



Healthcare
Improvement
Scotland

Community
engagement

Our Voice Citizens' Panel

Survey on awareness of antibiotic resistance,
appropriate use of antibiotics and related public
health campaigns

September 2020

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Foreword

Welcome to the sixth survey report of the Our Voice Citizens' Panel for Scotland. The report focuses on what the Scottish public think of antibiotic resistance, access and use of antibiotics, self-limiting infections and the impact of public health campaigns.

The Our Voice Citizens' Panel is one way that health and social care services in Scotland can listen to the views of the Scottish public – and, having listened, make improvements to the services they provide.



The results will support the work of the Scottish Antimicrobial Prescribing Group (SAPG) which is committed to using the results to help engage with and inform patients and the public about responsible antibiotic use. It is important to point out, however, that the survey was conducted before the Coronavirus pandemic impacted in Scotland so care will be taken to interpret and digest these results, within the changed context, before implementing any actions to address the findings.

I would like to thank the individuals who have volunteered to be part of the Panel, who together make up a representative 'slice' of the population of Scotland. I would also like to thank our contractors, Research Resource, who helped to recruit new Panel members and conduct the survey and our topic sponsors, SAPG, for contributing to this Citizens' Panel survey.

I hope you find this report helpful.

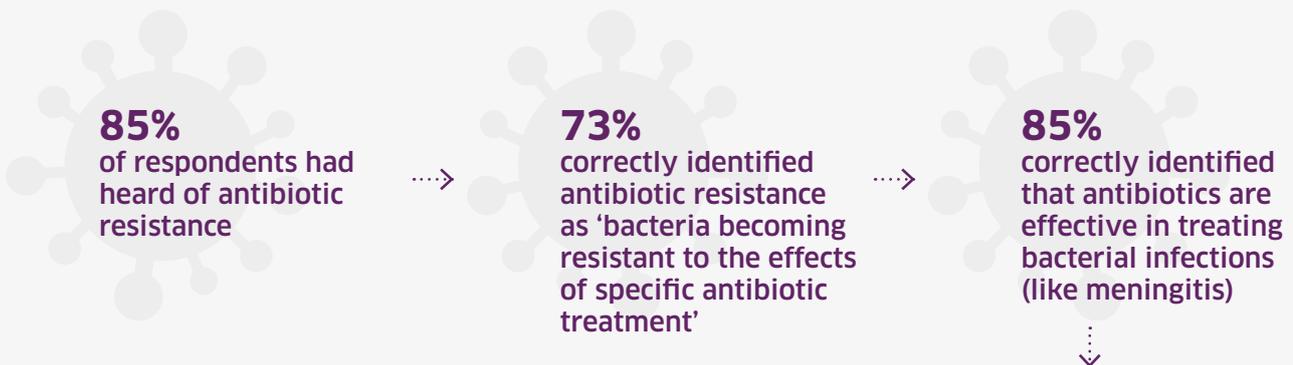
Suzanne Dawson
Chair, the Scottish Health Council

Our Voice Citizens' Panel

This infographic summarises the key findings from the sixth survey undertaken with the Our Voice Citizens' Panel which took place in January 2020. We asked questions about antibiotic resistance, access to and use of antibiotics, self-limiting infections and the impact of public health campaigns targeted at managing common infections.

In total, **599** Panel Members responded to the survey which represents a **52%** response rate. The results will support the work of the Scottish Antimicrobial Prescribing Group (SAPG) which is committed to using the results to help engage with and inform the public about responsible antibiotic use.

Antibiotic resistance

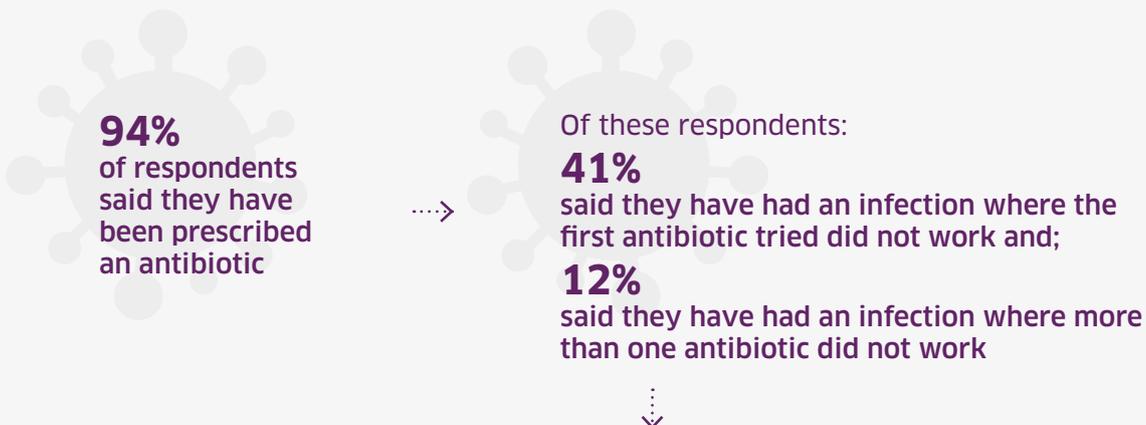


In terms of awareness of factors that contribute to antibiotic resistance:

- **92%** were aware of prescribing antibiotics when not required
- **61%** were aware of patients not completing a prescribed course of antibiotics
- **50%** were aware of incorrect antibiotic or dosage
- **38%** were aware of the use of antibiotics to promote growth in animals
- **18%** were aware of contamination of water from human or animal waste



Personal experience of using antibiotics



Those who said they were prescribed an antibiotic which did not work in the first instance were asked why this was the case. The top three reasons provided were:

- Not the right type of antibiotic for infection (**41%**)
- Was not strong enough (**21%**)
- Don't know (**19%**)



Self-limiting infections

SAPG sought Panel Members' views on self-limiting infections. These are described as being infections that will clear up on their own and how these should be treated.



The majority of respondents correctly **agreed** with the following:

- Symptoms of self-limiting infections can be helped by resting, drinking fluids and taking paracetamol (94%)
- The common cold is a self-limiting infection (81%)
- Self-limiting infections will get better without antibiotics (76%)
- Using antibiotics for self-limiting infections contributes to antibiotic resistance (71%)

The majority correctly **disagreed** with the following:

- A sore throat **is not** self-limiting and needs antibiotic treatment (67%)
- Pneumonia **is** a self-limiting infection (64%)

In relation to ear infections in young children, 42% of respondents said these are rarely self-limiting so antibiotics should be used, 10% disagreed, 16% neither agreed nor disagreed and 33% were uncertain. Ear infections are usually self-limiting in young children and the correct response was to disagree with antibiotic use.

The impact of public health campaigns

Keep antibiotics working

- 57% of respondents had seen the campaign
- The GP or health centre was the most common place people had seen this information (43%)
- In terms of obtaining information about antibiotics:
 - 90% of respondents obtain information from qualified healthcare professionals such as a doctor, nurse or pharmacist
 - 43% from antibiotic packaging leaflets
 - 35% from online NHS sources
 - 30% from public awareness campaigns
- In terms of how respondents assess the reliability of the information they receive:
 - 28% stated that they only consult professionals e.g. pharmacist, doctor, nurse
 - 28% stated they trust NHS sources
 - 20% stated that they trust their GP's knowledge

Spotting the signs of dehydration

- 37% of respondents were aware of the 'Spotting the signs of Dehydration' campaign which seeks to highlight the importance of staying hydrated to minimise the risk of developing a urinary infection and maintaining good health
- The most popular place to have observed this message was at GP or health centres (24%)
- In terms of fluid consumption, responses ranged from 1 litre to 10 litres with a mean score of 2.36 litres.
- This indicates that people are aware of how much fluids they should be consuming (the recommended amount is to drink 6-8 mugs of fluid, the equivalent to roughly 1.5-2litres, although this varies according to heat, activity, wellness)
- Almost all respondents knew if they were well hydrated their urine would be light in colour (97%) and that if they were dehydrated their urine would be dark in colour (96%)

Pharmacy first services

- 54% of respondents were aware of the "Pharmacy First" service which provides treatment of common infections via pharmacies
- More than 1 in 4 respondents (27%) had used the service
- 87% were comfortable seeking advice from a pharmacist
- 89% were comfortable taking the advice they had been given from the pharmacist
- 72% were comfortable taking antibiotic treatment prescribed by a pharmacist



Chapter 1: Introduction and context

Background and context

Research Resource was commissioned by Healthcare Improvement Scotland – Community Engagement¹ as part of ‘Our Voice’ – (a partnership involving Healthcare Improvement Scotland, public partners, the Health and Social Care Alliance Scotland (the ALLIANCE), the Convention of Scottish Local Authorities (COSLA) and the Scottish Government - to recruit a nationally representative Citizens’ Panel.

The Our Voice Citizens’ Panel was established in 2016 to be nationally representative and has been developed at a size that will allow statistically robust analysis of the views of the Panel members at a Scotland-wide level. The Panel members were randomly selected from the general population and invited to join the Panel. Some targeted recruitment also took place in order to ensure that a representative Panel was recruited. The Panel has been designed to be broadly representative of the Scottish population.

The Panel was refreshed with new Panel members in early 2019. The refresh replaced Panel members that either did not want to continue being members, or that had not responded to previous surveys. At the time of this survey in 2020, there are 1,148 Panel members spread across each and every Integration Authority and NHS territorial Board across Scotland.

This report details the findings from the sixth Panel survey which aimed to gather the views of the general public to help improve health care services and social care services in Scotland. The survey was developed in collaboration with HIS –Community Engagement Directorate and the Scottish Antimicrobial Prescribing Group (SAPG), part of the Evidence Directorate in Healthcare Improvement Scotland (HIS).

Questionnaire design

The first section of the questionnaire focused on antibiotic resistance. For instance, the panel members were asked about awareness of this terminology, for opinions on the effectiveness in treating various infections with antibiotics and about the factors that contribute to antibiotic resistance.

