



Special Eurobarometer 478

Summary

Antimicrobial Resistance

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Survey requested by the European Commission,
Directorate-General for Health and Food Safety
and co-ordinated by the Directorate-General for Communication

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Special Eurobarometer 478 – Wave EB90.1 – Kantar Public Brussels

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Summary

Antimicrobial Resistance

September 2018

Survey and report by Kantar Public Brussels on behalf of Kantar Belgium at the request of the European Commission, Directorate-General for Health and Food Safety

Survey co-ordinated by the European Commission, Directorate-General for Communication (DG COMM "Media Monitoring, Media Analysis and Eurobarometer" Unit and Directorate General for Health and Food Safety unit for Crisis management and preparedness in health – SANTE C3)

<http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm>

INTRODUCTION

Antimicrobial resistance (AMR) is the ability of micro-organisms (such as bacteria and some parasites) to become increasingly resistant to an antimicrobial to which they were previously susceptible. Although AMR is a naturally occurring process, it has increasingly become a problem and threat to public health in Europe and other parts of the world. AMR has a direct impact on human and animal health and results in substantial economic burden because of higher treatment costs and reduced productivity caused by sickness. It is estimated that AMR is responsible for over 25,000 deaths annually within the EU and costs more than EU 1.5 billion euros each year in terms of healthcare costs and productivity losses.

Tackling AMR is a priority for the European Commission. The Commission set out the activities it is taking to address antimicrobial resistance in the European One Health action plan against antimicrobial resistance adopted in June 2017¹, which follows the previous action plan adopted in 2011². The action plan includes over 70 actions involving 9 policy areas including human and animal health, agriculture, environment and research. It is built on three pillars:

- Making the EU a best practice region
- Boosting research, development and innovation
- Shaping the global agenda

In June 2017 the Commission adopted the first deliverable: EU guidelines on the prudent use of antimicrobials in human medicine³. These guidelines aim to reduce inappropriate use and promote prudent use of antimicrobials in people, targeting those who are responsible for or play a role in antimicrobial use (e.g. doctors, nurses, pharmacists and hospital administrators). Similar guidelines exist for the prudent use of antimicrobials in veterinary medicine⁴. In addition, the forthcoming EU Regulations on veterinary medicinal products and medicated feed, scheduled to be adopted by the end of 2018 for an application in three years' time, lay down a wide range of concrete measures to fight AMR following the "One Health" approach.

The knowledge, attitudes and behaviour of the public are of vital importance in establishing and ensuring the prudent use of antimicrobials. With this in mind, the European Commission has undertaken a series of surveys among the general public to monitor their levels of usage and knowledge about antibiotics. The first survey, undertaken for the Directorate-General for Health and Consumers, was conducted in 2009⁵. Two further surveys were then carried out in 2013⁶ and 2016⁷. The current survey thus represents the fourth in the series and tracks progress on public use of and knowledge about antibiotics. More specifically, the survey covers:

- the use of antibiotics among the general public: whether they have taken antibiotics in the last year; how they were obtained; the reason for taking them; and whether a test was carried out to establish the cause of the illness before the antibiotics were taken
- the levels of public knowledge about the nature and effectiveness of antibiotics and the risks associated with their unnecessary use

¹ [COM\(2017\)339](#)

² [COM\(2011\)748](#) <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0748:FIN:EN:PDF>

³ [EU Guidelines for the prudent use of antimicrobials in human health C/2017/4326: OJ C 212, 17.2017, p. 1-12](#)
http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2017.212.01.0001.01.ENG&toc=OJ:C:2017:212:TOC

⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015XC0911%2801%29>

⁵ http://ec.europa.eu/public_opinion/archives/ebs/ebs_338_en.pdf

⁶ http://ec.europa.eu/health/antimicrobial_resistance/docs/ebs407_en.pdf

⁷ http://ec.europa.eu/public_opinion/archives/ebs_445_en.pdf

- whether the general public have received information on unnecessary antibiotic use and the impact this information has had on behaviour; and their interest in finding out more about antibiotics, along with perceptions of the most trustworthy sources for getting the information
- views on the most appropriate policy response to AMR
- attitudes towards the use of antibiotics on sick animals; and awareness of the ban on using antibiotics to stimulate growth in farm animals

This survey was carried out by the Kantar Public Brussels network in the 28 EU Member States between the 8th and 26th September 2018. Some 27,474 respondents from different social and demographic groups were interviewed face-to-face at home in their mother tongue on behalf of the European Commission, Directorate-General for Health and Food Safety. The methodology used is that of Eurobarometer surveys as carried out by the Directorate-General for Communication “Media Monitoring, Media Analysis and Eurobarometer” Unit). A technical note on the manner in which interviews were conducted is appended as an annex to this report. Also included are the interview methods and confidence intervals⁸.

Note: In this report, countries are referred to by their official abbreviation. The abbreviations used in this report correspond to:

Belgium	BE	Lithuania	LT
Bulgaria	BG	Luxembourg	LU
Czech Republic	CZ	Hungary	HU
Denmark	DK	Malta	MT
Germany	DE	The Netherlands	NL
Estonia	EE	Austria	AT
Ireland	IE	Poland	PL
Greece	EL	Portugal	PT
Spain	ES	Romania	RO
France	FR	Slovenia	SI
Croatia	HR	Slovakia	SK
Italy	IT	Finland	FI
Republic of Cyprus	CY *	Sweden	SE
Latvia	LV	United Kingdom	UK
European Union – weighted average for the 28 Member States			EU28

* Cyprus as a whole is one of the 28 European Union Member States. However, the ‘acquis communautaire’ has been suspended in the part of the country which is not controlled by the government of the Republic of Cyprus. For practical reasons, only the interviews carried out in the part of the country controlled by the government of the Republic of Cyprus are included in the ‘CY’ category and in the EU28 average.

We wish to thank the people throughout the European Union

who have given their time to take part in this survey.

Without their active participation, this study would not have been possible.

⁸ The results tables are included in the annex. It should be noted that the total of the percentages in the tables of this report may exceed 100% when the respondent has the possibility of giving several answers to the question.

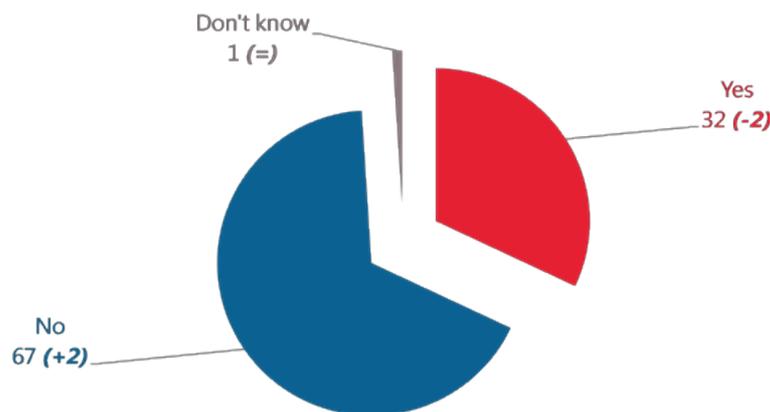
I. USE OF ANTIBIOTICS

At the start of the interview, respondents were asked whether they had taken antibiotics in oral form at any time in the last 12 months⁹.

Around a third of Europeans have taken antibiotics in the last year

Around one in three respondents (32%) say that they have taken antibiotics orally (such as tablets, powder or syrup) during the last year. There has been a small drop (-2 percentage points) in this figure compared to that reported in the 2016 survey (34%), and the proportion of respondents who have taken antibiotics now stands at its lowest level since 2009 (- 8 points from 40%).

QC1 Have you taken any antibiotics orally such as tablets, powder or syrup in the last 12 months?
(% - EU)



(September 2018 - April 2016)

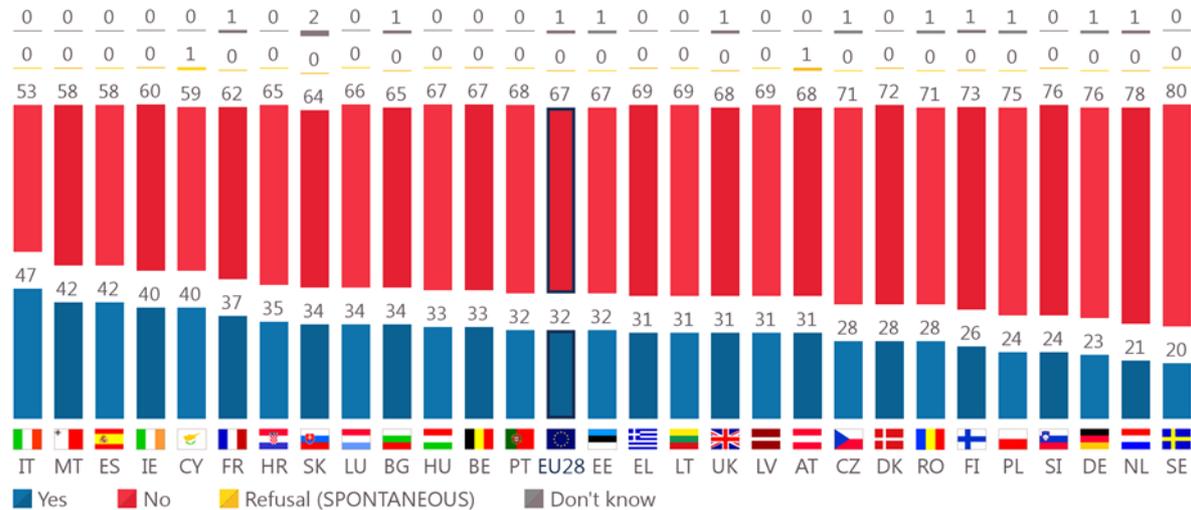
Base: all respondents (N= 26,085 – sensitive question¹⁰)

⁹ Q1 Have you taken any antibiotics orally such as tablets, powder or syrup in the last 12 months? (ONE ANSWER ONLY): Yes; No; Don't know

¹⁰ Several questions in this survey are classified as sensitive in nature under General Data Protection Regulation guidelines [Regulation (EU) 2016/679]. Respondents were asked their consent to be asked these questions. For the survey, these primarily comprise questions relating to health and medical treatment or conditions. Although the first question QC1 was not filtered – i.e. in theory it could be asked of all respondents – as some respondents declined to give their consent, the base size is lower than the total sample size.

