

European Antibiotic Awareness Day (EAAD) 2013 Evaluation Report

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Executive Summary

European Antibiotic Awareness Day (EAAD) is a Europe-wide initiative led by the European Centre for Disease Prevention and Control (ECDC). It takes place on 18th November every year to encourage responsible use of antibiotics by healthcare staff and the public to preserve their effectiveness for future generations.

The Department of Health (DH), its expert Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI), Public Health England (PHE) and other professional bodies such as the British Society for Antimicrobial Chemotherapy, the British Infection Association and the Royal College of General Practitioners collaborate on EAAD.

This year EAAD was highly publicised for both the public and professionals. There was an unprecedented level of online access of the DH Educational Materials including widespread uptake of the TARGET toolkit for primary care and the Start Smart – Then Focus guidance for secondary care and the new quizzes and crosswords produced by DH. Importantly, this year had greater veterinary involvement in the UK for EAAD than previous years, this collaboration with Defra and several veterinary professional bodies led to conferences, publications and information for veterinarians and animal owners (both pets and livestock). There was large national media coverage on EAAD with coverage by both the BBC and The Times of the PHE press release “green phlegm and snot ‘not always a sign of an infection needing antibiotics’”, which has continued attracting interest to date and several televised interviews on SkyNEWS. In the professional education sphere, there were thirty-six professional bulletins and thirty-seven publications in peer-reviewed journals on the topic of antibiotic resistance and stewardship with a special-edition timed for EAAD released in both The Lancet and the Journal of Antimicrobial Chemotherapy; combined this is a 400% increase from 2012. In addition to these, there were several high-impact online campaigns aimed at the general public, such as the Treat Yourself Better without Antibiotics and the British Society for Antimicrobial Chemotherapy sponsored Thunderclap petitions, where personal pledge messages to refuse unnecessary antibiotics for colds and flu reached over 300 000 people.

DH has been leading annual antibiotic campaigns in the UK for the past fifteen years, joining the EU in the EAAD initiative since its inception in 2008; leadership for EAAD will be taken over by PHE in April 2014. Public Health England aims to build upon their hard work and success of leading EAAD in England for the future. Recommendations for 2014 can be found in the table below replicated from section 6.2.

Table: PHE recommendations for EAAD 2014 based on the evaluation and feedback from EAAD 2013. Replicated from Section 6.2, table 5.

Recommendation for EAAD 2014	Rationale
<p>1. Develop a strategy for monitoring implementation and a measurable outcome evaluation of public behavioural changes around antibiotic usage.</p>	<p>Evaluating behaviour change is difficult. Working with partner organisations with clear outcome measures ahead of time may make this a more feasible task.</p>
<p>2. Develop a clear and succinct set of messages that can be shared and used for unified online activity by all participating bodies across human and veterinary medicine. For social media messages use easily identifiable hashtags that highlight EAAD in 2014, England or UK.</p>	<p>There was considerable feedback requesting a unified online message or tweet(s) to send out across the UK both in the time upcoming and on the day of EAAD. Furthermore, there was difficulty at times separating the #EAAD hashtags from other countries also using it.</p>
<p>3. Use eye catching press releases aimed at the public to further national media interest in EAAD.</p>	<p>Building upon the success of the “green snot” PHE press release, there should be interest in creating a similar message which can garner further national media attention.</p>
<p>4. New resources could include: “anti-prescriptions” and an infographic that illustrates the resistance data over time with a comparison of UK to Europe or global data trends.</p>	<p>Evaluation survey feedback requested a review of the online resources with requests to bring back prescription-paper printable “anti-prescription” pads. There were also several requests for new posters for public displays.</p>
<p>5. Investigate centralised printing capabilities for trusts so they can order materials to be printed professionally using higher quality paper and ink.</p>	<p>Organisers of EAAD events at hospitals would like a central place from which to order professionally printed leaflets and materials as self-printed materials may seem less professional by the public.</p>
<p>6. Liaise with NHS Choices editorial teams and gov.uk web teams to publish resources and links between the two platforms as appropriate.</p>	<p>Gov.UK resource pages are aimed at professionals, and do not feature resources for the public. Branded resources will be published on gov.uk. NHS Choices will post public facing content that does not include any PHE branding.</p>

1.0 Introduction

1.1 Antibiotic Resistance

Antibiotic resistance is an increasing global public health issue driven by the over-use of antibiotics and inappropriate prescribing, making available antibiotics less effective and contributing to infections which are hard to treat.¹ This issue is further exacerbated by the dwindling pipeline for the development of new antibiotics entering the market and an increase in the number of infections due to antibiotic-resistant bacteria.^{2, 3, 4}

Antibiotics have revolutionised modern medicine and infection control, however, bacterial resistance complicates the management of every infection, no matter how mild they may be at the time of first presentation. There are an estimated 25 000 deaths in Europe every year due to antibiotic resistant infections, and related costs of €1.5 billion in healthcare expenses and productivity losses.⁴ Antibiotic resistance is a difficult problem to tackle, however through increasing knowledge, understanding and appropriate stewardship and prescribing practise, we can work to slow the progression and spread of antibiotic resistance.

The 'UK Five Year Antimicrobial Resistance Strategy 2013 – 2018' published in 2013 by the Department of Health (DH) and Defra⁵ and sets out how to address the key challenges of antimicrobial resistance by improving knowledge and understanding of antimicrobial resistance, conservation and stewardship of the effectiveness of existing treatments, and to stimulate the development of new antibiotics, diagnostics and novel therapies. EAAD is highlighted as a tool to be used in the implementation

¹ Bell et al. A systematic review and meta-analysis of the effects of antibiotic consumption on antibiotic resistance. *BMC Infectious Diseases* 2014; 14(13).

² Howard SJ, Catchpole M, Watson J, Davies SC. Antibiotic resistance: global response needed. *The Lancet Infectious Diseases* 2013 12;13(12):1001-1003.

³ Laxminarayan R, Duse A, Wattal C, Zaidi AKM, Wertheim HFL, Sumpradit N, et al. Antibiotic resistance—the need for global solutions. *The Lancet Infectious Diseases* 2013 12;13(12):1057-1098.

⁴ Aronsson B, Boscan IS, Cars O, Giamarellou H, Gyssens IC, Lutsar I, et al. The bacterial challenge: time to react European Centre for Disease Prevention and Control and European Medicines Agency joint report. 2009.

http://www.ecdc.europa.eu/en/publications/Publications/0909_TER_The_Bacterial_Challenge_Time_to_React.pdf

⁵ Department of Health & DEFRA. UK Five Year Antimicrobial Resistance Strategy 2013 to 2018. *Department of Health* 2013.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244058/20130902_UK_5_year_AMR_strategy.pdf

of key objective four: improving professional education, training and public engagement.

The Eurobarometer, engaged in the field of public opinion measurement published a special Antimicrobial Resistance report in November 2013 to coincide with EAAD. The report includes the 28 EU Member States and reports on the public use of antibiotics, public knowledge of effective use and risks of unnecessary use, and the impact of antibiotic awareness campaigns on knowledge and actions of Europeans.⁶ Some key findings were:

- The vast majority of the UK public (86%) rely on their doctors as a trusted source of information on antibiotics, and 51% turn to their pharmacist for information on antibiotics.
- Knowledge of antibiotic efficacy is higher in the UK than the EU as a whole. 52% of the UK public are aware that antibiotics are ineffective against viruses; however, 70% are aware that antibiotics are ineffective against cold and flu. Compared to EU averages, only 40% of the public are aware antibiotics do not work against viruses, and 52% know antibiotics are ineffective against cold and flu.
- In the UK, 41% of residents reported they had taken antibiotics in the last 12 months, compared to the European average 35%.
- The top five reasons for taking antibiotics in the UK are: (1) Flu, (2) Bronchitis, (3) Urinary Tract Infections, (4) Cold and, (5) Sore Throat.
- 31% of the UK citizens (EU average, 33%) remember getting information about the unnecessary use of antibiotics in the last 12 months.

⁶ Special Eurobarometer 407: Antimicrobial Resistance. European Commission November 2013. http://ec.europa.eu/public_opinion/archives/ebs/ebs_407_en.pdf

1.2 European Antibiotic Awareness Day (EAAD)

In recognition of the need for increased public awareness about antibiotic use (and misuse) and to highlight the global dilemmas surrounding antibiotic use, EAAD was introduced in 2008, led by the European Centre for Disease Prevention and Control (ECDC) in close collaboration with the World Health Organization (WHO). EAAD aims to establish significant public awareness across Europe on the need to use antibiotics responsibly with a view to controlling the increase in antibiotic resistance.

Held on 18 November every year, EAAD takes place across the 28 EU Member States. In England EAAD is led by the Department of Health, Public Health England (PHE) and the DH advisory committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI); the devolved administrations were also part of the EAAD planning group. The NHS, local authorities and others are asked to support EAAD which can make a significant impact locally and nationally. In support of EAAD, the DH publishes on the Gov.UK website a resource page of educational materials for use in primary and secondary care. The materials are targeted primarily at healthcare professionals, with the intention of being passed on by healthcare professionals at a local level to the public. This method increases the level of personal engagement between healthcare professionals and the local public, and encourages questions and discussion between these groups.

2.0 Aims & Objectives

Tackling antimicrobial resistance (AMR) remains a key priority for the Department of Health, Public Health England, Defra and ARHAI and requires action at central, local and individual levels. The Department of Health provided educational materials centrally, for professionals and the public; to increase awareness and support, and motivate behaviour change.

The main objectives were to:

- Educate, inform and engage patients and healthcare professionals about the appropriate use of antibiotics and reduce expectation of antibiotics for colds and most coughs and sore throats.
- Motivate healthcare professionals to prescribe antibiotics more appropriately.
- Educate, inform and engage patients and healthcare professionals about the importance of preventing resistance to antibiotics.
- Reinforce awareness of this problem as a wider international issue by promoting EAAD.
- Align key messages and activities with the objectives of the UK Five-Year Antimicrobial Resistance Strategy 2013 – 2018.

3.0 Methods and Activities

3.1 Target Audience

The target audience for EAAD 2013 were:

- Frontline prescribing healthcare professionals in primary and secondary care, including GPs, hospital doctors, pharmacists and nurses
- Patients and the general public
- Parents of young children
- Children

3.2 Key Activities

“European Antibiotic Awareness Day: 2013 Resources”⁷ hosted by Department of Health were published on the 04th of October 2013. Based on feedback from EAAD 2012, the materials were categorised for ease of access into resources for both primary and secondary care, for primary care, or for secondary care. This page also hosted links to other EAAD-aligned resources including the e-Bug website for teachers and children, the Treat Antibiotics Responsibly, Guidance, Education Tools (TARGET) toolkit for GP staff, Start Smart then Focus guidance for hospital staff, patient.co.uk for prescribers, Centre for Pharmacy Postgraduate Education (CPPE) for higher education and, NHS Choices and the Self-Care Forum for the public.

TARGET is a primary care education toolkit developed by the former Health Protection Agency (now Public Health England) in collaboration with several other professional bodies including the Antimicrobial Stewardship in Primary Care (ASPIC) Collaboration. TARGET is hosted on the Royal College of General Practitioners (RCGP) website, and includes resources such as a PowerPoint presentation for local champions of stewardship to present to prescribers, and materials for primary care staff to promote the importance of appropriate antibiotic use to staff and the public.

Start Smart then Focus was developed in 2011 by ARHAI to promote the aim of providing evidence-based guidelines for secondary healthcare antimicrobial stewardship. In 2012 a survey to assess implementation of Start Smart then Focus around England showed that

⁷ <https://www.gov.uk/government/collections/european-antibiotic-awareness-day-resources>

- 68% of Trusts have found SSTF useful in making antimicrobial stewardship a Trust priority. A further 9% of Trusts had implemented the recommendation that the indication and duration, or review date, should be recorded on in-patient antimicrobial prescriptions. The number of antimicrobial ward rounds undertaken, or planned, within Trusts was also reported to have increased.
- Engagement with pharmacists and microbiologists/infectious control leads was key to implementation; likewise, a lack of time resource with the same key members was the largest impendence to implementation.

A number of measures were suggested by ARHAI to assess impact of SSTF implementation:

- National survey to measure Trust compliance with the quality improvement measures and audits recommended in SSTF
- Monitoring AMS nationally using prevalence tools
- Develop national benchmarking/quality measures around prescribing e.g. number of antimicrobial pharmacists, AMS activities.

These recommendations will be taken forward by English Surveillance Programme for Antimicrobial Utilisation and Resistance (ESPAUR) who is also setting up a subgroup in 2014 aimed at ensuring the guidance are fully implemented and embedded within secondary care in England

A comprehensive list of activities related to EAAD is available in Annex F. For an overview of public and professional facing activities see section 7, Figures 4 and 5.

3.2.1 Highlighted Projects – Professional Bodies

In addition to the Department of Health materials, the **British Society for Antimicrobial Chemotherapy (BSAC)** launched a series of awareness campaigns, liaising closely with PHE and DH. BSAC launched on EAAD the e-poster NICHE Campaign. The aim is to get prescribers to ask the five NICHE questions before issuing a prescription

- Need** (for antibiotic)
- Investigation** (cultures for prescribing)
- Choice** (spectrum of antibiotic)
- How long** (is your prescription for)
- Evaluate** (your patient & prescription)

Alongside the campaign, BSAC was responsible for two high impact Thunderclaps, a targeted pledge statement which users can take which will broadcast via Twitter on a

set date. These two thunderclaps had a social reach of over 300 000 people.

