

Analysis of the large increase in the Labour Force Survey disability data: April to June 2017 to July to September 2017 and the periods after this increase

In November 2017, we suspended Dataset A08 (Labour market status of disabled people) due to a large increase between Quarter 2 and 3 2017. While the evidence was not conclusive we could not identify any quality issues and reinstated the dataset from 15 May 2018 subject to health warnings. This article makes conclusions about the nature of the large increase and provides advice to users about how to interpret the disability series.

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The data range of Figure 1 has been extended to July to September 2018.

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1 . Summary

In November 2017, Office for National Statistics (ONS) suspended publication of [disability employment figures](#) based on the Labour Force Survey (LFS) and the Annual Population Survey (APS), due to an unexplained large increase in the number of people reporting disabilities between Quarter 2 (Apr to June) 2017 and Quarter 3 (July to Sept) 2017. Working with stakeholders such as the Department for Work and Pensions (DWP), we conducted a review of the datasets to determine why the large increase happened.

While the analysis did not result in a conclusive reason being identified, the dataset was reinstated in May 2018 alongside the publication of an [Analysis of the discontinuity in the Labour Force Survey disability data: April to June 2017 to July to September 2017 article](#), with accompanying health warnings. A [further update](#) was published in August 2018, which kept the health warnings in place while further analysis was undertaken. This article includes results of the further analysis, makes conclusions about the nature of the large increase and provides advice to users about how to interpret the disability series.

2 . Introduction

In November 2017, Office for National Statistics (ONS) suspended [Dataset A08](#) (Labour market status of disabled people) due to an “apparent discontinuity” between Quarter 2 (Apr to June) 2017 and Quarter 3 (July to Sept) 2017. While the evidence was not conclusive, we could not identify any quality issues and reinstated the dataset from 15 May 2018 subject to health warnings.

This article shows that there is no conclusive evidence to suggest that the large increase in the number of people reporting disabilities¹ between Quarter 2 2017 and Quarter 3 2017 is caused by a discontinuity in the data and we have therefore removed the health warnings previously applied to the datasets.

Users can directly compare figures either side of the large increase, but should be mindful that the data are not seasonally adjusted so any change that they are seeing between consecutive quarters could be due to seasonality. ONS normally advises users to make longer-term comparisons (such as quarter on same quarter a year ago) when using not seasonally adjusted datasets.

We investigated the potential reasons for the large increase under four main groupings:

- change in survey instrument
- change in respondent behaviour (for example, public awareness and/or campaigns)
- sampling volatility
- error in processing

The analysis presented in this article rules out changes made to the disability-related questions and interviewing practices (direct impact from the survey instrument) as a potential cause for the large increase but it is unable to rule out the survey instrument completely due to the coincidence between the timing of the sudden increase and the beginning of the interview quarter.

The article rules out error in processing and although it suggests that public awareness of disability, particularly relating to mental health, could affect rates of reporting in the Labour Force Survey (LFS) over a longer period, it is unlikely that this alone could have caused such a large and sudden increase in reporting, two months after a spike in public awareness.

An analysis of sampling variability in annual changes was also undertaken. It revealed that the change from Quarter 3 2016 to Quarter 3 2017 was not significantly different from the annual average over the preceding period (Quarter 2 2014 to Quarter 2 2017). The result suggests that in the context of annual comparisons, the change in Quarter 3 2017 was not sufficiently large to reflect a discontinuity in the series.

