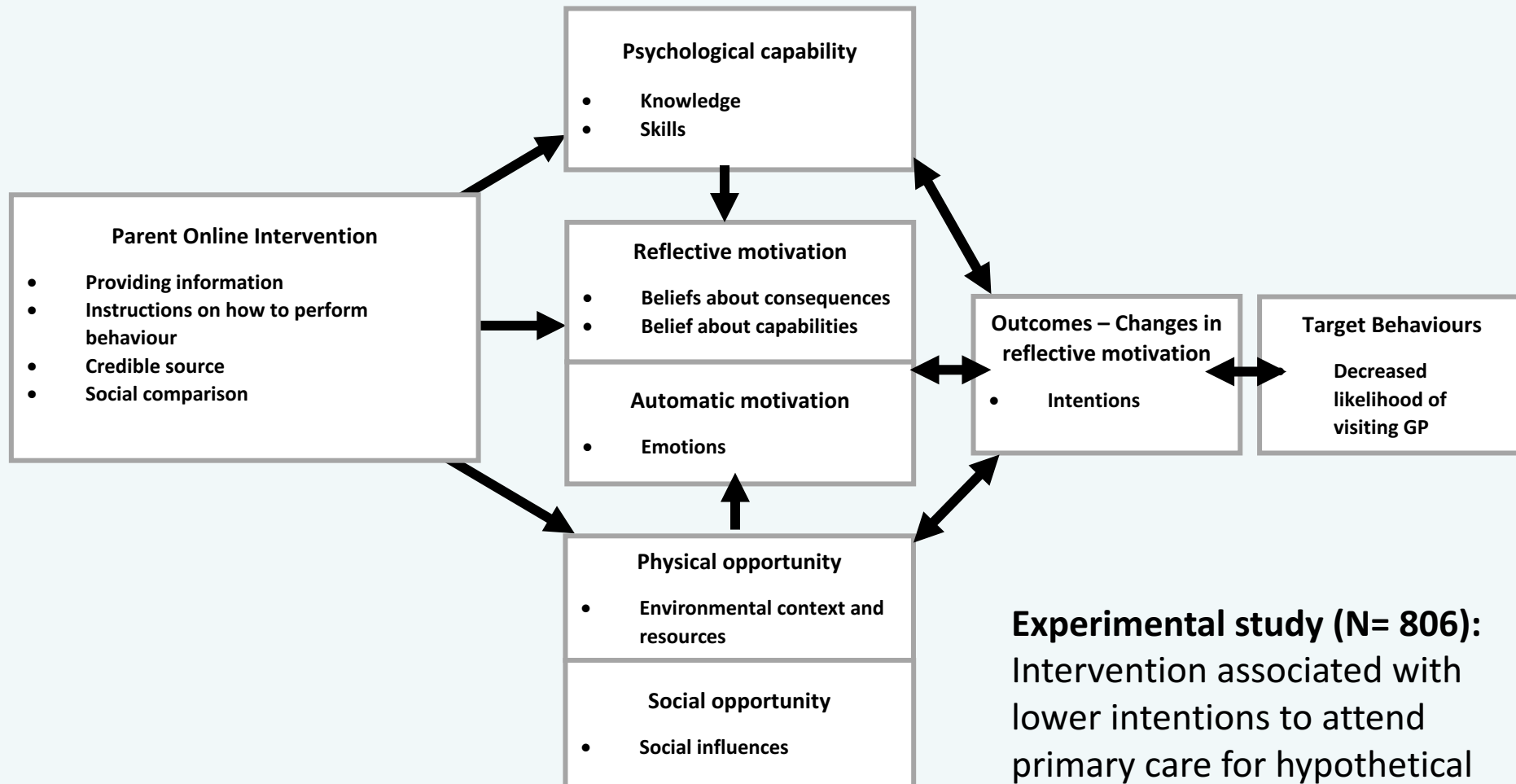
Bubble-size relates to number of children identified with the virus. The **darker** the colour, the more likely your child has the **viral illness** and does **not need** to see a GP.

Click on the bubbles to find out more about viral symptoms.