Further along the social media front, BSAC ran the @TheUrgentNeed twitter, which is currently on-going, for their Antibiotics Awareness Petition Campaign.

e-Bug.eu is an educational website for young people aimed at teachers and children across Europe. It is funded and run by Public Health England and covers microbes and how they are spread, hand and respiratory hygiene, antibiotic resistance and use and vaccines. E-bug created a competition (funded by the BSAC and Society for General Microbiology) and resource page. To further expand the reach, a Saudi Arabian e-bug website was created with a full Arabic translation of all materials and resources.

The **British Medical Journal** hosts the web forum **Doc2Doc** where physicians can discuss topics online; for EAAD the topic was: *Too much medicine: how do you say "no" to patients requesting antibiotics for sore throats?* This forum had interactive participation and debate from doctors on the topic question; the TARGET toolkit and EAAD resource materials were featured during the discussion.

3.2.2 Educating Professionals

3.2.2.1 Centre for Pharmacy Postgraduate Education (CPPE)

CPPE created a set of educational resources, a quiz and workshops aimed at pharmacists, pre-registration pharmacists, pharmacy technicians and pharmacy students. These included a new learning programme; “Focal Point: Antibacterials” aimed at developing knowledge on antimicrobial resistance, fostering antimicrobial stewardship, and improving prescribing practice.

CPPE release a monthly e-challenge and for EAAD a special edition antimicrobial resistance and stewardship e-challenge was developed. As of the 31st of December 2013, over 2200 people have accessed the EAAD special edition e-challenge.

CPPE ran 57 Antibacterial Focal Point workshops throughout England between January and April 2014, attended by 1884 pharmacists and pharmacy technicians. The programme was launched to coincide with the release of EAAD DH materials. One of the tutors running the event commented “the material allows for some great debate and discussion to really get the pharmacists to challenge their antibacterial stewardship currently and review what they can do differently”.

Other CPPE programmes available include; “Antibacterials” learning@lunch programme, “Antibiotics and their role in managing infections” and “Avoiding

antibiotic resistance: the role of the pharmacy team” open learning programmes for pharmacists and pharmacy technicians.

3.2.2.2 Pharmacy Voice and Self Care Forum

Pharmacy Voice provides a unified voice for the community pharmacy associations represented by both independents and national chain pharmacies. Working with the Proprietary Association of Great Britain (PAGB) and the Self Care Forum, Pharmacy Voice developed a series of common condition-specific Pharmacy Self Care Advice pathways, providing pharmacy with a great opportunity to align self-care advice to the information used by general practice when talking about minor illnesses.

The self-care advice pathways are aligned with the Self Care Forum Fact Sheets, so that GPs and pharmacy teams can use the same information to discuss treatment options and provide consistent advice. The guidance is intended to be used as part of the clinical decision pharmacists can exercise on the progression of symptoms, likely duration, treatment options available and red flags that require referral.

The pathways made available included cough in adults, cold and flu (adults), fever in children, indigestion and heartburn, sore throat and ear ache. As a result of feedback received over the course of the Winter 2013-14, the advice guides are being revised for 2014, to highlight, in particular the key messages around symptom duration and red flags.

3.2.2.3 Conferences and Publications

This year there were four large conferences surrounding EAAD:

- Federation of Infection Societies with the topic of “Action on Infection”, where there was a presentation on EAAD to raise awareness and involvement in the week prior;
- University College London (UCL) by the National Resource for Infection Control (NRIC) “European Antibiotic Awareness Day 2013: A response to the Department of Health Antibiotic Resistance Strategy”. The conference day covered two main topics of improving antibiotic stewardship and improving knowledge and understanding of antimicrobial resistance;
- Royal Society of Chemistry “Beating Superbugs: avoiding the antibiotic apocalypse”. The focus of the Beating Superbugs conference was around the development of new antibiotics and treatments for resistant

infections;

- University of Liverpool “Promoting Good Veterinary Antimicrobial Stewardship”. Discussions focused on guidelines to promote good antimicrobial stewardship within veterinary medicine and livestock production and associated professional best practice. Further information can be found in section 7.1.

There were thirty-seven publications in nine peer-reviewed journals this year in relation to EAAD. This is over double the number of publications in previous years (Annex B).

3.2.3 Educating the Public

A targeted focus group for EAAD has always been parents with young children. One highly used resource is the ‘When should I worry?’ booklet, within the TARGET resources that primary care prescribers can provide to parents. TARGET web traffic can be found in Annex D: Figure 12. Feedback from the survey indicated that prescribers would like more resources in line with this booklet in a short leaflet or “when not to worry” prescription pad printout that they can hand to parents during consultations or at poster displays in public settings. It was suggested that these “anti-prescription pads” could highlight information on inappropriate prescribing, key messages of antibiotics being ineffective against the cold and flu viruses, or important warning signs that should prompt a return to your doctor.

There was extensive media coverage this year in national, regional and local media. The PHE press release “Green phlegm and snot ‘not always a sign of an infection needing antibiotics’” was picked up by several national media bodies and highlighted when antibiotics are appropriate for treatment in the presence of coloured phlegm or snot. The release included quotes from prominent leaders in the medical community and notes to editors about warning signs for who may actually need antibiotics for coloured phlegm or snot. As of April 2014, this press release was still receiving an average of 2000 unique views per month.

The Proprietary Association of Great Britain (PAGB) sponsors both the Self-Care Forum and the Treat Yourself Better without Antibiotics campaign. Both are aimed at educating the public on self-care and encouraging people to consult their local pharmacist. Treat Yourself Better without Antibiotics was a four month campaign jointly run by PAGB and Pharmacy Voice, which included consumer media editorial, public print and poster advertising as well as a strong online presence.

The Treat Yourself Better without Antibiotics campaign website was launched on 12 November 2013, in the run up to EAAD. The campaign was aimed at the public with the objective of educating when it is appropriate to need antibiotics or not, with a heavy emphasis on the inappropriateness of antibiotics for treating cold, coughs and the flu. The website includes information on warning signs, expert advice, FAQ and links to more information. The primary public education aspects of Treat Yourself Better without Antibiotics are:

- antibiotics don't work on viruses like those that cause common winter conditions;
- pharmacies are good places to go first for help with common winter conditions;
- most people don't know how long common winter conditions last, education on likely symptom duration was a key focus.

In this first year, the campaign achieved a reach of over 400 million, with 76 pieces of consumer media (national press, magazines and regional newspapers), most of which included the key campaign messages, and 18 local radio interview spots. The website hub achieved over 20,000 hits, with good referral in via links from Pharmacy Voice and PAGB member sites, particularly Boots WebMD. Online activity included over 300 social media mentions, reaching over half a million people, with one Thunderclap in the middle of December reaching almost 100,000 at one time.

The formal evaluation of the Treat Yourself Better campaign found overall awareness to be good, at just under a third of the total population (29%). Engagement to increase awareness was particularly successful via messages from surgeries, pharmacies and on the radio among women, and via social media and websites with younger populations. Unfortunately, the "without antibiotics" element of the message appeared to be confusing, with men in particular thinking the message was the opposite one to that intended.

A decision has been taken, in principle, to run the campaign again in 2014/15; different treatments of the key message are currently in consumer testing.

For an overview of treatyourselfbetter.co.uk traffic see Annex D Figure 16.

3.2.4 Educating Children

E-Bug is a website aimed at educating school children which is run by Public Health England and used across Europe. The website features a multitude of games and interactive learning for children ages 5-17. Additionally, to reach a wider audience, e-Bug has been translated into several languages, most recently to include Arabic.

E-Bug ran their annual educational competitions for children of different age groups and their teachers focused on understanding the difference between viruses and bacteria and associated spread and treatment.

3.2.5 Devolved Administration EAAD Activities

Northern Ireland Antimicrobial Pharmacist Network: The Minister for Health, Department of Health, Social Services and Public Safety held an event to formally launch the update of Management of Infection Guidelines for Northern Ireland together with updated antimicrobial resources. Interviews regarding the event were held with two national radio stations and press releases from event are expected to be published in local newspapers over the next few weeks.

Scottish Medicines Consortium: A press release was covered on local radio stations. Leaflets regarding antimicrobial usage were circulated in hospitals, primary care facilities and care homes. Feedback from local teams indicated that crosswords and quizzes were used to good effect and received an enthusiastic response from the public. Some teams did not like using leaflets from the previous year's EAAD and would have preferred the same message on refreshed materials

3.3 Cost

In view of DH policy for digital only media, there were no hard copy materials sent out to professional bodies and organisations, instead all materials were provided in digital format ready for print. All other publicity and awareness raising was without cost to the Department of Health.

3.4 Measuring Outcomes

Expected outcomes for 2013 were based on the results of the EAAD 2012 Evaluation; detailed outcomes can be found in Section 5.0, Table 4. The focus of EAAD 2013 outcomes was to exceed the outreach of previous years. The EAAD Evaluation Survey was a key tool for assessing the impact outcomes.

Recent changes to material distribution policy resulted in all DH educational materials being distributed exclusively online. Current online tracking does not allow for the exact number of downloads per item to be assessed, however, visitor traffic can be used to extrapolate which resources were utilised the most frequently when combined with the results of the EAAD Evaluation Survey.

Process outcomes, such as the number of publications, national and regional media coverage and conferences allow for a direct comparison to previous years. In all of these categories there were improvements over previous years. Annex B provides a comprehensive list of journal articles and editorials and Annex C a comprehensive list of bulletins targeted at both professionals and public. Furthermore, there was involvement from every Area Team in England with the exception of one and a significant engagement with veterinary colleagues promoting EAAD key messages.

To evaluate the extent of EAAD involvement from professional bodies and organisations, an evaluation survey was sent to all bodies who had registered as participants for EAAD. Additionally, an extensive search of news outlets and organisational bulletins allowed us to estimate the reach of the materials. Website traffic also provides an indication of access to materials through various sources. Furthermore, there were an unprecedented number of publications in recognised journals around EAAD compared to previous years, with a special EAAD Antimicrobial Resistance issue in both The Lancet and the Journal of Antimicrobial Chemotherapy.

4.0 EAAD Activities and Outcomes:

4.1 Department of Health EAAD 2013 Resources

The Department of Health published the materials on the 4th of October 2013. This was the first year that materials were distributed exclusively online and available for download. Printing and distribution of materials was a major cost factor in previous years.

4.1.1 Key Message Statement:

The following is taken directly from the EAAD Resource Page as published by the Department of Health:⁸

“European Antibiotic Awareness Day (EAAD) is a public health initiative aimed at encouraging responsible use of antibiotics.”

“Held on 18 November every year, European Antibiotic Awareness Day is supported in England by the Department of Health and its advisory committee on Antimicrobial Resistance and Healthcare Associated Infections (ARHAI). The NHS, local authorities and others are asked to support EAAD which can make a significant impact locally and nationally.

EAAD supports the aims of the UK 5 Year Antimicrobial Resistance Strategy 2013 to 2018, which focuses on antibiotics and sets out actions to slow the development and spread of antimicrobial resistance.

The following information and resources have been collated to help support local activity on EAAD and to promote responsible use of antibiotics. Some of these resources have been adapted from original European Centre for Disease Prevention and Control materials.”

⁸ <https://www.gov.uk/government/collections/european-antibiotic-awareness-day-resources>

4.1.2 Website Resources

The resources were available under the following header groups, for a breakdown of resources used see Section 4.4, Figure 4. For DH Resource page traffic see Annex D, Figure 10-11.

European Antibiotic Awareness Day: Resources for primary and secondary care

- Key messages on antibiotic resistance by DH, ARHAI and DEFRA
- Poster: no amount of antibiotics will get rid of your cold
- Poster: EAAD centre piece for hospitals, GP surgeries and clinics
- Leaflet: get well soon without antibiotics (offered in 11 languages)
- Quiz: European antibiotics awareness day
- Quiz: non-prescribing administering / dispensing Health Care Workers
- Quiz: pharmacy lab staff
- Quiz: prescribers part 1
- Quiz: prescribers part 2
- Crossword 1
- Crossword 2
- EAAD case studies
- “Take Care, Not Antibiotics” Videos for GP Waiting Rooms (hosted on YouTube)

Other useful links were highlighted only on this page:

- Centre for Pharmacy Postgraduate Education
- E-Bug – the educational tool about infections for schools
- European Centre for Disease Prevention and Control (ECDC)
- Health Education England
- National Prescribing Competences (hosted by NICE)
- NHS Choices website which provides information for patients and the public
- Patient.co.uk
- Self-care forum

European Antibiotic Awareness Day: Resources for secondary care

- Secondary care prescribers checklist
- Web banner: Start smart - then focus
- Poster: Start smart - then focus
- ARHAI Guidance Resource Link: Start Smart – Then Focus Guidance

European Antibiotic Awareness Day: Resources for primary care

- EAAD web banner for promoting 'TARGET antibiotics' toolkit
- The TARGET Antibiotics Toolkit: Hosted by the RCGP provides a central resource for information about antibiotic prescribing and is important for

use in primary care.

European Antibiotic Awareness Day: video files (wmv download)

- Looking for a purrfect remedy for your cough
- Don't get prickly if your doctor won't prescribe you antibiotics
- Sick as a parrot?
- Feel like a lame duck?
- When you're ill you'll do anything to feel better

European Antibiotic Awareness Day: audio files (mp3 download)

- Looking for a purrfect remedy for your cough
- Don't get prickly if your doctor won't prescribe you antibiotics
- Sick as a parrot?
- Feel like a lame duck?
- When you're ill you'll do anything to feel better

Table 1: Highlights the significant increase in views for the Department of Health EAAD public education videos hosted on YouTube 2011 - 2013.