There is widespread variation at a national level.

QC1 Have you taken any antibiotics orally such as tablets, powder or syrup in the last 12 months?
(%)



Base: all respondents (N= 26,085 – sensitive question)

Across all Member States, fewer than half of the respondents say that they have taken antibiotics. However, while nearly half of those polled in Italy (47%) say that they have taken antibiotics, less than a quarter of those polled in Poland and Slovenia (both 24%), Germany (23%), the Netherlands (21%) and Sweden (20%) say that they have done so.

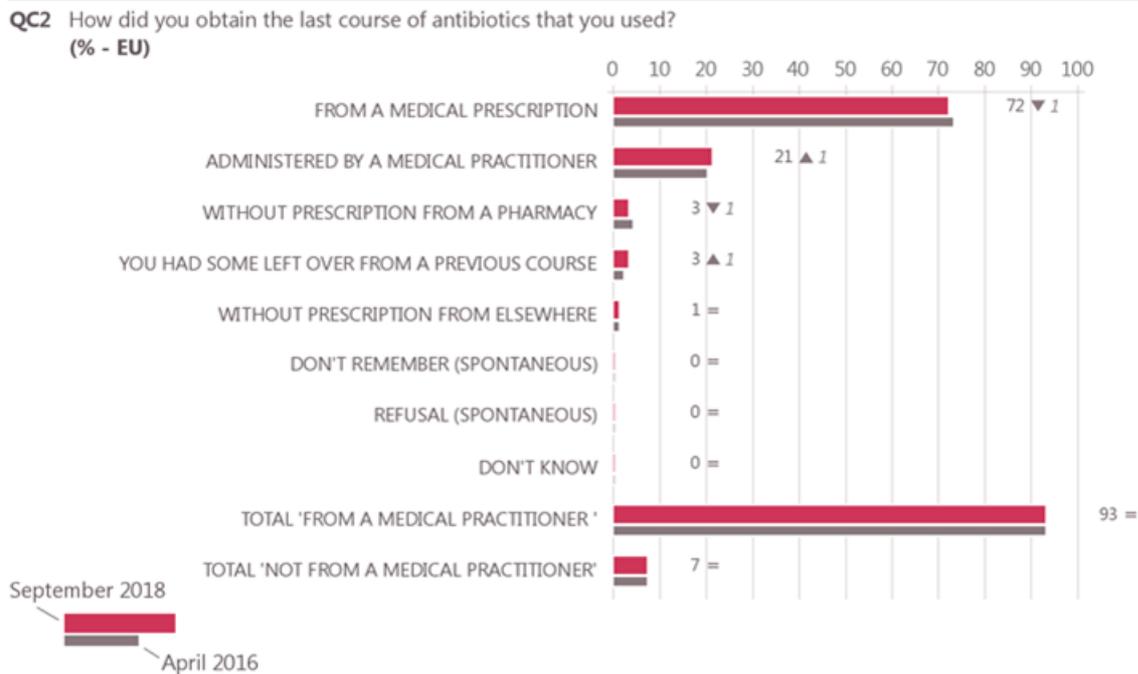
Almost all Europeans obtained their last course of antibiotics through a healthcare professional – either via a medical prescription or directly from a medical practitioner

Respondents who said that they had used antibiotics in the last twelve months (32% of EU citizens) were asked how they obtained the last course of antibiotics that they had used¹¹.

The vast majority of respondents (93%) say that they obtained their last course of antibiotics from a healthcare professional. This figure is obtained from combining the proportion who said that they obtained their antibiotics from a medical prescription (72%) and those who said they received the antibiotics directly from a medical practitioner (21%). There is a small minority of respondents who say they obtained antibiotics without a prescription from a pharmacy (3%) or used those left over from a previous course (3%). In addition, 1% say they obtained antibiotics without a prescription from elsewhere.

¹¹ Q2 How did you obtain the last course of antibiotics that you used? ONE ANSWER ONLY: From a medical prescription; Administered by a medical practitioner; You had some left over from a previous course; Without prescription from a pharmacy; Without a prescription from elsewhere; Don't remember (SPONTANEOUS), Don't know.

The results for the answers "From a medical prescription" and "Administered by a medical practitioner" are combined into a category "Total from a medical practitioner"; the results for the answers "You had some left over from a previous course", "Without prescription from a pharmacy" and "Without prescription from elsewhere" are combined into a category "Total not from a medical practitioner"



Base: Respondents who have taken antibiotics in the last 12 months (N= 8,416)

The results are very similar to those seen in 2016. As in 2016, a total of 7% of respondents did not obtain the antibiotics they used from a medical practitioner. This proportion has not changed since the previous survey.

Europeans are most likely to cite bronchitis, a sore throat, flu, a urinary tract infection and a fever as reasons for taking antibiotics

Respondents who said they had taken antibiotics in the last year were asked their reason for taking them¹².

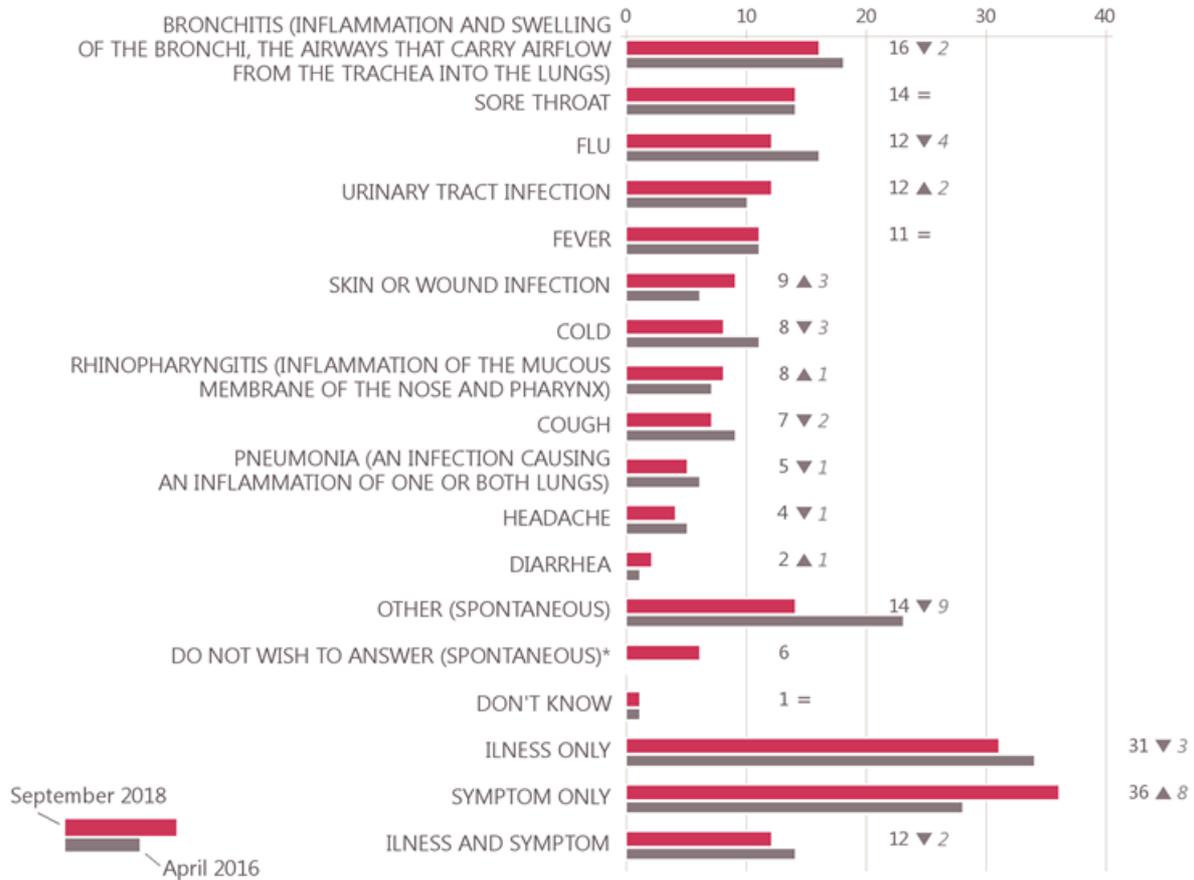
One in seven respondents (14%) say that they took antibiotics for reasons that were not specified on the list of options presented to them.

