

Dr Lesley Price
On behalf of the SHIP Research Group



**Engaging the Public with AMR and Hand
Hygiene**

PACCARB Public Meeting January 31st 2019



University for the Common Good

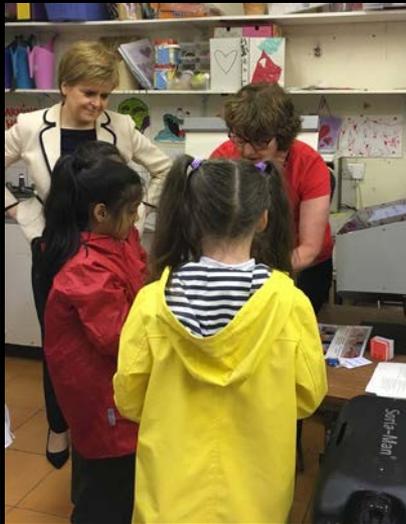
Thank you for the invitation. In this presentation I am going to **speak** about our **experiences** as a research group of **public engagement** in which I hope to demonstrate some of the **innovative strategies** we have used and **review** some of **the literature** for public engagement on a large scale.

Next slide please.



The SHIP Research Group

& the public



Public engagement in our research group is **undertaken by all** members of our group: researchers, PhD students, administrators and colleagues within the Department of Nursing & Community Health. The **photograph** on the bottom left hand corner of the screen are the **team** members who I acknowledge for their **contribution** to this work.

The **other photographs** on this slide illustrate some of our public engagement **events**. These are presented to illustrate **who** we consider the **public** to be.

Moving around the photographs in a **clockwise** direction the photograph above the research group is of **residents** attending a community housing association meeting. At the meeting **research group members** took on the **role** of various **stakeholders** to **debate** the role that different **individuals** and **organisations** can play in the preservation of antibiotics.

The next photograph is **Professor Sneeze** during a visit to a **local primary school**. Here Professor Sneeze is helping children understand **why cough etiquette** is important in the **prevention of infections** by getting the children to **create a "sneeze run,"** which **simulates** the spread of **mucous** in a sneeze.

The photograph in the top right hand corner of the screen is a **pop up stand** held during a event for **people** recovering from a **stroke** and their carers at our **university**.

The photograph below this is **one of my favourite ones** because of the **sheer joy** in the **children's faces**. These children are at a **Science Centre** taking part in **our successful Guinness World Record attempt** for the **largest simultaneous hand hygiene lesson**. The lesson was **taught** by our **nursing students** and took place in a **science centre** and many **60+ local primary schools** and included **3089 children**.

The last photograph on the slide is us at **community centre** in a **deprived** area of Glasgow, again engaging with children, but the lady in the background is, **Nichola Sturgeon, the First Minister of Scotland**.

Who do we consider **our public** to be – in short **everyone** who does **not** have a **specialist knowledge** of **infection prevention** or **antimicrobial resistance**. So for the rest of this presentation I will referring to **communication** exchanges between **experts** in **infection prevention** or **antimicrobial resistance** and the **public**, that is **non experts**.

Benefits of public engagement

- Making science relevant to the public
- Building the public trust in science
- Transparency about use of public funds
- Inspiring and informing the public
- Enhancing the well-being of the public
- Improving the quality of research
- Meeting the requirements of policy makers and funder

Many **organisations**, including **policy makers** and **funding bodies**, are **expecting healthcare experts** to **engage** with the **public**. **Historically** there was an expectation that this was to **transfer knowledge** but the **expectations** are **changing**. The **public** are **no longer** just **passive recipients** of healthcare or information, they are being **asked to act** upon this information and behave in ways that **maximises their own health potential**. **Experts** have a **role** to play in helping the public to do this by **providing** health **information** in a manner that is **accessible** to them.

To do this the **public** have to **trust** the **information** they are being given. **Trust** can be **built** by an **open** and **transparent exchange** of **information** about our **antibacterial resistance**. This **transparency** about our work also **holds us to account** for use of **public funding** but through this sharing of information an **added benefit** is that the **public** can provide a different **perspective** on its **relevance** and consequentially **insights** into how what we do can be **improved**.