The next section of the questionnaire followed on from this by asking Panel members about how they access and use antibiotics. For example, panel members were asked where people seek advice on treatment when they or a family member feels unwell with flu like symptoms. Opinion was sought on how comfortable people would feel purchasing antibiotics from online pharmacies and shops whilst abroad, about their experiences of antibiotics not working and also about what they do with old or unused antibiotics.

¹ As of 1 April 2020 Healthcare Improvement Scotland – Community Engagement became the operating name of the Scottish Health Council

The third section of the questionnaire focused on self-limiting infections (infections that will clear up on their own) and how we should manage these.

The survey concluded with a section on sharing healthcare messages. This was of great interest to the SAPG who were keen to find out where public awareness materials have most impact and are noticed most. Panel members were asked about where they may have seen messages relating to the 'Keep Antibiotics Working' campaign and also the 'Spotting Signs of Dehydration' campaign. We asked Panel members about their daily fluid intake and about their awareness of dehydration indicators. Finally, the survey asked about awareness and use of the 'Pharmacy First' service which provides treatment of common infections via community pharmacies.

A copy of the final questionnaire is available in Appendix 1.

Response rates and profile

At the time of writing this report, the Our Voice Citizens' Panel has a total of 1,148 members. The sixth Our Voice Citizens' Panel survey was sent by email on 18th December 2019 to all 951 Panel members for whom we have email addresses. On 6th January 2020 survey packs were sent to all Panel members for whom we have no email addresses and those from whom a bounce back email message was received. A further 3 reminder emails were sent to those who had not yet responded by email between 6th January and 24th January. On 27th January additional postal surveys were delivered to Panel members who had not yet responded to the survey. Postal responses continued to be accepted up until the 27th February 2020.

A detailed analysis of the response profile identified that the survey was under-represented in terms of younger Panel members (defined as younger members aged 44 and under) and females. It was decided that a targeted telephone boost be undertaken in an attempt to increase the response from these under-represented groups. It was also noted that no minority ethnic Panel members responded to the survey therefore a total of 10 interviews were targeted specifically at this demographic group. A total of 100 telephone interviews were completed between the 12th and 27th February 2020.

This took the final response up to 599, a 52% response rate. This level of return provides data accurate to +/-4% (based upon a 50% estimate at the 95% level of confidence) at the overall Panel level.

Despite the attempts of the telephone boost, younger respondents and females were still under-represented. To ensure the data was representative by age and gender, survey data was weighted to adjust for this imbalance.

Full information on the response profile achieved and weighting can be found in Appendix 2.

Interpreting results

When reporting the data in this document, in general, percentages in tables have been rounded to the nearest whole number. Columns may not add to 100% because of rounding or

where multiple responses to a question are possible. The total number of respondents to each question is shown either as 'Base' or 'n=xxx' in the tables or charts. Where the base or 'n' is less than the total number of respondents, this is because respondents may be 'routed' passed some questions if they are not applicable.

All tables have a descriptive and numerical base, showing the population or population subgroup examined in it. Due to the self-completion nature of the survey, the base for each question varies slightly.

Open-ended responses have been coded into response categories in order that frequency analysis or cross tabulations can be undertaken of these questions. The process of coding open-ended responses begins with reading through the responses to get a feel for potential response categories. A list of thematic response categories is then created. These are known as 'codes'. The coding process then involves assigning each response to a code. Responses can be coded into multiple categories where more than one point is communicated. Response categories must be clear and easy for anyone reading the analysis to understand. To check the coding of open-ended responses, 10% of all responses are validated by a second person to check for any issues or errors.

Chapter 2: Antibiotic resistance

Introduction

Introduction

A key element of the work of the SAPG is to increase awareness and understanding amongst patients and the public of the problem of antimicrobial resistance (AMR), commonly known as antibiotic resistance, how it may impact on healthcare and how we can all help to preserve antibiotics. This has been the focus of annual campaigns each November since 2010 for European Antibiotic Awareness Day and since 2015 has been part of World Antibiotic Awareness Week. However further engagement of patients and the public is required and behavioural insights research suggests that different approaches are required to make these issues real and of personal relevance.

This survey aimed to explore public knowledge and understanding of these issues, their behaviours around seeking advice and using antibiotics as well as awareness of relevant public health campaigns. This will allow SAPG to target messages to address specific gaps in knowledge and misunderstandings around use of antibiotics.

1. Understanding antibiotic use and antibiotic resistance

In this section the SAPG aimed to gain more insight into what the public know about antimicrobial resistance, how antibiotic use influences antimicrobial resistance and whether they think that it is a current issue in Scotland.

2. Requesting and using antibiotics

The survey explored how people access advice about antibiotics and their personal experience and behaviours around using antibiotics.

3. Self-limiting infections

A key action to reduce unnecessary antibiotic use is to promote and support self-care for self-limiting infections. The SAPG aimed to explore peoples' understanding of which common infections are usually self-limiting and how they can manage symptoms themselves.

4. Sharing healthcare messages

Antibiotic awareness campaigns and also campaigns about hydration which can be a factor in urinary infections have been used to engage the public about important healthcare messages. In this section the SAPG wanted to explore whether and where people had seen these campaigns and whether they felt they were meaningful and helpful.

Awareness of antibiotic resistance

The survey began by asking Panel members if they had heard of antibiotic resistance. The vast majority (85%) said they had heard of antibiotic resistance, 11% had not heard of this and 4% were uncertain.

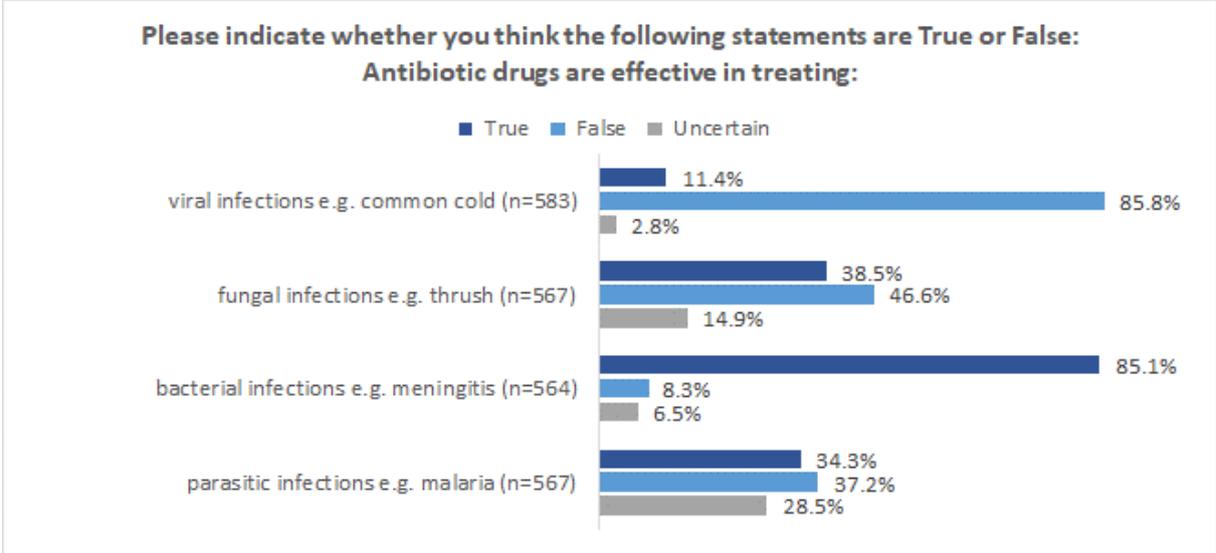
Describing antibiotic resistance

Following on from this, respondents were asked to select from a list of options which statements they believed described antibiotic resistance. Respondents were able to select more than one response. Over seven in 10 respondents (73%), correctly said this could be described by bacteria becoming resistant to the effects of a special antibiotic treatment and 60% correctly said it was where antibiotics become ineffective at treating common infections. Just under half of respondents (47%) incorrectly believed this was where an individual becomes resistant to a specific antibiotic treatment confirming that this is a common misperception. Only 4% of respondents said that none of these statements described antibiotic resistance.

Which of the following statements do you think describe "antibiotic resistance"?	
Weighted base, n=586	%
Bacteria become resistant to the effects of a specific antibiotic treatment	72.7%
Antibiotics become ineffective at treating common infections	59.5%
An individual becomes resistant to a specific antibiotic treatment	47.4%
None of the above	3.5%

Opinions on the effectiveness of treating various infections with antibiotic drugs

Respondents were provided with a list of statements and asked to rate whether they believed these to be true or false. The majority of respondents (85% answered 'true') were correctly in agreement that antibiotics were effective in treating bacterial infections such as meningitis. On the other hand, the vast majority disagreed that antibiotics were effective in treating viral infections (86% answered 'false'). With regards to antibiotics being effective at treating fungal infections, the responses weren't as clear cut with 39% stating this statement was true compared to 47% who said it was false and 15% being uncertain. This was also the case in relation to antibiotics being effective in treating parasitic infections, with 34% stating this was true compared to 37% who said it was false and 29% being uncertain.



Factors which have contributed to antibiotic resistance

Survey respondents were provided with a list of factors which have contributed to antibiotic resistance and asked which of these they were aware of. The vast majority were aware that prescribing antibiotics when not required (92%) has contributed to antibiotic resistance, followed by patients not completing a prescribed course of antibiotics (61%) and incorrect antibiotic or dosage (50%). Very few were aware of the contamination of water from human or animal waste being a factor (18%). All of these factors contribute to antibiotic resistance.