YouTube Video	2011 Total Views	2012 Total Views	2013 Total Views	2013 Increase
Don't get prickly if your doctor won't prescribe you antibiotics	82	1159	1685	45% n=526
When you're ill you'll do anything to feel better	50	643	1150	79% n=507
Feel like a lame duck?	65	729	1016	39% n=287
Sick as a parrot?	99	710	994	40% n=284
Looking for a purrfect remedy for your cough	50	565	882	56% n=317
Total	346	3806	5727	50% n=1921

4.2 Media Coverage for EAAD 2013

4.2.1 National Coverage

A comprehensive list of National and Regional coverage is available in Annex F: EAAD Activity Database.

SkyNEWS ran a special televised report on antibiotic resistance, including both an interview with Professor Alan Johnson, PHE entitled “*UK Faces an Antibiotic Time Bomb*”, and a news feature “*Antibiotics Warning: Resistance Growing*”.

The Independent ran an article in their paper ‘*Superbugs could erase a century of medical advances, experts warn*, making reference to The Lancet’s special report on antibiotic resistance authored by the Chief Medical Officer Professor Dame Sally Davies alongside sporadic quotes from interviews with academics.

Reuters ran a story which featured an interview with Dr Donna Lecky, e-Bug manager on peer-to-peer education: *Study enlists kids to combat antibiotics overuse*.

Public Health England issued a press release entitled: *Green phlegm and snot ‘not always a sign of an infection needing antibiotics’*, this was picked up by several media outlets including:

- **BBC News:** *Antibiotics not for running noses, warn doctors*
- **The Times:** ran two articles on inappropriate use of antibiotics for flu symptoms and another for cough symptoms; *Antibiotics are “wasted on sniffles”* and *Bad cough? Some people will swallow anything*
- **The Daily Express & Scottish Daily Express:** *Tackling the cold cure myth: Why antibiotics won’t stop the sniffles*

This press release has had an unprecedented level of hits with over 10 000 since November 2013, and regularly gets 2 000 visits a month as of April 2014.

4.2.2 Regional Local Coverage

There were several local papers which published articles on EAAD. These included articles from the Lancashire Telegraph, The Westmorland Gazette, The Warrington Guardian and Rochdale Online; these articles highlighted EAAD, the importance and impact of inappropriate prescribing and how the public can make a difference with a focus on the message of antibiotics not working for flu and cold. The Edinburgh STV

published an excellent report, augmented in the online version with videos, infographics and DH awareness posters.

4.2.3 UK Online Blogs

This was the first year that blogs were used as a tool of public engagement. Online blogs provide an excellent format for the public to interact with experts in a discussion outside of traditional social media (twitter and Facebook). This medium helps reach a wider audience, and often encourages and results in participants being more informed in their commentary.

Controversies in Hospital Infection Prevention: *European Antibiotic Awareness Day: Why Not Go Global? A conversation between Dr Angela Huttner and Professor Herman Goossens*

This post was a short transcript of a discussion on bringing the campaign from separated national campaigns into a single unified one.

Super Working Mum: *European Antibiotic Awareness Day- My thoughts on the use of antibiotics*

The 'mummy blogger' wrote about the importance of knowing when and when not to ask for antibiotics for your children as a mother, and understanding what true warning signs are. The author also highlighted the importance of finishing a course of antibiotics.

Open University Press Blog: *Worn out wonder drugs*

This post aimed at a higher education public demographic highlights the importance of educating children in addition to adults in awareness campaigns. There is discussion around the implementation of school-based campaigns including hand washing and the use of E-Bug.

4.2.4 Social Media: Twitter and Facebook

Several key organisations engaged with their members and the public through social media, primarily via twitter. Notable twitter account mentions include, but are not restricted to: @EAAD_EU, @PHE_UK, @DHgovuk, @DEFRAGovUK, @RCPLondon, and @TheUrgentNeed. There was earnest online activity and conversation using the hashtags #EAAD, #AMR, #AntibioticAwareness and #AntimicrobialResistance. The true reach of these conversations cannot be evaluated. The Facebook page for EAAD is maintained by EAAD EU.

A powerful social media tool is the thunderclap; a predetermined message or tweet that individual users can sign up for via a combination of Facebook, Twitter and Tumblr (blog).

Table 2: The BSAC led Thunderclaps (2) on request by the EAAD planning group led to a reach of over 300 000. A Thunderclap is a set social media message where individuals subscribe in the month preceding, and on the set time (EAAD 18 November 2013, 12:00) the unified message is broadcast to all those who pledged via their social networks (Facebook, Twitter, Tumblr).

Thunderclap Message	Support and Reach
"I will NOT expect antibiotics for cold/flu; instead I will ask how to treat my symptoms"	570 supporters Social Reach: 274 498
"I pledge that where a dental infection needs drainage this is provided before considering the use of antibiotics"	107 supporters Social Reach: 32 532
	Total: 677 Supporters Social Reach: 307 030

4.3 Veterinary Involvement in EAAD 2013

This year's EAAD saw a greater involvement from the animal health sector than previously, with many key and influential industry bodies, trade associations and third sector bodies promoting the day and raising awareness around the responsible use of antibiotics. A few of the highlights from this were:

The **British Veterinary Association (BVA)** provided a web page with specific resources, including a set of downloadable myth busters tackling common misconceptions about antibiotics, a collection of leaflets for farmers and pet owners and links to BVA and BVA division responsible use guidance for veterinarians. Additionally, the BVA collaborated with the Veterinary Medicines Directorate (VMD) on a promotional poster for practice waiting rooms aimed at pet owners with a new focused tagline "Don't Infect, Don't Expect, Do Protect". BVA members were made aware of EAAD activities through e-newsletters, the BVA website and BVA's online member forum.

The **Veterinary Medicines Directorate (VMD)** revised all of their antibiotic resistance pages to be more public facing, including a specific EAAD page, and a Responsible Use Resources page which pulls together guidance and guidelines on the responsible use of antibiotics produced by various veterinary professional bodies.

In addition, they used EAAD to time with the release of their report: *UK Veterinary Antibiotic Resistance and Sales Surveillance*. As Editor of the report Prof Peter Boriello states, "This is the first report to combine UK data on antimicrobial sales for animal use (2008-2012) together with England and Wales data on the antibiotic susceptibility of veterinary pathogens and food-borne pathogens (2009-2011)."

The **Bella Moss Foundation (BMF)** launched a series of five educational posters for pet owners which were advertised via Facebook and on the BMF website. The posters included: (1) *Antibiotics for Pet Owners*, (2) *Hand-washing Guidelines*, (3) *Responsible use of Antibiotics for Vets and Pet Owners*, (4) *Veterinarians care for animals and people*, and (5) *FECAVA Advice to companion Animal owners on responsible use of Antibiotics and Infection control*.

The **University of Liverpool** hosted a veterinary conference on the 18th of November for EAAD on 'Promoting Good Veterinary Antimicrobial Stewardship'. The conference included talks linking animal to human health, a panel discussion and research poster displays linking prescribing practise and antimicrobial stewardship for use in animals, both pets and in agriculture.

The veterinary bodies made extensive use of social media using Facebook, twitter

and YouTube to cultivate engagement with both professionals and the public, specifically pet and livestock owners. Veterinary publications, including editorials in the Royal College of Veterinary Surgeons (RCVS) Newsletter, Veterinary Record (published by the BVA) and The Veterinary Nurse were used to target professionals. Public facing articles in targeted magazines such as Dogs Monthly, Racing Pigeon magazine and the Royal Pigeon Racing Association and the magazine Veterinary Practise were targeted towards the public and pet owners.

The VMD continue to coordinate regular meetings with a wide group of interested parties from the animal health sector to discuss future activities for EAAD 2014.

4.4 Survey of Professional bodies and organisations

The European Antibiotics Awareness Day (EAAD) online evaluation survey was emailed to professional bodies and organisations around England who have reported or registered as EAAD participants one month after EAAD on 18 December, the survey remained open for a period of six weeks. The survey was completed by primarily by representatives from professional bodies and organisations that formed the EAAD Subgroup and the antimicrobial pharmacist network. A copy of the survey can be found linked in Annex E.

4.4.1 Respondent Demographics

92 representatives from professional bodies and organisations participated in the 2013 EAAD Evaluation survey. There was at least one respondent from every NHS Local Area Team in England, with the exception of Wessex Area Team. 13 respondents were from the London Area Team. 75% of respondents were Antimicrobial Pharmacists (41%), Microbiologists (26%) or the organisational antimicrobial lead (8%). 71% of respondents represented a hospital. 66% of respondents were represented secondary care institutions; conversely, only 8% of respondents were from primary care.

4.4.2 Survey Results

Participants were asked to rate their agreement with two statements: (1) EAAD was of value, and (2) EAAD is useful for improving awareness of appropriate antibiotic use and the importance of preventing antibiotic resistance. Participants were asked to report their agreement in relation to the public, patients and healthcare professionals. See Figure 1 and Figure 2.

91% of respondents reported that their organisation had planned activities in support of EAAD on 18 November 2013 (n=78). Reported reach of organisational activities can be seen in Figure 3.

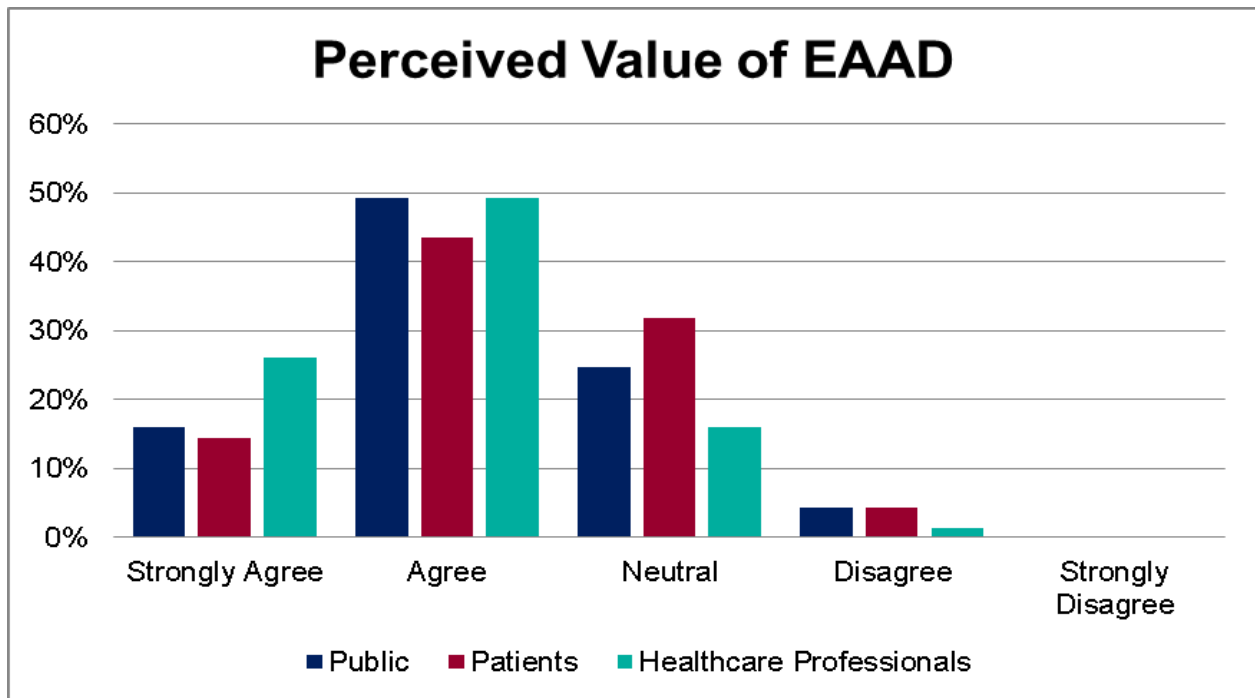


Figure 1: Respondents were asked from their experience of EAAD in their organisation and across the media, to indicate their agreement with the statement “EAAD was of value for public, patients and healthcare professionals”, n=69.

