

Section A: CPHE to complete	
Name:	Diane Ashiru-Oredope
Job title:	Pharmacist Lead for Antimicrobial Resistance and Stewardship, Public Health England
Guidance title:	Antimicrobial Stewardship: changing risk-related behaviours in the general population
Committee:	PHAC A
Subject of expert testimony:	The effectiveness of national and local campaigns in changing the public's behaviour to ensure they only ask for antimicrobials when appropriate and use them correctly
Evidence gaps or uncertainties:	Effectiveness of the European Antibiotic Awareness Day (EAAD) in changing the public's behaviour in relation to appropriate antibiotic use
Research questions to address:	
<ul style="list-style-type: none"> - How have the patient/public tools used in the European Antibiotic Awareness Day been developed and how are they delivered? - What is the role of the NHS, social services, local authorities and the wider public, private, voluntary and community sectors in campaigns to change the public's behaviour to ensure they only ask for antimicrobials when appropriate and use them correctly? - Is there evidence that the European Antibiotic Awareness Day leads to changes in the public's knowledge and/or behaviour to ensure they only ask for antimicrobials when appropriate and use them correctly? 	
Section B: Expert to complete	
Summary testimony:	[Please use the space below to summarise your testimony in 250 – 1000 words – continue over page if necessary]
<p>In England, since 1999 the Department of Health supported by Public Health England (PHE, previously Health Protection Agency), have provided educational campaign materials to remind healthcare professionals of the need for appropriate antibiotic prescribing and to help reduce the public expectation of antibiotics for coughs and colds. The campaigns have predominantly been distribution of posters and leaflets to health centres rather than mass media or social marketing campaigns. A survey conducted by McNulty et al (2007) after the 'Andybiotic' campaigns of 1999 and 2002 which included sending materials to all GP surgeries in the UK, found that only 20% of those surveyed were aware of the campaign.¹ In addition, following the launch of a new set of campaign materials in 2008 which have subsequently been used as materials for European Antibiotic Awareness Day (EAAD); a face to face omnibus survey in 2009 showed that the campaign led to a small but significant increase in recollection of the antibiotic campaign posters in England. However the campaign had little or no impact on public attitudes, knowledge or prescription rates².</p>	

¹ McNulty C A M, Boyle P, Nichols T, Clappison P, Davey P. The public's attitude and compliance with antibiotics. Journal of Antimicrobial Chemotherapy. 2007; 60: 63 - 68

² McNulty CAM, Nichols T, Boyle PJ et al. The English antibiotic awareness campaigns: did they change the public's knowledge of and attitudes to antibiotic use? J Antimicrob Chemother 2010; 65: 1526–33.

The authors recommended that for greater effectiveness, a campaign must utilise a variety of mediums and be repeated over several years.

In 2014, PHE decided to extend the EAAD objective from raising awareness to supporting people to take concrete personal and collective action to use antibiotics prudently, while increasing measurable engagement with healthcare professionals and the public. PHE aimed to develop a campaign using behaviour change strategy that would be available all year round rather than focus on a single day.

Following research and discussions with health psychologists, a pledge-based behaviour change campaign using “if-then statements” derived from the implementation intentions model aimed at overcoming the intention-behaviour gap was developed. The campaign titled “Antibiotic Guardian” was developed and led by PHE in collaboration with several professional bodies, the Devolved Administrations in the United Kingdom, and across human and animal health, in healthcare social and community settings. A video educating on antimicrobial resistance as well as providing three key actions that individuals can take was developed. The video and pledges were hosted on the website www.antibioticguardian.com.

Evaluation of the campaign has included:

- Analysis of demographic and spatial Antibiotic Guardian pledge data
- Survey of Professional bodies
- Questionnaire to over 8,000 Antibiotic Guardians who agreed to be contacted after pledging.