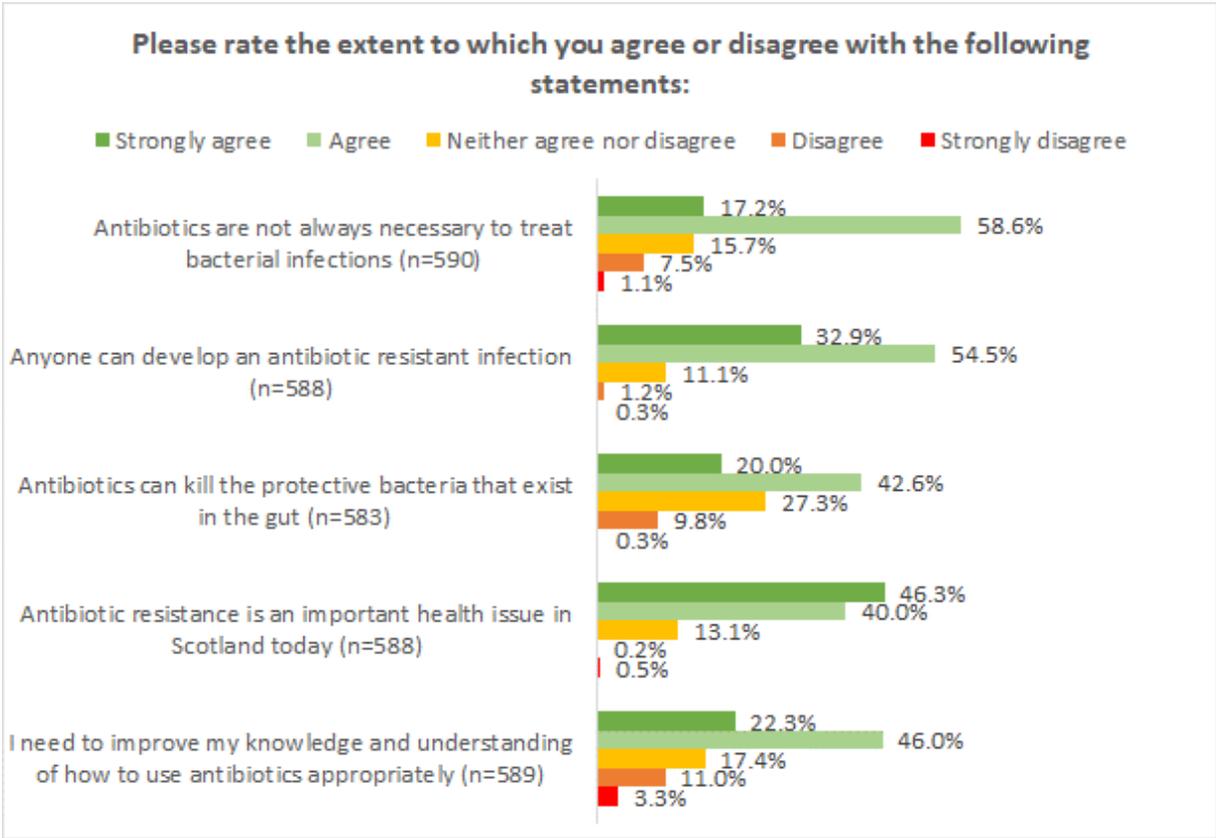
Which of the following statements do you think have contributed to antibiotic resistance? (please tick all that apply)	
Weighted base, n=586	%
Prescribing antibiotics when not required	91.7%
Patients not completing a prescribed course of antibiotics	61.3%
Incorrect antibiotic or dosage	49.5%
Use of antibiotics to promote growth in animals	37.6%
Contamination of water from human or animal waste	17.7%
Other cause	8.4%
None of the above	1.3%

Opinions on various statements relating to antibiotic resistance

The survey included a question which asked respondents to rate the extent to which they agreed or disagreed with various statements relating to antibiotic resistance. The level of agreement was highest in relation to the following statements:

- Anyone can develop an antibiotic resistant infection (87% agreed)
- Antibiotic resistance is an important health issue in Scotland today (86% agreed)

On the other hand, fewer respondents agreed that antibiotics can kill the protective bacteria that exists in the gut (63% agreed). The first four statements below are correct.



Where people seek advice on treatment for flu like symptoms

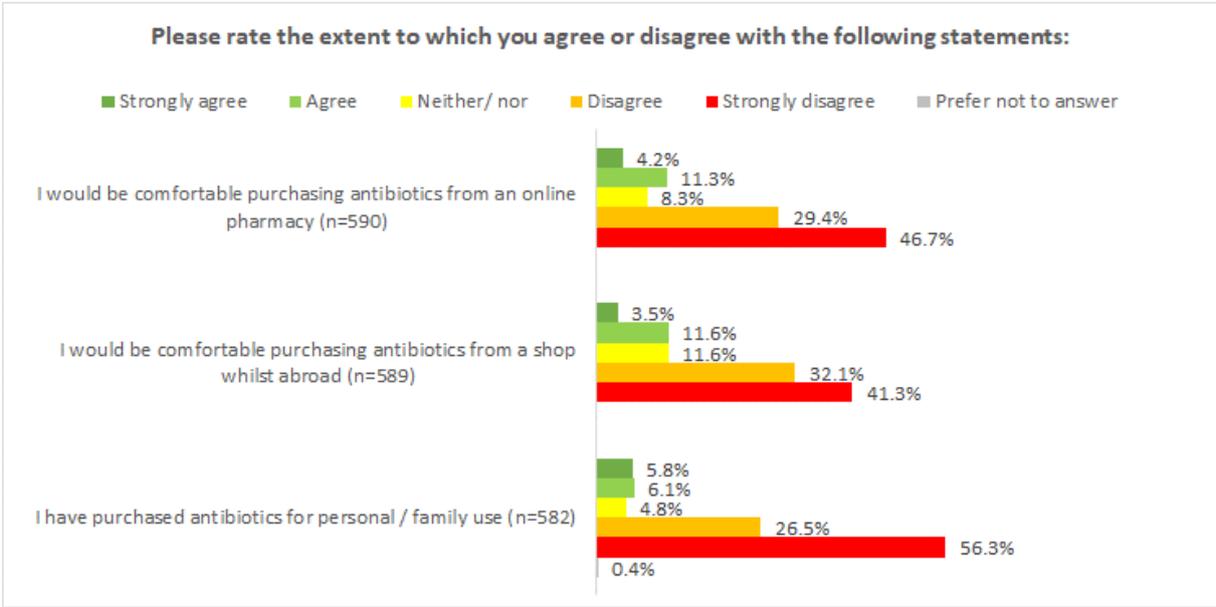
Over half of survey respondents said that when either themselves, or a family member feels unwell with flu like symptoms, they would seek advice or treatment from their pharmacist (53%), 30% would contact their GP and 22% would look online for advice. Just over a third of respondents said they would not seek advice on treatment for flu like symptoms (34%), although this may have changed due to COVID-19

When you or a family member feel unwell with flu like symptoms (coughs, sore throat) where do you seek advice or treatment? (tick all that apply)	
Weighted base, n=593	%
Pharmacist	52.9%
I do not seek advice on treatment for flu like symptoms	33.7%
GP	30.3%
Internet	21.8%
Family or friends	19.0%
Nurse	13.4%
Health apps	7.5%
Health books/literature	5.8%
Other	3.6%

Opinions on purchasing antibiotics

Panel members were asked for their opinions on purchasing antibiotics online or while abroad. As can be seen in the following chart, the majority felt uncomfortable purchasing antibiotics in each of these scenarios without face to face discussion with a healthcare professional. For example:

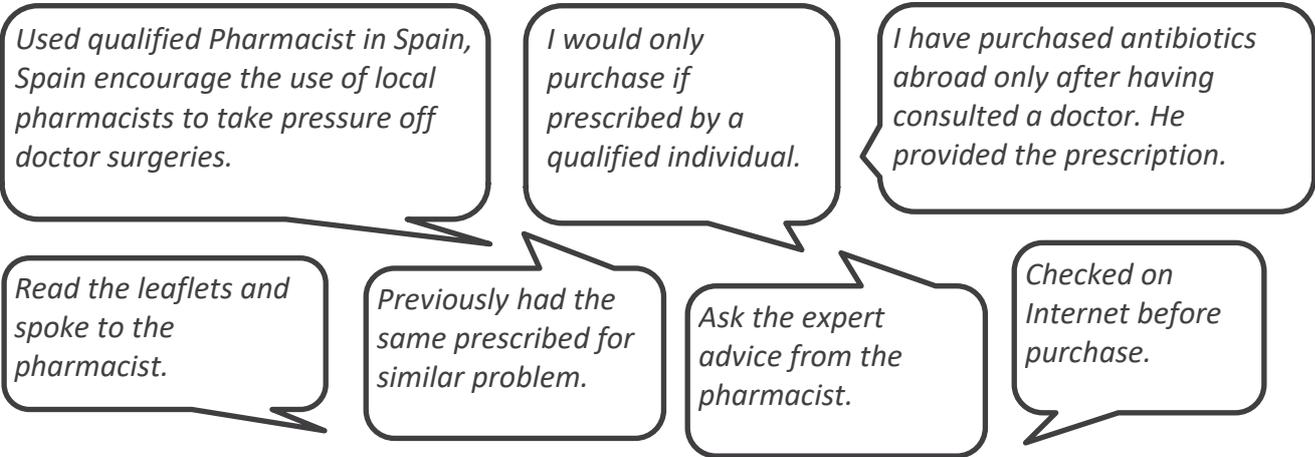
- 16% would feel comfortable purchasing antibiotics from an **online pharmacy**, 76% would feel uncomfortable.
- 15% would feel comfortable purchasing antibiotics from **a shop while abroad**, 73% would feel uncomfortable.
- Just over one in 10 respondents (12%) said they had purchased antibiotics for **personal/ family use**.