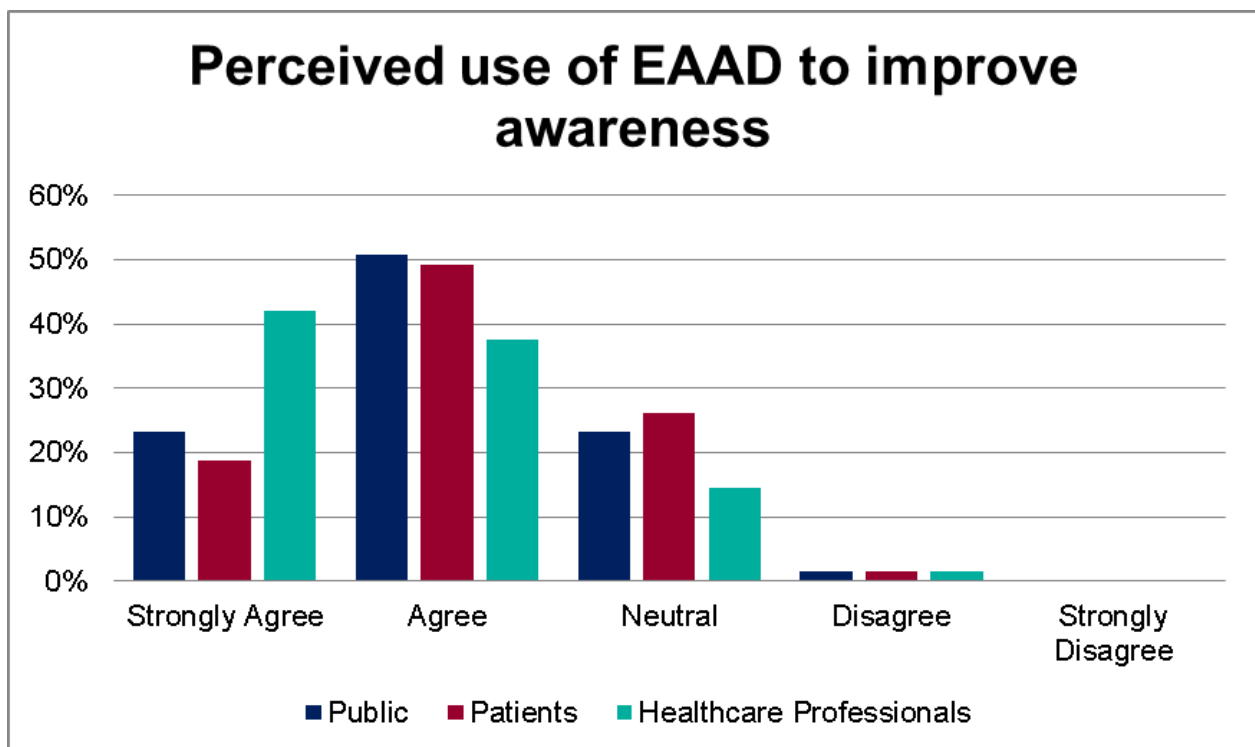


Figure 2: Respondents were asked from their experience of EAAD in their organisation and across the media, to indicate their agreement with the statement “EAAD is useful for improving awareness of appropriate antibiotic use and the importance of preventing antibiotic resistance in the public, and with patients and healthcare professionals”, n=69.

Department of Health published the resource page on 04 October 2013 compared to 04 November 2012. 68% of respondents agreed that this earlier publication date was “about right”, however, 32% found that the resources were still published “too late” (n=69).

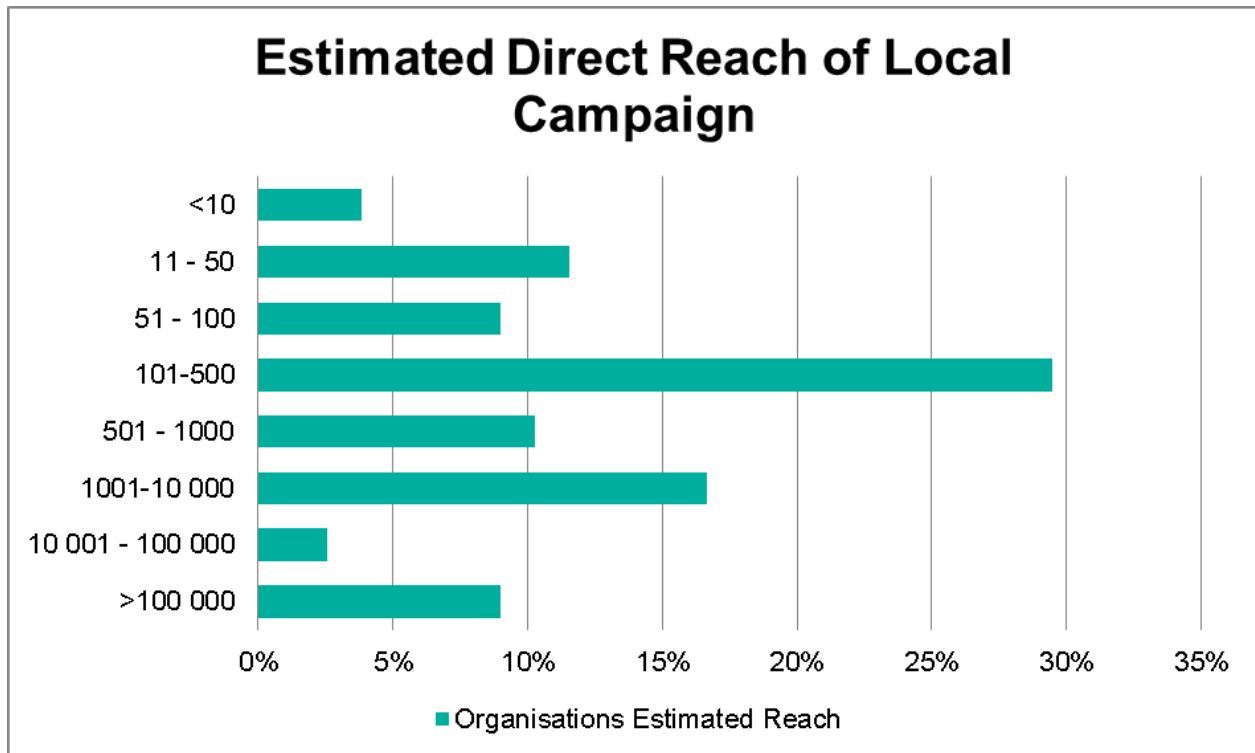


Figure 3: Respondents were asked to indicate the approximate direct reach of their organisations local campaign. Seven organisations had estimated reach over 100 000, n=78.

Respondents were asked to rate the usefulness of the resources available on the DH materials resource page, and were asked which resources they used (Figure 4). Interestingly the videos and audio files were not downloaded; however, the same videos hosted YouTube videos which were not linked had several thousand views since last year (Section 4.2, Table 1). How organisations presented their materials to public and professionals can be found in Figure 5.

Reported use and usefulness of DH Educational Materials

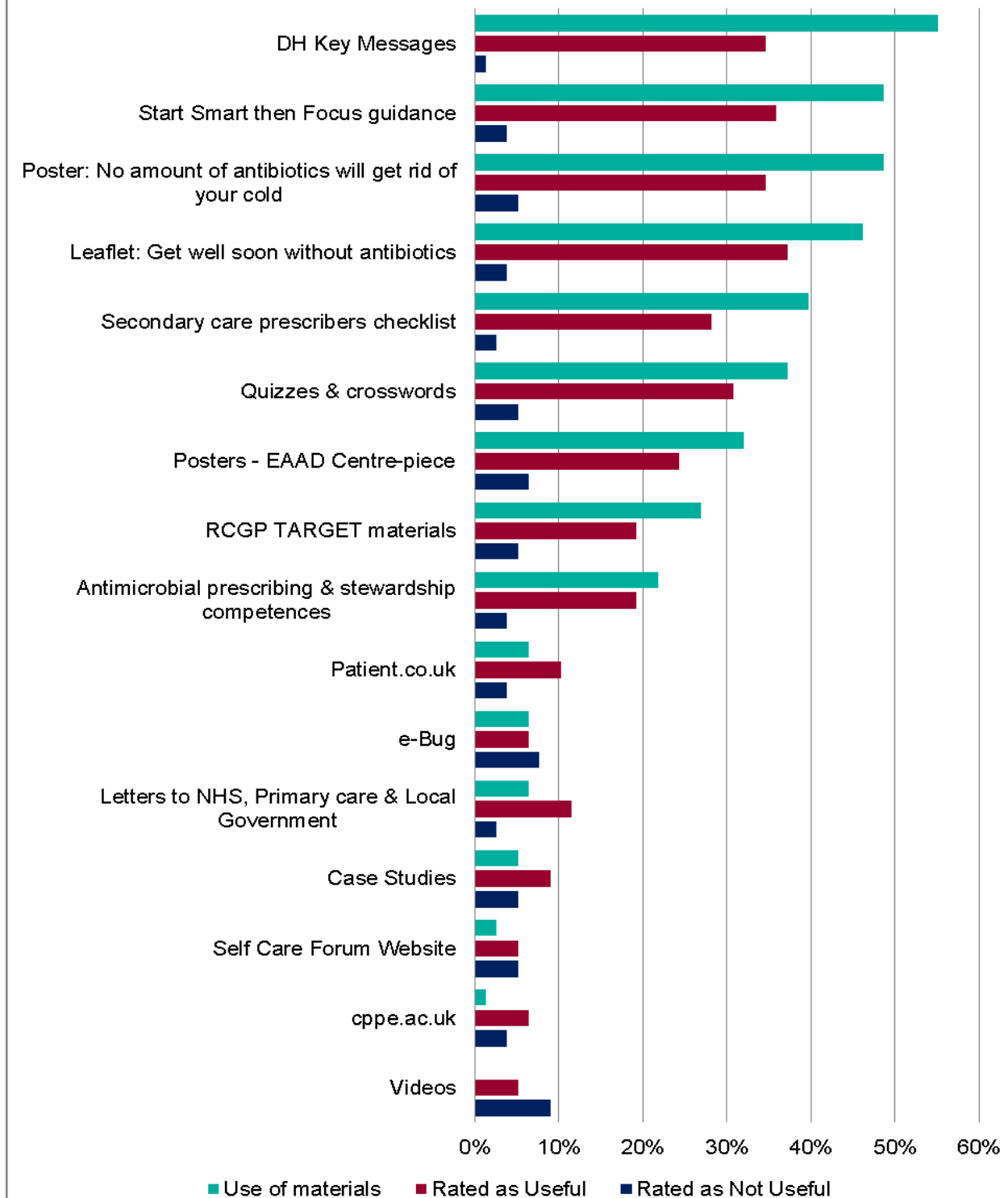


Figure 4: Reported use and rating of usefulness for the Department of Health Educational Materials available online via the gov.uk DH resource page, n=78. 66% of respondents were from secondary care, 8% of respondents were from primary care.

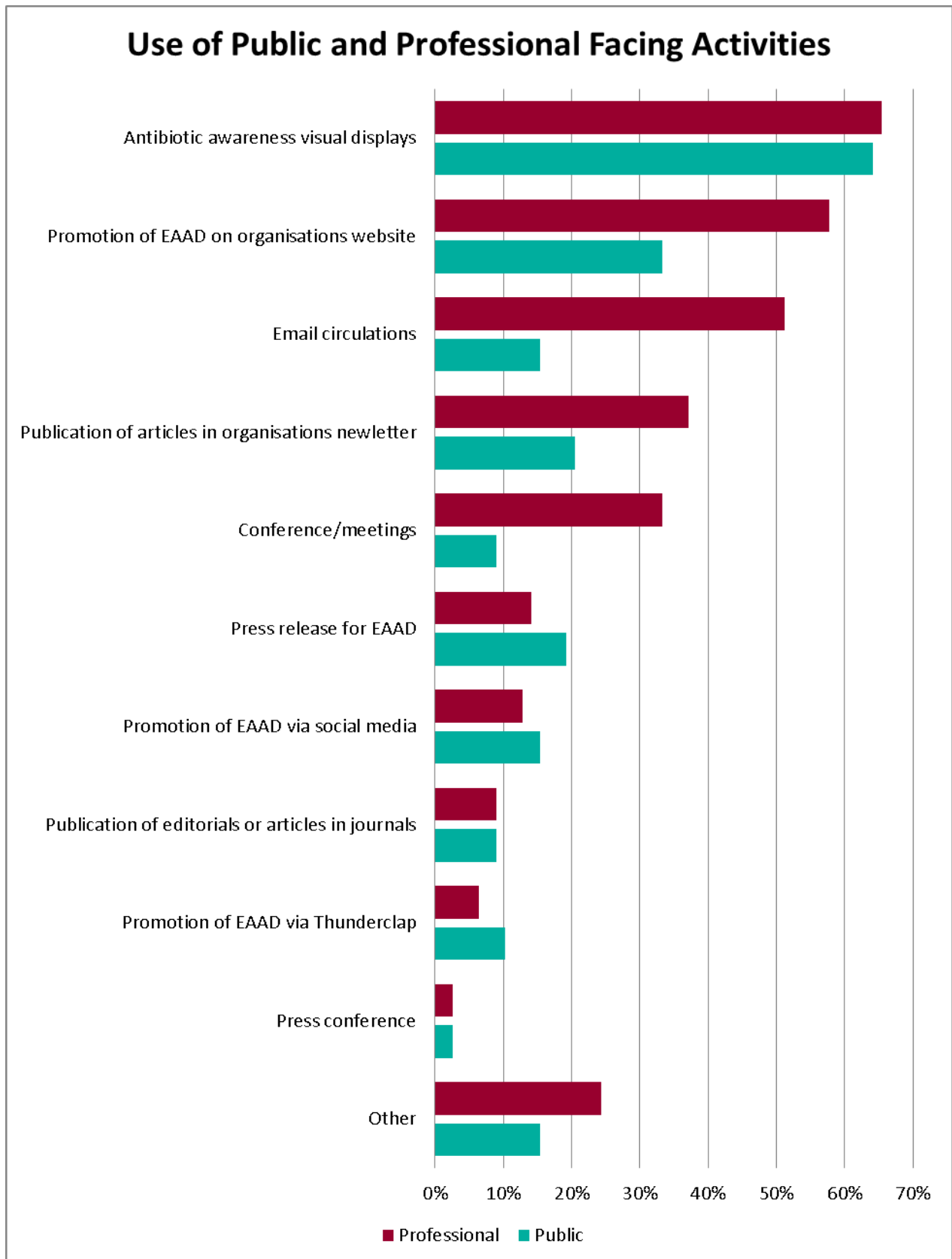


Figure 5: Respondents were asked which of the above activities their organisation used to engage the public or professionals, n=78.

4.5 Antibiotic Prescribing

National antibiotic primary care prescribing data (October to December quartets 1996-2013) for quinolones (Figure 6), cephalosporins (Figure 7) and co-amoxiclav (Figure 8) was obtained from NHS Business Services Authority (NHSBSA) Prescription Services.

