



Falling through the gaps: why more people need basic asthma care

Annual Asthma Survey 2017 report

Foreword



When I read this latest Annual Asthma Survey report, I experience mixed emotions. I'm hugely proud of the team for producing such a comprehensive picture of the care received by people with asthma in the UK. However, the results have made me feel deeply sad and upset. Since last year's report, around 1,200 people tragically died from asthma in the UK, and around 70,000 will have experienced the upset, pain and stress of an emergency visit to hospital. And the same happened the year before that, and the year before that. This can't carry on.

Whilst we know we face difficult times in the NHS, I am incredibly disappointed about the lack of progress shown in this report and angry at the inaction on behalf of people with asthma. What is particularly frustrating is that these tough circumstances have not seen a halt in innovation, access to care or new treatments developed. But people with asthma are still missing out on the basic provisions of care, even whilst we see progress being made in other conditions. The only measure that has seen consistent improvement is the provision of written asthma action plans, and that is due to the unrelenting efforts of Asthma UK to promote their life saving potential direct to people with asthma, policy makers and health care professionals.

We need progress on much more and it is high time that this dismal picture is changed. It is unacceptable that I continue to be told that 'asthma is not a priority in the health care system' when there are 5.4 million people affected. We need the needs of people with asthma to be taken seriously and invested in. For years, asthma has been at the bottom of the 'to do' list, meaning that people with asthma are second-class citizens in comparison to people with other long-term conditions. All conditions should be addressed and the imbalance needs to stop.

Changes within the NHS, a forthcoming asthma audit and new guidelines create an opportunity to improve care for people with asthma. This will only happen with pressure and action at all levels. People with asthma, healthcare workers, commissioners and politicians need to make sure the crucial basics are provided in every single case. These are:

- You should have a review of your asthma at least once a year.
 - If you are getting symptoms or using your reliever inhaler three or more times per week you should go for a review of your asthma.
 - If you are using more than one reliever inhaler per month this may be a sign of untreated inflammation and risk of a life-threatening asthma attack – your asthma should be reviewed sooner.
 - A review should help you to know what to do if you (or your child) has an asthma attack.
 - A review should make sure that every person with asthma has access to information and support so that they can understand and manage their own asthma safely and effectively.
- You should have an agreed written asthma action plan
 - If you have an asthma attack – get help early. People die from delaying getting the support they need.
- Make sure that you are followed up after an asthma attack – not just to check that the treatment is working but to help prevent the next attack.

Everyone with asthma deserves at the very least basic care, and through highlighting what needs to be done with reports like this we wish to make this a reality. There is a long way to go, and I hope that future editions show progress. Be assured we will continue to do everything we can with our small but committed team to make that happen.

Kay Boycott
Chief Executive, Asthma UK

Executive Summary

Every 10 seconds, someone has an asthma attack.¹ Asthma has a huge impact on people’s lives, the NHS and the economy. In this fifth edition of the Annual Asthma Survey, we sought to find out more about your experiences with your asthma and the care you received in the past year.

In [last year’s edition of the Annual Asthma Survey](#), we discovered that two-thirds of people with asthma were not getting the care they deserved. Sadly, this year’s findings show that very little has changed in the past 12 months. Only 35% of people with asthma are receiving the most basic level of asthma care, and the consequences of this lack of provision are fatal. Other measures used in this report, such as care ratings and the provision of follow-up care after an emergency admission, show a similarly worrying lack of progress.

We also learn about the differences in care levels across the UK in this year’s report. All people with asthma should receive basic care, but the findings show that there is a form of ‘postcode lottery’ in the UK for people with asthma. Nearly twice as many people with asthma in Northern Ireland (48.2%) received basic asthma care as in London (27.6%). This inequality is not just geographical but generational. A quarter of people aged 18-29 (25.1%) received basic asthma care, compared to 41.7% of people aged 70-79. This inequality of care is particularly frustrating, because it shows that a better (if not perfect) standard of care is possible.






This year, we asked a number of new questions. We have gained new insight into your asthma triggers, and which triggers are particularly difficult to avoid. We also asked about the use of technology in your healthcare. Over half (55.6%) of you told us that you used some form of technology in your healthcare, but only 8.3% used an asthma specific app. Technology is a key part of our vision for the asthma care of the future, and it is clearly part of the present for many aspects of healthcare. There is an unmet need in asthma technology that we want to see addressed. Increasing the role of technology in healthcare will help balance the disparities in care described in this report. The NHS is currently under considerable strain, and asthma care may be provided in different ways than we’re used to.

This year’s Annual Asthma Survey attracted 7,611 responses - the largest we’ve seen. It has provided a great insight into the care received by people with asthma across the country, and where improvements need to be made. This report is for anyone who has asthma or is affected by asthma. After reading this report, we hope you will be more informed about both your own asthma care and the national picture.

We would also like to thank those who completed the survey for their contribution.

Annual Asthma Survey 2017 report

Key findings

-  Nearly two-thirds of people with asthma are not receiving basic levels of asthma care
-  There is significant variation across the UK in the levels of basic asthma care received
-  Two-thirds of people with asthma who attended hospital did not receive a follow-up appointment within two working days as recommended in guidelines
-  People with asthma experience a variety of asthma triggers, with colds and flu being the most prevalent (81%)
-  Over half of respondents reported using technology in their healthcare

Introduction

This is the fifth edition of Asthma UK’s Annual Asthma Survey report. The survey aimed to provide updated insight on the levels of care received by people with asthma by asking questions that have been asked in all previous editions of the survey, allowing trends to be tracked. Insight into respondents’ asthma triggers and the use of technology in healthcare was also gained, through the addition of new questions.

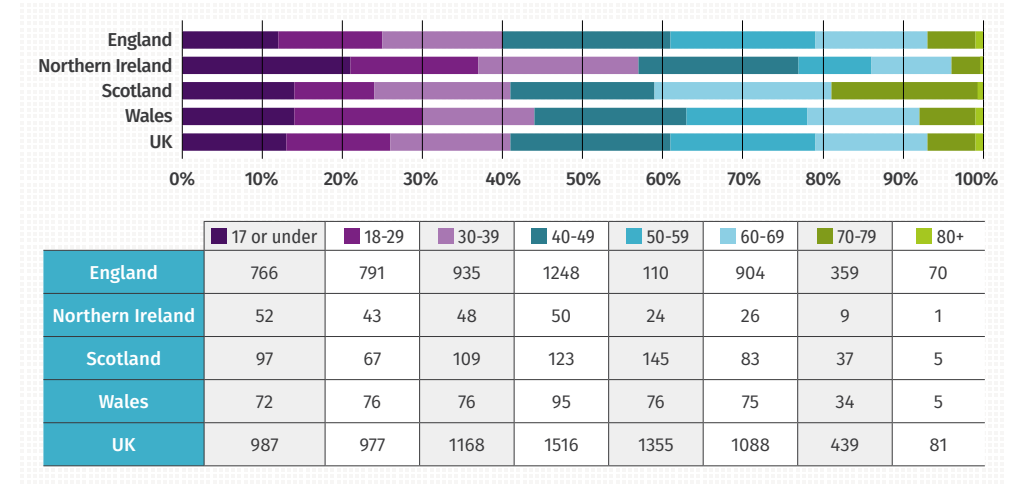
The survey was conducted online, and ran from mid-June 2017 to late August 2017. The survey was promoted on our newsletter, social media and website. A full list of questions asked in the survey is available in Appendix A.

Who responded to the survey?

The survey received 7735 responses. After data cleaning,¹ a final total of **7611** unique responses were counted in the results. This is the highest response we have received to the Annual Survey.

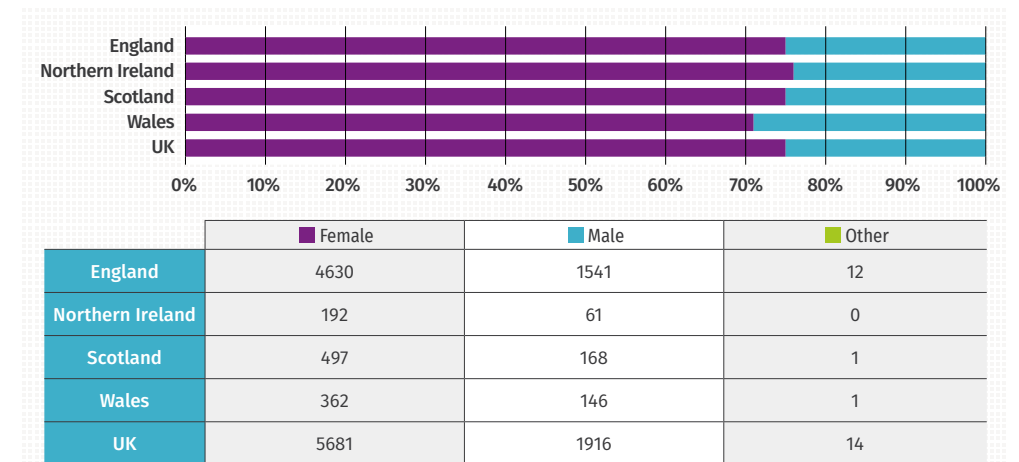
Of these responses, **6183 were from England, 666 from Scotland, 509 from Wales** and **253 from Northern Ireland**. The age group with the largest number of respondents (1516) was 40-49, constituting 19.9% of all respondents. We received a higher proportion of respondents who were 17 or under (987, 13.0% of respondents) compared to the 2016 survey (431, 9.3% of respondents).ⁱⁱ This figure includes those who completed the survey on behalf of their children. There are 1.1 million children with asthma in the UK, so this increased response rate means we can have greater confidence in representing the views of children with asthma.