Individuals who had purchased antibiotics were asked what they did to ensure the suitability and quality of the product. A total of 53 respondents responded to the question regarding what they had done to ensure suitability and quality of the product if they had purchased antibiotics. The most common responses were:

- Sought advice/ bought from a pharmacy (33 responses)
- Sought advice from a GP (four responses)
- Had previous experience with the antibiotic (four responses)
- Read the leaflet provided (four responses)
- Checked online for advice (two responses)
- Bought from reputable online pharmacy (two responses)

These are demonstrated in the comments below:



Opinions on being prescribed and using antibiotics

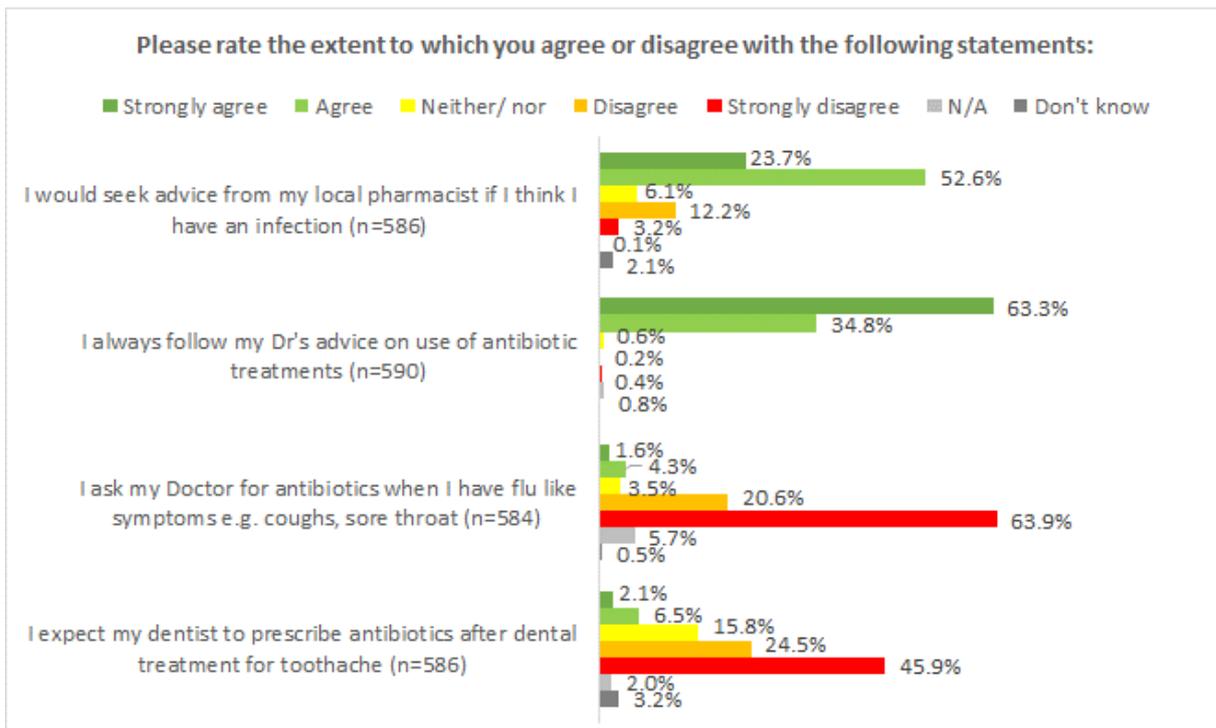
Panel members were provided with a number of statements and asked to rate the extent to which they agreed or disagreed with each of these.

In terms of seeking advice on antibiotics, respondents were most likely to agree or agree strongly with the following statements:

- I would seek advice from my local pharmacist if I think I have an infection (76%)
- I always follow my doctor’s advice on use of antibiotic treatments (98%)

On the other hand, respondents were most likely to disagree or strongly disagree with the following statements:

- I ask my Doctor for antibiotics when I have flu like symptoms e.g. coughs, sore throat (85%)
- I expect my dentist to prescribe antibiotics after dental treatment for toothache (70%)

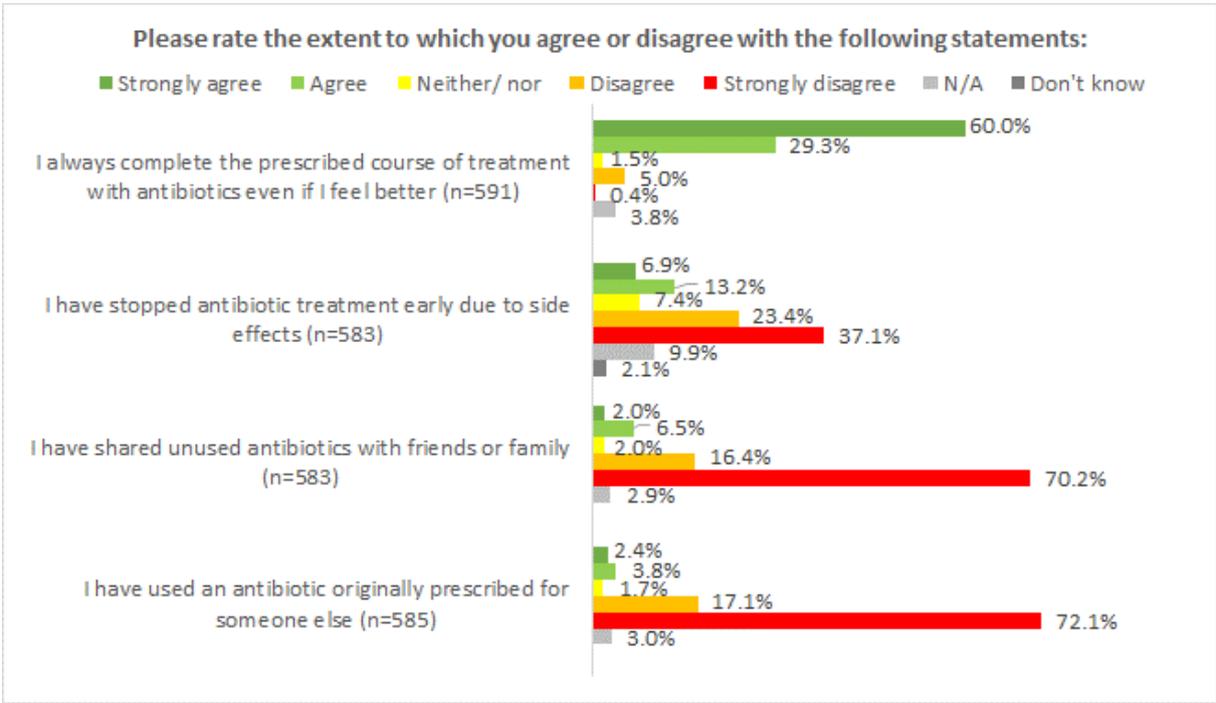


In terms of antibiotic use, respondents were most likely to agree or agree strongly with the following statement:

- I always complete the prescribed course of treatment with antibiotics even if I feel better (89%)

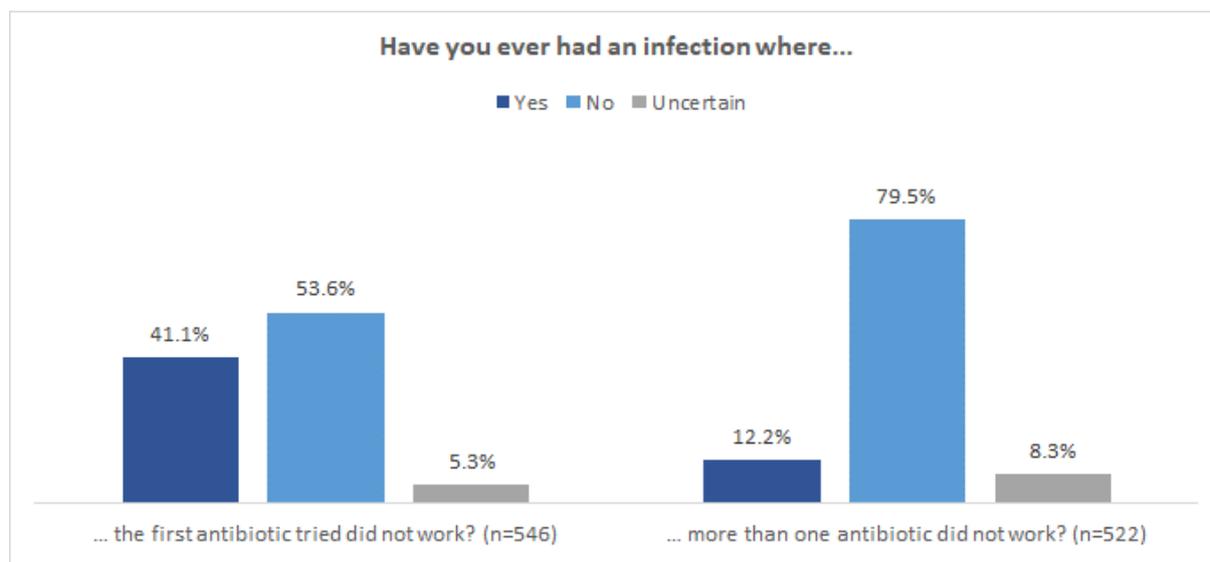
Conversely, respondents were most likely to disagree or strongly disagree with the following statements:

- I have stopped antibiotic treatment early due to side effects (61%)
- I have shared unused antibiotics with friends or family (87%)
- I have used an antibiotic originally prescribed for someone else (89%)