Our research group shares **its work** with the **public** to **enable** them to be **proactive in preventions** **infection** thus **reducing** the requirement for **antibiotics** and to **encourage** them to have a **role** in **preserving antibiotics**.

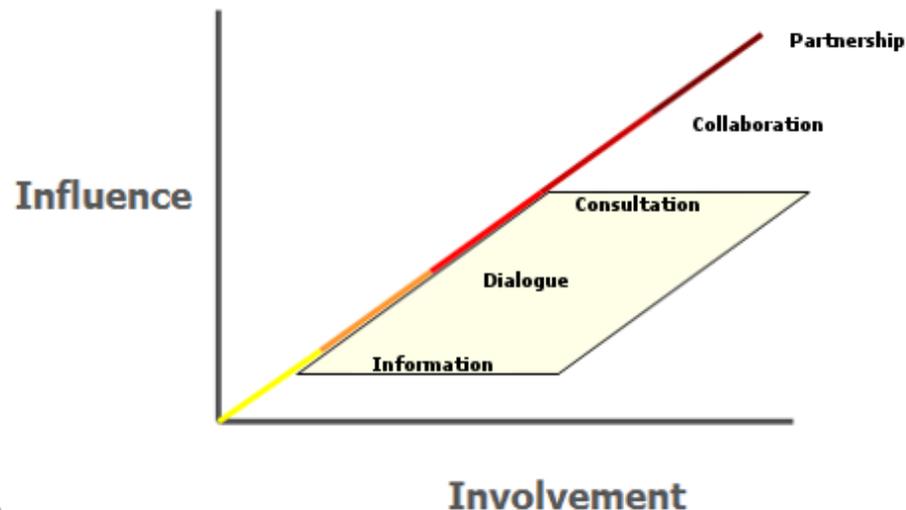
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Defining public engagement

Engagement Continuum

ACTIVITY	NATURE OF INTERACTIVITY	LEVEL OF DECISION-MAKING	EXPECTED OUTPUTS
Information access/ Dissemination	One-way	None	Better informed outside stakeholders
Policy Dialogue	Two-way	None	Both sides better informed
Policy / Programmatic Consultation	Two-way	Low	Views of stakeholders taken into account
Collaboration	Two-way	Shared	Shared goals and action (short term, ad-hoc)
Partnership	Two-way	Equal	Common goals and action (long term, institutional)

Engagement Continuum



There are a number of **key concepts** that need to be **defined** when we are thinking about our **relationship** with the **public** some of which are used **interchangeably** in the **literature**. I am referring here particular to the **terms public engagement** and **public involvement**. The **World Bank** has a **useful framework** for **clarifying** these **terms** that demonstrates why **I think** **public engagement** and **public involvement** are two **different** concepts.

Can I ask you to first consider the **figure** on the **right** hand side of the slide. The framework shows **engagement** on a **continuum** with **involvement** and **influence** of the public **increasing** through the **levels** of the continuum. The **table** on the **left** **explains** the **differences** between the different **levels**.

At **bottom** end of the continuum there is **information giving**. Information **flows in one direction** from the **expert** to the **public** and there is **no involvement** of the public in **decision making**. I think this is **public engagement**. **All other levels** in the **framework** **involve** the public either in the **exchange of information** or **both** the **exchange** of information and **decision making**. I think this is **public involvement**.

The work I have shown you **so far** is **our public engagement** work but we do **also do public involvement**. This is a more **formalised** process where we have a **group of 20 members of the public**, who meet **twice a year** and **as required** for individual research projects. They **check** our plain English research **summaries**, **comment** on the **relevance** of our research **ideas**, make **suggestion** for **how to recruit** members of the public to our studies, are **members of project management groups** or **collaborators** on research **funding applications**. This is **public involvement**.

Next slide please.

The public and AMS: the need for engagement

Stewardship

The responsible overseeing and protection of something considered worth caring for and preserving.



To **engage** the **public** we **go out** to **them**, keep the **messages simple** and **create interesting activities** that they want to **participate** in, which makes the **message memorable** and gives us an **opportunity** to **talk to them**.