Among the illnesses and symptoms shown to them, respondents are most likely to cite bronchitis (16%), a sore throat (14%), flu (12%), a urinary tract infection (UTI) (12%) and a fever (11%) as reasons for taking their last course of antibiotics.

At a sub-group level, just under a third of respondents took the antibiotics for illness only (31%), with a somewhat larger proportion taking them for symptoms only (36%), and around one in eight taking them to treat both illness and symptoms (12%).

¹² Q3 What was the reason for last taking the antibiotics that you used? (SHOW SCREEN – READ OUT – MULTIPLE ANSWERS POSSIBLE): Pneumonia (an infection causing an inflammation of one or both lungs); Bronchitis (inflammation and swelling of the bronchi, the airways that carry airflow from the trachea into the lungs); Rhinopharyngitis (inflammation of the mucous membrane of the nose and pharynx); Flu: Cold; Sore throat; Cough; Fever; Headache; Diarrhea; Urinary tract infection; Skin or wound infection; Other (SPONTANEOUS); Do not wish to answer (SPONTANEOUS); Don't know

QC3 What was the reason for last taking the antibiotics that you used? (MULTIPLE ANSWERS POSSIBLE)
(% - EU)



Base: Respondents who have taken antibiotics in the last 12 months (N= 8,416)

The notable changes since 2016 are an increase in the proportion of respondents who say they took antibiotics for symptoms only (+8 percentage points) and a decrease in the proportion using antibiotics to treat illness only (-3 percentage points).

Among the illnesses and symptoms shown to respondents, there have been small increases since 2016 in the proportion using antibiotics to treat a skin or wound infection (+3 percentage points) and a UTI (+2 points), and decreases in the proportion using antibiotics to treat flu (-4 pp points), a cold (-3 pp), bronchitis (-2 pp) and a cough (-2 pp).

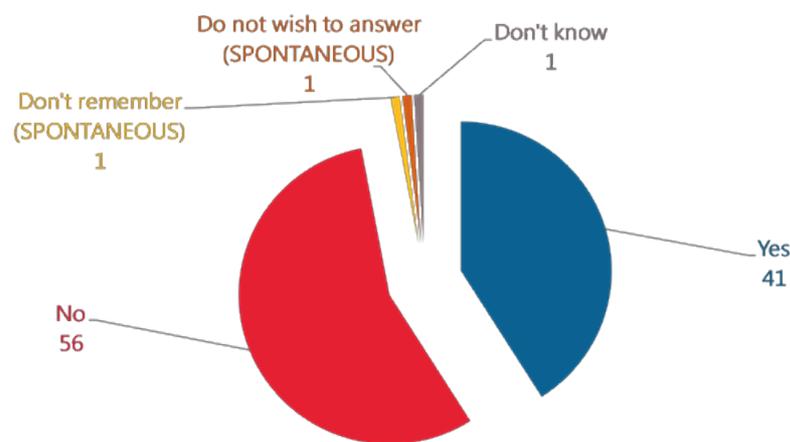
In total, one in five respondents (20%) say that the reason for last taking antibiotics was either cold or flu – this is a significant decrease since 2016 when the proportion was 27%.

There has been a notable drop in the proportion saying that they took antibiotics for reasons that were not specified on the list of options presented to them (-9 percentage points).

Just over two fifths of respondents (41%) say they had a test to find out the cause of their illness, before or at the same time as starting the antibiotics.

Respondents who had taken a course of antibiotics in the last 12 months were asked whether they had a test, for example a blood or urine test, or throat swab, to find out the cause of the illness before or at the same time that they started taking the antibiotics¹³.

QC4 Did you have a test, for example a blood or urine test, or throat swab, to find out what was causing your illness, before or at the same time as you started antibiotics ?
(% - EU)

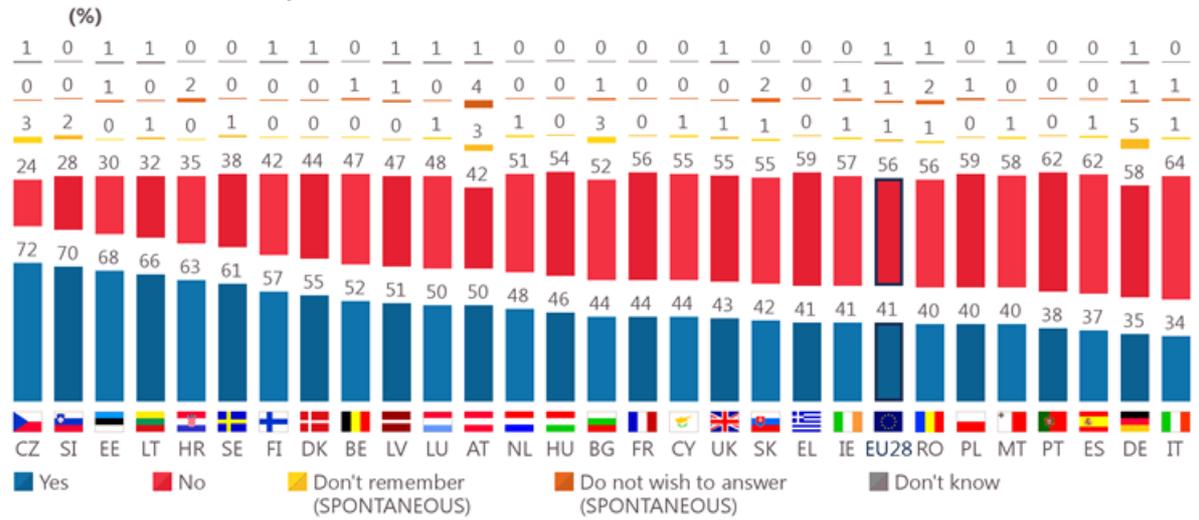


Base: Respondents who have taken antibiotics in the last 12 months (N= 8,416)

At a national level there is widespread variation. There are ten Member States where the majority of respondents say that they had a test, with particularly high proportions reported in the Czech Republic (72%), Slovenia (70%), Estonia (68%) and Lithuania (66%). Countries where respondents are least likely to have had a test include Spain (37%), Germany (35%) and Italy (34%).

¹³ Q4 Did you have a test, for example a blood or urine test, or throat swab, to find out what was causing your illness, before or at the same time that you started taking antibiotics? (ONE ANSWER ONLY): Yes, No; Don't remember (SPONTANEOUS); Do not wish to answer (SPONTANEOUS); Don't know

QC4 Did you have a test, for example a blood or urine test, or throat swab, to find out what was causing your illness, before or at the same time as you started antibiotics ?



Base: Respondents who have taken antibiotics in the last 12 months (N= 8,416)

II. KNOWLEDGE OF ANTIBIOTICS

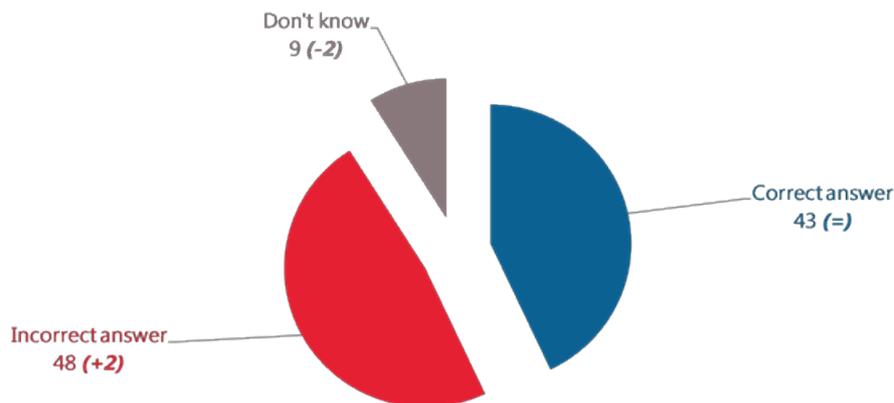
Respondents were read a series of statements about antibiotics, and asked to say if each was ‘true’ or ‘false’:

- Antibiotics kill viruses (FALSE)
- Antibiotics are effective against colds (FALSE)
- Unnecessary use of antibiotics makes them become ineffective (TRUE)
- Taking antibiotics often has side-effects, such as diarrhea (TRUE)¹⁴

Less than half of Europeans think that antibiotics are ineffective against viruses

Across the EU just over two-fifths of respondents (43%) correctly say that it is false that antibiotics kill viruses, while a slightly larger proportion (48%) incorrectly think that it is true that antibiotics kill viruses. One in eleven respondents (9%) were unable to express an opinion.