Experience of antibiotics not working

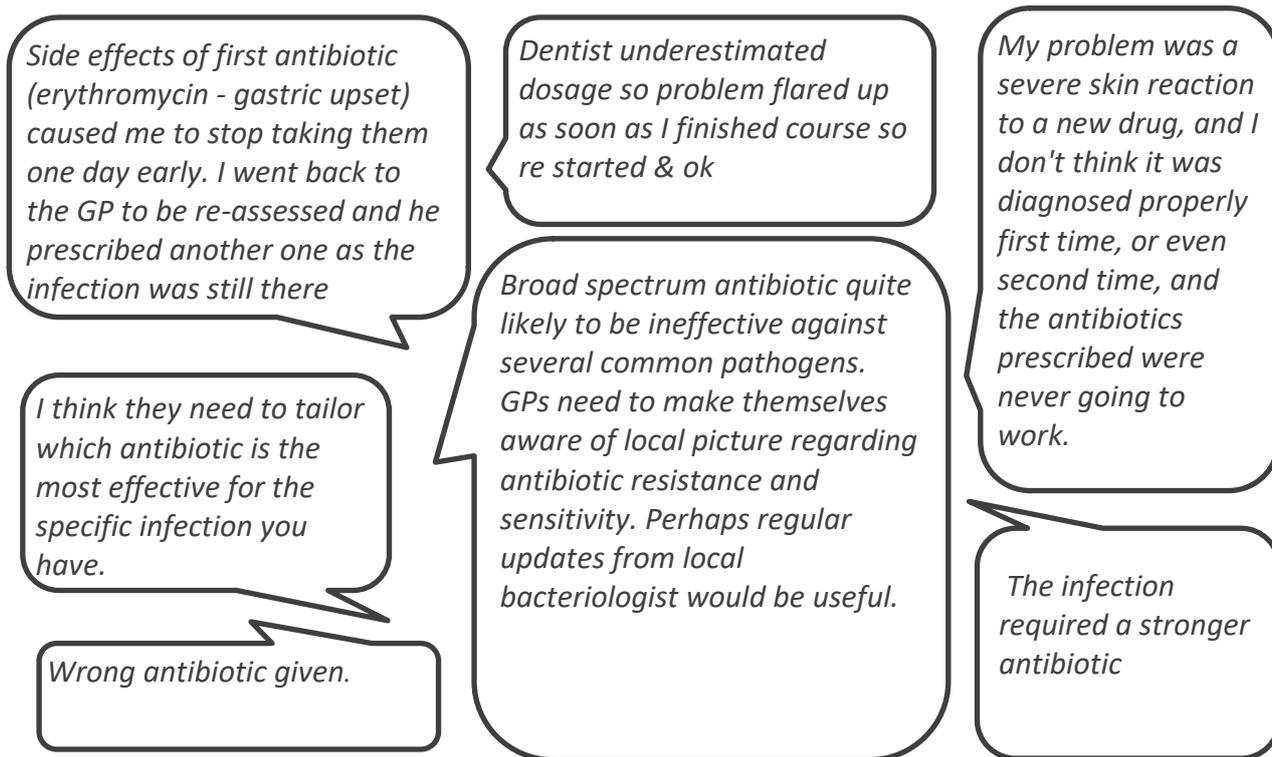
More than nine in 10 respondents (94%) said they have been prescribed an antibiotic. Just over four in 10 (41%) of those respondents who had been prescribed an antibiotic said they have had an infection where the first antibiotic tried did not work. Just 12% of those respondents who had been prescribed an antibiotic said they have had an infection where more than one antibiotic did not work.



Those who said they were prescribed an antibiotic which did not work in the first instance were asked why this was the case. The reasons given included not being given the correct dosage or strength of antibiotic or a perception that the antibiotic prescribed was not strong enough.

Why do you think the first antibiotic tried did not work?	
Weighted base, n=222	%
Different type of infection/ not the right type of antibiotic for infection	40.6%
Was not strong enough	21.6%
Don't know	18.8%
Allergic to it/ did not agree with me	7.6%
Length of prescription was not enough	4.1%
Bacterial resistance	3.4%
Immune to antibiotic	2.5%
Cheap antibiotic given	0.9%
Original diagnosis was wrong	0.4%

Some examples of the comments provided are shown below:



What people do with unused antibiotics

The most common thing that people would do with unused antibiotics was to take them to a pharmacist (34%) and this was followed by putting them in a bin with the rest of the household waste (16%). Other actions would be to take them to a health centre or GP surgery (7%) or flush them down the toilet (5%). A further 5% of responses were where respondents said they would keep any unused antibiotics.

If you were aware of any old or unused antibiotics in your cupboard, what are you most likely to do with them?	
Weighted base, n=589	%
I don't have any unused antibiotics	40.9%
Take them to a pharmacist	34.2%
Put them in the bin with the rest of the household waste	15.7%
Take them to a health centre or GP surgery	6.5%
Flush them down the toilet	4.9%
I don't get rid of unused antibiotics, I keep them	4.7%
Other	0.9%

Chapter 3: Self-limiting infections

Introduction

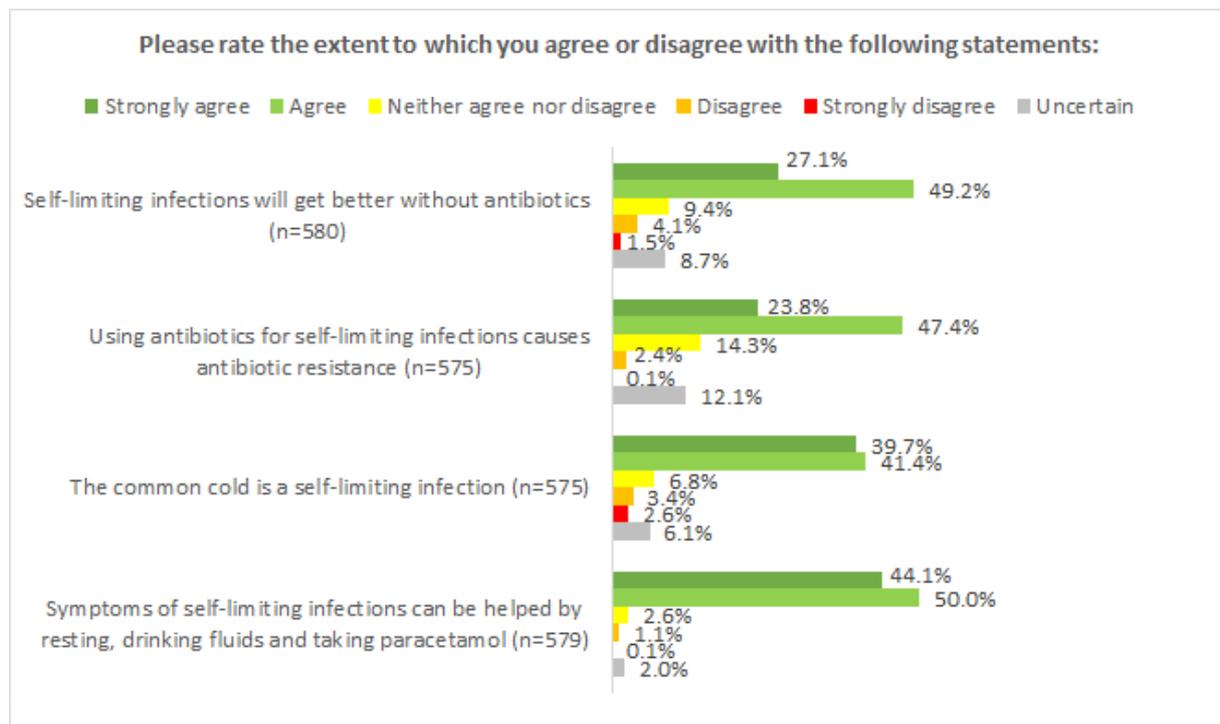
The SAPG sought panel member's views on self-limiting infections. These are described as being infections that will eventually clear up on their own and how these should be treated.

Opinions on a range of statements regarding self-limiting infections

The following charts show the extent to which respondents agreed or disagreed with various statements in relation to self-limiting infections.

The majority of respondents were correctly in agreement that:

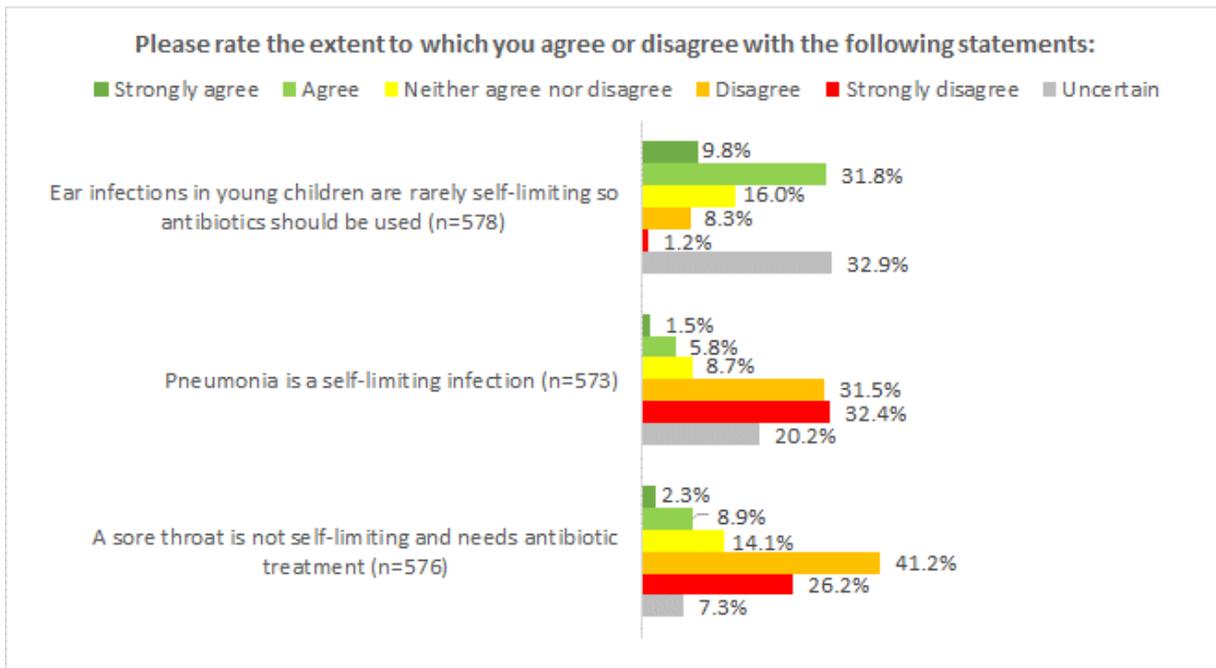
- Symptoms of self-limiting infections can be helped by resting, drinking fluids and taking paracetamol (94% agreed/ strongly agreed)
- The common cold is a self-limiting infection (81%)
- Self-limiting infections will get better without antibiotics (76%)
- Using antibiotics for self-limiting infections causes antibiotic resistance (71%)



On the other hand, the majority of respondents correctly disagreed that:

- A sore throat is not self-limiting and needs antibiotic treatment (67% disagreed/ disagreed strongly)
- Pneumonia is a self-limiting infection (64%)

In relation to ear infections in young children, 42% of respondents wrongly agreed with the statement that these are rarely self-limiting so antibiotics should be used, 10% correctly disagreed, 16% neither agreed nor disagreed and 33% were uncertain.