Figure 1: Respondents by age and nation



Women made up nearly three-quarters (74.6%, 5681 of 7611) of the survey respondents. This is in line with the gender balance of surveys from previous years, with women providing 75.8% of total responses in 2016ⁱⁱⁱ. The gender balance in asthma prevalence is 56% women and 44% men. This means that 2.4 million men have asthma in the UK,^{iv} so encouraging more men to take part is, once again, something to target for next year’s survey.

Figure 2: Respondents by gender and nation



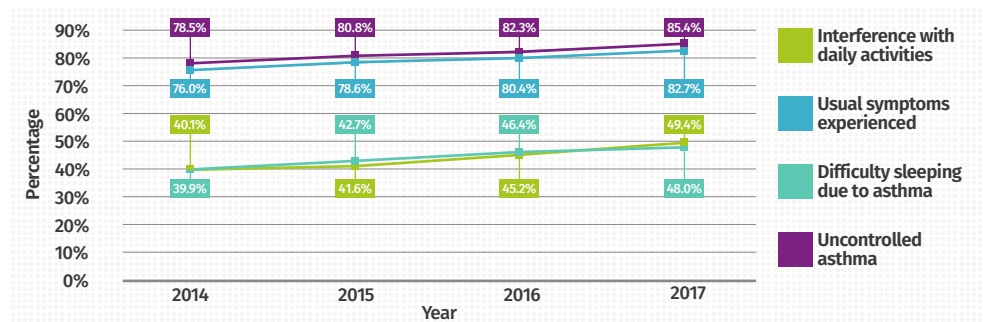
What are the levels of asthma control?

Each year, we ask respondents about their level of asthma control. This is a good measure to help gauge how asthma affects people's lives. We use three questions used by the Royal College of Physicians (RCP),^v which ask whether, in the past four weeks:

- you, or your child, has experienced trouble sleeping due to your/their asthma
- were you or your child's usual daily activities, such as performing work/housework, going to school or other activities interfered with due to asthma
- you, or your child, have experienced usual asthma symptoms, such as cough, wheeze, shortness of breath or chest tightness during the day.

Answering yes to one (or more) of these questions indicates that you may have uncontrolled asthma. The level of uncontrolled asthma reported by respondents has increased to 85.4% (6500 of 7611), from 82.3% in 2016. This continues the pattern observed since 2014 when asthma control questions were first asked.

Figure 3: Asthma control levels, 2014-2017



The 2016 Annual Asthma Survey^{vi} established a direct link between levels of asthma control and the impact of asthma on people's free time, career and education. These results indicate that poor levels of asthma control, through interrupting sleep and affecting daily activities, continue to have an impact on the lives of people with asthma in the UK. Levels of asthma control also have an impact on hospital attendance rates, levels of care provision and number of triggers, which will be explored further in this report.

What does this mean for you, and what are we doing about it?

- If your asthma symptoms are causing problems, such as interfering with daily activities or interrupting your sleep, the best way to address this is to [attend an asthma review with your doctor or asthma nurse](#).
- We are trying to improve access to asthma reviews through the [development of digital solutions](#) to support the management of your asthma.
- We want to see the results of this assessment used to improve outcomes and reduce A&E attendance.

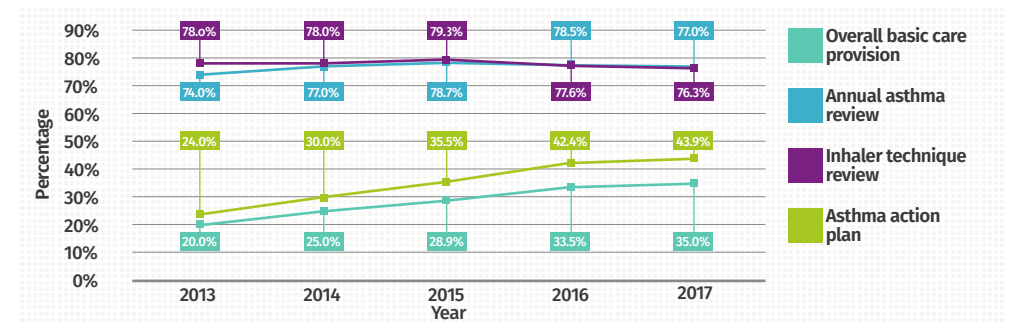
What level of basic asthma care is provided?

Everyone with asthma should receive a basic level of asthma care. The provision of basic care contributes to keeping people with asthma out of hospital, and ultimately saving lives. To find out the level of basic care received in 2017, we asked the same questions we have asked since 2013. We asked whether you had received the following three elements of basic care, as set out in the clinical guidelines:^{2viii}

- an annual asthma review
- a written asthma action plan
- an inhaler technique check with a healthcare professional.

A negative answer to any of these three questions means that you are not receiving basic care for your asthma that fully meets clinical guidelines.

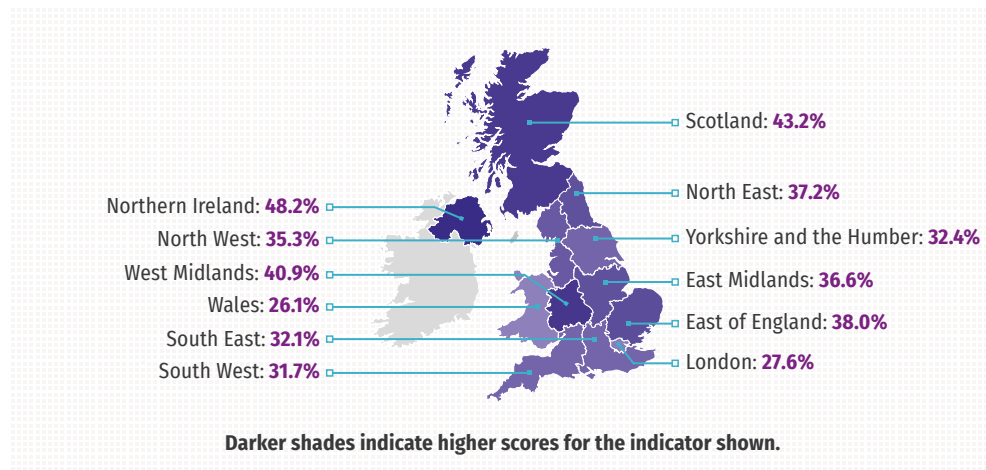
Figure 4: Basic care measures received, 2013-2017



This year's results continued the slight upward trend in the provision of basic care, with 35.0% of respondents receiving all three elements of care. This, however, still means that majority of people with asthma in the UK do not receive the basic level of care – an estimated 3.5 million people. We think that the upward trend is a result of the increase in use of written asthma action plans, which is now 43.9% (3344 of 7611). This is an encouraging 82.9% increase from the 2013 level (24.0%). The results for receiving an annual asthma review and an inhaler technique check continue to track closely together at 77.0% and 76.3% respectively. Although the results of these measures have historically not fluctuated much, both saw a slight decrease this year. This is a concern, and the overall increase in care provision should not mask the downward trend for these two important elements of asthma care.

There are notable national and regional differences in the care provided for people with asthma as shown in Map 1. In Northern Ireland, nearly half of respondents (48.2%, 122 of 253) received basic asthma care. In comparison, **only 26.1% (133 of 509) of people with asthma in Wales** received basic asthma care.