QC5.1 For each of the following statements, please tell me whether you think it is true or false.
Antibiotics kill viruses (% - EU)



(September 2018 - April 2016)

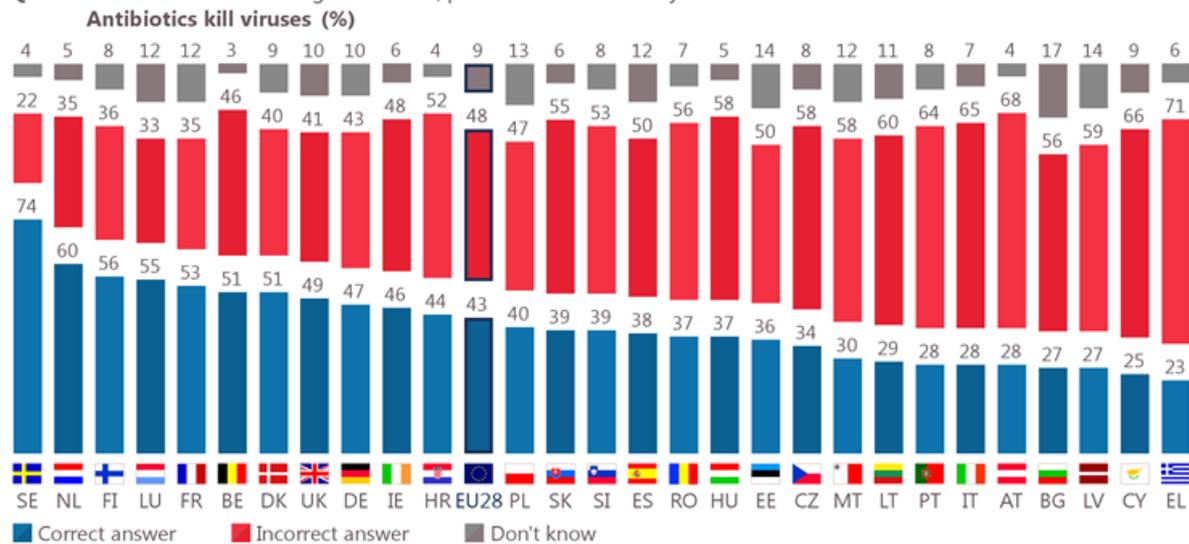
Base: all respondents (N= 27,474)

Since 2016 there has been no change in the proportion correctly saying that it is false that antibiotics kill viruses. There has been a small increase in the proportion incorrectly thinking that it is true (+2 percentage points), with a corresponding decrease in the proportion unable to express an opinion (-2 pp).

¹⁴ Q5 For each of the following statements, please tell me whether you think it is true or false? (SHOW SCREEN - READ OUT -ONE ANSWER PER LINE): Antibiotics kill viruses; Antibiotics are effective against colds; Unnecessary use of antibiotics makes them become ineffective; Taking antibiotics often has side effects such as diarrhea ANSWER LIST: True; False; Don't know

There is widespread variation at a national level.

QC5.1 For each of the following statements, please tell me whether you think it is true or false.



Base: all respondents (N= 27,474)

There are seven countries where the majority of respondents know that antibiotics do not kill viruses, ranging from a notable high in Sweden (74%) to between 51%-60% in the other six Member States.

There are nine countries where less than a third (33%) of respondents know that antibiotics do not kill viruses, with the lowest proportions reported in Bulgaria and Latvia (both 27%), Cyprus (25%) and Greece (23%).

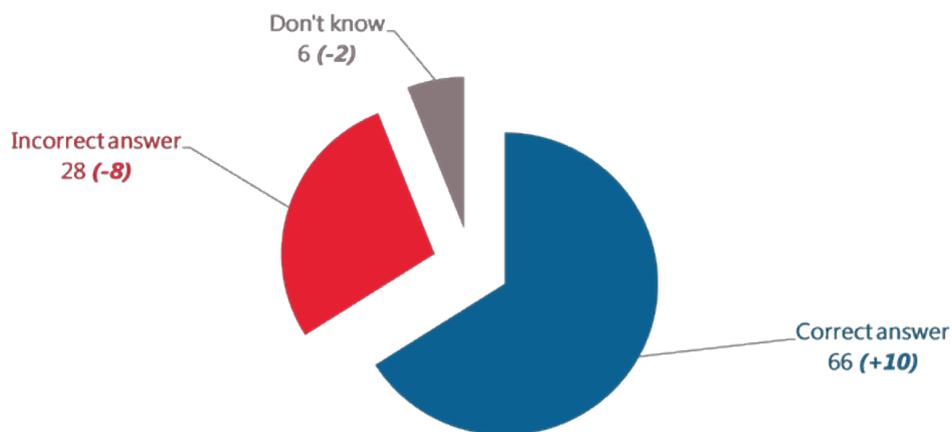
Comparing the national results with those from the 2016 survey, there are ten countries where the proportion of respondents correctly saying that it is false that antibiotics kill viruses has increased since 2016, with the most marked increases in Romania (+8 percentage points) and Poland (+6 pp).

There are 14 countries where knowledge has worsened, with the greatest declines in Ireland (-11 percentage points), Luxembourg and Cyprus (both -8 pp), the UK (-7 pp), France (-6 pp), and Finland, Denmark, Hungary and Lithuania (-5 pp in each).

The majority of Europeans are aware that antibiotics are ineffective at treating colds

Two thirds (66%) of respondents across the EU correctly say that it is false that antibiotics are effective at treating colds. Around a quarter (28%) gave the incorrect answer (thinking that it is true that antibiotics are effective against colds), with a small minority (6%) unable to express an opinion.

QC5.2 For each of the following statements, please tell me whether you think it is true or false.
Antibiotics are effective against colds (% - EU)



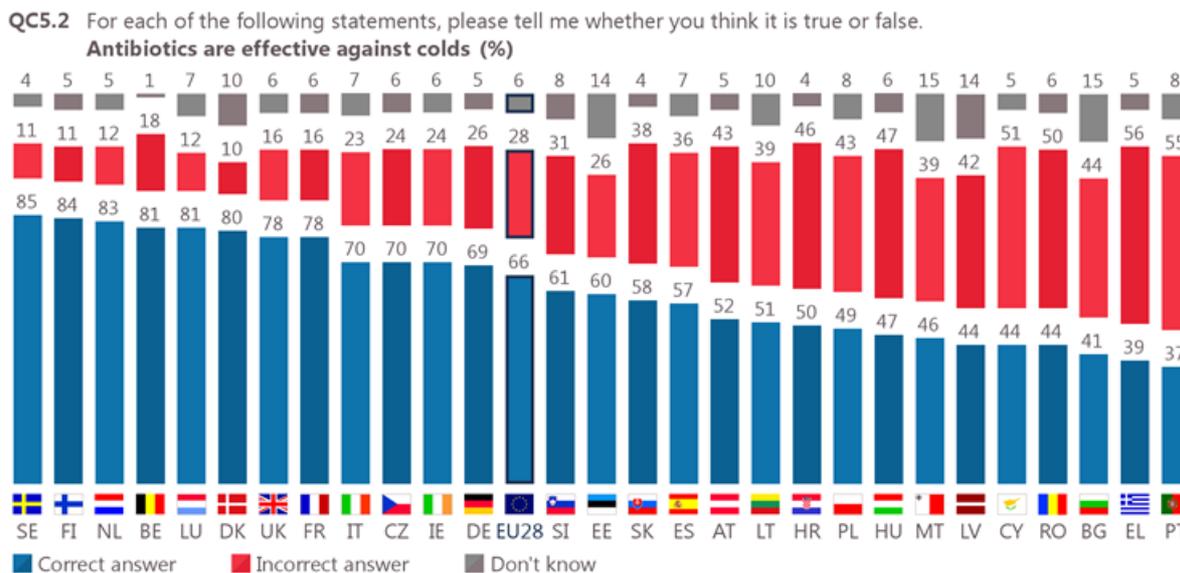
(September 2018 - April 2016)

Base: all respondents (N= 27,474)

The wording of this statement has changed slightly since 2016 (previously both colds and flu were included in the statement). Bearing this in mind, there has been a large increase in the proportion knowing that antibiotics are not effective against colds (+10 percentage points) and a somewhat smaller decrease in the proportion giving the incorrect answer (-8 percentage points).

As seen in relation to opinions about the effectiveness of antibiotics on viruses, there is widespread national variation about their effectiveness on colds.

There are six countries where at least eight in ten respondents know that antibiotics do not kill colds: Sweden (85%), Finland (84%), the Netherlands (83%), Belgium and Luxembourg (both 81%), and Denmark (80%). The majority of respondents in a further 12 Member States correctly say that it is false that antibiotics are effective at treating colds. Countries where respondents are least likely to give the correct answer are Bulgaria (41%), Greece (39%) and Portugal (37%).

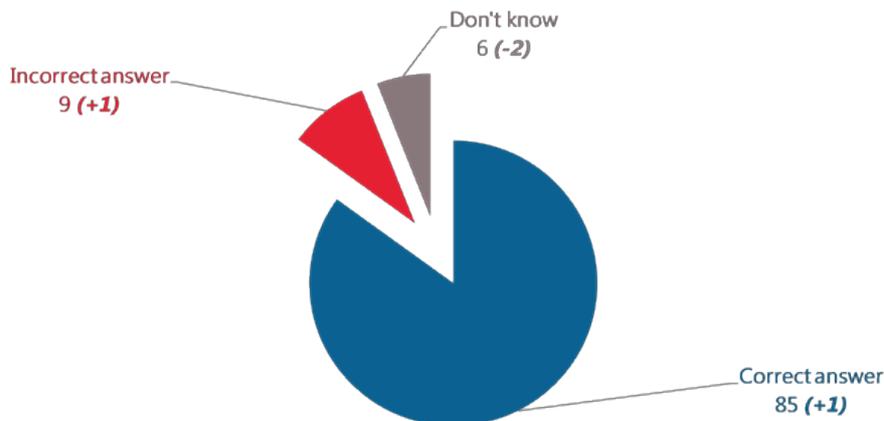


Base: all respondents (N= 27,474)

Most Europeans are aware that using antibiotics unnecessarily makes them become ineffective

More than four in five respondents (85%) correctly say that it is true that unnecessary use of antibiotics makes them become ineffective. 9% incorrectly say that this statement is false.