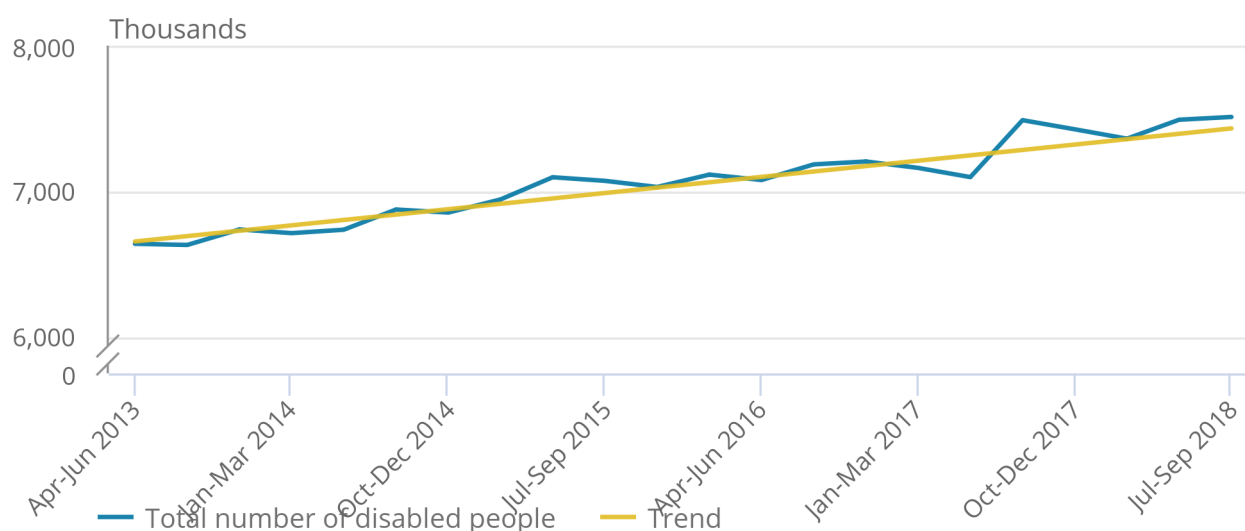
We found that, following the large increase for the harmonised standard definition of disabled people² between Quarter 2 and Quarter 3 in 2017, the series has returned to a trend pattern consistent with the pre-2017 path (Figure 1). The large increase was accentuated by quarterly decreases in the disability series in the preceding two quarters.

Figure 1: Number of disabled people with trend line, ages 16 to 64 years, not seasonally adjusted, UK

April to June 2013 to July to September 2018

Figure 1: Number of disabled people with trend line, ages 16 to 64 years, not seasonally adjusted, UK

April to June 2013 to July to September 2018



Source: Labour Force Survey, Office for National Statistics

Although the large increase began suddenly at the start of an LFS quarter, analysis of the LFS design did not identify any cause that could have introduced a change in the pattern of disability reporting in Quarter 3 2017; increases were seen across most response types and all the interview modes. Over the year from Quarter 3 2017 to Quarter 3 2018, there has been a decrease in personal and proxy responses, while responses brought forward have increased. In addition, there has been an increase in telephone reporting but a decrease in reporting in face-to-face interviews.

Analysis of the LFS suggests that the increases in the number of disabled people were generally broad-based in Quarter 3 2017. Increases were more concentrated in the employment and inactivity categories. Over the year from Quarter 3 2017 to Quarter 3 2018, increases were focused in employment and unemployment categories, while the economically inactive have experienced a decrease.

From Quarter 2 2017 to Quarter 3 2017, there were increases across all age bands. However, over the year from Quarter 3 2017 to Quarter 3 2018, there were decreases in the number of 16- to 17-year-olds, 18- to 24-year-olds, and 35- to 49-year-olds reporting disability, and increases in 25- to 34-year-olds and 50- to 64-year-olds reporting disability.

The proportion of respondents reporting disability increased across all waves except wave 2 in Quarter 3 2017. Over the year from Quarter 3 2017 to Quarter 3 2018, all waves except wave 3 increased, but these increases were of a much smaller scale than the increase seen into Quarter 3 2017. This suggests that the level of disability reporting is “settling down” following the large increase.

Notes for: Introduction

1. In the Labour Force Survey (LFS) respondents self-identify themselves as disabled or not disabled.
2. The Government Statistical Service (GSS) Harmonised Standards focus on a “core” definition of people whose condition currently limits their activity. In summary, the core definition covers people who report both: (current) physical or mental health condition(s) or illnesses lasting or expected to last 12 months or more; and the condition(s) or illness(es) reduce their ability to carry out day-to-day activities.

3 . Analysis of respondent increase in the population reporting a disability status

There has been a steady increase in the UK population aged 16 to 64 years over the last few years, averaging around 145,000 more people per year. Figure 2a shows an increase of 19,000 in the number of people aged 16 to 64 years reporting a disability under the harmonised standard definition (disabled people) between Quarter 2 (Apr to June) 2018 and Quarter 3 (July to Sept) 2018. Over the same period, there was an increase of 35,000 in the number of people aged 16 to 64 years who are not disabled according to the harmonised standard, either because they have stated that they are not disabled or their condition does not meet the Government Statistical Service (GSS) harmonised definition (not disabled), as seen in Figure 2b.