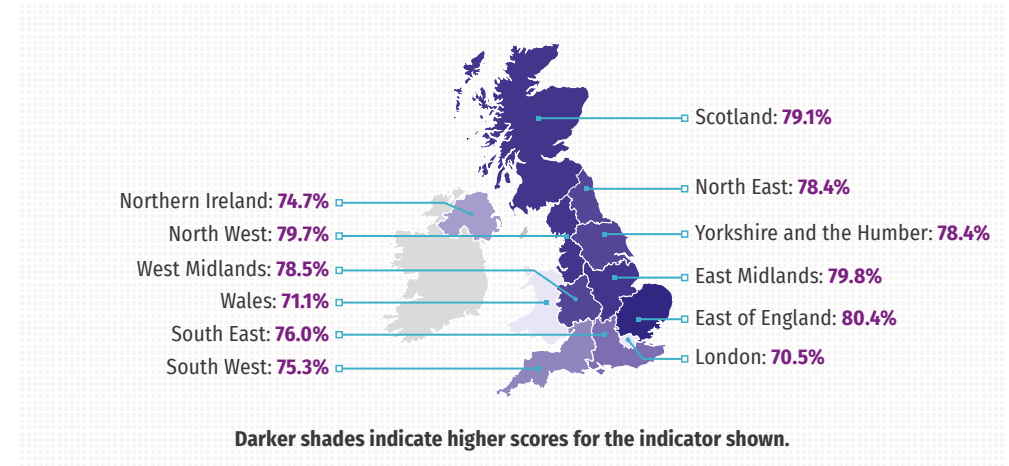
Map 1: Percentage of respondents receiving basic care across the UK



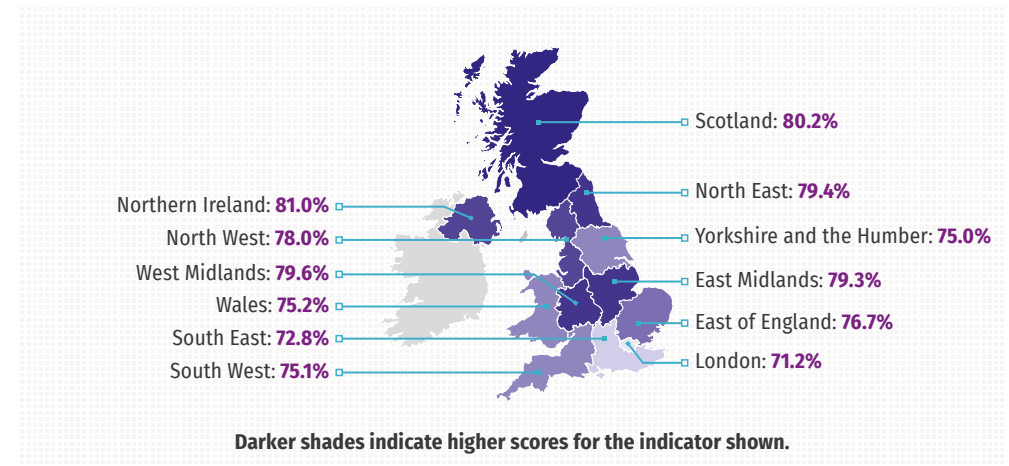
There are also inequalities in the three elements of basic care individually. People with asthma in London receive the lowest rate of annual asthma reviews (70.5%, 424 of 601) in the UK (Map 2). Essential annual asthma review provision in Wales (71.1%) is also significantly below the national level (77.0%). As Map 3 indicates, London also performs poorly in receiving an inhaler technique check (71.2%, 428 of 601). This follows on from previous poor performance in the capital in these measures in the 2015 and 2016 editions of the survey. As Map 4 shows, Wales has the lowest rate of asthma action plan provision, with less than a third (32.6%, 166 of 509) of people with asthma using one. Asthma action plan provision has the most acute inequality, with nearly double the proportion (60.5%, 153 of 253) receiving one in Northern Ireland. These results indicate that asthma care is uneven across the UK. It is also important to remember that within the regions listed, there will be areas with excellent asthma care next to areas where people with asthma are not receiving the care they need.

Regional differences in care levels are matched by differences in care levels by age group. People with asthma aged between 18 and 29 are the group least likely to receive their basic asthma care, with only a quarter (25.1%, 245 of 977) receiving basic asthma care. Although all people with asthma should receive basic asthma care, it is encouraging to see higher levels of care for the 17 or under age group. It should be a priority to ensure that young people continue to demand the care they receive in childhood.

Map 2: Percentage of respondents receiving an annual asthma review



Map 3: Percentage of respondents who had an inhaler technique check



Map 4: Percentage of respondents who had received a written asthma action plan

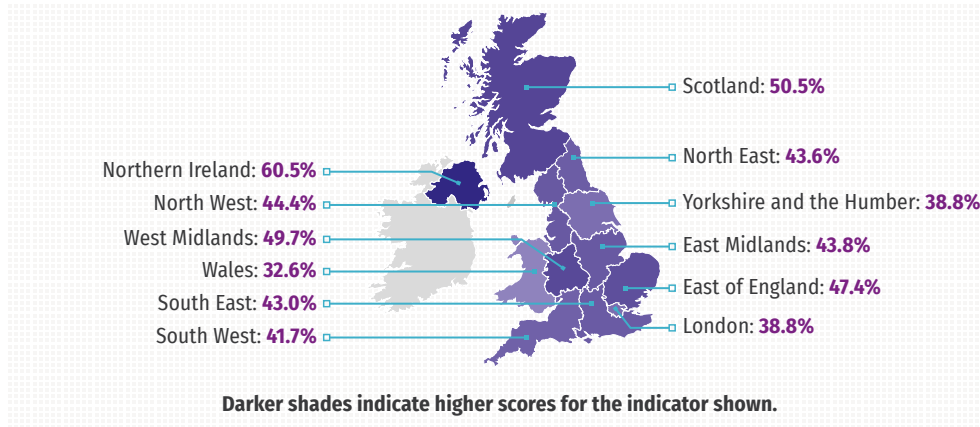
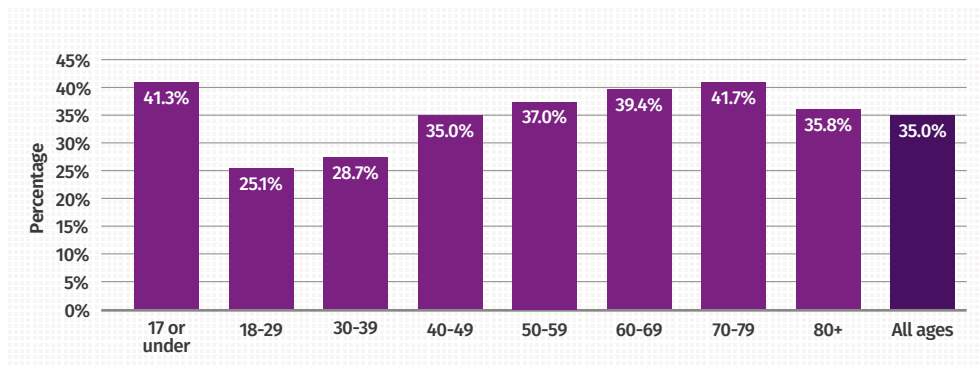


Figure 5: Basic care received by age group



These results have shown that once again, there are disparities in the levels of care received by people with asthma across the UK. Although there are notable gaps in coverage, sometimes basic care will not be provided because the person with asthma does not attend a GP appointment, despite reminders or encouragement. The inequalities noted are evident by age and geographic area, which was a trend observed in previous editions of this survey, and it is important that this is addressed.

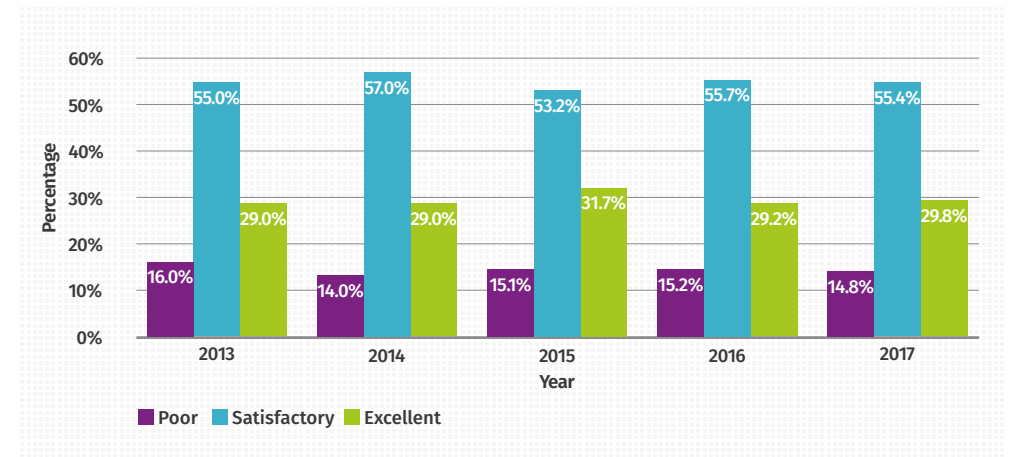
What does this mean for you, and what are we doing about it?

- The measures discussed here outline the basic care [you should receive in the NHS](#) for your asthma. If you are not receiving it, demand it.
- We will continue our work to [influence policy makers](#) across the UK to improve the provision of basic asthma care.
- We want to see levels of care monitored and used to drive improvements.

How did you rate your care?

Each year, we ask respondents to rate the care they receive for their asthma. This question encompasses all aspects of care and provides a good overall figure. For the first time, we asked respondents to rate the individual aspects of their asthma care they received – their primary care, emergency hospital care and specialist care. This gives us a greater understanding of what parts of asthma care require improvement, and which parts people are happy with.