The data shows that since 2008, there has been a year on year reduction in the prescriptions for quinolones and cephalosporins (19% and 54% respectively), however prescriptions for co-amoxiclav have increased over the same period (5%). Compared to 2012, prescriptions for cephalosporins, quinolone and co-amoxiclav have reduced by 10%, 2% and 2.5% respectively. Figure 9 for an overview of trends.

The reduction in prescribing over the years cannot be attributed to EAAD alone, however EAAD activities and materials such as TARGET, non-antibiotic prescriptions, leaflets promoted as part of EAAD (since 2008) are likely to have been significant contributors to the outcome of reduced prescribing.

Similar robust data is currently not available for secondary care but will be available from 2014 through the work of the new national programme ESPAUR – The English Surveillance Programme for Antimicrobial Utilisation and Resistance.

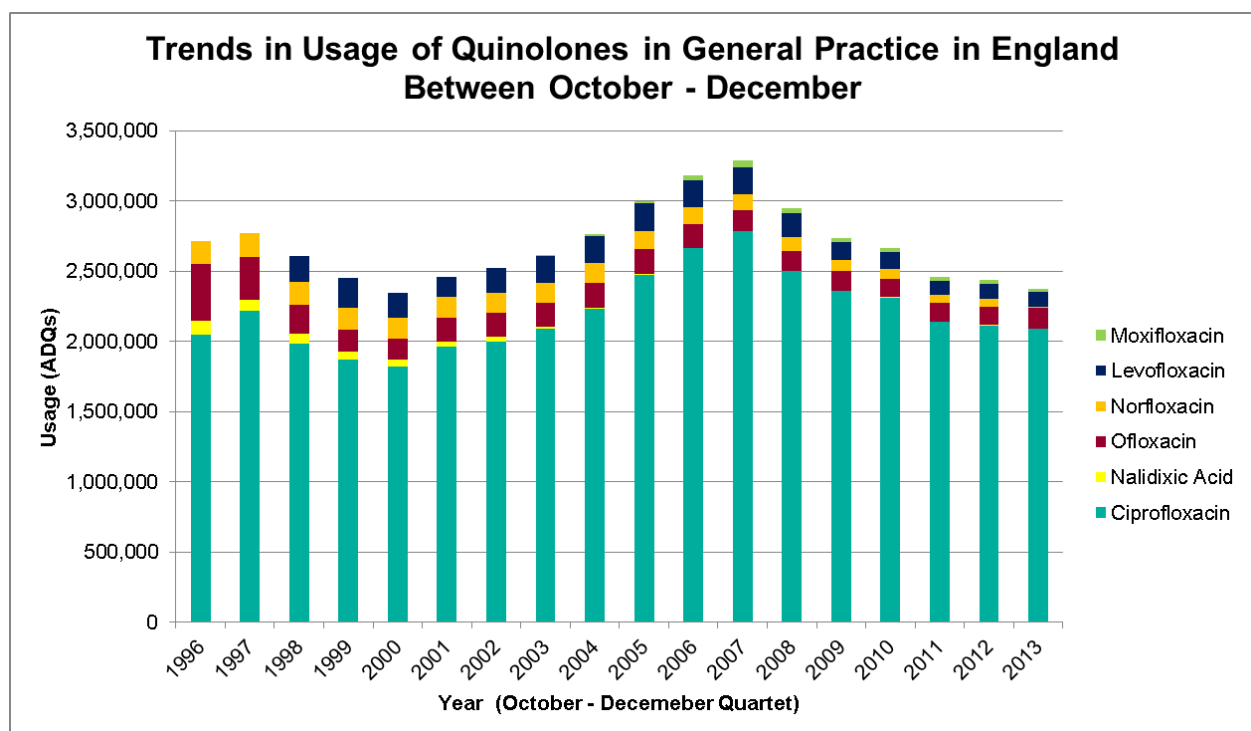


Figure 6: Trends in usage of Quinolones

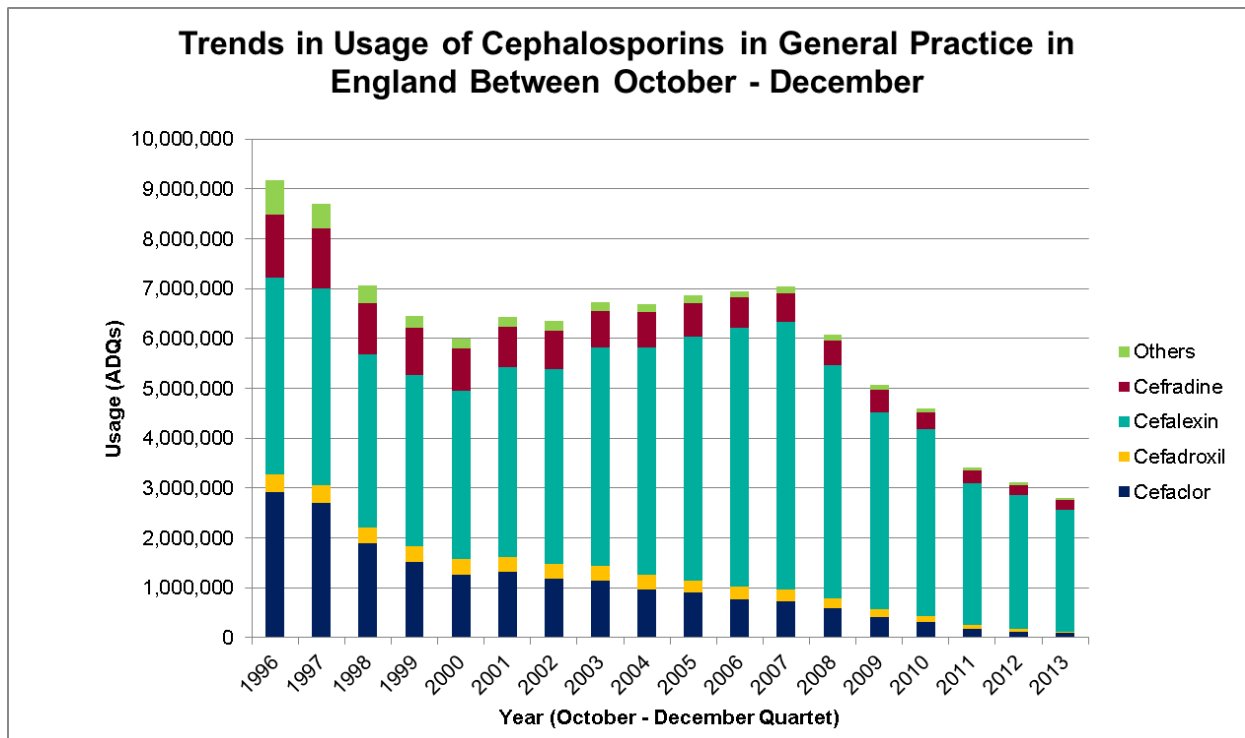


Figure 7: Trends in usage of Cephalosporins

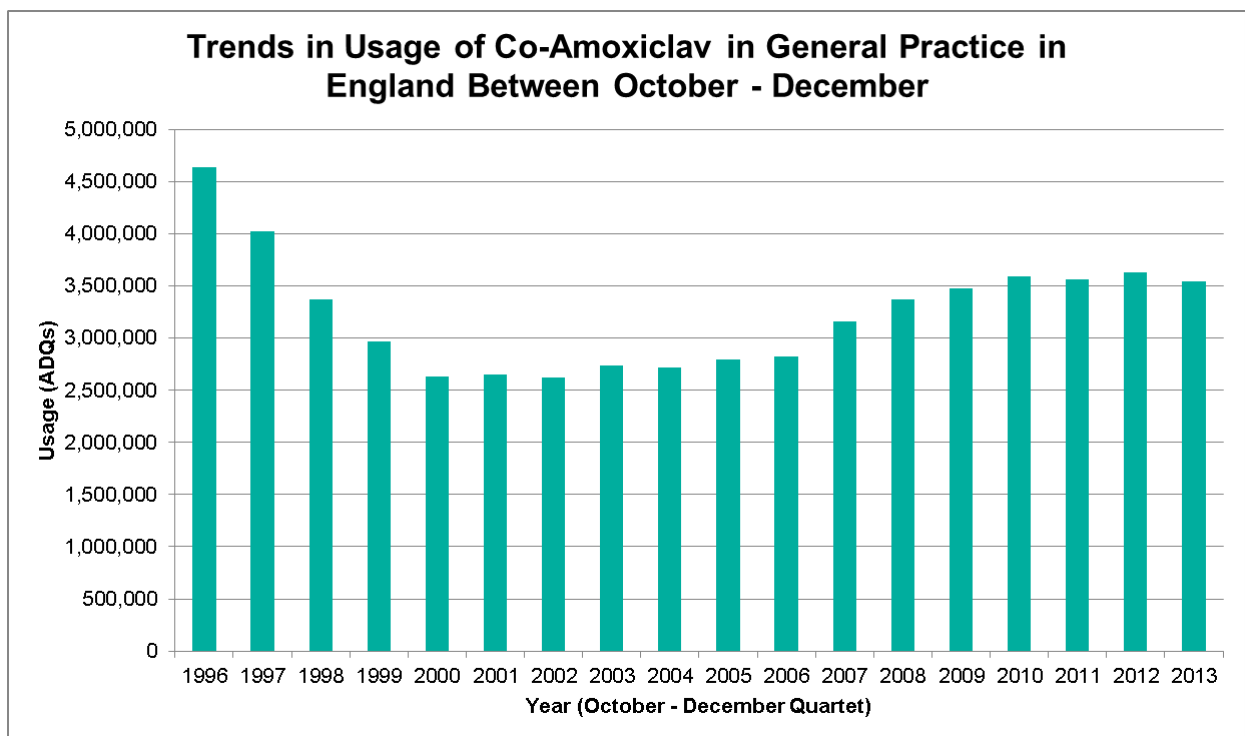


Figure 8: Trends in usage of Co-Amoxiclav

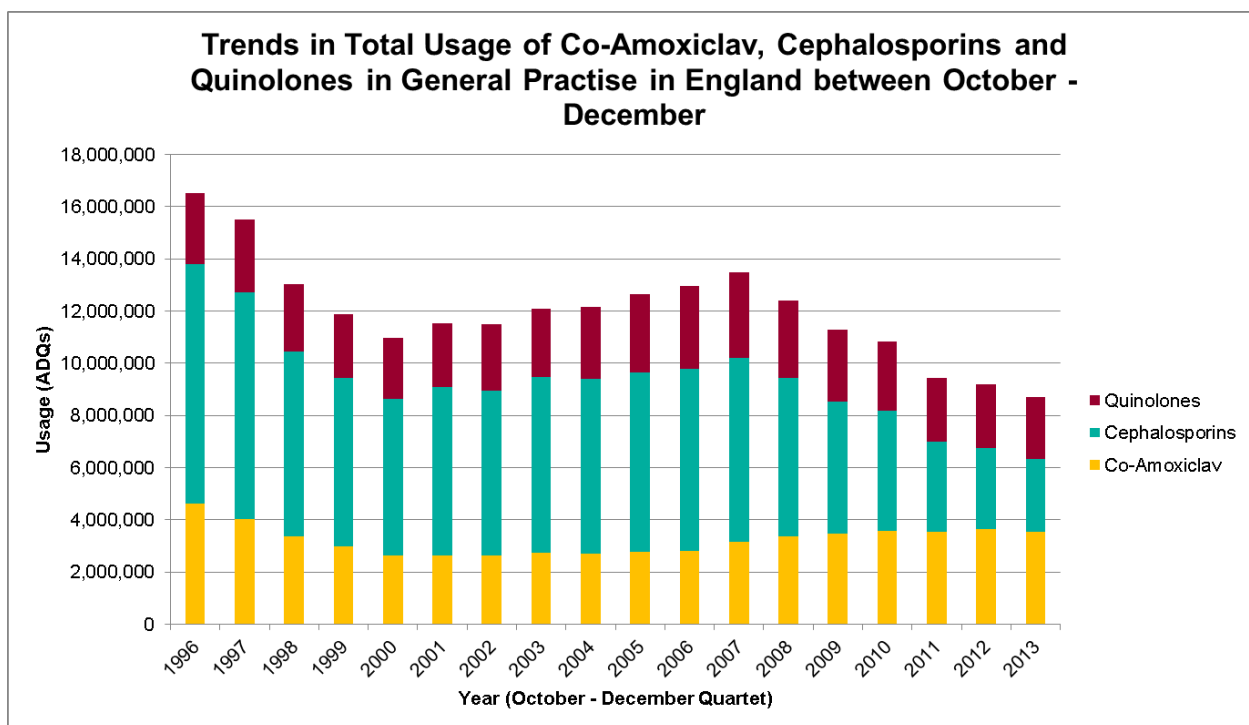


Figure 9: Trends in total antibiotic usage of co-amoxiclav, cephalosporin and quinolones in England between the October-December Quartet 1996-2013

5.0 Discussion

Based on the recommendations of the 2012 Evaluation, there has been a continued high level of engagement with professional bodies and organisations including the NHS England and the Devolved Administrations. Unlike previous years, no materials were offered in hard copy for dissemination, however were available online centrally via the new Gov.UK website. The creation of new materials were based upon suggestions from 2012, specifically that of the quizzes and crosswords for both public and professionals, these have received good reviews. A summary of key measurable outcomes can be found in Table 3.

Compared to previous years, there was a prolific level of engagement with professionals to increase education and awareness, exemplified by several conferences and major peer-reviewed journal releases. These professional engagement activities were focused on antimicrobial stewardship and prescribing practise. The objective result of professional engagement was prescribers taking an active role in helping to stem the spread of antibiotic resistance.