The latest increases in both the disabled and non-disabled population are not unprecedented and are significantly smaller than the changes we saw between Quarter 2 2017 and Quarter 3 2017 (391,000 increase in the disabled population and 363,000 decrease in the non-disabled population). As mentioned previously, the data in [Dataset A08](#) are not seasonally adjusted, so part of the movement we are seeing can be due to seasonality.

The change seen in the disabled population between Quarter 2 2017 and Quarter 3 2017 was significantly different from the average quarterly change over the period before the large increase in Quarter 3 2017. However, such a comparison does not consider the influence of seasonality on the series. In a quarter on same quarter a year ago comparison, we see that the change between Quarter 3 2016 and Quarter 3 2017 is significantly different from zero, but not significantly different from the average change over the period before the large increase in Quarter 3 2017. It suggests that, although the annual change in Quarter 3 2017 is significantly different from zero, it is not sufficiently large to reflect a discontinuity in the series.

It should also be noted that even though the changes seen in both the disabled and non-disabled population between Quarter 2 2017 and Quarter 3 2017 were unprecedented in magnitude since comparable records began in Quarter 2 2013, the subsequent data points show that both series have largely returned to trend.

The GSS harmonised definition of “disabled” is determined by a positive response to two Labour Force Survey (LFS) questions:

- whether the health condition or illness lasts longer than 12 months (LNGLST)
- whether the condition reduces the respondent's ability to carry out their day-to-day activities (LIMACT)

In Quarter 3 2017, the increase that we saw in disability was driven mainly by the gateway variable LNGLST.

As the data in [Dataset A08](#) are not seasonally adjusted, it will be better to look at the quarter on same quarter a year ago comparisons. Between Quarter 3 2016 and Quarter 3 2017, the disabled population increased by 304,000, which is not an unprecedented annual increase. The decrease in the non-disabled population in the same period (155,000) is of a similar magnitude to a previous decrease (149,000 between Quarter 2 2014 and Quarter 2 2015). However, the decrease (341,000) between Quarter 2 2017 and Quarter 2 2018 is unprecedented in its magnitude.

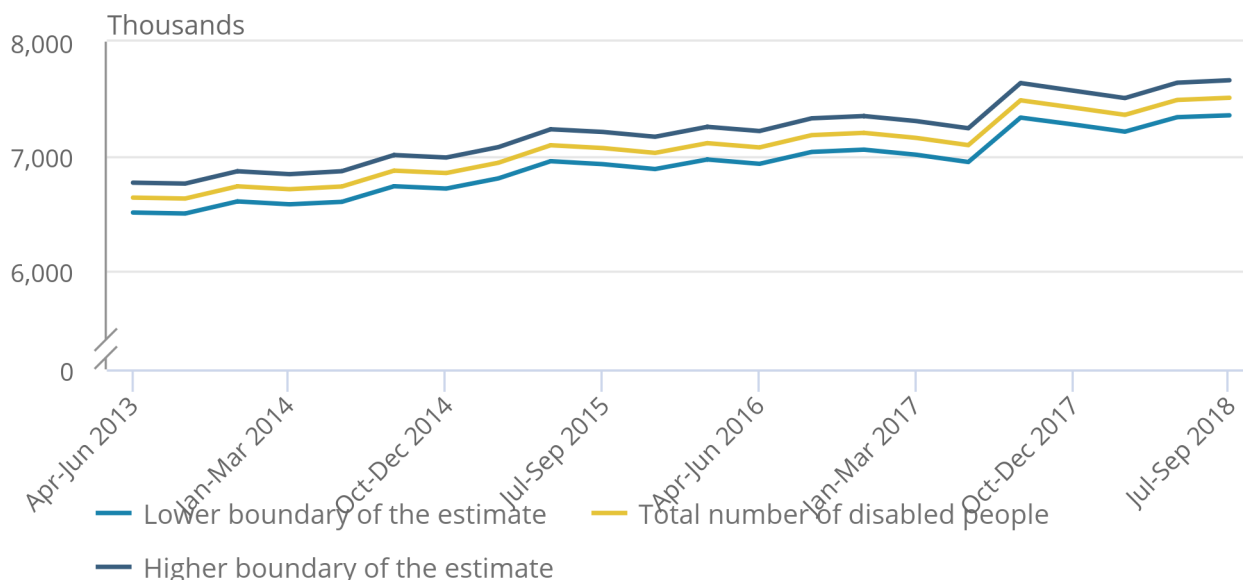
The annual changes in the population reporting disability between Quarter 3 2017 and Quarter 3 2018 average 229,000 per year which, when considering all annual changes preceding the large increase, is of a similar magnitude to the annual change seen between Quarter 3 2014 and Quarter 3 2015 (230,000 per year). However, the annual average in the non-disabled population for the same period differs substantially (136,000 average decrease between Quarter 3 2017 and Quarter 3 2018 compared with a 50,000 average decrease between Quarter 3 2014 and Quarter 3 2015).