Figure 6: Overall asthma care ratings 2013-2017



Overall, we've seen little change in the perception of asthma care over the five editions of this survey. Figure 6 shows that this year, 14.8% (1120 of 7579) of respondents rated their asthma care as 'poor', which fits within the pattern of 14% to 16% of respondents describing their asthma care as 'poor' since 2013. Breaking the results of this question down to age groups in figure 7, we find subtle variations. **The two youngest age groups, 17 or under and 18-29, have a higher proportion of respondents rating their care as poor at 18.3% (180 of 984) and 18.1% (176 of 974) respectively.** Interestingly, figure 5 shows that those 17 or under received the second highest amount of basic asthma care. This indicates that although you may receive care that follows clinical guidelines, it may not always reach your expectations. In contrast, 8.9% of people aged 70-79 (39 of 437) and 7.5% of people aged 80+ (six of 80) rated their asthma care as poor. In terms of national and regional differences in care ratings, asthma care in Scotland is rated the highest, with 36.7% rating their asthma care as 'excellent'. In contrast, only 24.7% of people in London rated their care as 'excellent'. This again highlights the disparity in care quality across the UK.

Figure 7: Asthma care ratings by age

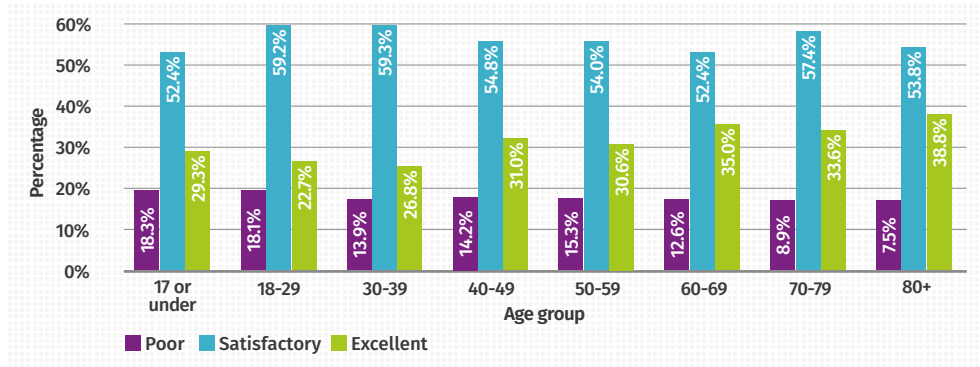
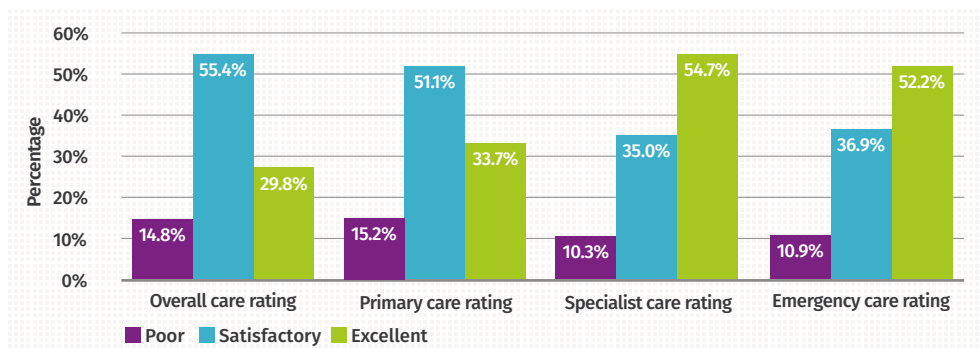


Figure 8: Asthma care ratings by care sector



Being asked to rate your care is a broad question and it is hard to draw solid conclusions from the responses, so we asked for ratings on the care received in the different settings. Figure 8 shows that primary care ratings are similar to the overall care ratings, with over a third rating their care as 'excellent'. This similarity is understandable, as 85% of asthma patients are managed exclusively in primary care.^{ix} However, care provided in hospitals was rated higher in this question, with **over half of respondents rating their specialist care (54.7%, 743 of 1358) and emergency care (52.2%, 1164 of 2229) as 'excellent'**.

The results described here indicate that the majority of people with asthma are content with the quality of care they receive, but there are disparities in care experience across age and care setting.

What does this mean for you, and what are we doing about it?

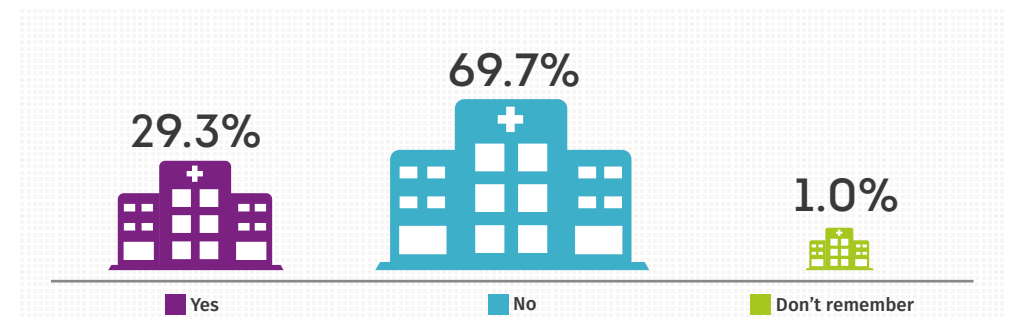
- If you are not happy with your care or are struggling to access care, [read about your options](#) on the Asthma UK website.
- We know the NHS is stretched and it can be a struggle to access care when you need it, so we are continuing to develop [our resources](#) to support you.
- We want to see care ratings improve across all care settings, and policymakers working to address this.

What did you tell us about your secondary care?

Every eight minutes, someone is admitted to hospital for an asthma attack in the UK.^x To explore this critical element of asthma care further, we asked if you had received unscheduled emergency care,⁴ and if so, if you had attended a GP follow up appointment within two working days. A follow-up appointment is essential to stop asthma attacks and prevent further hospital visits.

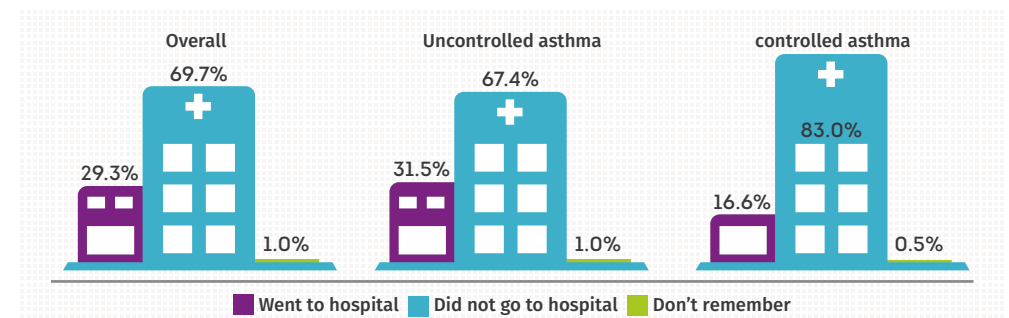
Nearly one-third (29.3%, 2229 of 7611) of respondents had received emergency or unplanned care at a hospital or out-of-hours centre for their asthma in the previous year.

Figure 9: Have you received emergency/unplanned care at a hospital or out-of-hours centre for your asthma in the past year?



If we break down this figure further, we can see the link between asthma control and the risk of hospitalisation. The figures showed 31.5% (2045 of 6500) of people with uncontrolled asthma received emergency or unplanned care, compared to 16.6% (184 of 1111) of people with controlled asthma. Improving levels of asthma control is one method that may reduce hospitalisations.

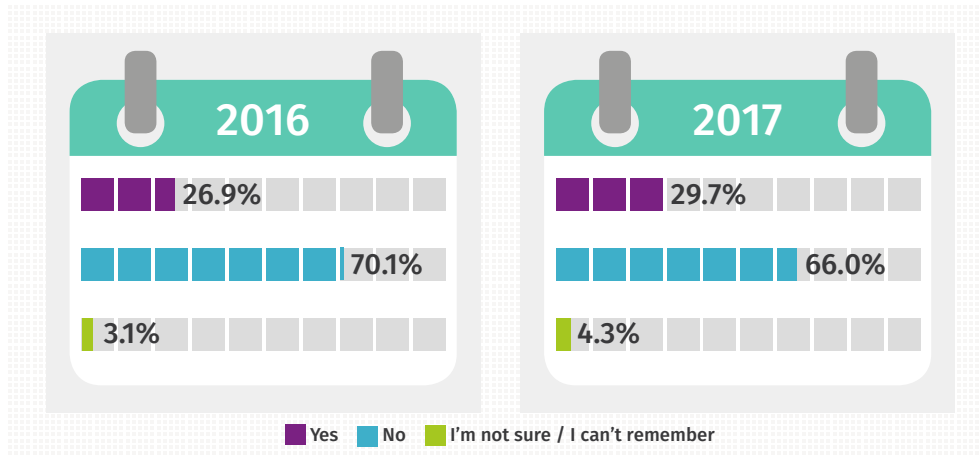
Figure 10: Asthma control and hospital attendance



4 We amended this question in 2016, so will not be able to compare these results with years prior to this.

3 Figure 8 represents the results of four separate questions. All respondents (7611, 7659 answers for this question) were able to give the overall care ratings, while the responses for the primary (6771) and specialist care (1358) were dependent on receiving routine care at these settings. Only those who stated they had received emergency care in the past 12 months (2229) were asked to rate emergency care.