Objectives for EAAD 2013 were set based on the 2012 evaluation and recommendations (Table 4). Whilst most objectives were met, there were a few which cannot be measured at this time. It can be very difficult to assess behaviour change, especially in a short period of time. However, we can attempt to estimate this by assessing the uptake and reach of materials (Figure 4). A key message of EAAD 2013 was around not expecting antibiotics for colds and flu; this was widely spread and hopefully will aid in reducing the expectation of antibiotics for respiratory infections from patients, and increase the rate at which prescribers suggest alternative treatments.

A large majority of the publications were explicit in agreement that antimicrobial resistance is not just a UK issue, but a global concern. This message is clear in the UK Five-Year AMR Strategy, which highlighted EAAD in key objectives 4: improving professional education, training and public engagement. To better work towards this, future messages could include focus not only on colds and flu, but how the role of the individual plays into the global picture. Feedback from the evaluation survey indicated that several NHS trusts wanted an infographic poster depicting UK comparisons to global data over time, perhaps including information on single person impact, or on an individual level would be beneficial in promoting this message.

The PHE “green phlegm and snot” press release was met with enthusiasm by national news outlets, and generated excellent publicity of key EAAD messages. There was greater media coverage this year than in 2012, especially noticeable at a national press-media level. The introduction of Thunderclap social media pledges also helped to increase the reach within the public sphere; social pledges using tools

such as Thunderclaps could be especially useful tools for the future which give an output of a direct measurable outcome.

This was the first year that there was significant veterinary involvement; the veterinary professional bodies took an active role in spreading the messages to veterinarians, livestock owners and pet owners. Continued veterinary organisation support will help to reach a greater audience and spread critical messages around antimicrobial stewardship. Feedback from veterinary associations requested higher visibility of their resources on future EAAD resources pages.

Due to the new online distribution method, evaluating exact uptake and distribution of materials is difficult. Feedback from the evaluation survey has highlighted that there is a need for a modification of the resource materials to show patients and staff that key messages are adapted to the current situation rather than a replication of previous years. The most frequent display of materials within NHS trusts was to create a stand or poster display in a high visibility area where patients could ask questions. Feedback from those using stands was that they wanted templates that they could easily modify to personalise materials for their trust; additionally, an infographic style poster which demonstrates the rise in antibiotic resistance in the UK was also highly requested. One particularly useful suggestion was to bring back the “anti-prescription” sheets as a digital template that prescribers can print out on FP10 prescription paper with information on when you don’t require a prescription or “when not to worry” information.

It should be noted that the YouTube videos were not linked on the DH resource page, and that the download links for the same videos were not utilised, this may indicate that people want the convenience of streaming rather than downloading videos. Although the YouTube videos had a significant increase in views (Table 1), the number of downloads remains low. This may suggest that those accessing the videos were aware of them from previous years.

An assessment of highly requested and used resources should be undertaken for EAAD 2014. It might be that further simplification of the published resource page is necessary with the addition of a global messages category. Alternatively, a more public facing website can be used which highlights these messages both personally and locally, and within the broader global picture.

Table 3: Summary of measurable key process outcomes from 2011 – 2013.

EAAD Measurable Key Process Outcomes			
	2011	2012	2013
Professional Organisations	30	36	43
Publications	11	11	37
Bulletins	3	7	36
Website Page Views 04 Oct – 31 Dec			
DH Resources	2 230	2 221	23 793
e-Bug.eu	143 642	227 052	222 698
NHS Choices	9 040	13 589	18 821

Table 4: Overview of 2013 Objectives

2013 Expected Outcomes	Result
Increase uptake of online and hardcopy materials to promote antibiotic resistant messages at a local level in line with last year, with an increased emphasis on online materials.	Achieved: DH policy mandated that materials are to be sent out exclusively online. This makes determining the true number of resources downloaded and used impossible to measure.
Increased public and enhanced professional understanding of when antibiotics are not appropriate, especially in key primary care settings	Cannot be assessed: tools are not in place to properly assess public understanding at this time.
Reduced national levels of inappropriate/imprudent prescribing	Achieved: The data obtained from NHS BSA shows that since 2008, there has been a year on year reduction in the prescriptions for quinolones and cephalosporins (19% and 54% respectively), however prescription for co-amoxiclav has increased over the same period (5%). Compared to 2012, prescriptions for cephalosporins, quinolone and co-amoxiclav have reduced by 10%, 2% and 2.5% respectively.
Articles in at least 13 key journal, professional bodies bulletin or Newsletter publications	Achieved: There were 37 publications in 9 peer-reviewed journals. In addition, there were also 36 bulletins from NHS bodies or professional organisations. A total of 73 publications.

EAAD activities from at least 10 key professional bodies	Achieved: This year there were 41 professional bodies who had participated in EAAD planning and activities.
Over 2,500 visits to the Antibiotic Awareness pages of the NHS Choices	Achieved: Table 3. NHS Choices had 18 821 hits from 04 October – 31 December 2013.
Build on the media coverage received last year with a focus on the use of local and regional press.	Not achieved: This year had increased national media coverage from last year, but regional and local coverage was limited.
Identify and collate at least 1 spokes people for each region	Achieved: There was involvement from at least one trust or organisation within every single England Area Team with the exception of Wessex Area Team.
Have at least one secondary care and primary case study from multiple area teams	Achieved: New case studies were provided by several local area teams and made available as part of the EAAD materials for 2013.
Extend the promotion of EAAD to engage veterinary colleagues	Achieved: Several veterinary bodies became involved with EAAD this year. Notable mentions include the VMD, BVA and BMF, covering pet owners, veterinarians and livestock owners.
EAAD to feature in at least 2 veterinary journals and magazines with focus on animal keepers.	Achieved: This year had significant veterinary involvement, this success was furthered by six publications in two veterinary journals and several articles written for magazines targeted a pet owners.
Uptake of bank of crosswords/quizzes for use with patients and the general public. Quizzes and crosswords specifically for healthcare professionals will also be considered.	Achieved: Based on feedback from the EAAD Evaluation survey, the quizzes and crosswords were well received and widely used during display stands to help engage with patients and educate staff.
Increased uptake of E-bug competition compared to previous 2 years.	Not achieved: e-Bug experienced a higher volume of traffic on and around EAAD compared to 2012, but had a slight reduction in traffic overall from last year. The number of entries into the competition was disappointing. It has been suggested that further promotion or visibility of e-Bug is necessary in the future.

6.0 Conclusions and Recommendations

6.1 Conclusion

EAAD reached a greater audience both online and offline than in previous years, which is impressive as there was no budget. There was a substantial increase in the number of publications, engagement with the public, and the uptake of materials. Furthermore, this was the first year of significant engagement with the veterinary sector, with targeted messages for veterinarians and pet or livestock owners. Some activities which were particularly successful for engaging the public and professionals were the Thunderclap and Antibiotic Action campaigns, the Lancet and JAC EAAD special edition releases and the PHE “green snot” press release. A large number of trusts reported using the DH materials to set up information booths and displays on EAAD which were reported to be highly successful in engaging with patients and public. The quizzes and crosswords, both new materials, were highly useful for stimulating discussions around the topic of antimicrobial resistance and awareness.

EAAD historically has been focused on raising awareness, to encourage and motivate behaviour change. Behavioural change is a key objective for EAAD in the future to align with the UK five-year AMR strategy. Therefore extensive strategy and planning will be required with a focused target group and message for the upcoming year. Future consideration is required on how to best evaluate reach of online distribution of materials and messages and to quantify public and professional engagement. This is difficult to do with the tools currently in place.

This was the final year that EAAD will be run by the Department of Health. EAAD will henceforth be under the remit of Public Health England, and any recommendations taken forward will be considered for future strategy and outputs.

PHE would like to express their appreciation for the hard work of the DH in building an extensive public and professional reach and leading EAAD in the UK for the past 15 years. PHE aims to build on these successes and continue to promote the importance of appropriate antibiotic use by building on this solid foundation. PHE would like to thank all professional bodies and organisations for taking part and completing the evaluation.

6.2 Recommendations

Table 5: PHE recommendations for EAAD 2014 based on the 2013 evaluation and feedback.

Recommendation for EAAD 2014	Rationale
<p>Develop a strategy for monitoring implementation and a measurable outcome evaluation of public behavioural changes around antibiotic usage.</p>	<p>Evaluating behaviour change is difficult. Working with partner organisations with clear outcome measures ahead of time may make this a more feasible task.</p>
<p>2. Develop a clear and succinct set of messages that can be shared and used for unified online activity by all participating bodies across human and veterinary medicine. For social media messages use easily identifiable hashtags that highlight EAAD in 2014, England or UK.</p>	<p>There was considerable feedback requesting a unified online message or tweet(s) to send out across the UK both in the time upcoming and on the day of EAAD. Furthermore, there was difficulty at times separating the #EAAD hashtags from other countries also using it.</p>
<p>3. Use eye catching press releases aimed at the public to further national media interest in EAAD.</p>	<p>Building upon the success of the “green snot” PHE press release, there should be interest in creating a similar message which can garner further national media attention.</p>
<p>4. New resources could include: “anti-prescriptions” and an infographic that illustrates the resistance data over time with a comparison of UK to Europe or global data trends.</p>	<p>Evaluation survey feedback requested a review of the online resources with requests to bring back prescription-paper printable “anti-prescription” pads. There were also several requests for new posters for public displays.</p>
<p>5. Investigate centralised printing capabilities for trusts so they can order materials to be printed professionally using higher quality paper and ink.</p>	<p>Organisers of EAAD events at hospitals would like a central place from which to order professionally printed leaflets and materials as self-printed materials may seem less professional by the public.</p>
<p>6. Liaise with NHS Choices editorial teams and gov.uk web teams to publish resources and links between the two platforms as appropriate.</p>	<p>Gov.UK resource pages are aimed at professionals, and do not feature resources for the public. Branded resources will be published on gov.uk. NHS Choices will post public facing content that does not include any PHE branding.</p>

Annex A: Professional Bodies and Stakeholders (non NHS) Distribution List

1. Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI)
2. ARHAI Antimicrobial Pharmacist Network
3. Association of Anaesthetists of Great Britain and Ireland (AAGBI)
4. Bella Moss Foundation (BMF)
5. British Infection Association
6. British Medical Journal (BMJ)
7. British Orthopaedic Association
8. British Paediatric Allergy, Immunology and Infectious Diseases Group (BPAIIG)
9. British Society for Antimicrobial Chemotherapy (BSAC)
10. British Veterinary Association (BVA)
11. Care Quality Commission (CQC)
12. Centre for Postgraduate Education (CPPE)
13. Chartered Society of Physiotherapists
14. College of Podiatrists
15. Department for Environment, Food and Rural Affairs (DEFRA)
16. Department of Health (DH)
17. Faculty of General Dental Practice UK
18. Health Improvement Scotland
19. Healthcare Infection Society (HIS)
20. Infection Prevention Society
21. National Pharmacy Association
22. National Prescribing Centre
23. NHS Business Services Authority (NHSBSA)
24. NHS Information Centre
25. Northern Ireland Antimicrobial Pharmacist Network
26. Patients' Association
27. PHE/Royal College of Physicians (RCP)
28. Primary Care Pharmacist
29. Public Health England (Admin, AMRS & HCAI, Communications, Pharmacist Lead, Primary Care Unit, Support)
30. RCGP/NHS Connecting for Health
31. Royal College of General Practitioners (RCGP)
32. Royal College of Midwives (RCM)
33. Royal College of Nursing (RCN)
34. Royal College of Paediatrics and Child Health (RCPCH)
35. Royal College of Pathologists (RCPATH)
36. Royal College of Physicians (RCP)
37. Royal Pharmaceutical Society (RPS)
38. Royal Pharmaceutical Society of Great Britain (RPSGB)
39. Scottish Antimicrobial Prescribing Group
40. Scottish Medicines Consortium
41. The Company Chemists' Association
42. United Kingdom Clinical Pharmacy Association (UKCPA)
43. Veterinary Medicines Directorate (VMD)

Annex B: Professional Engagement: Editorials and Journal Articles Published for EAAD 2013

Editorials and articles were used to raise and maintain professional awareness. Thirty-seven editorials or articles were published in nine peer-reviewed journals to make professionals aware of EAAD:

1. Aldeyab MA, Kearney MP, Scott MG, Aldiab MA, Alahmadi YM, Darwish Elhajji FW, et al. An evaluation of the impact of antibiotic stewardship on reducing the use of high-risk antibiotics and its effect on the incidence of *Clostridium difficile* infection in hospital settings. *Journal of Antimicrobial Chemotherapy* 2012 December 01;67(12):2988-2996.
2. Antimicrobial resistance: Antimicrobial resistance: resources for vets and owners. *Veterinary Record* 2013; 173:461.
3. Antimicrobial resistance: EMA reflects on the risk of transferring resistance from pets to people. *Veterinary Record* 2013;173:462
4. Antimicrobial resistance: getting the message across. *Veterinary Record* 2013; 173: 461.
5. Antimicrobial resistance: Tackling antimicrobial resistance: the need for global commitment. *Veterinary Record* 2013; 173: 466-467.
6. Ashiru-Oredope D, Newton J. Pharmacists and Public Health. *The Pharmacist* 2013 Autumn/Winter Edition: 25-26.
7. Ashiru-Oredope D, Susan Hopkins on behalf of the English Surveillance Programme for Antimicrobial Utilisation and Resistance Oversight Group. Antimicrobial stewardship: English Surveillance Programme for Antimicrobial Utilisation and Resistance (ESPAUR). *Journal of Antimicrobial Chemotherapy* 2013 November 01;68(11):2421-2423.
8. Blommaert A, Marais C, Hens N, Coenen S, Muller A, Goossens H, et al. Determinants of between-country differences in ambulatory antibiotic use and antibiotic resistance in Europe: a longitudinal observational study. *Journal of Antimicrobial Chemotherapy* 2013 September 29. Available at: <http://jac.oxfordjournals.org/content/early/2013/09/27/jac.dkt377.full>.
9. Chandy SJ, Thomas K, Mathai E, Antonisamy B, Holloway KA, Stalsby Lundborg C. Patterns of antibiotic use in the community and challenges of antibiotic surveillance in a lower-middle-income country setting: a repeated cross-sectional study in Vellore, south India. *Journal of Antimicrobial Chemotherapy* 2013 January 01; 68(1):229-236.
10. Coenen S, Gielen B, Blommaert A, Beutels P, Hens N, Goossens H. Appropriate international measures for outpatient antibiotic prescribing and consumption: recommendations from a national data comparison of different measures. *Journal of Antimicrobial Chemotherapy* 2013 October 01. Available at: <http://jac.oxfordjournals.org/content/early/2013/09/30/jac.dkt385.full>.
11. Dewar S, Reed LC, Koerner RJ. Emerging clinical role of pivmecillinam in the treatment of urinary tract infection in the context of multidrug-resistant bacteria. *Journal of*

Antimicrobial Chemotherapy 2013 September 25. Available at: <http://jac.oxfordjournals.org/content/early/2013/09/24/jac.dkt368.full>.