QC5.3 For each of the following statements, please tell me whether you think it is true or false.
Unnecessary use of antibiotics makes them become ineffective (% - EU)

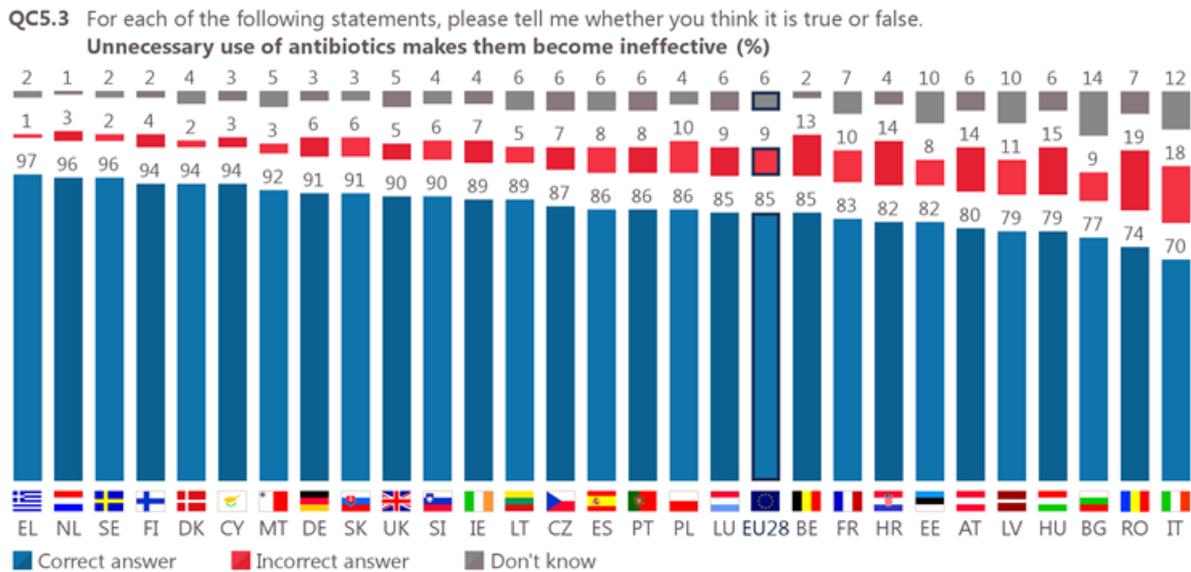


(September 2018 - April 2016)

Base: all respondents (N= 27,474)

The results are very similar to those reported in 2016. There has been a very small increase in the proportion of respondents who correctly think that using antibiotics unnecessarily leads to their ineffectiveness (+1 percentage point), a similar increase in the proportion incorrectly saying that this is false (+1 percentage point) and a small drop in the proportion unable to express an opinion (-2 pp).

There are differences across the Member States, but variation is less widespread than that seen in relation to knowledge about the effectiveness of antibiotics on viruses, and on colds.



Base: all respondents (N= 27,474)

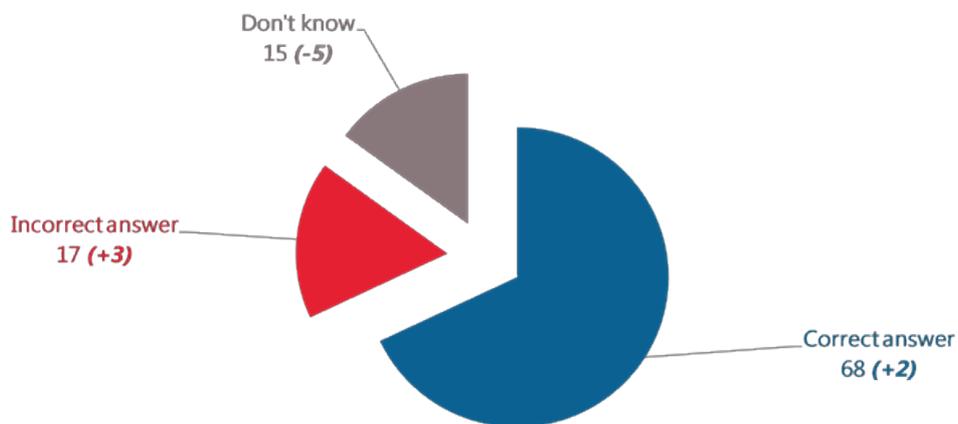
Across all Member States at least seven in ten respondents correctly identify that unnecessary antibiotic use leads to their ineffectiveness. Indeed, almost all respondents in Greece (97%), and Sweden and the Netherlands (both 96%) are correct, and at least nine in ten respondents in a further eight Member States¹⁵ know this to be the case. Respondents in Romania (74%) and Italy (70%) are least likely to give the correct answer.

¹⁵ Finland, Denmark, Cyprus, Malta, Germany, Slovakia, the UK and Slovenia

Around two thirds of Europeans know that taking antibiotics often leads to side effects, such as diarrhea

Just over two thirds of respondents (68%) correctly say that it is true that taking antibiotics often leads to side effects, such as diarrhea. One in six (17%) incorrectly say that it is false that antibiotics often leads to side effects. There is more uncertainty among respondents on whether this is true or false, with one in seven (15%) unable to give an answer (compared with 6%-9% on the previous three statements).

QC5.4 For each of the following statements, please tell me whether you think it is true or false.
Taking antibiotics often has side-effects such as diarrhea (% - EU)

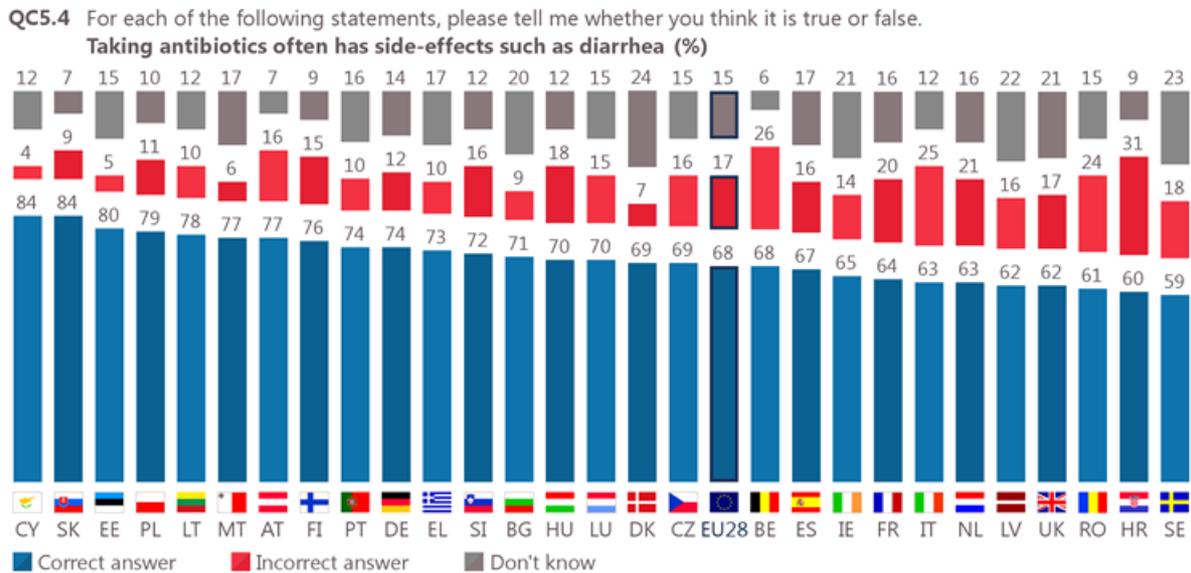


(September 2018 - April 2016)

Base: all respondents (N= 27,474)

Findings are broadly similar to those reported in 2016. There have been small increases in the proportion of respondents who correctly think that taking antibiotics often leads to side effects (+2 percentage points), and incorrectly say that this is false (+3 pp), with a corresponding drop in the proportion unable to express an opinion (-5 percentage points).

As seen in relation to opinions about the unnecessary use of antibiotics making them ineffective, there is less marked national variation on this measure.



Base: all respondents (N= 27,474)

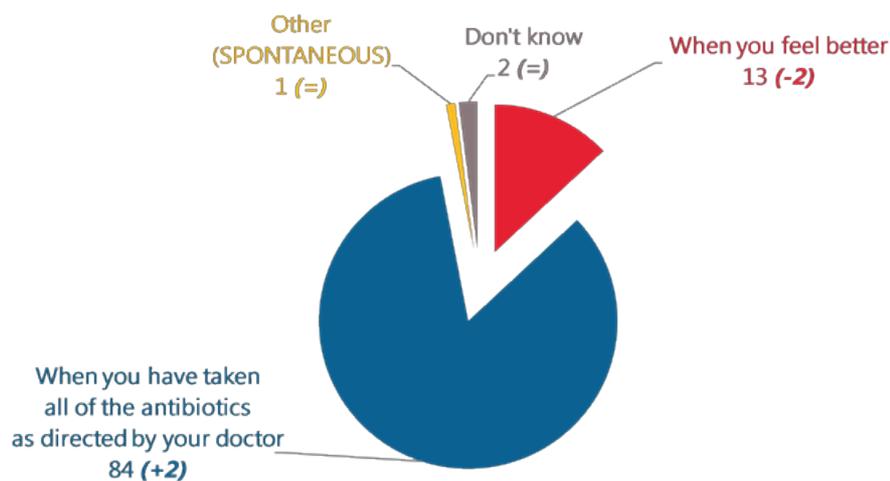
Across all Member States, the majority of respondents answer correctly. The highest proportions are found in Cyprus and Slovakia (both 84%), followed by Estonia (80%), Poland (79%), Lithuania (78%), Malta and Austria (both 77%), and Finland (76%). Countries where respondents are least likely to say that taking antibiotics often leads to side-effects include Croatia (60%) and Sweden (59%).