Figure 11: Did you have a follow-up appointment for your asthma within two working days?



Of those who had received emergency or unplanned care at a hospital or out-of-hours centre for their asthma in the previous year, **only 29.7% (662 of 2229) received the appropriate follow up care.** This is an improvement on last year's figure of 26.9% (345 of 1283), but still not close to the level needed to stop asthma attacks. In 2015/16, nearly 6000 (5961) people were readmitted to hospital in the UK for their asthma within 30 days of their initial discharge.^{xi} A further year has passed since the 2015 publication of the National Review of Asthma Deaths (NRAD)^{xii} which recommended follow-up appointments. This recommendation was made because of the 10 per cent who had been treated in hospital within 28 days of their death; two-thirds of these had been hospitalised for asthma in the month before they died and did not receive follow-up care. We also know that you are four times more likely to be admitted to hospital for your asthma if you don't have an asthma action plan.^{xiii} It is the avoidable nature of so many hospital admissions that is particularly frustrating. We recognise that there are limitations with linked health records, meaning that your GP does not always know if you have been to hospital, reducing the likelihood of a follow-up appointment occurring. We are campaigning to improve this situation, and believe that data sharing between GPs and hospitals would improve discharge arrangements and increase the number of people with asthma receiving a follow-up appointment.

What does this mean for you, and what are we doing about it?

- If you go to hospital for your asthma, see your GP as soon as possible afterwards. They won't necessarily know that you've been to hospital.
- We are working [to influence data sharing](#) across the NHS – something that is crucial to improving communication between everyone who looks after you.
- We want to see data joined up, so that you receive seamless care and the best outcomes for your asthma. We also want to see an [increased role for technology](#) in your asthma care.

What you told us about your triggers

Everyone's asthma is different and there are a huge range of potential triggers that can set asthma symptoms off. For the first time in an Annual Asthma Survey, we asked about what triggers people's asthma. Respondents were able to select as many triggers as necessary.

Table 1: Top 10 triggers selected⁵

Trigger	Have trigger	Do not have trigger	% of respondents who listed trigger
Colds and flu	6162	1449	81.0%
Dust	4846	2765	63.7%
Air pollution	4685	2926	61.6%
Pollen	4685	2926	61.6%
Exercise	4069	3542	53.5%
Cigarette smoke	4066	3545	53.4%
Perfumes and aerosols	3633	3978	47.7%
Stress	3292	4319	43.3%
Moulds and fungi	3220	4391	42.3%
Paint fumes	2886	4725	37.9%

Colds and flu was the trigger listed most frequently by respondents, with eight out of 10 listing these as triggers for their asthma. Six triggers were listed by over half of respondents. The results of this question are not particularly surprising, but it confirms that asthma is a diverse condition that affects people in a range of settings, and throughout the year.

Respondents were also asked which trigger they found hardest to avoid. Unlike the first triggers question, respondents were only able to select one answer.

Table 2: Top 10 hardest to avoid triggers

Trigger	% of respondents who stated trigger was hardest to avoid	Number of respondents who stated trigger was hardest to avoid
Air pollution	26.1%	1911
Colds and flu	22.6%	1656
Pollen	12.5%	917
Dust	8.7%	636
Cigarette smoke	5.5%	406
Stress	4.8%	353
Exercise	4.6%	339
Perfumes and aerosols	3.5%	260
Pets	2.1%	157
Moulds and fungi	2.0%	149

Air pollution is ranked as the asthma trigger that is hardest for people with asthma to avoid, with over a quarter listing this. Nearly half (48.7%) of answers were split between air pollution and colds and flu.

In London, 40.1% of people stated that air pollution was the trigger they found hardest to avoid, compared to the UK figure of 26.1%. London also had the highest prevalence of air pollution as a trigger, with 73.5% listing, compared to the UK figure of 61.6%. This is the most notable regional difference in the triggers question. There were further subtle age-based differences in the results. Colds and flu proved to be the hardest trigger for young people to avoid, with 36.1% of those 17 or under selecting it as the trigger that was hardest to avoid, compared to 22.6% of those of all ages.

Having controlled asthma is essential for not letting asthma rule your life, and we found that those with uncontrolled asthma listed more asthma triggers (6.8, on average) than those whose asthma was under control (4.7, on average). To find out more about asthma triggers, and the best methods to manage them, visit the [Asthma UK website](#).

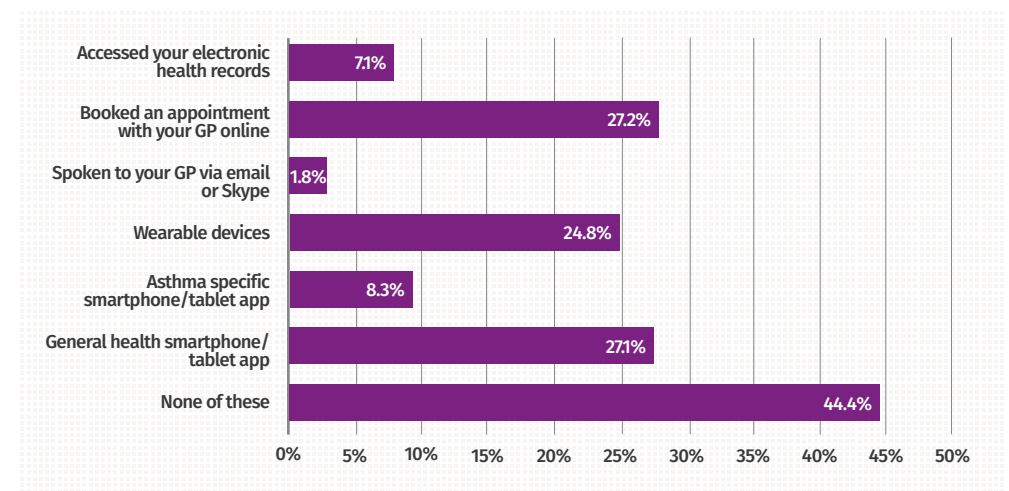
What does this mean for you, and what are we doing about it?

- If you are unsure about your triggers, you can find out more about asthma triggers on [our website](#). The best way to manage your triggers is to take preventer medicine, use an asthma action plan and go for an annual asthma review.
- We are calling for a new Clean Air Act and [campaigning](#) to raise awareness of the importance of clean air.
- We want to see [more research into asthma triggers](#) and how they affect you.

The use of technology in asthma care

We know there is an increasing role (and great potential) for the use of health apps, new devices (such as smart inhalers) and wearable technology in your asthma care, and technology has the potential to reshape the relationship between the patient and clinician. This is an [important area of work](#) for Asthma UK so for the first time, we asked you about the use of technology in your asthma care. We asked which modes of technology you used and how often you use each type of technology in your asthma care. Respondents were able to select more than one answer.

Figure 12: Which of these technologies have you used?



Over half of respondents (55.6%, 4235 of 7611) used some form of health technology. Online GP appointment booking and general health smartphone/tablet apps are the most commonly used. Interestingly, the proportion who have used an asthma specific app (8.3%, 633 of 7611) is much lower than the proportion who have used a general health app (27.1%, 2066 of 7611). This indicates there is an unmet need for health technology in asthma monitoring and care.

Figure 13: What did you tell us about using health technology?