➤ Most frequent **respiratory viral illnesses** in children in your local area in the **week commencing**:

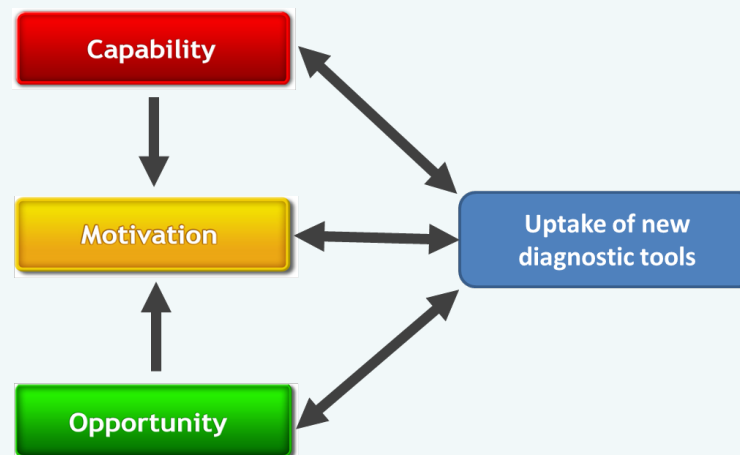


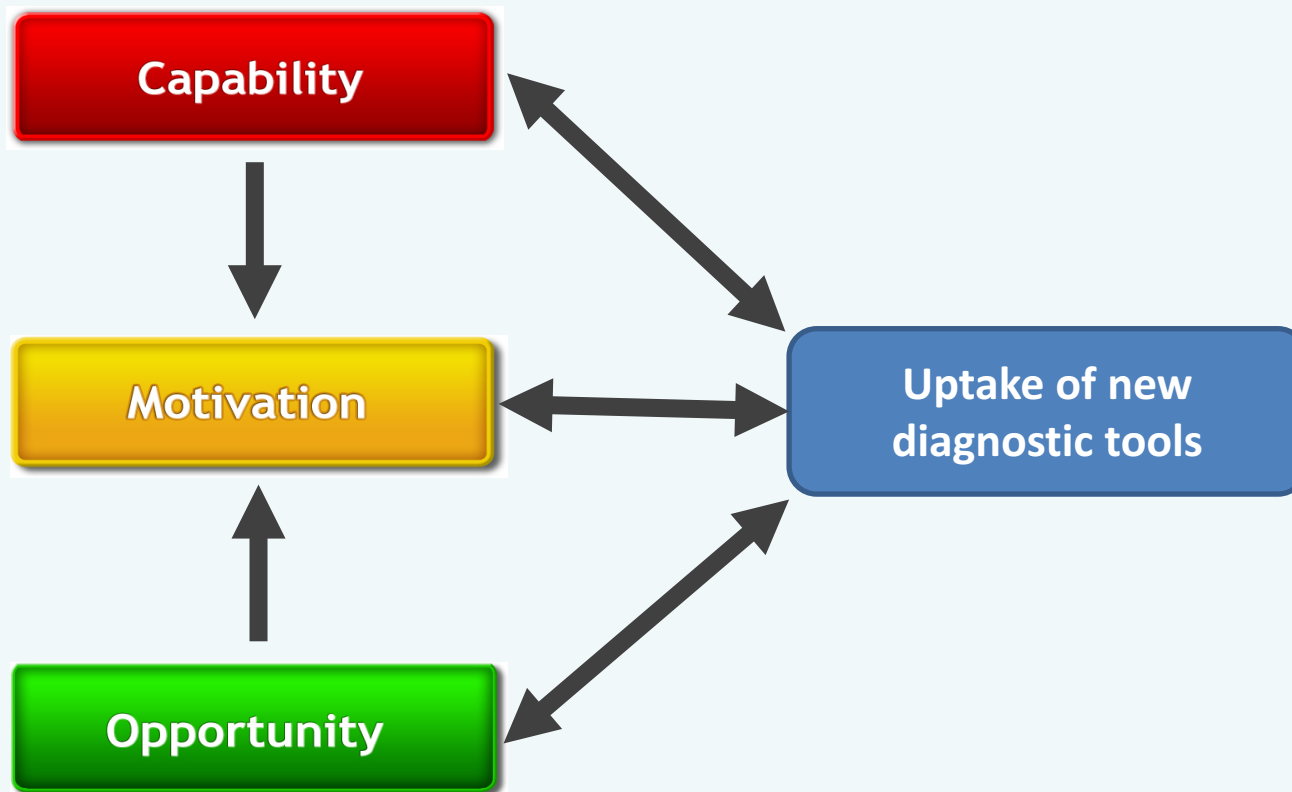
Conceptual intervention map



Experimental study (N= 806):
Intervention associated with lower intentions to attend primary care for hypothetical RTI illness scenario

Back to diagnostics: Potential COM-B influences







Thank you!



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 [@Annegret_S](https://twitter.com/Annegret_S)

HSCNI World Antibiotic Awareness Week Symposium

20^h November 2017