Figure 2a: Number of disabled people with 95% confidence interval, ages 16 to 64 years, not seasonally adjusted, UK

April to June 2013 to July to September 2018

Figure 2a: Number of disabled people with 95% confidence interval, ages 16 to 64 years, not seasonally adjusted, UK

April to June 2013 to July to September 2018



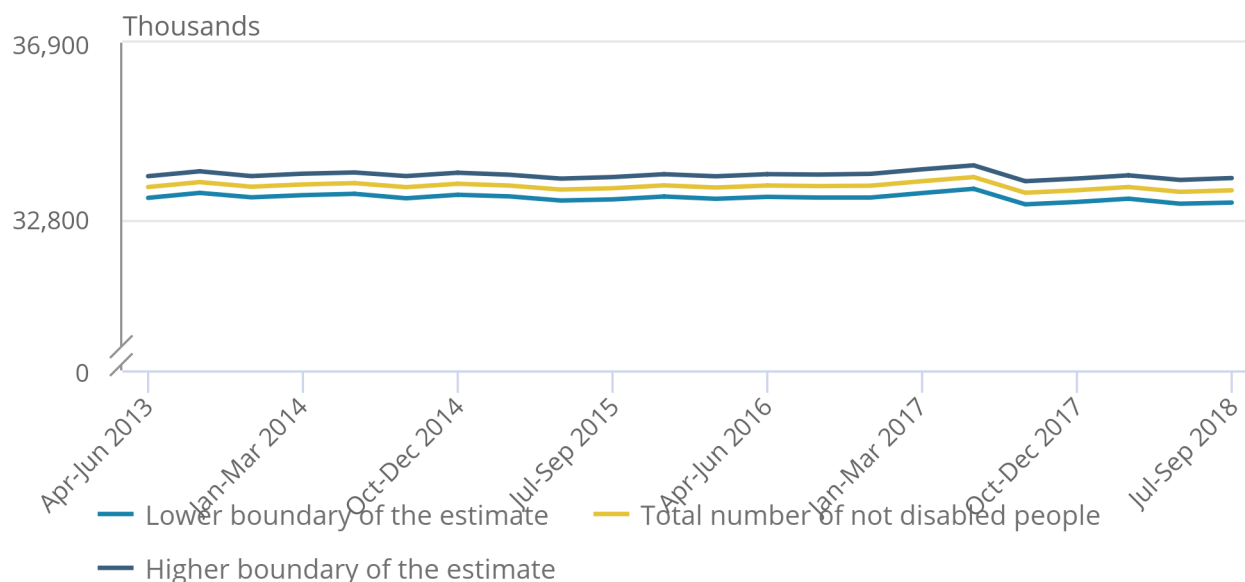
Source: Labour Force Survey, Office for National Statistics

Figure 2b: Number of not disabled people with 95% confidence interval, ages 16 to 64 years, not seasonally adjusted, UK

April to June 2013 to July to September 2018

Figure 2b: Number of not disabled people with 95% confidence interval, ages 16 to 64 years, not seasonally adjusted, UK

April to June 2013 to July to September 2018



Source: Labour Force Survey, Office for National Statistics

To put the large increase between Quarter 2 and Quarter 3 2017 into context, it is useful to look at the longer-term trend in the series (Figure 3). The disability questions on the Labour Force Survey (LFS) have undergone changes since 2010 and this has meant that comparisons over time have become difficult to interpret. There are two previous sets of changes that have resulted in discontinuities in the time series:

- in January 2010, a rewording of the introduction to the section of the survey covering disabilities
- in April 2013, changes to the wording of the disability questions to bring the LFS more into line with the definitions and questions used in other household surveys in the UK (see the notes in [Dataset A08](#) for further details)

Consequently, the estimates from 2010 onwards are not directly comparable with those for previous years. Also, the estimates from April 2013 are not comparable with those for either the 2010 to 2012 or the pre-2010 periods. These discontinuities are clearly shown in Figure 3.