Most Europeans recognise the need to complete the full course of antibiotic treatment

The final section of this chapter examines Europeans' views on when they think antibiotics should be stopped once a course of treatment has begun¹⁶.

More than four in five respondents (84%) correctly say that antibiotic treatment should only be stopped when all of the antibiotics have been taken as directed. Nevertheless, around one in eight respondents (13%) incorrectly think that they should stop taking antibiotics when they feel better.

QC6 When do you think you should stop taking antibiotics once you have begun a course of treatment?
(% - EU)



(September 2018 - April 2016)

Base: all respondents (N= 27,474)

The results are broadly similar to the findings reported in 2016. There has been a small increase in the proportion of respondents correctly saying that treatment should only stop when all the antibiotics have been taken (+2 percentage points) and a corresponding drop in the proportion who incorrectly say that the antibiotics should be stopped when they feel better (-2 percentage points).

¹⁶ Q6 When do you think you should stop taking antibiotics once you have begun a course of treatment? (READ OUT – ONE ANSWER ONLY): When you feel better; When you have taken all the antibiotics as directed by your doctor; Other (SPONTANEOUS); Don't know

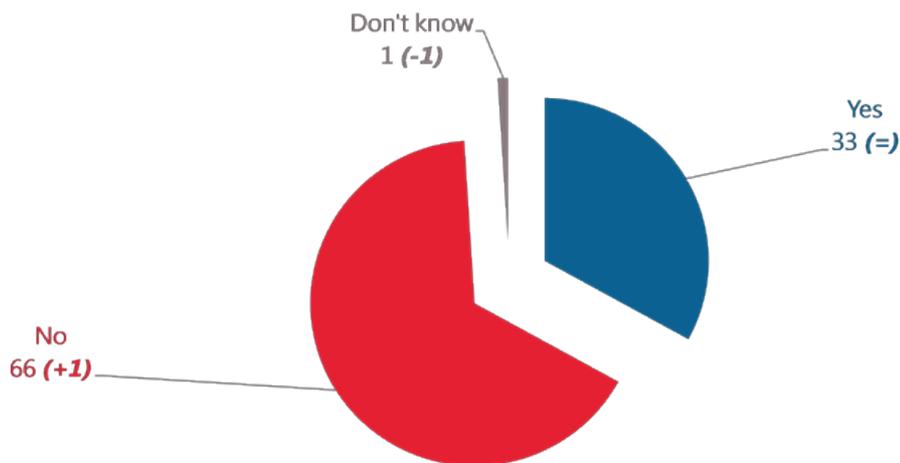
III. INFORMATION ABOUT THE CORRECT USE OF ANTIBIOTICS

A third of Europeans remember getting information about not taking antibiotics unnecessarily

Respondents were asked if they remembered getting any information about not taking antibiotics unnecessarily in the last year¹⁷.

The majority of respondents (66%) do not remember getting any information about not taking antibiotics unnecessarily, for example for a cold. A third (33%) of respondents say that they do remember receiving such information.

QC7 In the last 12 months, do you remember getting any information about not taking antibiotics unnecessarily, for example for a cold?
(% - EU)



(September 2018 - April 2016)

Base: all respondents (N= 27,474)

The results are very similar to those recorded in 2016.

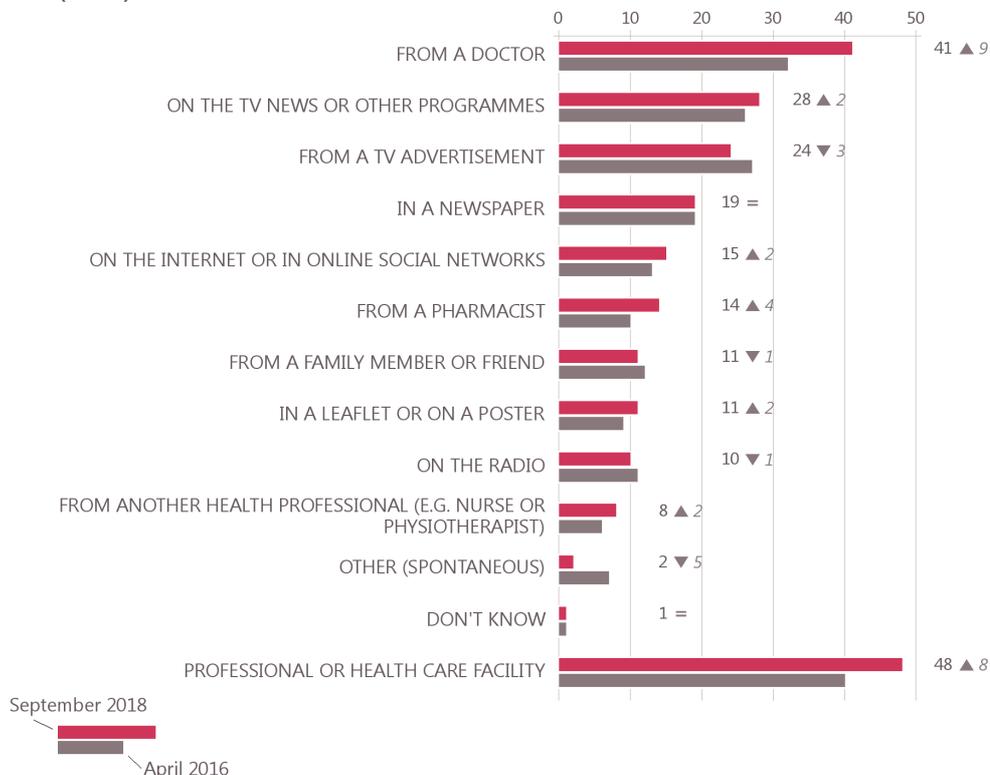
¹⁷ Q7 In the last 12 months, do you remember getting any information about not taking antibiotics unnecessarily, for example for a cold? (ONE ANSWER ONLY): Yes; No; Don't know

Europeans are most likely to have obtained the information from a doctor, followed by television news or other programmes or a television advertisement

Respondents who said that they had received information in the last 12 months about not taking antibiotics unnecessarily were asked how they got this information¹⁸, choosing their answer from a list of different ways presented to them.

Around two fifths of respondents (41%) say they got information about not taking antibiotics unnecessarily from a doctor, with more than a quarter (28%) getting the information on the television news or other programmes and just under a quarter (24%) getting information from a TV advertisement. Around one in five respondents (19%) obtained the information from a newspaper. No more than one in seven respondents mention other ways of obtaining the information.

QC8 Where did you get this information about not taking antibiotics unnecessarily? (MULTIPLE ANSWERS POSSIBLE)
(% - EU)



Base: Respondents who received information about not taking antibiotics unnecessarily (N= 8,983)

In terms of getting the information from professional sources, in addition to mentions of a doctor (41%), one in seven respondents mention getting the information from a pharmacist (14%) and a smaller proportion mention another health professional (e.g. nurse or physiotherapist) (8%). Combining these responses, just under half of respondents (48%) got their information from a professional or healthcare facility.

¹⁸ Q8 Where did you get this information about not taking antibiotics unnecessarily? (SHOW SCREEN – READ OUT – MULTIPLE ANSWERS POSSIBLE): From a doctor; From a pharmacist; From another health professional (e.g. nurse or physio-therapist); From a family member or friend; From a TV advertisement; On the internet or in online social networks; In a leaflet or on a poster; In a newspaper; On the TV news or other programmes; On the radio; Other (SPONTANEOUS); Don't know

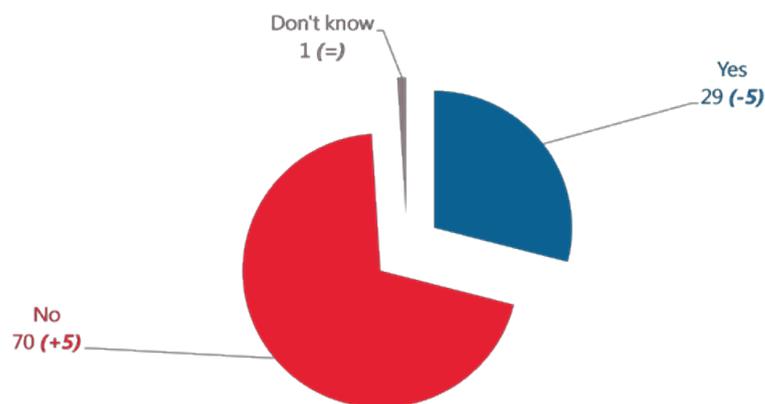
Seven in ten Europeans say the information that they obtained about the unnecessary use of antibiotics did not change their views about using them

European respondents who said that they had received information in the last 12 months about not taking antibiotics unnecessarily (33%) were then asked whether the information changed their views on using antibiotics.