This slide and the next one are **some examples** of some of **interesting activities** we have **done**.

On **European Antibiotic Awareness Day** we wanted to get the **public interested** in **antibiotic stewardship**. We did this by **talking** to them about the **lack of new antibiotics** while they helped us **create a piece of art** depicting this **problem**. Using an **"inked" thumb** we asked the public to insert **one thumb** print in **each letter** of the word **antibiotics**. As they **moved along** the **letters** there was **less and less ink** on their **thumbs**. This created a **fading image** that **corresponded** with the **timeline** below of the **fading production of new antibiotics**.

Below is an image that Very young children created. They like to express their **artist talent** in a **more liberated** manner so we get **groups** of them **drawing** images **of bugs** while we **all talk** about **when** they need to **wash** their **hands**.

Next slide please.



Creating opportunities for interaction with the public

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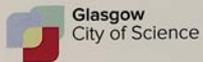
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Next slide please.

Guinness World Record Attempt
Largest Hand Hygiene Lesson (multiple venues)
Wednesday 19th March 2014



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I mentioned earlier that we had been involved in a **successful Guinness World Record** attempt for the largest simultaneous **hand hygiene lesson** with school children. This event not only **involved** the school **children** and their **teachers** learning about hand hygiene. **After** the event **parents and grandparents** **wrote** to us **telling** how much the children had enjoyed the event and the children were **now teaching them how to clean their hands properly**. Other **adults unrelated** to the children were **also involved**. We want to **leave** each **school** with a **legacy pack** to **remind** the children of **the lessons** they had learnt. This included **hundreds of knitted bacteria and viruses** produced by members of the **public** through a **social media campaign**. The **middle** picture on the **top row** shows **examples** of some of these **knitted organisms**. The **middle** picture on the **bottom** row shows the **concentration** on the **faces** of the **children** as they were learning the best way of cleaning their hands during the event.

We have **not one but two Guinness World Records**. The **second one** is shown in the photograph in the **centre** of the screen. We got **419** of our **first year** nursing students to take part in the **largest hand hygiene relay**. To take part the students had to learn the correct hand hygiene technique. **417** of the **419** nursing student were able to do so. We **did this** to make **learning** about hand hygiene **fun and memorable** for them and we were hoping that they would **remember** this when they were in **practice**.

One year on **international hand hygiene day** we had a **competition** to spread the message about **hand hygiene across the world**. We had a **pop stand in the university** and **demonstrated effective hand hygiene technique** to our **colleagues and students** and **asked** them to take a specially designed **postcard** on holiday with them. During the **holiday** we asked them to **teach someone else** the technique (the technique was included on the postcard). Then, in order to **demonstrate how far** the information about hand hygiene technique had **travelled**, and to be entered into a **prize draw** they had to take a **selfie of themselves and whoever** they had taught and post the photograph **on social media**. The **message travelled** a total of **13, 853 miles** –the equivalent of **half way around the world**.

The **final two photographs** on this slides are when we **planted daffodils** with **school children** at a **local park** and then showed them **how to wash their hands** to get rid of **the soil** and the **other** when we created a giant hand covered in “bugs” hand made by the team. **Participants** attending another **pop up stand** were asked to **remove a “bug”** from the hand to **remind them** of the **importance of appropriate hand hygiene**.

Next slide please.

Effectiveness of Interventions to enhance the publics' understanding of AMR and AMS behaviours

Public interventions¹

Interventions for parents (6/6) and school-children (6/6) & the public (5/8) demonstrated a significant effect on changing knowledge. Also change in parents (4/4) and public AMS behavior (4/7).

Ideally need to address entire population simultaneously, but segment the interventions to target sub-populations.

Professional & public interventions^{2,3}

Multimodal interventions increase public knowledge & reduce antibiotic use. Direct education more effective than mass media.