From the start of the series (in Quarter 2 1998) up until Quarter 4 (Oct to Dec) 2009, the number of disabled people increased steadily and had begun to level off. Then, between Quarter 4 2009 and Quarter 1 (Jan to Mar) 2010, there was a sharp increase in the number of disabled people, the largest on record (912,000), due to the change in wording of the questionnaire (Figure 3; D1). In the subsequent periods, the number of disabled people remained at this higher level until Quarter 2 2013, when there was a large drop of 390,000 due to the definitional changes (Figure 3; D2). Since then, the series had been increasing steadily until the large increase seen in Quarter 3 2017, which was of a similar magnitude to the fall in Quarter 2 2013 and the second-largest quarterly increase (391,000) since the series began.

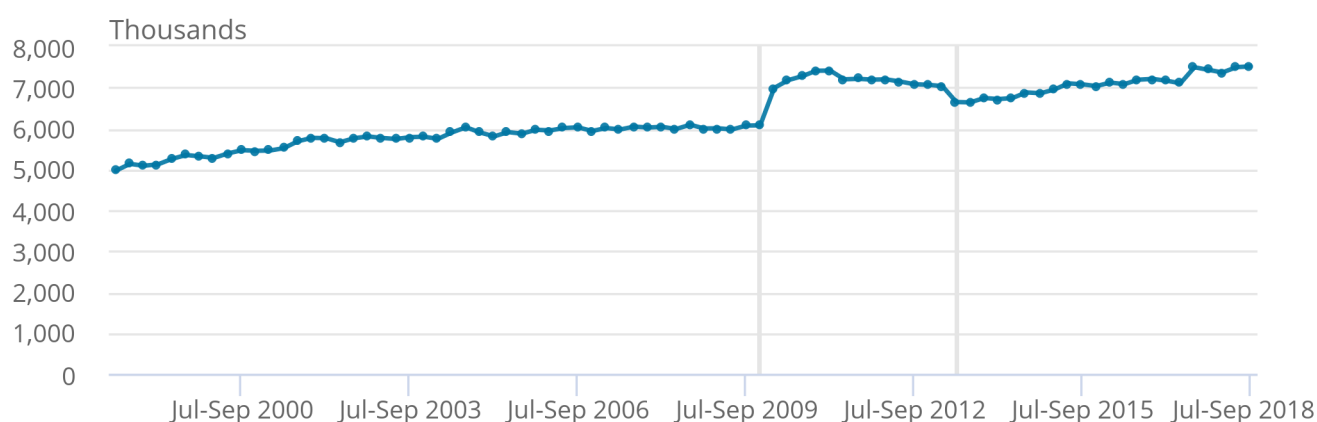
The difference between the discontinuities in 2010 and 2013 and the large increase in 2017 is that the latter does not coincide with any significant change in the questionnaire or interview processes. There have been no changes to the routing of the survey, the disability questions or any other survey questions in Quarter 3 2017. There have also been no changes to the information provided to respondents prior to the interview. There have been no changes introduced to interviewer training or written guidance. Moreover, all the system processes have been double-checked and everything has run normally. Nothing has been changed in the data rotation specifications either. All this analysis suggests that there is no direct evidence that the survey instrument has caused the change that we saw in Quarter 3 2017.

Figure 3: Number of disabled people, ages 16 to 64 years, not seasonally adjusted, UK

April to June 1998 to July to September 2018

Figure 3: Number of disabled people, ages 16 to 64 years, not seasonally adjusted, UK

April to June 1998 to July to September 2018



Source: Labour Force Survey, Office for National Statistics

The fact that the large increase in disability status reporting appears to happen in a very short space of time suggests that it could be either the result of a change in the survey characteristics or a very large and immediate external factor. The remainder of the article will investigate these hypotheses concentrating on the number of disabled people.