Around three in ten respondents who said they had received information about not taking antibiotics unnecessarily say that the information changed their views on using antibiotics (29%). For most respondents (70%), the information did not affect their opinions on usage.

Comparing the findings with those reported in 2016, there has been a drop in the proportion of respondents saying that the information changed their views on using antibiotics (-5 percentage points).

QC9 Did the information that you received change your views on using antibiotics?
(% - EU)

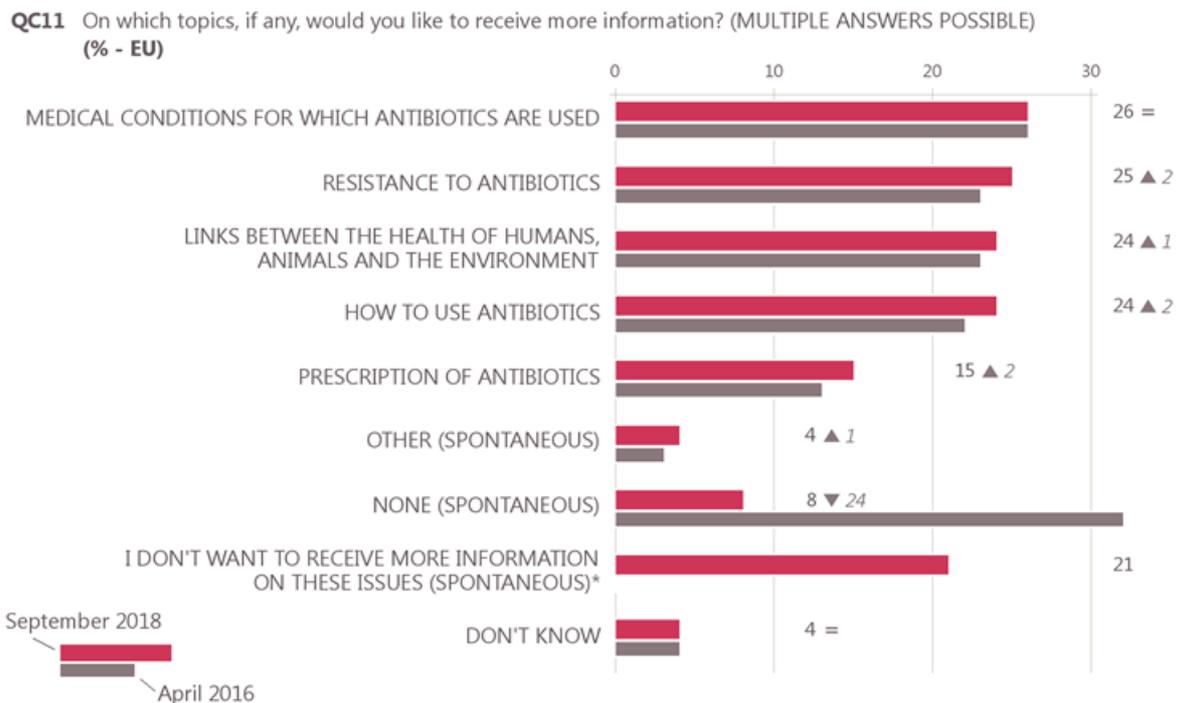


(September 2018 - April 2016)

Base: Respondents who received information about not taking antibiotics unnecessarily (N= 8,983)

Two thirds of respondents (67%) would like further information on antibiotics.

Around a quarter (26%) of respondents say they would like more information on medical conditions for which antibiotics are used, and similar proportions say they would like information on resistance to antibiotics (25%), links between the health of humans, animals and the environment (24%) and how to use antibiotics (24%). Respondents are less likely to want more information on the prescription of antibiotics (15%). One in five (21%) spontaneously say that they do not wish to receive more information on any of these subjects¹⁹.



Base: All respondents (N= 27,474)

The results are broadly in line with those reported in 2016. There are small increases in the proportion of respondents who say they would like more information on: resistance to antibiotics (+2 percentage points); how to use antibiotics (+2 pp); the prescription of antibiotics (+2 pp); and links between the health of humans, animals and the environment (+1 pp).

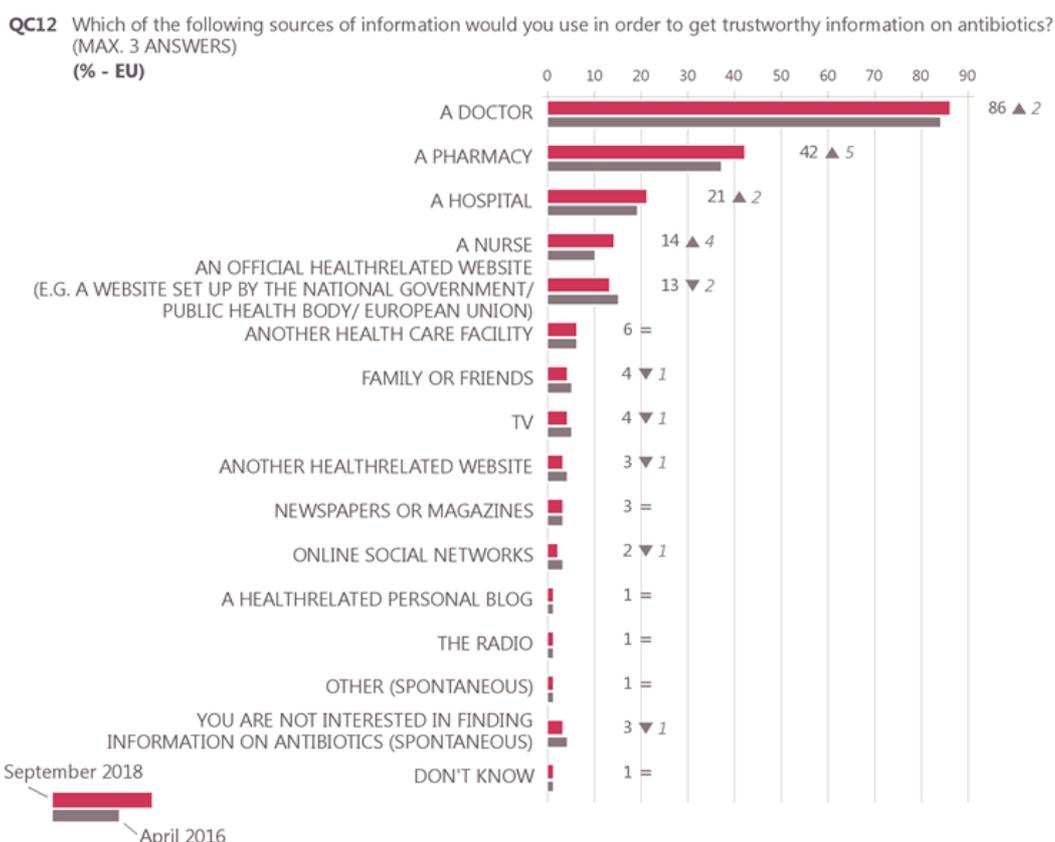
¹⁹ This was a new response item added to the questionnaire in 2018 and so there is no comparison data from 2016.

Europeans are much more likely to say they would go to a doctor to get trustworthy information on antibiotics rather than any other source of information

All respondents were shown a list of different ways in which information could be obtained and asked which sources they would use in order to get trustworthy information on antibiotics²⁰. They were able to choose up to three different methods. There has been a very slight modification of the question compared to that used in 2016²¹.

Respondents are most likely to view medical professionals or healthcare facilities as the most trustworthy sources of information on antibiotics. More than four in five respondents mention doctors (86%), while just over two fifths mention a pharmacy (42%) and around one in five mention a hospital (21%). One in seven respondents mention a nurse (14%) and one in eight an official health-related website (13%). Few respondents mention another healthcare facility (6%), another health-related website (3%) or a health-related personal blog (1%) as a source they would use to get trustworthy information on antibiotics.

Only a small proportion of respondents mention non-health-related sources as somewhere they would go to get information on antibiotics, such as television (4%), or family and friends (4%). Other methods that could be used to obtain trustworthy information are mentioned by no more than 3% of respondents.



Base: All respondents (N= 27,474)

²⁰ Q12 Which of the following sources of information would you use in order to get trustworthy information on antibiotics? (SHOW SCREEN – READ OUT – MAX. 3 ANSWERS): A doctor; A nurse; A pharmacy; A hospital; Another healthcare facility; Family or friends; An official health-related website (e.g. a website set up by the national government/ public health body/ European Union); A health-related personal blog; Another health-related website; Online social networks; TV; Newspapers or magazines; The radio; Other (SPONTANEOUS); You are not interested in finding information on antibiotics (SPONTANEOUS); Don't know

²¹ An additional code has been added to the interviewer answer list, allowing spontaneous mentions of 'Not interested in finding information about antibiotics' to be recorded

IV. USE OF ANTIBIOTICS IN AGRICULTURE AND THE ENVIRONMENT

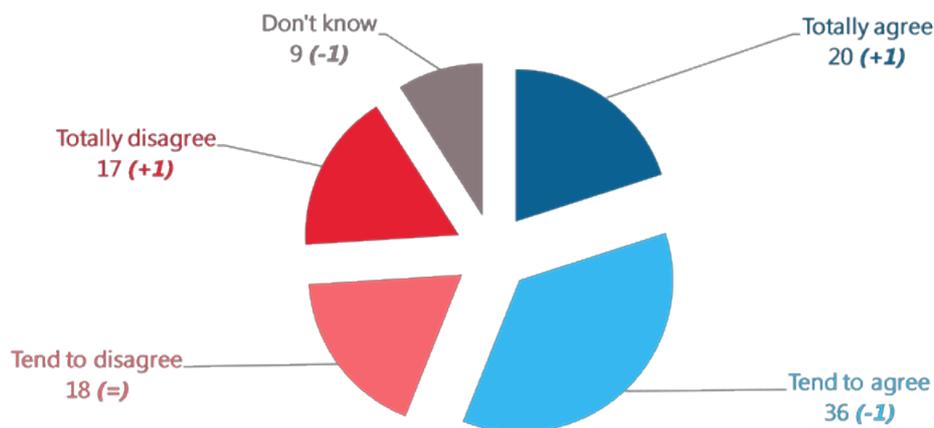
The final chapter of the report examines Europeans' attitudes towards the use of antibiotics on sick animals, and their awareness of the ban on using antibiotics to stimulate growth in farm animals.