Chapter 4: Sharing healthcare messages

Introduction

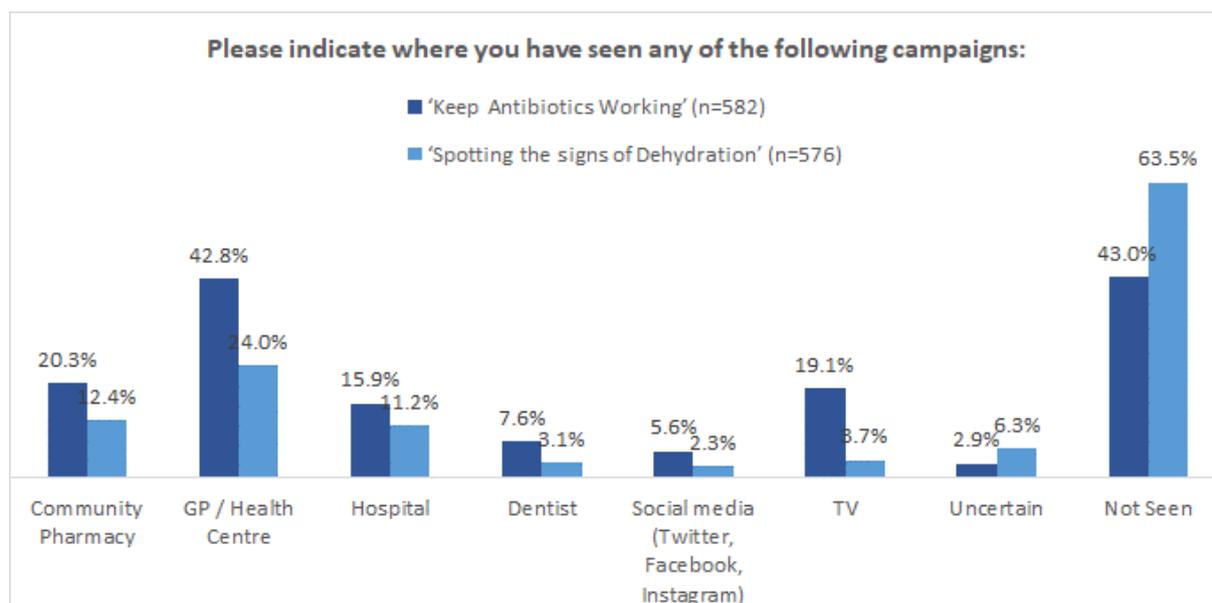
The SAPG were interested in finding out where their public awareness materials have most impact and get most noticed. In particular, the questionnaire asked Panel members where they had seen any communications on their 'Keep Antibiotics Working' campaign and the 'Spotting Signs of Dehydration' campaign. Panel member were also asked about their daily fluid consumption and about their awareness of hydration indicators. Finally, Panel members were asked about their awareness and use of the 'Pharmacy First' service which provides treatment of common infections via community pharmacies.

Awareness of healthcare campaign sources

The questionnaire contained visual examples of communication tools used in the 'Keep Antibiotics Working' campaign and also the 'Spotting Signs of Dehydration' campaign. Panel members were asked where, if at all, they could recall seeing either of these campaigns.

Firstly, with regards to the 'Keep Antibiotics Working' campaign, over half (57%) had seen the campaign with GP or health centres being the most common place people had seen this information (43%).

In terms of the 'Spotting Signs of Dehydration' campaign, fewer respondents were aware of this campaign (37% aware). Again, the most popular place to have observed this message was at GP or health centres (24%).



Where people get information about antibiotics and how they assess the reliability of this information

Nine in 10 respondents obtain information about antibiotics from qualified healthcare professionals such as a doctor, nurse or pharmacist (90%). This was followed by drug packaging leaflets (43%), online NHS sources (35%) and public awareness campaigns (30%).

Where do you get information about antibiotics? (tick all that apply)	
Weighted base, n=580	%
Qualified healthcare professionals e.g. doctor, nurse, pharmacist	89.6%
Drug packaging leaflet	43.3%
Online NHS sources	35.1%
Public awareness campaigns (TV, radio, newspapers, internet)	29.5%
Family members, friends, colleagues or neighbours	15.0%
Personal knowledge - I work/trained in health related field	14.3%
Other online sources	8.6%
Drug manufacturer website	5.5%
Charity website (e.g.: Antibiotic Research UK, Antibiotic Action)	1.9%
Not applicable/ no information	2.7%

Respondents were then asked how they assess the reliability of the information they receive. The most common open responses were that they only consult professionals e.g. pharmacist, doctor, nurse (28%), they trust NHS sources (28%) or that they trust the GP's knowledge (20%).

How do you assess the reliability of the information you receive?	
Weighted base, n=363	%
Only consult professionals	28.1%
NHS sources	28.0%
Trust GPs/ doctors knowledge	19.5%
Reliable sources	5.7%
Compare different sources	3.7%
Common sense	3.1%
Verified website	2.7%
Read leaflet	2.7%
Don't know	1.5%
Success of treatment	1.4%
Listen to the media	1.1%
Brand power	0.9%
Always question the source	0.7%
BNF	0.5%
Logo/ recognised source	0.3%
NICE guidelines	0.2%

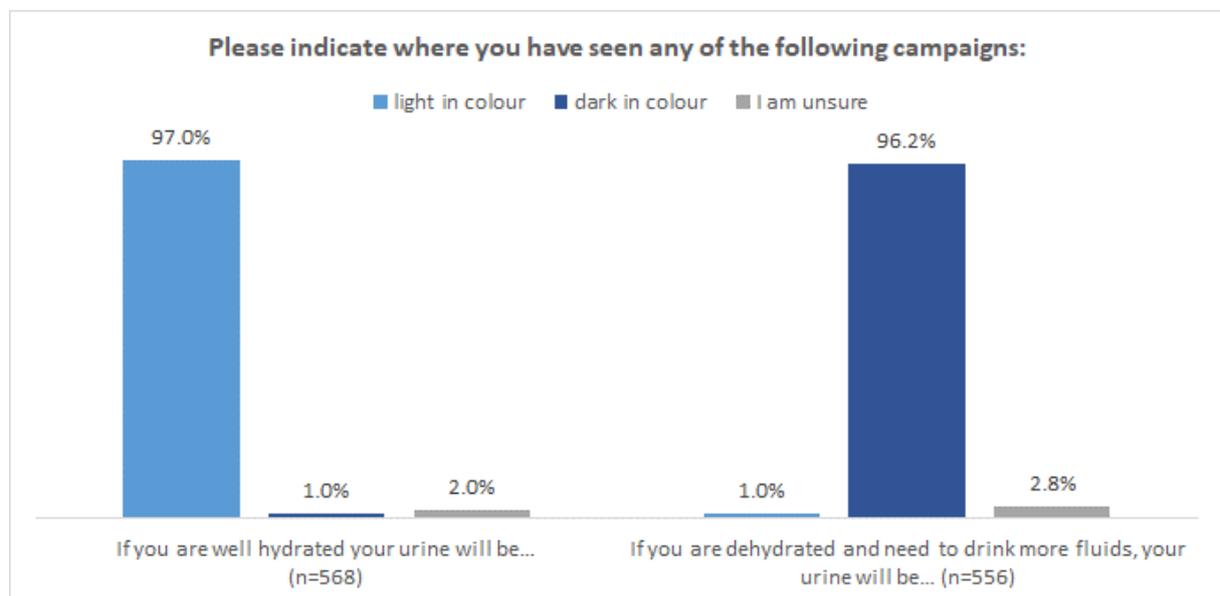
Importance of hydration in staying healthy

SAPG is a partner in the Scottish Urinary Tract Infection (UTI) Network which works to improve the recognition and management of urinary tract infections across all health and care settings. The network recently ran a campaign about spotting the signs of dehydration to increase awareness about the importance of keeping hydrated for good health.

Panel members were asked to record the number of litres of fluids they drink per day and also how many litres per day they believe is the recommended healthy amount. Firstly, in terms of fluid consumption, responses ranged from one litre to 10 litres with a mean score of 2.36 litres. This suggests that people are aware of how much fluids they should be consuming (the recommended amount is to drink six to eight mugs of fluid, the equivalent to roughly 1.5-2litres, although this varies according to heat, activity, wellness).

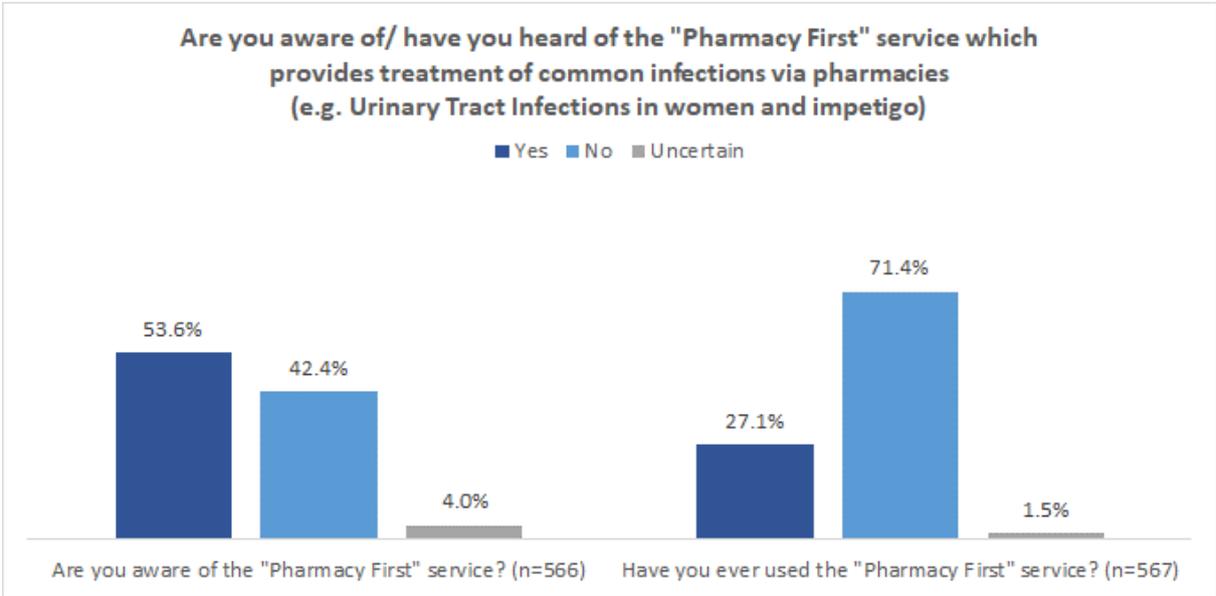
It is interesting to note that the mean score for fluid consumption was lower than the mean response in relation to the number of litres people *believed* they should be consuming per day which was 2.97 litres.