Disability reporting across the main survey characteristics

Aspects of the survey design have been investigated between Quarter 2 2017 and Quarter 3 2017. Now, a year on since the large increase, it is possible to make year-on-year comparisons of these survey design aspects between Quarter 3 2017 and Quarter 3 2018. These investigations show changes since the large increase which, as detailed in this section, reveal no clear pattern in the change in disability data. Increases in Quarter 3 2017 were exhibited by most characteristics, while by Quarter 3 2018 changes were more varied.

In addition, comparison of the disability shares within different survey characteristics both before (Quarter 2 2013 to Quarter 2 2017) and after (Quarter 3 2017 to Quarter 3 2018) the large increase helps us examine whether these have stayed broadly the same or whether they have changed drastically since. Each characteristic is looked at in turn in the following sections.

Gender

As can be seen in Figure 4, in Quarter 3 2017 there was an increase in the number of disabled men and women, which was more pronounced for men. In the subsequent two periods (Quarter 4 2017 and Quarter 1 2018), the number of disabled men decreased quite sharply while the decrease for women was more subdued.

In Quarter 2 2018, the number of disabled men and women increased, with the number of women reporting disability surpassing the level seen in Quarter 3 2017; while the level for men returned to the level seen in Quarter 4 2017. In Quarter 3 2018, the number of disabled women continued to increase, while the number of disabled men decreased.

Since Quarter 2 2013, both the quarterly and annual changes for women appear consistent even in the period overlapping the large increase. While the quarterly and annual changes for men in Quarter 3 2017 stand out, the magnitude of the changes has reduced by Quarter 3 2018, although the increase at Quarter 2 2018 means the level remains quite high.

Prior to the large increase, the average share of men with a disability was 44.3%, while the average share for women was 55.7%. This has remained the same in the period following the large increase (Quarter 3 2017 to Quarter 3 2018).

Between Quarter 2 2017 and Quarter 3 2017, the number of people reporting a disability increased by 5.5%. Men contributed 3.9 percentage points to the change, while the remaining 1.6 percentage points contribution came from women. The contribution to the quarterly change seen for women is not unprecedented, with a bigger contribution seen from Quarter 2 2014 to Quarter 3 2014. However, the contribution to the change for men is the highest since Quarter 2 2013 but has returned to similar magnitudes after Quarter 3 2017.

On an annual basis, the number of disabled people increased by 4.2% between Quarter 3 2016 and Quarter 3 2017, which is not an unprecedented growth in the series (5.3% growth between Quarter 2 2014 and Quarter 2 2015). In terms of gender contributions, men contributed 3.5 percentage points to the annual change both between Quarter 3 2016 and Quarter 3 2017, which is the largest contribution since Quarter 2 2013. Between Quarter 3 2017 and Quarter 3 2018, despite an overall increase in disability reporting, men contributed a decrease of 1.1 percentage points, which was their lowest contribution since Quarter 2 2017. The increase from Quarter 3 2017 to Quarter 3 2018 was driven by female contributions, which were in line with contributions seen in previous periods.