More than half of Europeans agree that sick animals have the right to be treated with antibiotics

Respondents were then asked whether they agreed or disagreed with the use of antibiotics on sick animals if this is the most appropriate treatment²².

More than half of respondents (56%) agree that sick animals have the right to be treated with antibiotics if this is the more appropriate treatment, with one in five (20%) saying they 'totally agree'. Around a third of respondents (35%) disagree that sick animals have the right to be treated, with around one in six (17%) saying they 'totally disagree'. One in eleven respondents (9%) are unable to express an opinion on whether sick animals have this right.

QC14 To what extent do you agree or disagree that sick farm animals should be treated with antibiotics if this is the most appropriate treatment?
(% - EU)



(September 2018 - April 2016)

Base: All respondents (N= 27,474)

These results are broadly in line with the 2016 findings. There has been a very small increase in the proportion of respondents who 'totally agree' that sick animals have the right to be treated with antibiotics (+1 percentage point) and similar increase in the proportion who say that they 'totally disagree' that sick animals have this right (+1 percentage point). There are very small drops in the proportion who say they 'tend to agree' that sick animals have the right to be treated with antibiotics (-1 percentage point) and the proportion unable to express an opinion (-1 point).

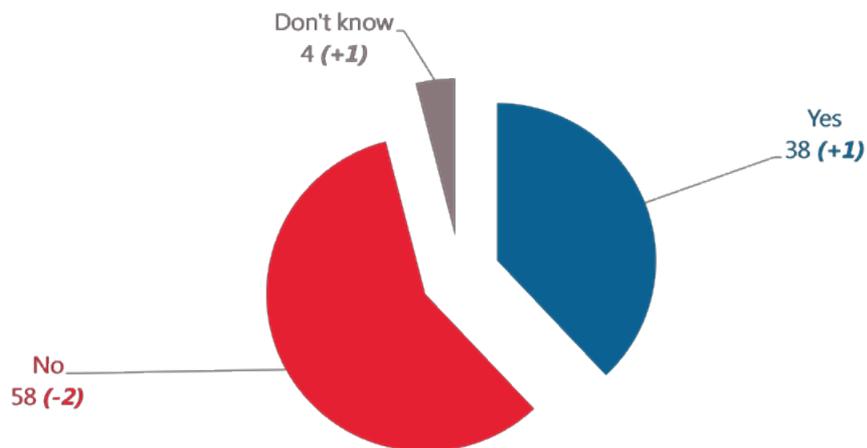
²² Q14 Now, let's talk about the use and effects of antibiotics in farm animals (i.e. animals used for consumption (meat, dairy products etc.).

To what extent do you agree or disagree that sick farm animals should be treated with antibiotics if this is the most appropriate treatment? (READ OUT - ONE ANSWER ONLY): Totally agree; Tend to agree; Tend to disagree; Totally disagree; Don't know

Around two in five Europeans are aware of the EU ban on the use of antibiotics to stimulate growth in farm animals

Around two fifths of respondents (38%) say they know that using antibiotics to stimulate growth in farm animals is banned within the EU²³. Just under three in five respondents (58%) do not know that such a ban exists.

QC15 Did you know that using antibiotics to stimulate growth in farm animals is banned within the EU?
(% - EU)



(September 2018 - April 2016)

Base: All respondents (N= 27,474)

The findings are broadly in line with those reported in 2016. There has been a very small increase in the proportion saying that they know that the use of antibiotics to stimulate growth in farm animals is banned in the EU (+1 percentage point).

²³ Q15 Did you know that using antibiotics to stimulate growth in farm animals is banned within the EU? (ONE ANSWER ONLY): Yes; No; Don't know

CONCLUSIONS

Reducing the overuse and misuse of antibiotics is vital to slow down and reduce antimicrobial resistance which has increasingly become a threat to public health to Europe and other parts of the world. The behaviour, knowledge and attitudes of the public play a key role in establishing and ensuring the prudent use of antimicrobials.

There has been a small drop since 2016 in the proportion of Europeans taking antibiotics in the previous 12 months and it is now at its lowest level since 2009. (40% in 2009 compared with 32% in 2018).

The level of usage in human medicine varies widely by country, ranging from just under half of citizens in Italy to around one in five in Sweden. While in most countries the proportion of citizens using antibiotics has remained stable or shown a small decline, there are a small number of Member States where usage has actually increased. There are certain groups of people more likely to say they have taken antibiotics in the last year, in particular people who struggle to pay their household bills and those who finished their full-time education at an early age (aged 15 or under). Women are also somewhat more likely than men to have taken them, as are the very young (15-24 year olds) and older people (aged 65 or over), and those who are not working. Of those who have taken antibiotics, only 41% say that a test was taken to find out what was causing the illness at the time.

While the vast majority (93%) of respondents obtained their last course of antibiotics from a healthcare professional, either via a medical prescription (72%) or directly from a medical practitioner (21%) around 7% of antibiotics were taken without a prescription – the same proportion as in 2016.

Respondents are most likely to cite bronchitis (16%), a sore throat (14%), flu (12%), a urinary tract infection (12%) and a fever (11%) as reasons for taking antibiotics. The proportion of antibiotics taken for cold or flu was 20% in 2018 – down from 27% in 2016.

Just over two fifths of respondents (41%) say they had a test to find out the cause of their illness, before or at the same time as starting the antibiotics

Overall, there remains significant scope to improve Europeans' knowledge about antibiotics, reflecting the findings of the surveys in 2009, 2013 and 2016. Only around one in four Europeans are able to give the correct answer to the four questions used to provide a measure of knowledge. Again, there are marked variations at a national level, ranging from just under half of citizens in Finland able to do so, to only one in eight in Italy and Latvia. While it is encouraging that knowledge appears to have improved in a few countries (although improvements tend to be small), there are ten Member States where knowledge has actually worsened since 2016. The population sub-groups who are more likely to have gaps in knowledge about antibiotics are generally groups who are also more likely to be taking them – people struggling with household bills, those who left full-time education at a young age (aged 15 or under), the very young (15-24 year olds) and older people (aged 65 or over) and those who are not working.

While most Europeans (85%) know that unnecessary use of antibiotics makes them become ineffective, and a similar proportion know that antibiotics should only be stopped after taking all of the prescribed dose, less than half know that antibiotics are ineffective against viruses and only just over half know they are ineffective against colds. Yet sore throats and flu are the second and third most widely cited reasons for taking antibiotics, and around one in nine citizens mention using them to treat a cold. However, there has been some improvement here – 20% say they taken antibiotics to treat flu or a cold compared with 27% in 2016.

Two thirds (67%) say they would like further information on antibiotics. When asked about the topics Europeans would like more information on, one in four mention the medical conditions for which antibiotics are used, with a slightly smaller proportion who want information on resistance to antibiotics, links between the health of humans, animals and the environment and how to use antibiotics.

The majority of Europeans do not remember getting any information in the last year about not taking antibiotics unnecessarily – only one in three say that they did. Again, there is widespread variation across Member States, with just over two thirds of citizens in Finland getting such information, compared with only one in seven in Italy. Those who have been exposed to such information are notably more likely to have better knowledge about antibiotics, although only a minority say that the information led them to change their views on antibiotics.

While the findings show that media (e.g. television, press, leaflet or poster) can and does convey information on antibiotics, any campaigns that use such channels need to be particularly effective at targeting those with poor knowledge. Europeans perceive doctors and pharmacists to be the most trustworthy sources of such information and, as such, they are the most likely to be able to educate citizens who are less well-informed about antibiotics and more likely to be using them. This reinforces the importance of the EU guidelines that task those who are responsible for or play a role in antimicrobial use with the promotion of prudent use of antibiotics. There is also an opportunity for healthcare systems to increase diagnostic testing before prescribing antibiotics – there are 16 Member States where less than half of their citizens who took antibiotics had a test to diagnose their symptoms and illness. The antibiotic course may not have been needed.

In terms of policy response on tackling antimicrobial resistance, Europeans are divided in their opinions but are most likely to think that action at a global level is most effective, followed by action at a national level or individual or family level.

Overall, the challenge remains to reduce the overuse of antibiotics and reduce incorrect usage. Improving public awareness of the role of antibiotics and of antimicrobial resistance is important in achieving these objectives.