The questionnaire discussed urine colour being a useful indicator of hydration levels. Almost all respondents correctly believed if they were well hydrated their urine would be light in colour (97%) and also correctly believed that if they were dehydrated their urine would be dark in colour (96%).

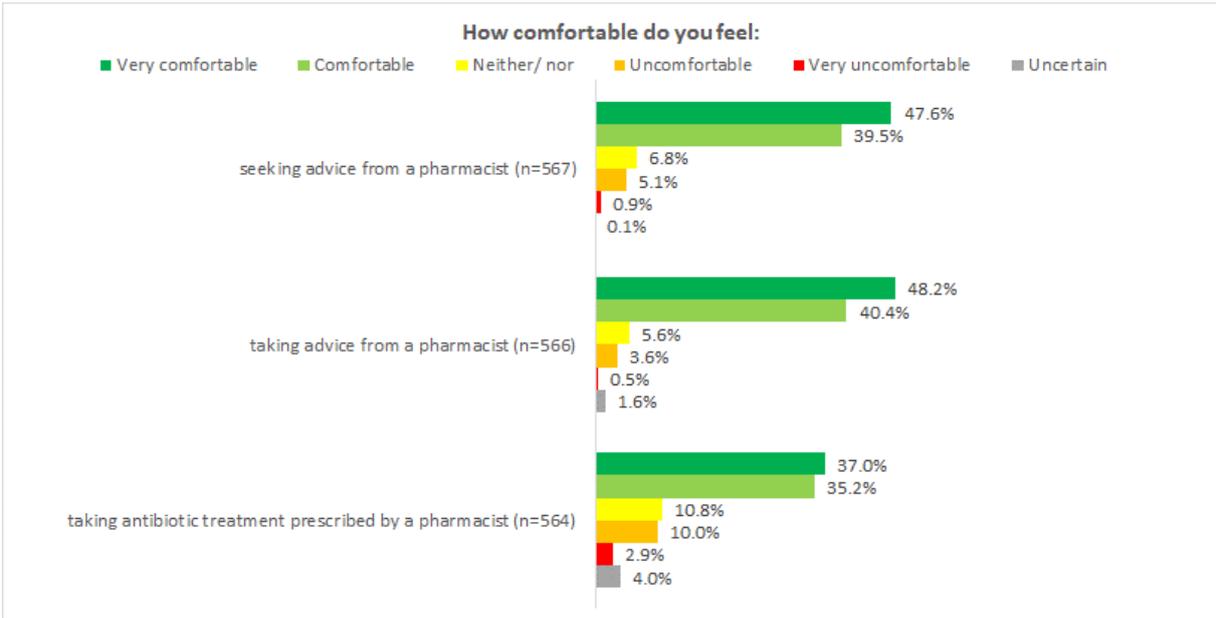


Awareness and use of 'Pharmacy First' services

Over half of respondents (54%) were aware of the 'Pharmacy First' service which provides treatment of common infections via pharmacies, and over one in four respondents (27%) had used the service.



Finally, respondents were asked how comfortable or uncomfortable they would feel seeking or taking advice from a pharmacist, or taking an antibiotic treatment prescribed by a pharmacist. Just under nine in 10 respondents were either very comfortable or comfortable seeking advice from a pharmacist (87%) and taking the advice they had been given from the pharmacist (89%). Whilst still the majority, the proportion of respondents who felt very comfortable or comfortable taking antibiotic treatment prescribed by a pharmacist was slightly less at 72%.



Chapter 5: Conclusions & Recommendations

General conclusions that can be drawn at this stage are that the public appear to have relatively good knowledge and behaviours around antibiotic resistance, access and use of antibiotics, self-limiting infections and public health campaigns.

Some suggestions about areas that need more public information and awareness include:

- information about causes of resistance
- more information about what is self-limiting and what needs treatment, and
- reinforce advice on self-care for self-limiting infections.

In addition to the above, campaigns designed to increase public understanding of anti-microbial resistance should emphasise that it is bacteria that become resistant to antibiotics NOT individuals.

Further emphasis should also be made that antibiotics are effective only for the treatment of bacterial infections NOT viral infections.

The results will support the work of the SAPG to help engage with and inform patients and the public about responsible antibiotic use.

Appendix 1: Questionnaire



Welcome to the Our Voice Citizens' Panel

Thank you for volunteering to be part of the national Our Voice Citizens' Panel for health and social care.

As a member of this panel, you are one of a group of volunteers who provide public opinions on a range of health and social care issues. When taken together, the views panel members provide can reflect the views of the Scottish population.

In this Our Voice Citizens' Panel survey we will ask you questions on:

- [antibiotic resistance](#)
- [how you access and use antibiotics](#)
- [self-limiting infections](#)
- [the impact of public health campaigns](#)
- [the importance of hydration in staying healthy](#)

There are no wrong answers to these questions - this is not a test. We are interested in your personal responses, thoughts and experiences of these issues and how they apply to you. Your answers are confidential and all views will be made anonymous.

Please answer the questionnaire as fully as you are willing, and able. If there is anything you do not wish to answer please just move on to the next question.

Please do not use Google to answer these questions.

We are very grateful to you for taking the time to complete this survey, to help us gain a better picture of the opinions of the Scottish public on issues of health and social care. If you need help to answer the questions please call Research Resource on FREEPHONE 0800 121 8987 or email info@researchresource.co.uk.

BSL users can contact us via Contact Scotland BSL <http://contactscotland-bsl.org/>

Thank you.

If you would like to complete future surveys online, please provide your email address below:

Please complete and return this survey by 27th January 2020

1. Understanding antibiotic use and antibiotic resistance

The Scottish Antimicrobial Prescribing GroupSAPG is a Scottish Government funded group of health professionals, who work to improve how antibiotics are used across all care settings in Scotland. Working with partners like the Antibiotic Research UK Charity (ANTRUK), The Scottish Antimicrobial Prescribing GroupSAPG try to increase awareness and understanding amongst the public of the problem of antimicrobial resistance and how it may impact on healthcare and to raise awareness of how we can all help to preserve antibiotics. They would like to ask you some questions about your views on and use of antibiotics.

1. Have you heard of "antibiotic resistance"?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No
<input type="checkbox"/>	Uncertain

2. Which of the following statements do you think describe "antibiotic resistance"?

(please tick all that apply)

<input type="checkbox"/>	an individual becomes resistant to a specific antibiotic treatment
<input type="checkbox"/>	bacteria become resistant to the effects of a specific antibiotic treatment
<input type="checkbox"/>	antibiotics become ineffective at treating common infections
<input type="checkbox"/>	NONE OF THE ABOVE

3. Please indicate whether you think the following statements are True or False:

Antibiotic drugs are effective in treating:

	True	False		Uncertain
viral infections (like common cold)	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
fungal infections (like thrush)	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
bacterial infections (like meningitis)	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
parasitic infections (like malaria)	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

4. Which of the following factors do you think have contributed to antibiotic resistance?

(please tick all that apply)

<input type="checkbox"/>	patients not completing a prescribed course of antibiotics
<input type="checkbox"/>	contamination of water from human or animal waste
<input type="checkbox"/>	use of antibiotics to promote growth in animals
<input type="checkbox"/>	incorrect antibiotic or dosage
<input type="checkbox"/>	prescribing antibiotics when not required
<input type="checkbox"/>	Other cause (please specify): _____
<input type="checkbox"/>	NONE OF THE ABOVE

5. Please rate the extent to which you agree or disagree with the following statements: (please tick one box in each row)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
antibiotics are not always necessary to treat bacterial infections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
anyone can develop an antibiotic resistant infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
antibiotics can kill the protective bacteria that exist in the gut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
antibiotic resistance is an important health issue in Scotland today	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need to improve my knowledge and understanding of how to use antibiotics appropriately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Requesting and using antibiotics

6. When you or a family member feel unwell with flu like symptoms (coughs, sore throat) **where do you seek advice on treatment?** (tick all that apply)

<input type="checkbox"/>	GP
<input type="checkbox"/>	Family or friends
<input type="checkbox"/>	Health apps
<input type="checkbox"/>	Nurse
<input type="checkbox"/>	Internet
<input type="checkbox"/>	Health books/ literature
<input type="checkbox"/>	Pharmacist
<input type="checkbox"/>	Other (please specify): _____
<input type="checkbox"/>	I do not seek advice on treatment for flu like symptoms

7. Please rate the extent to which you agree or disagree with the following statements: (please tick one box in each row)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Prefer not to answer
I would be comfortable purchasing antibiotics from an online pharmacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would be comfortable purchasing antibiotics from a shop whilst abroad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have purchased antibiotics for personal / family use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7b. If you have purchased antibiotics, what did you do to ensure the suitability and quality of the product?

8. Please rate the extent to which you agree or disagree with the following statements: (please tick one box in each row)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	NOT APPLICABLE	Prefer not to answer
I would seek advice from my local pharmacist if I think I have an infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I always follow my Dr's advice on use of antibiotic treatments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have shared unused antibiotics with friends or family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have used an antibiotic originally prescribed for someone else	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	NOT APPLICABLE	Prefer not to answer
I always complete the prescribed course of treatment with antibiotics even if I feel better	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have stopped antibiotic treatment early due to side effects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I ask my Doctor for antibiotics when I have flu like symptoms (coughs, sore throat)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I expect my dentist to prescribe antibiotics after dental treatment for toothache	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Have you ever been prescribed an antibiotic?