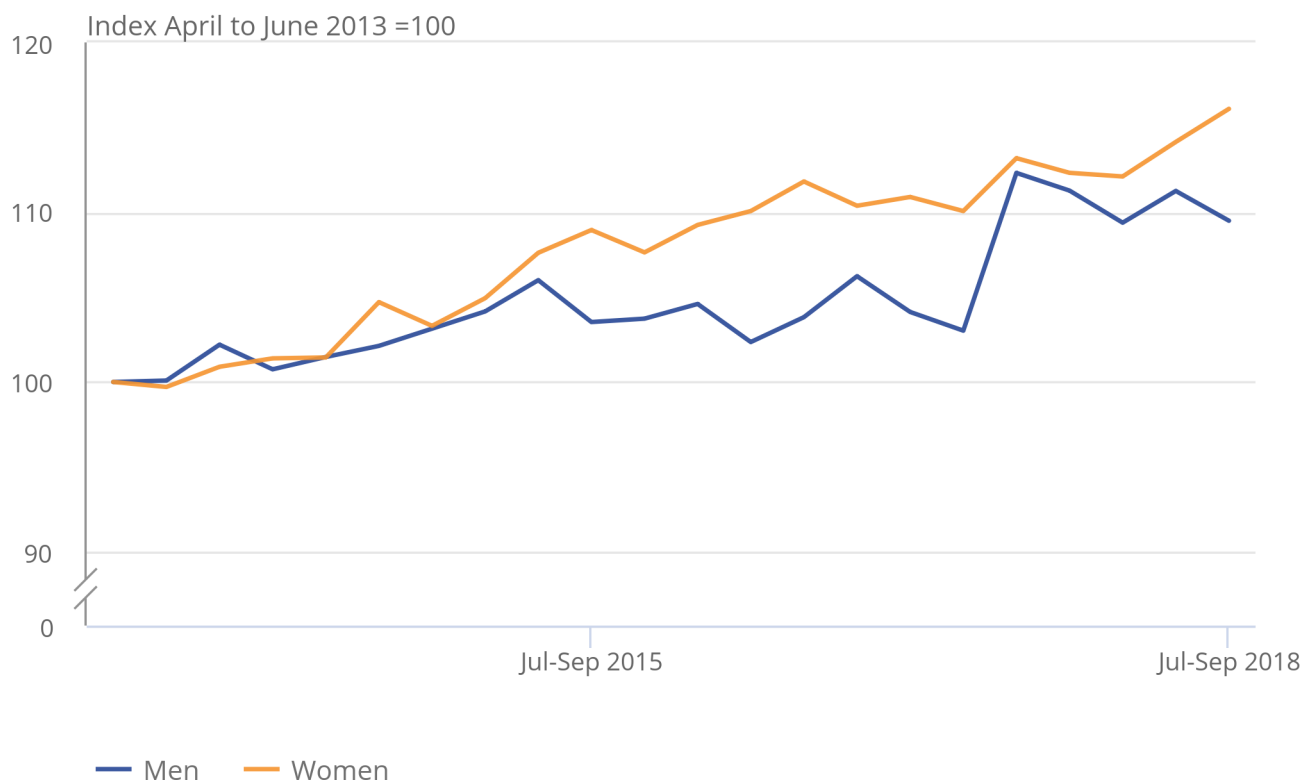
In summary, men contributed to the large increase observed between Quarter 2 2017 and Quarter 3 2017 to a greater extent than women. However, by Quarter 3 2018, the contribution of men and women to changes in disability reporting returned to the levels seen prior to the large increase.

Figure 4: Number of disabled people by sex, ages 16 to 64 years, not seasonally adjusted, UK

April to June 2013 to July to September 2018

Figure 4: Number of disabled people by sex, ages 16 to 64 years, not seasonally adjusted, UK