12. Dyar OJ, Pulcini C, Howard P, Nathwani D, on behalf of ESGAP, (the ESCMID Study Group for Antibiotic Policies). European medical students: a first multicentre study of knowledge, attitudes and perceptions of antibiotic prescribing and antibiotic resistance. *Journal of Antimicrobial Chemotherapy* 2013 November 04. Available at: <http://jac.oxfordjournals.org/content/early/2013/11/03/jac.dkt440.full>.
13. Earnshaw S, Mendez A, Monnet DL, Hicks L, Cruickshank M, Weekes L, et al. Global collaboration to encourage prudent antibiotic use. *The Lancet Infectious Diseases* 2013 12;13(12):1003-1004.
14. Eldridge, S. European Antibiotics Awareness Day – how nurses can help. *The Veterinary Nurse* 2013; 4(9): 576.
15. Fleming N, Ashiru-Oredope D, Harris D. The antibiotics battle. *Chemist and Druggist* 14 November 2013. Available at: http://www.chemistanddruggist.co.uk/feature-content/-/article_display_list/16619388/the-antibiotics-battle.
16. Ghafur A. Perseverance, persistence, and the Chennai declaration. *The Lancet Infectious Diseases* 2013 12; 13(12):1007-1008.
17. Gyansa-Lutterodt M. Antibiotic resistance in Ghana. *The Lancet Infectious Diseases* 2013 12;13(12):1006-1007.
18. Hansen S, Sohr D, Piening B, Pena Diaz L, Gropmann A, Leistner R, et al. Antibiotic usage in German hospitals: results of the second national prevalence study. *Journal of Antimicrobial Chemotherapy* 2013 December 01; 68(12):2934-2939.
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Annex C: Public and Professionals Engagement: 2013 EAAD Bulletins

This year 36 bulletins were posted openly online to help raise public and professional awareness of EAAD. In 2012 there were eight bulletins posted online for EAAD. This is a 450% increase in bulletins from last year.

1. Airedale NHS Foundation Trust. For coughs and colds, antibiotics are not what the doctor ordered.
2. British Society of Antimicrobial Chemotherapy. NICHE Campaign.
3. Central Manchester University Hospitals NHS Foundation Trust. European Antibiotic Awareness Day (EAAD).
4. Cumbria CCG. Antibiotics only effective when you need them.
5. Dartford, Gravesham and Swanley CCG. European Antibiotic Awareness Day.
6. Dorset CCG. Medicine Managements Team Bulletin.
7. Greater Preston CCG. Dr Ann Bowman. Residents in Greater Preston asked to support European Antibiotic Awareness Day.
8. Holme-Bubwith Medical Group. About antibiotic awareness.
9. Infection Prevention Society. Weekly Digest 20 September 2013.
10. International Scientific Forum on Home Hygiene. IFH Newsheet October 2013: Antibiotic Awareness Day November 18th 2013.
11. IS Global. 7 Facts on Antibiotic Resistance.
12. Journal of Antimicrobial Chemotherapy. Dr Donna Lecky. Worn out wonder drugs.
13. Lewisham CCG. Antibiotic Awareness.
14. Mid Essex Hospital Service Trust. Trust Staff Mark European Antibiotic Awareness Day!
15. NHS Central and North West London Foundation Trust. Naomi Flemming. Keep Antibiotics Working.
16. NHS Choices. The Antibiotics Awareness Campaign.
17. NHS England. Chief Nursing Officer. CNO Bulletin October 2013: Get Ready

for European Antibiotic Awareness Day – 18th November.

18. NHS England. Dr Mike Bewick. GP Practise and Team Bulletin: Get Ready for European Antibiotic Awareness Day – 18th November.
19. NHS Fife. European Antibiotic Awareness Day (EAAD).
20. NHS Grampian. Dr Ian Gould. Cold and Flu Bugs - Antibiotics Won't Work.
21. NHS Grampian. European Antibiotic Awareness Day - 18th November.
22. NHS National Services Scotland. Patients urged to resist antibiotics.
23. NHS Networks. Launch of antibiotic awareness campaign.
24. NHS Wales. European Antibiotic Awareness Day.
25. Nottingham City CCG. Mindy Bassi. Have Your Say.
26. Royal College of General Practitioners. Clinical News Bulletin
27. Scottish Medicines Consortium. European Antibiotic Awareness Day.
28. Self-Care Forum. European Antibiotic Awareness Day (EAAD).
29. Self-Care Forum. Treat yourself better without antibiotics campaign launches.
30. Sheffield CCG. Antibiotics Awareness Day.
31. West Cheshire CCG. Its Antibiotic Awareness Day 18th November.
32. West Lancashire CCG. Dr Simon Frampton. European Antibiotic Awareness Day.
33. West Leicestershire CCG. Dr Darren Jackson. Antibiotics not the only answer.
34. West Suffolk CCG. Dr Rosie Frankenberg. Antibiotics are not a miracle cure.
35. WHO Europe. European Antibiotic Awareness Day 2013: everyone is responsible
36. Wirral CCG. Antibiotic Awareness Day – Monday 18th November 2013.

Annex D: Key Website Page View Traffic

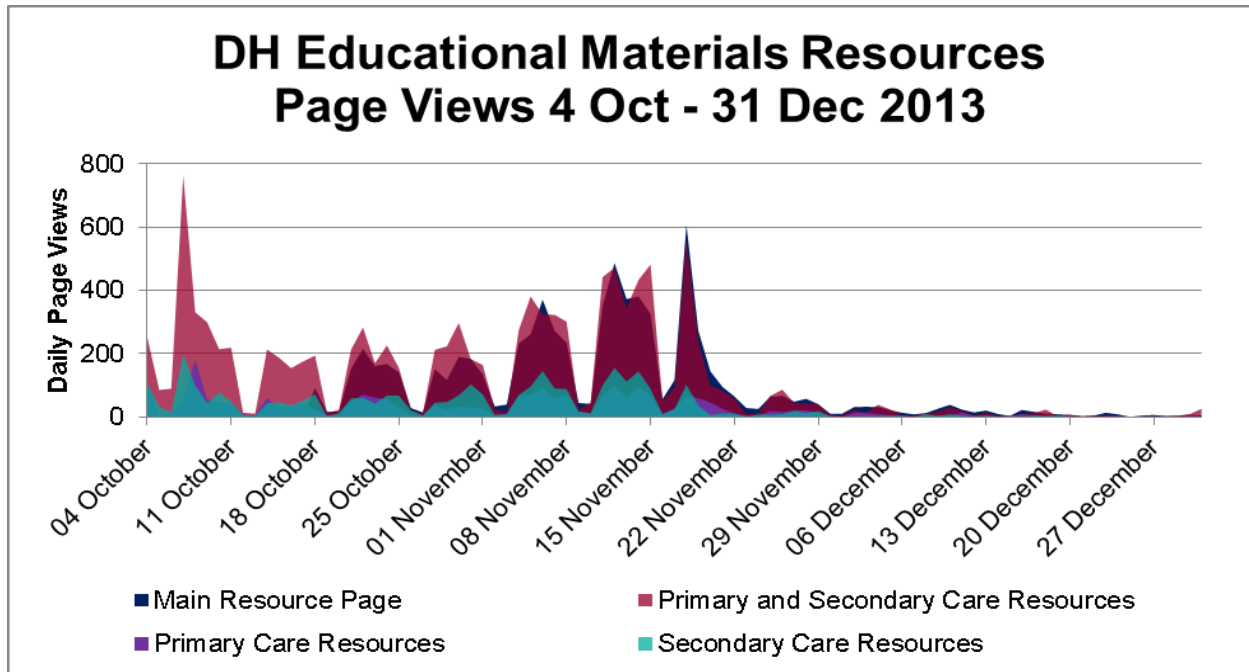


Figure 10: Breakdown of page views by resource target categories for EAAD 2013 Resources Material hosted on the new Gov.UK website. The video and audio files were not viewed.

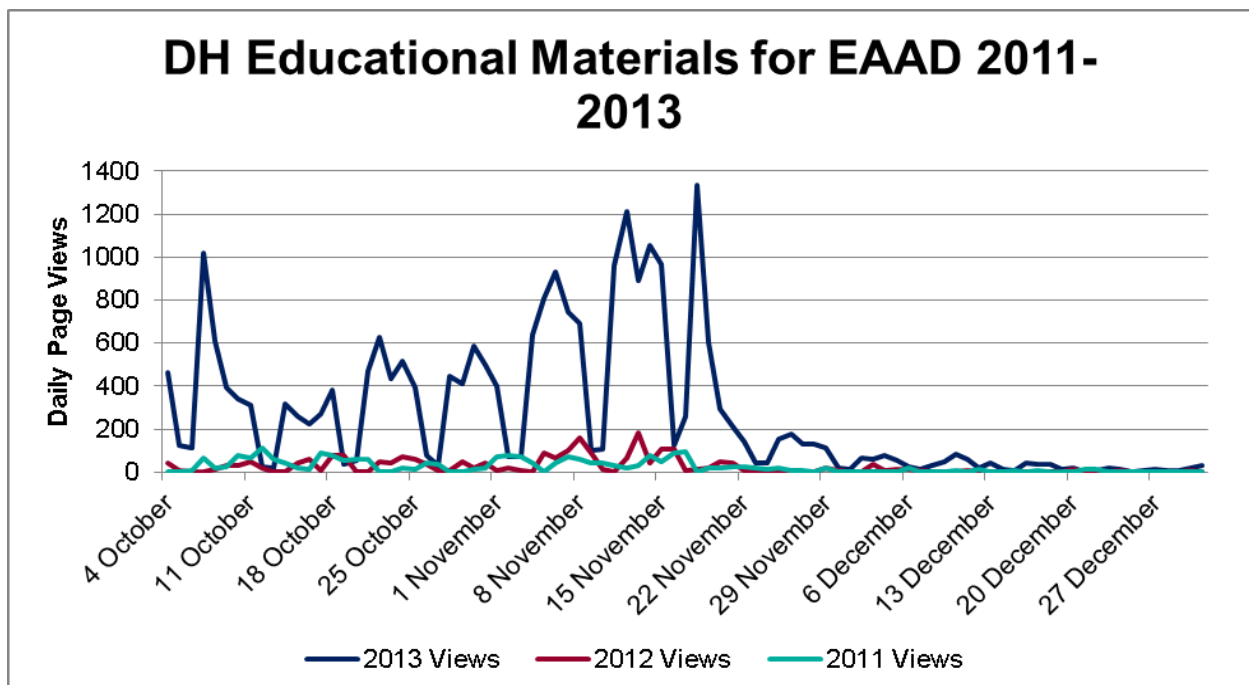


Figure 11: Comparison of DH resource page views 2011 - 2013. This was the first year that materials were offered exclusively online, which may attribute for the massive differences in web traffic. This year the resources were also hosted on the new Gov.UK website.