<input type="checkbox"/>	Yes	Go to Q9b
<input type="checkbox"/>	No	Go to Q10
<input type="checkbox"/>	Uncertain	Go to Q10

9b. If yes:

	Yes	No	Uncertain
Have you ever had an infection where the first antibiotic tried did not work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever had an infection where more than one antibiotic did not work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q9c. Why do you think the first antibiotic tried did not work?

10. If you were aware of any old or unused antibiotics in your cupboard, what are you most likely to do with them? (tick all that apply)

<input type="checkbox"/>	I don't have any unused antibiotics
<input type="checkbox"/>	Flush them down the toilet
<input type="checkbox"/>	I don't get rid of unused antibiotics, I keep them
<input type="checkbox"/>	Take them to a pharmacist
<input type="checkbox"/>	Take them to a health centre or GP surgery
<input type="checkbox"/>	Put them in the bin with the rest of the household waste
<input type="checkbox"/>	Other (please specify): _____

3. Self-limiting infections

The Scottish Antimicrobial Prescribing GroupSAPG is interested in your views on self-limiting infections (infections that will eventually clear up on their own) and how we should treat these.

11. Please rate the extent to which you agree or disagree with the following statements: (please tick one box in each row)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Uncertain
Self-limiting infections will get better without antibiotics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using antibiotics for self-limiting infections causes antibiotic resistance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The common cold is a self-limiting infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Symptoms of self-limiting infections can be helped by resting, drinking fluids and taking paracetamol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ear infections in young children are rarely self-limiting so antibiotics should be used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x <input type="checkbox"/>	<input type="checkbox"/>
Pneumonia is a self-limiting infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A sore throat is not self-limiting and	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

needs antibiotic treatment							
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4. Sharing healthcare messages

The Scottish Antimicrobial Prescribing Group (SAPG) is interested in finding out where their public awareness materials have most impact and get most noticed. Your views will help inform how and where they target future public awareness campaigns.



i.

What to do if you are concerned about someone else:

You can help prevent dehydration by:

- being aware of the early warning signs
- sitting down and having a drink or cup of tea with them
- planning visits around mealtimes to get a sense of what they are drinking and if they have any difficulties drinking
- having a look in the fridge or cupboards to check they have enough things to drink
- encouraging them to attend local cafes / local lunches / visiting voluntary, community or faith organisations with luncheon clubs
- ensuring both hot and cold drinks are safely and freely accessible
- encouraging around eight drinks per day
- be aware that other food such as jelly, soup, yogurt, milk pudding, ice-llolles, and some fruits contain fluid.
- supporting access to both social and health services.

Who can help?

Your GP or community nurse can provide you with advice or information about preventing dehydration or can provide information on other services which might be able to help.

Other useful Contacts

SUTIN contact:
Email: nss.ScottishUTINetwork@nhs.net

**Healthy pee is 1 to 3...
4 to 8 Must hydrate***

Use this urine colour chart to check for signs of dehydration

Signs that you are not drinking enough:
• Dry mouth • Loose skin
• Thirst • Dark or strong smelling urine
• Headache • Constipation

You should aim to drink 6-8 mugs of fluid per day

* Some medicines may affect urine colour. If you are unsure, please ask your pharmacist.
Health Protection Scotland is part of National Services Scotland
Review date: August 2020

Spotting the signs of dehydration simple first steps...

ii.

12. Please indicate **where** you have seen any of the following campaigns:

(tick all that apply)

	Community Pharmacy	GP / Health Centre	Hospital	Dentist	Social media (Twitter, Facebook, Instagram)	TV	Uncertain	Not Seen
i. 'Keep Antibiotics Working'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
ii. 'Spotting the signs of Dehydration'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

12b. If you have seen these campaigns elsewhere, please tell us where?

13. Where do you get information about antibiotics? (tick all that apply)

<input type="checkbox"/>	Qualified healthcare professionals e.g. doctor, nurse, pharmacist
<input type="checkbox"/>	Charity website (e.g.: Antibiotic Research UK, Antibiotic Action)
<input type="checkbox"/>	Public awareness campaigns (TV, radio, newspapers, internet)
<input type="checkbox"/>	Personal knowledge - I work/trained in health related field
<input type="checkbox"/>	Online NHS sources
<input type="checkbox"/>	Family members, friends, colleagues or neighbours
<input type="checkbox"/>	Drug packaging leaflet
<input type="checkbox"/>	Drug manufacturer website
<input type="checkbox"/>	Other online sources
<input type="checkbox"/>	Not applicable/ no information

13b. How do you assess the reliability of the information you receive? (e.g.NHS logo)

Scottish Antimicrobial Prescribing GroupSAPG is a partner in the Scottish Urinary Tract Infection (UTI) Network which works to improve the recognition and management of urinary tract infections across all health and care settings. The network has recently ran a campaign about spotting the signs of dehydration to increase awareness about the importance of keeping hydrated for good health. We are keen to seek feedback on this campaign.

14. The 'Spotting the signs of Dehydration' and 'Think2Drink H2O' campaigns are trying to inform people about the importance of staying hydrated to minimise the risk of developing a urinary infection and for maintaining good health.

Please tell us: (please record number of litres in the box provided)

how many litres of fluids do you drink per day	<input type="text"/>
how many litres of fluids per day do you think is the recommended healthy amount	<input type="text"/>

- Note:**
 330ml can of juice
 250ml glass of water/juice
 200ml mug of tea/coffee
 150ml cup of tea/coffee
 568ml in 1 pint

15. The colour of your urine (pee) is a useful indicator of whether you are well hydrated or dehydrated.

	light in colour	dark in colour	I am unsure
If you are well hydrated your urine will be...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you are dehydrated and need to drink more fluids, your urine will be...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Are you aware of the "Pharmacy First" service which provides treatment of common infections via community pharmacies (e.g. Urinary Tract Infections in women and impetigo)?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No
<input type="checkbox"/>	Uncertain

16b. Have you ever used the "Pharmacy First" service which provides treatment of common infections via community pharmacies?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No
<input type="checkbox"/>	Uncertain

17. How comfortable do you feel:

	Very comfortable	Comfortable	Neither comfortable nor uncomfortable	Uncomfortable	Very uncomfortable	Uncertain
seeking advice from a pharmacist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
taking advice from a pharmacist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
taking antibiotic treatment prescribed by a pharmacist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Your views

We want to make sure Panel Members have the opportunity to give their views on health and social care issues that they themselves feel to be of importance. **Please tell us:**

18. What is the key social care and health care issue that you would like to give us your views on?

THANK YOU FOR COMPLETING THIS SURVEY. 😊

**Please now return in the reply paid envelope
provided by 27th January 2020**

Appendix 2: Response profile

Our Voice Citizens' Panel - Sixth Survey Response Analysis and Profile

Emails sent	846
Number of email responses	390
Email response rate	46%

Number of postal sent	766
Number of postal returned	109
Postal response rate	14%

Telephone surveys	100
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OVERALL RESPONSE RATE	
Response	599
Current number on panel	1148
Overall response rate	52%

Gender ^[1]	No on Panel	% of Panel	Response	Response rate
Male	613	53%	338	55%
Female	531	46%	259	49%
Prefer not to answer	4	0%	2	50%
Total	1148	100%	599	52%

[1] Panel members could also describe their gender using any other terms. No Panel members took the opportunity to do so.

Source: National Records Scotland - Population Estimates 2017. Table 1. Retrieved from:

<https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/mid-2017> 12/03/2019

Tenure	No on Panel	% of Panel	Response	Response rate
Own	824	73%	469	57%
Rent from Council/ HA	190	17%	75	39%
Private Rent	69	6%	28	41%
Other	53	5%	24	45%
Total	1136	100%	596	52%

Source: Scotland's Census 2011. Table DC4427SC - Accommodation type by tenure - Households. (2014). National Records of Scotland, Crown copyright. Retrieved from:

<http://www.scotlandscensus.gov.uk/ods-anlyser/jsf/tableView/tableView.xhtml> 26/10/2016

Age	No on Panel	% of Panel	Response	Response rate
16-24	20	2%	9	45%
25-44	208	18%	80	38%
45-64	422	37%	222	53%
65+	488	43%	284	58%
Total	1138	100%	595	52%

Source: National Records Scotland - Population Estimates 2017. Table 2. Retrieved from: <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/mid-2017> 12/03/2019

Ethnic group	No on Panel	% of Panel	Response	Response rate
White British/ Irish	1113	97%	589	53%
Other	34	3%	10	29%
Total	1147	100%	599	52%

Source: Scotland's Census 2011. Table DC2101SC - Ethnic group by sex by age. (2014). National Records of Scotland, Crown copyright. Retrieved from: <http://www.scotlandscensus.gov.uk/ods-analyser/jsf/tableView/tableView.xhtml> 26/10/2016

SIMD Quintile (2016)	No on Panel	% of Panel	Response	Response rate
1	192	17%	84	44%
2	233	20%	121	52%
3	235	21%	115	49%
4	243	21%	140	58%
5	243	21%	139	57%
Total	1146	100%	599	52%

Physical or mental health condition or illness	No on Panel	% of Panel	Response	Response rate
Yes	447	39%	238	53%
No	658	57%	344	52%
Prefer not to say/ Don't know	43	4%	17	40%
Total	1148	100%	599	52%

Source: Long term conditions. (December 23, 2015). The Scottish Government. Retrieved from <http://www.gov.scot/Topics/Health/Services/Long-Term-Conditions> 26/10/2016

Weighting survey data

As can be seen in the analysis of the response profile to this survey, different response rates have been achieved for different groups of respondents. For this survey, we received a greater response from males than females and also from older respondents than younger respondents.

In most surveys it will be the case that some **groups are over-represented** in the raw data and **others under-represented**. These misrepresentations are usually dealt with by weighting the data.

The idea behind weighting is that:

- Members of subgroups that are thought to be over or under-represented in the survey data are each given a weight
- Over-represented groups are given a weight of less than one
- Under-represented groups are given a weight of greater than one

The weight being calculated in such a way that the weighted frequency of groups matches the population.

All survey estimates are calculated using these weights, so that averages become weighted averages, and percentages become weighted percentages, and so on.

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Please contact our Equality and Diversity Advisor on 0141 225 6999
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