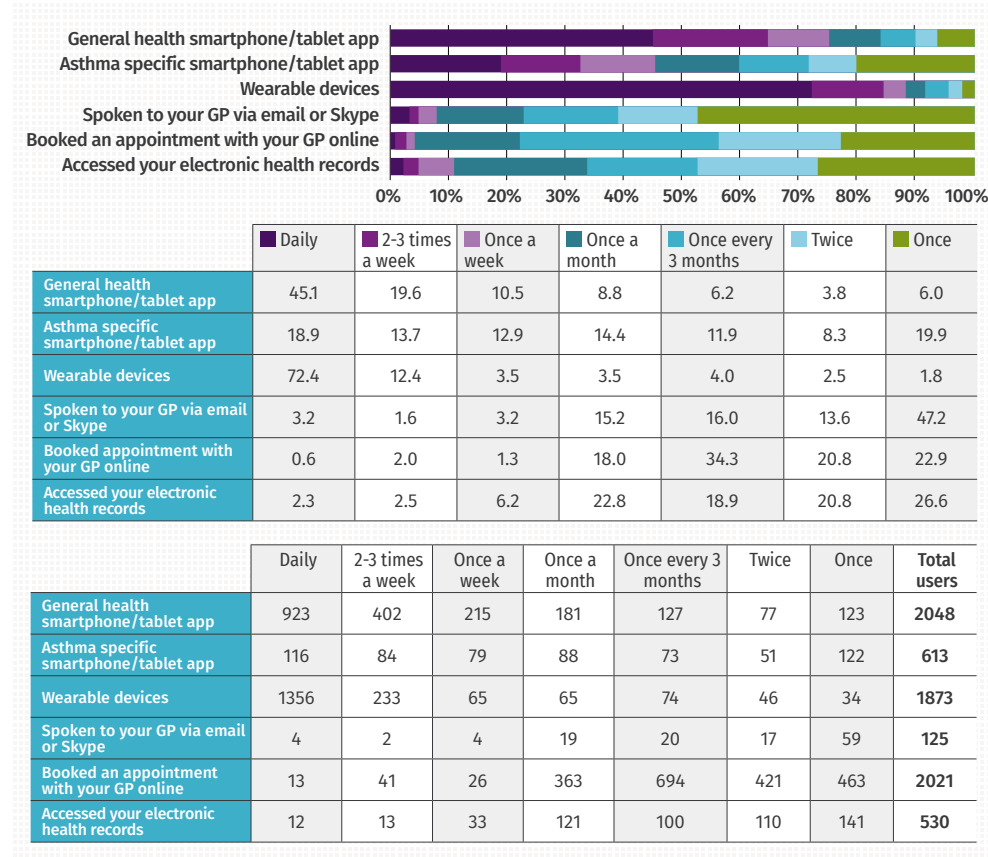
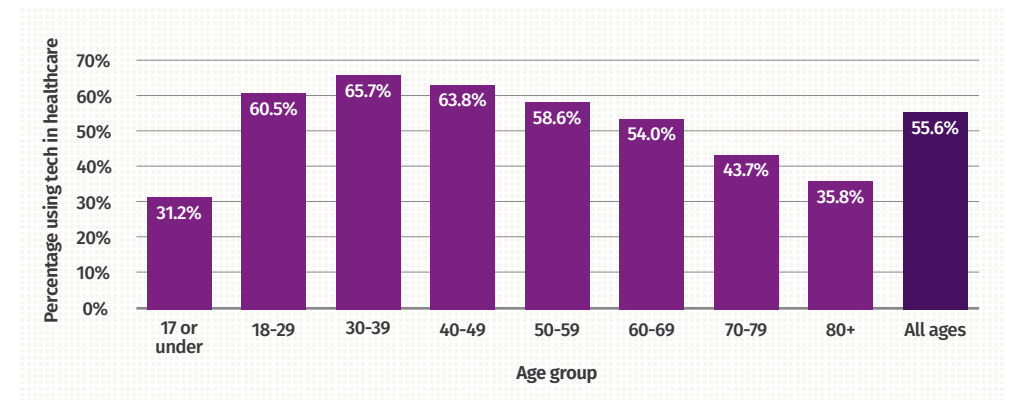


Figure 13 indicates differing use patterns for different technologies. It shows 72.4% (1356 of 1873) of those using wearable devices and 45.1% (923 of 2048) of those using general health apps used them daily, indicating they are part of day-to-day health management for a large number of people with asthma. Once again, the disparity between the general health app usage and asthma-specific app usage is notable. The two most frequent usage levels selected for the asthma app are 'Once' (19.9%, 122 of 613) and 'Daily' (18.9%, 116 of 613). This indicates that people using an asthma app have either found it useful and built using it into their daily asthma routine, or downloaded it, used it once and found it has not met their needs. The usage figures for the online contact with your GP, online appointment booking and accessing electronic health records are more occasional events, with the majority of respondents who have used these methods using them, at most, once every three months. The respondents who used these technologies more frequently (such as speaking to a GP more than weekly) may have done so over a spell of bad health, rather than across the whole year.

Respondents aged 30-39 are the group most likely to use technology in their healthcare, with 65.7% (767 of 1168) using at least one form of technology. All age groups between 18 and 59 are above the overall average of technology usage of 55.6% (4235 of 7611). Interestingly, the 17 or under age group has the lowest level of usage, showing that there is potential for the expanded use of health apps or wearable devices for this age group, who will grow up using technology in many aspects of their lives.

Figure 14: Use of technology in health care by age group



Technology in healthcare is an area that will increase in prominence in the future. These results are an interesting snapshot of current patterns of use, and we can expect them to change over the next few years as technology becomes an increasing part of our health and asthma care. The survey results show that although technology is used by most respondents, there is significant potential for it to further change the way healthcare is delivered, and to improve asthma self-management.

What does this mean for you, and what are we doing about it?

- Interested in the technology discussed here? A health app could help you manage and monitor your asthma.
- We think [digital health technology](#) has a significant role to play in stopping asthma attacks and curing asthma. We are working to make sure new asthma care technology (such as [smart inhalers](#)) have the patient at the heart of their design.
- We want to see the adoption of technology in asthma care encouraged and invested in.

Conclusion

The results presented in this report show the continuation of trends observed in previous editions. A large majority of people with asthma (65.0%) are still not receiving the basic level of asthma care. A small improvement in last year's figures is not sufficient improvement. People with asthma will continue to suffer life-threatening asthma attacks and be admitted to hospital, when better provision of basic care would help avoid this. Beneath the overall picture, there is significant variation in quality of care. The low basic asthma care levels received in London (27.6%) and Wales (26.1%) are particularly concerning. In Northern Ireland, 48.2% of people with asthma received full basic care, showing that higher basic care levels are achievable. Disparities in the level of care received were also prevalent across age groups, with only 25.1% of people with asthma aged 18-29 receiving basic care. As well as inequality of care levels between the different people with asthma, there are differing levels of care satisfaction between care settings. People with asthma are more content with the emergency and specialist care they receive

than the primary care. As 85% of asthma patients are managed exclusively in primary care, there is high importance for this element of care.

As well as finding this year's levels of care received, we also found new insights into asthma triggers and tech usage in asthma care. Most people with asthma manage a number of different asthma triggers, and some of these asthma triggers are more difficult to avoid for some than others. The broad results to this question highlight the diversity of the experiences of people with asthma, and show managing triggers is a daily routine. The questions on technology usage showed that technology plays a role in asthma and health care, and that there is potential for the expansion of this in the future. In particular, there is an unmet need for asthma-specific apps that is not currently being met. There is the potential for well-designed patient-centric apps and devices to help deliver asthma care and improve the level of basic care. This will be a potential trend to track in future editions of this survey.

This report was written by Andrew Cumella of Asthma UK.

Appendices

Appendix A: Survey questions

1. Who are you completing this survey for?

- a. Yourself
- b. Your child
- c. Other

2. Where do you live?

- a. England
- b. Northern Ireland
- c. Scotland
- d. Wales

3. Which region do you live in?

[If answer England]

- a. East Midlands
- b. East of England
- c. London
- d. North East
- e. North West
- f. South East
- g. South West
- h. West Midlands
- i. Yorkshire and the Humber

[If answer Northern Ireland]

- a. Belfast
- b. Northern
- c. South Eastern
- d. Southern
- e. Western

[If answer Scotland]

- a. Ayrshire and Arran
- b. Borders
- c. Dumfries and Galloway
- d. Fife
- e. Forth Valley
- f. Grampian
- g. Greater Glasgow and Clyde
- h. Highlands and Western Isles
- i. Lanarkshire
- j. Lothian
- k. Orkney and Shetland
- l. Tayside

[If answer Wales]

- a. Abertawe Bro Morgannwg
- b. Aneurin Bevan
- c. Betsi Cadwaladr
- d. Cardiff and Vale
- e. Cwm Taf
- f. Hywel Dda
- g. Powys

4. How would you describe the area you live in?

- a. Urban
- b. Rural

5. What is your gender?

- a. Male
- b. Female
- c. Other

6. Are you, or the person you are completing the survey for:

- a. 17 or under
- b. 18-29
- c. 30-39
- d. 40-49
- e. 50-59
- f. 60-69
- g. 70-79
- h. 80+

7. If you had to rate the care you have/your child has received for your asthma, would you say it was:

- a. Excellent
- b. Satisfactory
- c. Poor

8. Were you diagnosed with asthma as a child or an adult?

- a. I was diagnosed as a child (up to and including 17 years old)
- b. I was diagnosed as an adult (18 or older)

9. Have you ever talked to your doctor or nurse, at diagnosis or at another time, about whether your asthma could be caused or made worse by your job?

- a. Yes
- b. No
- c. I'm not sure/I can't remember

10. In the last four weeks, have you or your child had difficulty sleeping due to your asthma?

- a. Yes
- b. No

11. In the last four weeks, have you or your child had usual asthma symptoms such as cough, wheeze, chest tightness or shortness of breath during the day?

- a. Yes
- b. No

12. In the last four weeks, has your or your child's asthma interfered with usual daily activities, for example performing work/housework or going to school/activities?