1. Price L et al (2018) JAC 73 (6): 1464–1478
2. Haynes & McLeod (2015) <https://www.nice.org.uk/guidance/ng63/documents/antimicrobial-resistance-changing-riskrelated-behaviours-in-the-general-population-evidence-review-32>.
3. King S et al (2016) Rand Health Q 5: (3) 2

When considering the National Action Plan for combatting AMR I assumed that you would want to consider **public engagement** on a **larger** scale than our research group's approach so I thought I would **tell** you about the **findings** of a **systematic review** examining the **effectiveness of interventions** designed to improve the **public's knowledge and or antimicrobial stewardship behaviour** that I conducted.

We reviewed **20 papers** of which **6 targeted school children**. **5** focused on **change in knowledge** and **all 5** showed a **significant improvement**. The **6th study** focused on a **change in behaviour** i.e. **not taking antibiotic for colds and flu** and this too showed **significant** improvement. However the **robustness** of the data is **questionable** as there were **4 non controlled** before and after studies and **2 controlled** before and after studies and **no longitudinal** follow up.

There were **6** studies that targeted **parents**. **All** studies showed a **significant** increase in **knowledge** following the interventions. In addition, **four of the 6 also focused on behaviour change**. These showed a **significant** improvement in parents' antimicrobial stewardship **behavior** in relation to **not taking antibiotics** for colds or flu, **not getting antibiotics** for their **children**, using **hand sanitizer** or seeking influenza **vaccination**.

The general **public** were the population of interest in **eight** of the included **studies**. **6 out of 8** studies were **mass media campaigns**, including four studies that measured the effects of national campaigns. **One** used **posters and leaflets** while another used a **website**. They either measure **knowledge alone or knowledge and behavior change** with **significant** improvements in **5 out of 8** of the studies. The remaining **three** were **mass media project** that had **no significant effect overall**.

There has **also** been a **systematic review** conducted that involved **simultaneous intervention** for **healthcare professional and the public**. It found that **multimodal interventions** increased the **publics knowledge** and **reduced antibiotic use** but **like our systematic review** direct education **was more effective than mass media**.

Next slide please.

Recommendations

- Multimodal interventions^{5,7}, need for new interventions that are theory driven⁴
- Simultaneous delivery to all stakeholders⁶
- Targeted to the group^{1,2,3,6}
- Clear message,^{2,3} focused on behavior rather than antecedents⁴
- Fun²
- Interactive²
- Theory driven implementation plan with evaluation plan⁸

1. Grayson et al (2015) PloS one 10: e0140509

2. Hofstede (2011) <https://doi.org/10.9707/2307-0919.1014>

3. Landridge et al (2018) <http://dx.doi.org/10.1111/bjhp.12339>

4. McParland et al (2017) British Journal of Health Psychology 23(4): 804-819

5. Haynes & McLeod (2015) <https://www.nice.org.uk/guidance/ng63/documents/antimicrobial-resistance-changing-riskrelated-behaviours-in-the-general-population-evidence-review-32>.

6. Price L et al (2018) JAC 73 (6): 1464–1478

7. King S et al (2016) Rand Health Q. 5: (3) 2

8. Kirk et al (2016) <https://doi.org/10.1186/s13012-016-0437-z>

These **recommendations** are delivered with **two notes of caution**.

Caution is required as the **evidence** of effectiveness of AMS interventions is **heterogeneous** and **does not** present a **large body** of evidence for **anyone** particular **approach** for anyone particular **target group**. Having said that **until** stronger evidence is available it can **provide some direction**. There is **not one approach** that would **suit all**. **Multimodal intervention** that **targeted specific messages** for **specific groups delivered simultaneous** look **promising**.

Caution is also required about the **clarity** of the **messages** we deliver about AMR. The **message** must be **specific** to a **target** group. The **message** should **inform** the target group about the **problem** and what **they can do** about it. Currently with regard to **AMR a lot of messages** are focused on **fear or threat** but this may create a wish to hid from or disclaim such messages besides they are misleading as **not all bacteria are bad**.

To help us get this right I recommend **theory driven interventions targeted** at different stakeholder **groups delivered simultaneous**. **Theory** being used to develop the **content** of the interventions, their **implementation** and **concurrent evaluation** as the **literature** suggest this is how to be **effective** and to **develop the evidence base**.

Final slide please.

Thank you.



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