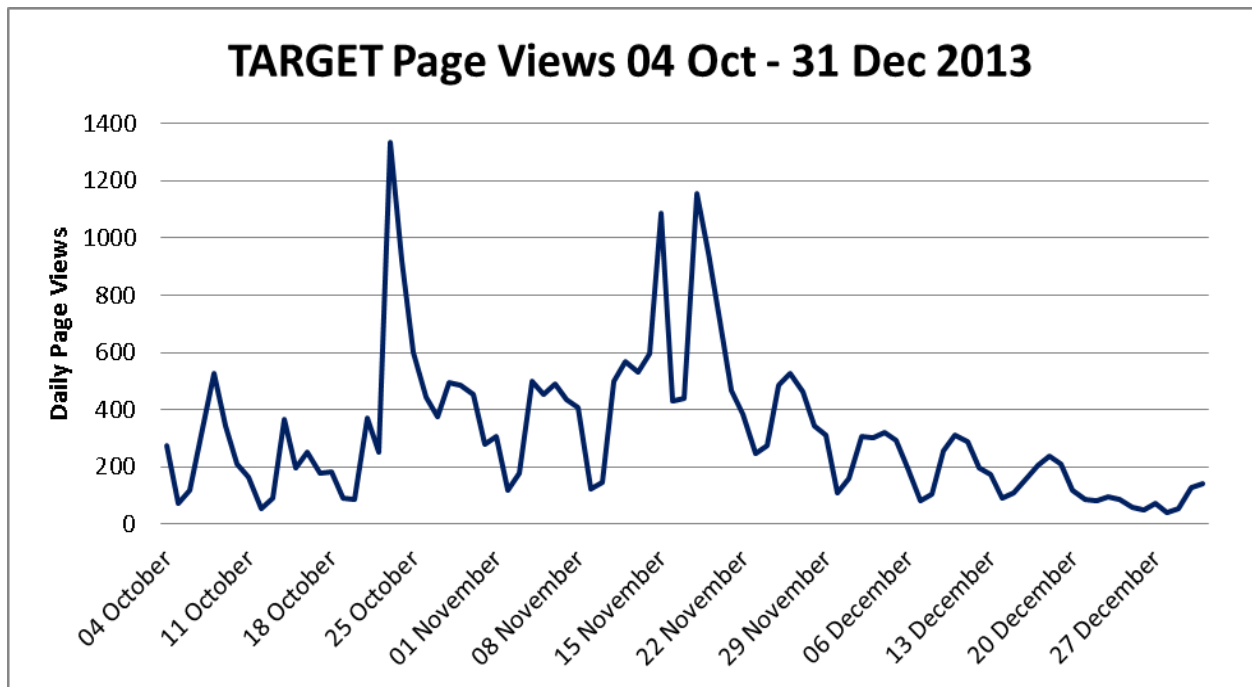


Figure 12: TARGET page views 2013, previous year comparison unavailable.

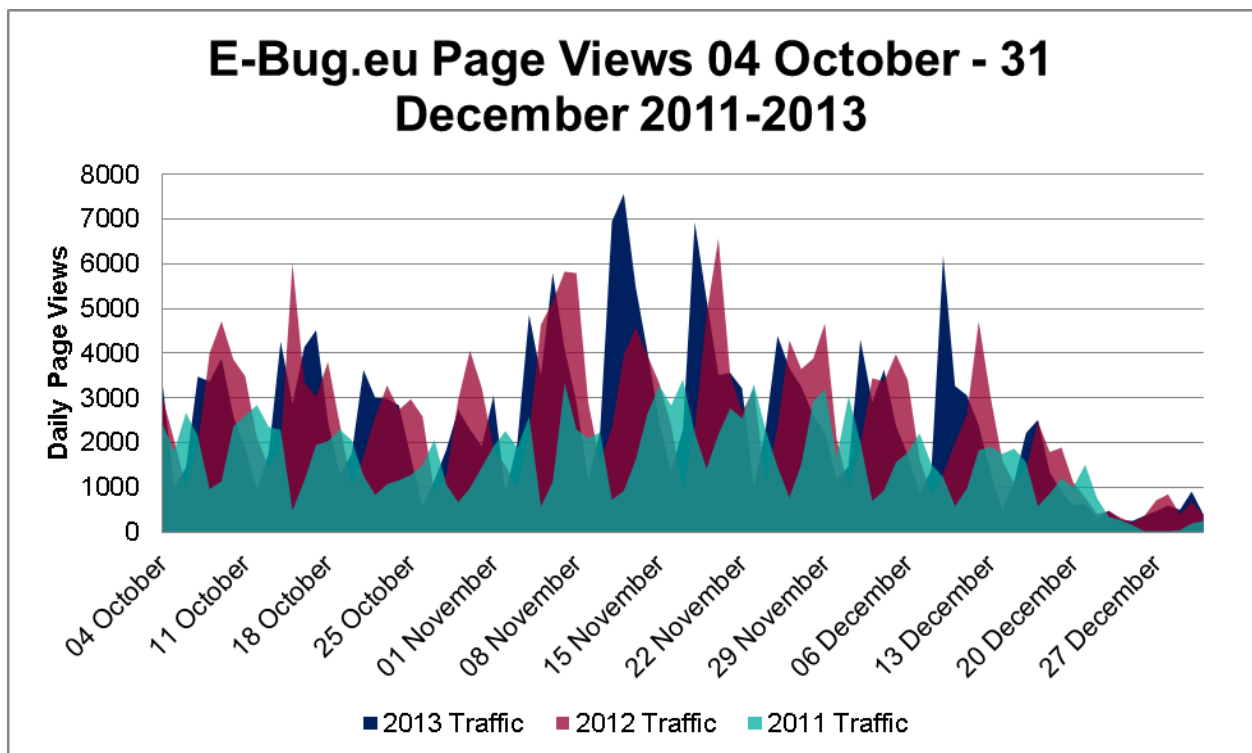


Figure 13: e-bug.eu comparison of page views 2011 – 2013, there has been a noticeable increase in traffic around EAAD over the past three years.

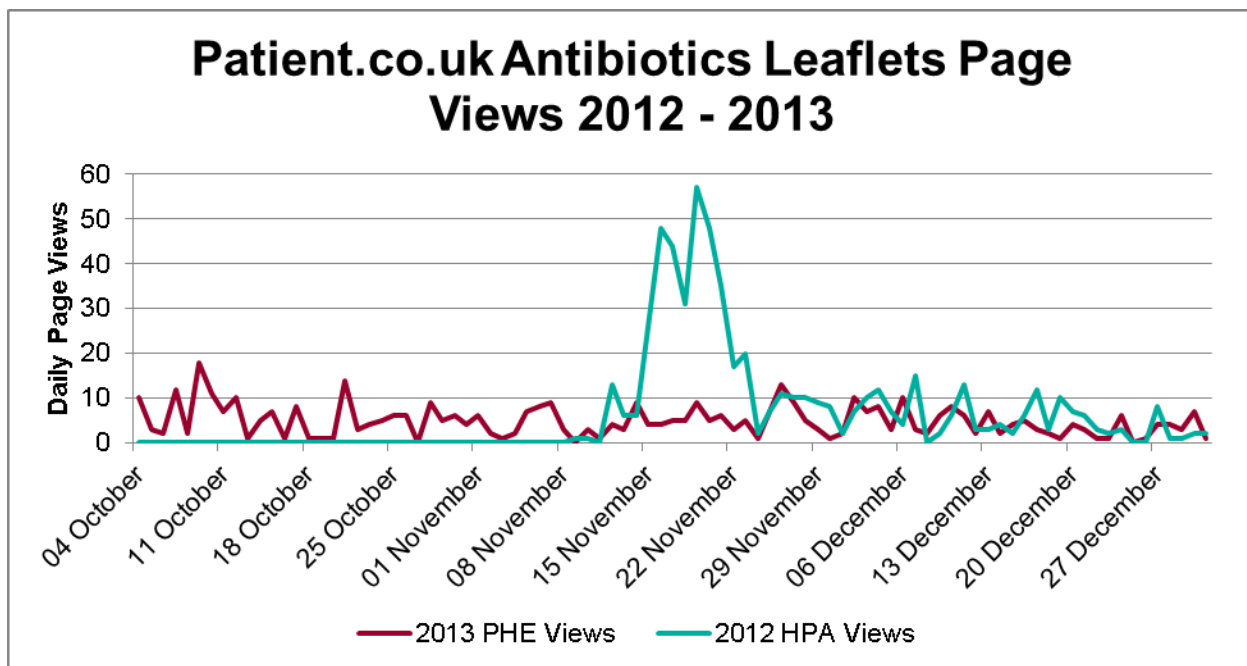


Figure 14: Comparison of page views for 2012 and 2013. The website was launched the week prior to EAAD 2012.

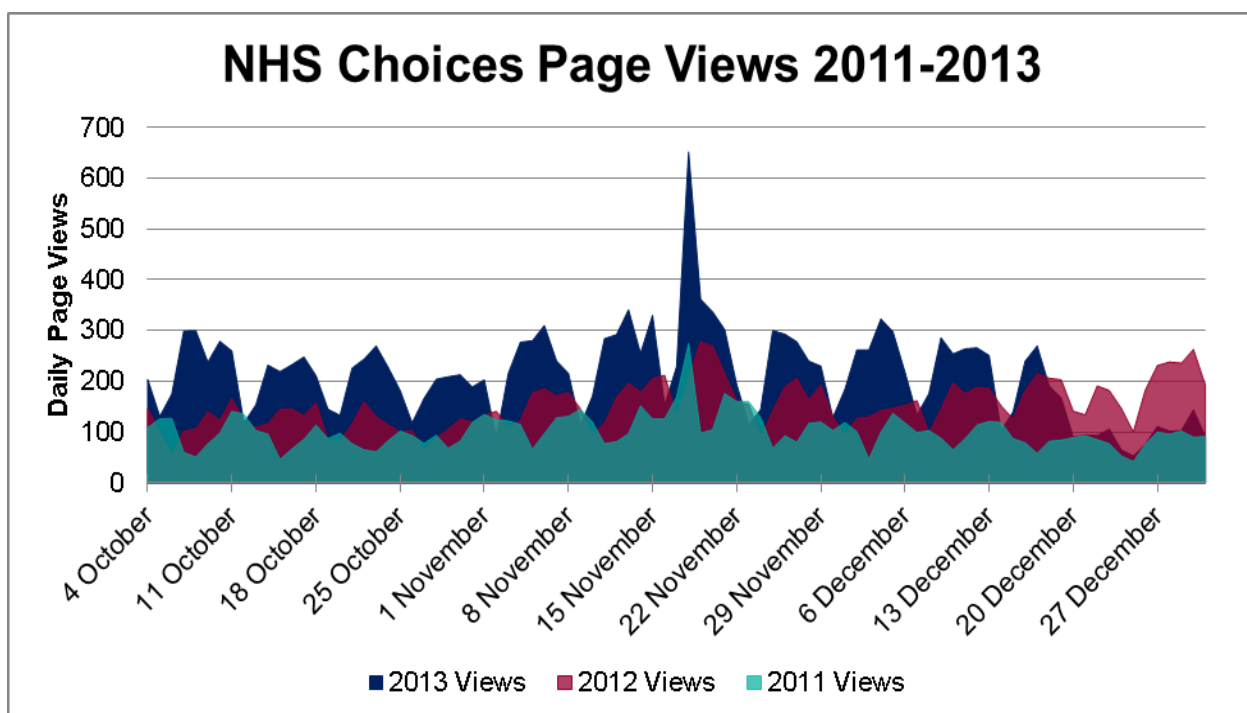


Figure 15: Increase in page views from 2011 – 2013, NHS Choices Antibiotics Awareness page.

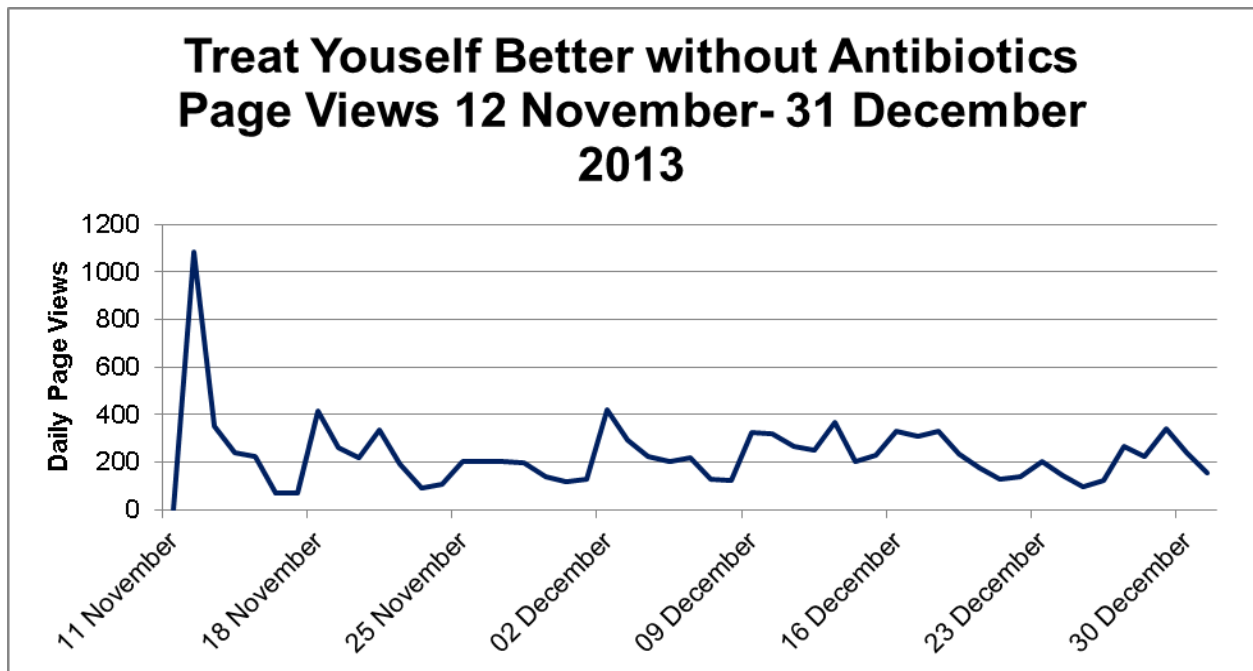


Figure 16: TreatYourselfBetter.co.uk website launched on 12 November 2013 in preparation for EAAD (18 November).

Annex E: EAAD Evaluation Survey

A full archived version of the survey can be found at:

https://surveys.phe.org.uk/TakeSurvey.aspx?SurveyID=EAAD2013_ARCHIVE

Annex F: EAAD Activity Database

[Click here to download the excel database of activities](#)

Annex G: EAAD Highlights Slideshow

[Click here to download the highlights slideshow](#)