- a. Yes
- b. No

13. Do(es) you/your child currently have a written action plan for managing your/their asthma to help understand when symptoms are getting worse and what to do about it?

- a. Yes
- b. No

14. Have you had a planned review or check-up of your asthma with your doctor or nurse in the last year?

- a. Yes
- b. No

15. Did your doctor or nurse help you make sure you could correctly use ALL your current types of inhaler before you started using them?

- a. Yes
- b. No
- c. Do not remember

16. Where do you receive your regular asthma care?

- a. GP surgery
- b. Hospital
- c. Both
- d. Other

17. Thinking about the care provided for your asthma in the past 12 months from your GP or practice nurse, would you say it was:

- a. Excellent
- b. Satisfactory
- c. Poor

18. Thinking about the specialist care you received in hospital the past 12 months, would you say it was:

- a. Excellent
- b. Satisfactory
- c. Poor

19. Have you/your child received emergency/unplanned care at a hospital or out-of-hours centre for your asthma in the past year?

- a. Yes
- b. No
- c. Don't remember

20. Thinking about the care you received in hospital/A&E/an out-of-hours centre in the past 12 months, would you say it was:

- a. Excellent
- b. Satisfactory
- c. Poor

21. The last time you/your child were treated at a hospital or out-of-hours centre, did you have a follow up appointment at your doctor's surgery for your asthma within 2 working days?

- a. Yes
- b. No
- c. I'm not sure/I can't remember

22. Which, if any, of these things trigger your asthma?

- a. Air pollution
- b. Cigarette smoke
- c. Colds and flu
- d. Dust
- e. Exercise
- f. E-cigarettes
- g. Food and drinks
- h. Hormonal changes
- i. Moulds and fungi
- j. Paint fumes
- k. Perfumes and aerosols
- l. Pets
- m. Pollen
- n. Recreational drugs
- o. Sex
- p. Stress
- q. Your workplace or work
- r. Other (please list)

23. Which of your asthma triggers is hardest to avoid?

- a. Air pollution
- b. Cigarette smoke
- c. Colds and flu
- d. Dust
- e. Exercise
- f. E-cigarettes
- g. Food and drinks
- h. Hormonal changes
- i. Moulds and fungi
- j. Paint fumes
- k. Perfumes and aerosols
- l. Pets
- m. Pollen
- n. Recreational drugs
- o. Sex
- p. Stress
- q. Your workplace or work
- r. Other (please list)

24. What type of workplace do you work in?

- a. Office
- b. Factory
- c. Laboratory/research
- d. Education
- e. Health or social care
- f. Farming, fishing or forestry
- g. Hospitality (including food), leisure and tourism
- h. Skilled trades (including hairdressing and cleaning)
- i. Construction
- j. Mining, energy and water
- k. Transportation
- l. Retail
- m. Armed forces
- n. Other (please state)

25. Which of the following have you used or accessed in the past 12 months?

- a. General health smartphone/tablet app (including fitness tracker apps)
- b. Asthma-specific smartphone/tablet app
- c. Wearable devices (such as Fitbits or a pedometer/step counter)
- d. Spoken to your GP via email or Skype
- e. Booked an appointment with your GP online
- f. Accessed your electronic health record
- g. None of these

26. How often, in the past 12 months, have you [answer(s) selected in Q25]

- a. Used daily
- b. Used once a week
- c. Used once a month
- d. Used once every 3 months
- e. Used twice
- f. Used once
- g. Not used

Appendix B: Results tables

Table 1: Respondents by age and nation

		17 or under	18-29	30-39	40-49	50-59	60-69	70-79	80+	All ages
England	Respondents	766	791	935	1248	1110	904	359	70	6183
	Percentage of nation	12.4%	12.8%	15.1%	20.2%	18.0%	14.6%	5.8%	1.1%	100.0%
Northern Ireland	Respondents	52	43	48	50	24	26	9	1	253
	Percentage of nation	20.6%	17.0%	19.0%	19.8%	9.5%	10.3%	3.6%	0.4%	100.0%
Scotland	Respondents	97	67	109	123	145	83	37	5	666
	Percentage of nation	14.6%	10.1%	16.4%	18.5%	21.8%	12.5%	5.6%	0.8%	100.0%
Wales	Respondents	72	76	76	95	76	75	34	5	509
	Percentage of nation	14.1%	14.9%	14.9%	18.7%	14.9%	14.7%	6.7%	1.0%	100.0%
UK	Respondents	987	977	1168	1516	1355	1088	439	81	7611
	Percentage of nation	13.0%	12.8%	15.3%	19.9%	17.8%	14.3%	5.8%	1.1%	100.0%

Table 2: Respondents by gender and nation

Nation		Male	Other	Blank	Total
England	Respondents	4630	1541	12	6183
	Percentage of nation	74.9%	24.9%	0.2%	100.0%
Northern Ireland	Respondents	192	61	0	253
	Percentage of nation	75.9%	24.1%	0.0%	100.0%
Scotland	Respondents	497	168	1	666
	Percentage of nation	74.6%	25.2%	0.2%	100.0%
Wales	Respondents	362	146	1	509
	Percentage of nation	71.1%	28.7%	0.2%	100.0%
UK	Respondents	5681	1916	14	7611
	Percentage of nation	74.6%	25.2%	0.2%	100.0%

Table 3: Levels of asthma control in the UK, 2014-2017

		2014	2015	2016	2017
Interference with daily activities (answered yes)	Percentage	39.9%	42.7%	46.4%	46.0%
	Answer yes / total respondents	2600/6511	2853/6675	2066/4572	3655/7611
Usual symptoms experienced (answered yes)	Percentage	76.0%	78.6%	80.4%	82.7%
	Answer yes / total respondents	4946/6508	5246/6675	3673/4569	6291/7611
Difficulty sleeping due to asthma (answered yes)	Percentage	40.1%	41.6%	45.2%	49.4%
	Answer yes / total respondents	2609/6508	2771/6675	123/4572	3761/7611
Uncontrolled asthma	Percentage	78.5%	80.8%	82.3%	85.4%
	Answer yes / total respondents	5106/6508	5394/6674	3762/4569	6500/7611

Table 4: Basic asthma care provision, 2013-2017

		Overall basic care provision		Annual asthma review		Inhaler technique check			Asthma action plan	
		Met	Not met	Yes	No	Yes	No	Do not remember	Yes	No
2013	Percentage	20.0%	80.0%	74.0%	26.0%	78.0%	22.0%	N/A	24.0%	76.0%
	Number	1148	4730	4377	1501	4578	1300	N/A	1398	4480
2014	Percentage	25.0%	75.0%	77.00%	23.0%	78.0%	22.0%	N/A	30.0%	70.0%
	Number	1648	4885	5014	1520	5068	1464	N/A	1972	4562
2015	Percentage	28.9%	71.1%	78.7%	21.3%	79.3%	20.7%	N/A	35.5%	64.5%
	Number	1906	4696	5197	1406	5236	1367	N/A	2342	4261
2016	Percentage	33.5%	66.5%	78.5%	21.5%	77.6%	16.9%	5.6%	42.4%	57.6%
	Number	1526	3027	3575	978	3531	768	254	1929	2624
2017	Percentage	35.0%	65.0%	77.0%	23.0%	76.3%	18.4%	5.2%	43.9%	56.1%
	Number	2661	4950	5858	1753	5810	1402	399	3344	4267

Table 5: Basic care provision across the UK

Region	Care met	Care not met	Care met	Care not met
East Midlands	36.6%	63.4%	208	361
East of England	38.0%	62.0%	295	481
London	27.6%	72.4%	166	435
North East	37.2%	62.8%	110	186
North West	35.3%	64.7%	269	493
South East	32.1%	68.0%	394	835
South West	31.7%	68.3%	247	533
West Midlands	40.9%	59.1%	240	347
Yorkshire and the Humber	32.4%	67.6%	189	394
England	34.3%	65.7%	2118	4065
Northern Ireland	48.2%	51.8%	122	131
Scotland	43.2%	56.8%	288	378
Wales	26.1%	73.9%	133	376
UK	35.0%	65.0%	2661	4950

Table 6: Annual asthma review provision across the UK

Region	Yes	No	Yes	No
East Midlands	79.8%	20.2%	454	115
East of England	80.4%	19.6%	624	152
London	70.6%	29.5%	424	177
North East	78.4%	21.6%	232	64
North West	79.7%	20.3%	607	155
South East	76.0%	24.0%	934	295
South West	75.3%	24.7%	587	193
West Midlands	78.5%	21.5%	461	126
Yorkshire and the Humber	78.4%	21.6%	457	126
England	77.3%	22.7%	4780	1403
Northern Ireland	74.7%	25.3%	189	64
Scotland	79.1%	20.9%	527	139
Wales	71.1%	28.9%	362	147
UK	77.0%	23.0%	5858	1753