By 30th November 2015, 11,833 people had pledged which included 3644 (30.8%) pledging as members of the public and 8189 (69.2%) choosing one of the pledges for healthcare professionals. The website was visited by people in 156 different countries, and at least one pledge was made in 81 of these

Engaging with professional bodies and organisations

To engage further with professional bodies and as a conduit of information to healthcare professionals; professional bodies and organisations were invited to register their planned activities for EAAD, including intended support for the Antibiotic Guardian pledge campaign. One hundred and ninety-six bodies registered with PHE, of which 91% were from England, 7% were cross-UK and the final 2% were from the Devolved Administrations.

Questionnaire to Antibiotic Guardians

In February 2015 an online questionnaire, "Evaluation of the Antibiotic Guardian campaign 2014", was sent via e-mail to the 9016 Antibiotic Guardians (AGs) who consented to follow-up contact. It included an invitation to participate in focus groups/in depth interviews as well as questions on:

- Type of pledge
- Motivation
- Change in behaviour (acting according to pledge)
- Knowledge acquired
- Clarity of promotion materials
- Demographics (age, sex, health-related profession, use of social media)

Results:

Precisely 2478 AGs responded; a response rate of 27.5%. The majority pledged as healthcare professionals (n=1696; 68%), whereas fewer pledged as members of public (n=782; 32%). Regardless of demographic the vast majority of respondents had prior knowledge of AMR and were connected to the healthcare system (96% and 77% respectively).

A large proportion of respondents remembered at least the general meaning of their pledge and reported always acting according to their pledge (84% and 63% respectively). Members of the public were more likely to act in line with their pledge than professionals (Odds Ratio (OR) =3.60, 95 % Confidence Interval (CI):2.88-4.51). People confused about AMR prior to the AG campaign acquired more knowledge after the campaign (OR=3.1, 95% CI: 1.36 – 7.09). More participants reported a sense of personal responsibility towards tackling AMR post-campaign, increasing to 70.5% of participants post campaign compared to 58.3 % pre-campaign.

Over two-thirds of respondents (67%) agreed to various extents that the AG campaign was well promoted.

Conclusion:

Improving professional education, training and public engagement is one of seven key areas of the 5 year UK AMR strategy. England has participated in awareness raising activities through participation in EAAD since 2008. Whilst awareness has increased, there is no evidence of increased knowledge and behaviour change.

For the first time, using behaviour change strategies, the Antibiotic Guardian campaign has shown evidence of moving from increasing awareness to engagement.

Evaluation of the Antibiotic Guardian campaign highlighted that it is an effective tool for increasing knowledge and changing behaviour.

The impact of the campaign on prescription rates is yet to be determined; direct association would be difficult to make as there are several interventions to reduce prescribing currently in progress.

Plans for 2015 include further engagement with the public through schools and local authorities. Full postcodes for health care professionals will be requested to enable mapping of pledges to prescribing rates at CCG and NHS Area Team level. Further development of the website will provide an opportunity for individuals to share their Antibiotic Guardian experiences such as how they have fulfilled their pledge.

References:

- ¹ McNulty C A M, Boyle P, Nichols T, Clappison P, Davey P. The public's attitude and compliance with antibiotics. *Journal of Antimicrobial Chemotherapy*. 2007; 60: 63 - 68
- ² McNulty CAM, Nichols T, Boyle PJ et al. The English antibiotic awareness campaigns: did they change the public's knowledge of and attitudes to antibiotic use? *J Antimicrob Chemother* 2010; 65: 1526–33.
- ³ Edgar T, Boyd SD, Palame MJ. Sustainability for behaviour change in the fight against antibiotic resistance: a social marketing framework. *J Antimicrob Chemother* 2009; 63: 230–37.

For further information see:

Chaintarli K, Ingle SM, Bhattacharya A, Ashiru-Oredope D, Oliver I, Gobin M: Impact of a United Kingdom-wide campaign to tackle antimicrobial resistance on self-reported knowledge and behaviour change. *BMC public health* 2016, 16:393.

Bhattacharya A, Hopkins S, Sallis A, Budd EL, Ashiru-Oredope D: A process evaluation of the UK-wide Antibiotic Guardian campaign: developing engagement on antimicrobial resistance. *Journal of Public Health* 2016.