Table 7: Inhaler technique check provision across the UK

Region	Yes	No	Do not remember	Yes	No	Do not remember
East Midlands	79.3%	16.2%	4.6%	451	92	26
East of England	76.7%	17.1%	6.2%	595	133	48
London	71.2%	22.0%	6.8%	428	132	41
North East	79.4%	15.2%	5.4%	235	45	16
North West	78.0%	16.7%	5.4%	594	127	41
South East	72.8%	21.6%	5.6%	895	265	69
South West	75.1%	20.3%	4.6%	586	158	36
West Midlands	79.6%	14.8%	5.6%	467	87	33
Yorkshire and the Humber	75.0%	19.2%	5.8%	437	112	34
England	75.8%	18.6%	5.6%	4688	1151	344
NI	81.0%	15.0%	4.0%	205	38	10
Scotland	80.2%	16.5%	3.3%	534	110	22
Wales	75.2%	20.2%	4.5%	383	103	23
UK	76.3%	18.4%	5.2%	5810	1402	399

Table 8: Asthma action plan provision across the UK

Region	Yes	No	Yes	No
East Midlands	43.8%	56.2%	249	320
East of England	47.4%	52.6%	368	408
London	38.8%	61.2%	233	368
North East	43.6%	56.4%	129	167
North West	44.4%	55.6%	338	424
South East	43.0%	57.0%	529	700
South West	41.7%	58.3%	325	455
West Midlands	49.7%	50.3%	292	295
Yorkshire and the Humber	38.8%	61.2%	226	357
England	43.5%	56.5%	2689	3494
NI	60.5%	39.5%	153	100
Scotland	50.5%	49.5%	336	330
Wales	32.6%	67.4%	166	343
UK	44.9%	56.1%	3344	4267

Table 9: Basic care levels received by age group

Age group	Met	Not met	Met	Not met
17 or under	41.3%	58.7%	408	579
18-29	25.1%	74.9%	245	732
30-39	28.7%	71.3%	335	833
40-49	35.0%	65.0%	531	985
50-59	37.0%	63.0%	501	854
60-69	39.4%	60.6%	429	659
70-79	41.7%	58.3%	183	256
80+	35.8%	64.2%	29	52
All ages	35.0%	65.0%	2661	4950

Table 10: Overall asthma care ratings

		2013	2014	2015	2016	2017
Excellent	Number	29.0%	29.0%	31.7%	29.2%	29.8%
	Percentage	1688	1887	2104	1212	2259
Satisfactory	Number	55.0%	57.0%	53.2%	55.7%	55.4%
	Percentage	3359	3595	3530	2314	4200
Poor	Number	16.0%	14.0%	15.1%	15.2%	14.8%
	Percentage	831	1046	1003	631	1120

Table 11: Asthma care ratings by location

	Excellent		Satisfactory		Poor	
	Percentage	Number	Percentage	Number	Percentage	Number
East Midlands	29.8%	169	56.5%	321	13.7%	78
East of England	35.0%	271	53.0%	411	12.0%	93
London	24.7%	147	59.6%	355	15.8%	94
North East	31.0%	91	56.1%	165	12.9%	38
North West	29.6%	225	56.7%	431	13.7%	104
South East	29.6%	360	54.6%	664	15.8%	192
South West	31.9%	249	55.6%	434	12.4%	97
West Midlands	28.5%	167	57.1%	334	14.4%	84
Yorkshire and the Humber	23.8%	139	57.8%	337	18.4%	107
England	29.5%	1818	56.1%	3452	14.4%	887
Northern Ireland	26.2%	66	59.1%	149	14.7%	37
Scotland	36.7%	243	49.5%	328	13.9%	92
Wales	26.0%	132	53.5%	271	20.5%	104
UK	29.8%	2259	55.4%	4200	14.8%	1120

Table 12: Asthma care ratings by age

		17 or under	18-29	30-39	40-49	50-59	60-69	70-79	80+	Overall
Excellent	Number	29.3%	22.7%	26.8%	31.0%	30.6%	35.0%	33.6%	38.8%	29.8%
	Percentage	288	221	311	469	413	379	147	31	2259
Satisfactory	Number	52.4%	59.2%	59.3%	54.8%	54.0%	52.4%	57.4%	53.8%	55.4%
	Percentage	516	577	689	828	729	567	251	43	4200
Poor	Number	18.3%	18.1%	13.9%	14.2%	15.3%	12.6%	8.9%	7.5%	14.8%
	Percentage	180	176	162	214	207	136	39	6	1120

Table 13: Asthma care ratings by care sector

		Overall	Primary care	Specialist care	Emergency care
Excellent	Number	29.8%	33.7%	54.7%	52.2%
	Percentage	2259	2282	743	1164
Satisfactory	Number	55.4%	51.1%	35.0%	36.9%
	Percentage	4200	3461	475	823
Poor	Number	14.8%	15.2%	10.3%	10.9%
	Percentage	1120	1028	140	242

Table 14: Respondents receiving emergency or unplanned care for their asthma

		Overall
Yes	Percentage	29.3%
	Number	2229
No	Percentage	69.7%
	Number	5305
Don't remember	Percentage	1.0%
	Number	77

Table 15: Asthma control and emergency or unplanned asthma care

		Went to hospital	Did not go to hospital	Don't remember
Controlled asthma	Percentage	16.6%	83.0%	0.5%
	Number	184	922	5
Uncontrolled asthma	Percentage	31.5%	67.4%	1.1%
	Number	2045	4383	72
Overall	Percentage	29.3%	69.7%	1.0%
	Number	2229	5305	77

Table 16: Trigger prevalence

	Have trigger	Do not have trigger	% listed
Colds and flu	6162	1449	81.0%
Dust	4846	2765	63.7%
Air pollution	4685	2926	61.6%
Pollen	4685	2926	61.6%
Exercise	4069	3542	53.5%
Cigarette smoke	4066	3545	53.4%
Perfumes and aerosols	3633	3978	47.7%
Stress	3292	4319	43.3%
Moulds and fungi	3220	4391	42.3%
Paint fumes	2886	4725	37.9%
Pets	2586	5025	34.0%
Food and drinks	1438	6173	18.9%
E-cigarettes	1059	6552	13.9%
Hormonal changes	976	6635	12.8%
Your workplace or work	648	6111	9.6%
Sex	335	6424	5.0%
Weather	353	7258	4.6%
Other	88	7523	1.2%
Recreational drugs	78	6681	1.2%
Don't know	55	7556	0.7%
Chemicals	43	7568	0.6%
Emotions	36	7575	0.5%

Table 17: Triggers people find most difficult to avoid

	Number listing	Percentage
Air pollution	1911	26.1%
Colds and flu	1656	22.6%
Pollen	917	12.5%
Dust	636	8.7%
Cigarette smoke	406	5.5%
Stress	353	4.8%
Exercise	339	4.6%
Perfumes and aerosols	260	3.6%
Pets	157	2.1%
Moulds and fungi	149	2.0%
Hormonal changes	106	1.5%
Weather	105	1.4%
Your workplace or work	103	1.4%
Food and drinks	72	1.0%
Don't know	43	0.6%
E-cigarettes	38	0.5%
Paint fumes	21	0.3%
Other	19	0.3%
Sex	17	0.2%
Emotions	11	0.2%
Chemicals	5	0.1%
Recreational drugs	5	0.1%

Table 18: Triggers listed as hardest to avoid by area

Region	Trigger most frequently listed as hard to avoid	Percentage	Number listing	Number listed as trigger
East Midlands	Air pollution	28.1%	154	548
East of England	Air pollution	26.1%	195	746
London	Air pollution	40.1%	233	581
North East	Colds and flu	23.8%	68	286
North West	Air pollution	25.2%	187	741
South East	Air pollution	29.6%	349	1180
South West	Colds and flu	24.5%	185	756
West Midlands	Air pollution	25.0%	142	568
Yorkshire and the Humber	Air pollution	25.7%	144	561
England	Air pollution	27.1%	1614	5967
Northern Ireland	Air pollution/ Colds and flu	25.2%	61	242
Scotland	Colds and flu	26.1%	164	629
Wales	Colds and flu	26.3%	129	491
UK	Air pollution	26.1%	1911	7329

Table 19: Use levels of technology

	General health smartphone/tablet app	Asthma specific smartphone/tablet app	Wearable devices	Spoken to your GP via email or Skype	Booked an appointment with your GP online	Accessed your electronic health records	None of these
Use	2066	633	1885	137	2073	538	3376
Do not use	5545	6978	5726	7474	5538	7073	4235
Percentage using	27.1%	8.3%	24.8%	1.8%	27.2%	7.1%	44.4%

Table 20: Age and technology use

		17 or under	18-29	30-39	40-49	50-59	60-69	70-79	80+	All ages
Use	Percentage	31.2%	60.5%	65.7%	63.8%	58.6%	54.0%	43.7%	35.8%	55.6%
	Number	308	591	767	967	794	587	192	29	4235
Do not use	Percentage	68.8%	39.5%	34.3%	36.2%	41.4%	46.0%	56.3%	64.2%	44.4%
	Number	679	386	401	549	561	501	247	52	3376

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