April to June 2013 to July to September 2018



Source: Labour Force Survey, Office for National Statistics

Age

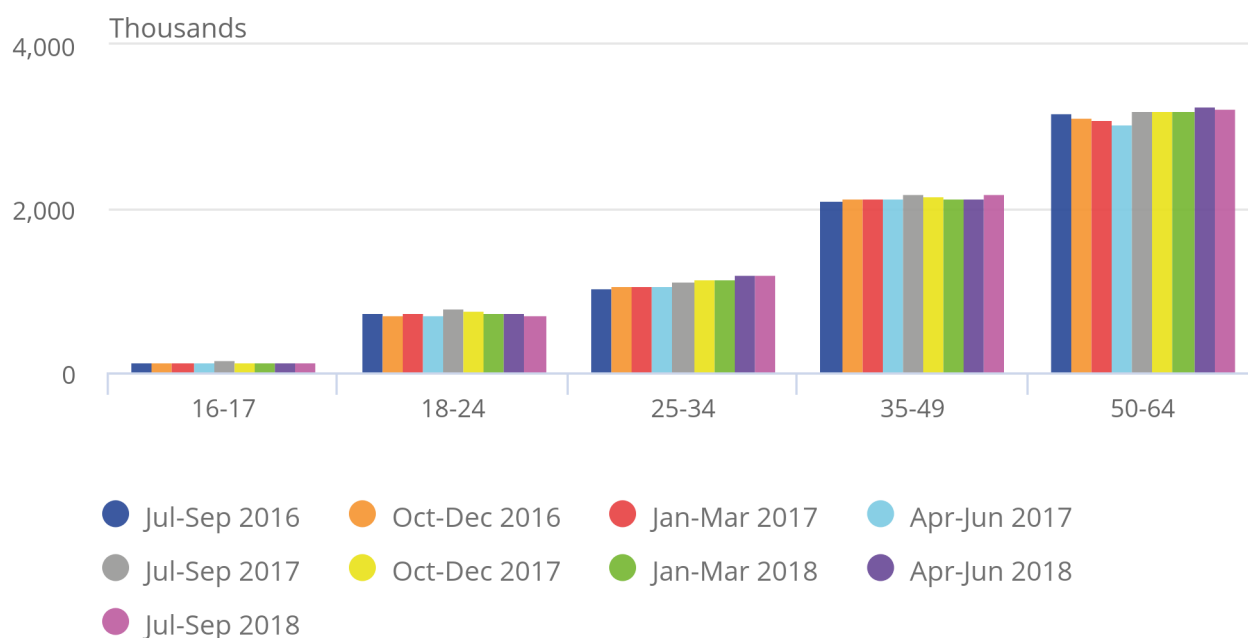
Figure 5a shows the number of disabled people by age group between Quarter 3 2016 and Quarter 3 2018. Throughout the series, the largest number of disabled people are in the oldest age group (50- to 64-year-olds). There is a clear increase in all age groups between Quarter 2 2017 and Quarter 3 2017 that matched what we saw in the top-level disability estimates. From Quarter 3 2017 to Quarter 3 2018, 16- to 17-year-olds and 18- to 24-year-olds have substantially decreased, while 35- to 49-year-olds have experienced a more modest decrease. Those aged 25 to 34 years and 50 to 64 years have continued an upward trend to Quarter 3 2018.

Figure 5a: Number of disabled people (aged 16 to 64 years), not seasonally adjusted, by age, UK

July to September 2016 to July to September 2018

Figure 5a: Number of disabled people (aged 16 to 64 years), not seasonally adjusted, by age, UK

July to September 2016 to July to September 2018



Source: Labour Force Survey, Office for National Statistics

Indexing the series allows us to see more clearly which age groups were most affected by the large increase. In Figure 5b we see that there were increases in all age groups in Quarter 3 2017, with the largest increases in the younger age groups (16- to 17-year-olds and 18- to 24-year-olds). By Quarter 3 2018, the younger age groups (16- to 17-year-olds and 18- to 24-year-olds) had decreased to levels seen prior to the large increase, although 16- to 17-year-olds showed a slight increase from Quarter 2 2018 to Quarter 3 2018. This is consistent with the volatile levels exhibited prior to the large increase, however, and so also suggests a return to pre-Quarter 3 2017 patterns. Other age groups (those aged 25 to 34, 35 to 49, and 50 to 64 years) have largely continued the longer-term upward trends.

Consistent with the split between the sexes in Figure 4, men have been the main driver for the increase in the 18- to 24-year-olds, while the increase in the 16- to 17-year-olds was similar in both sexes (not shown).

In terms of shares, two age groups saw increases in their average share in the period after the large increase: 18- to 24-year-olds and 25- to 34-year-olds increased by 0.7 and 1.5 percentage points, respectively. Two age groups saw decreases in their average share when compared with the period before the large increase: 35- to 49-year-olds and 50- to 64-year-olds decreased by 1.2 and 1.0 percentage points, respectively.

The biggest contribution to the quarterly change between Quarter 2 2017 and Quarter 3 2017 came from people aged 50 to 64 years (2.3 percentage points); this is the highest contribution this group has made since Quarter 2 2013. The 16- to 17-year-olds and the 18- to 24-year-olds also made their biggest contributions to the change since Quarter 2 2013 in this period.

On an annual basis, the biggest contribution to the change between Quarter 3 2016 and Quarter 3 2017 came from 25- to 34-year-olds and 35- to 49-year olds (1.3 percentage points for both), with the contribution from the latter group being the largest since Quarter 2 2013. Between Quarter 3 2017 and Quarter 3 2018, most age categories' contributions to the change were consistent with previous contributions. The contribution of those aged 18 to 24 years decreased, however, which was unprecedented.

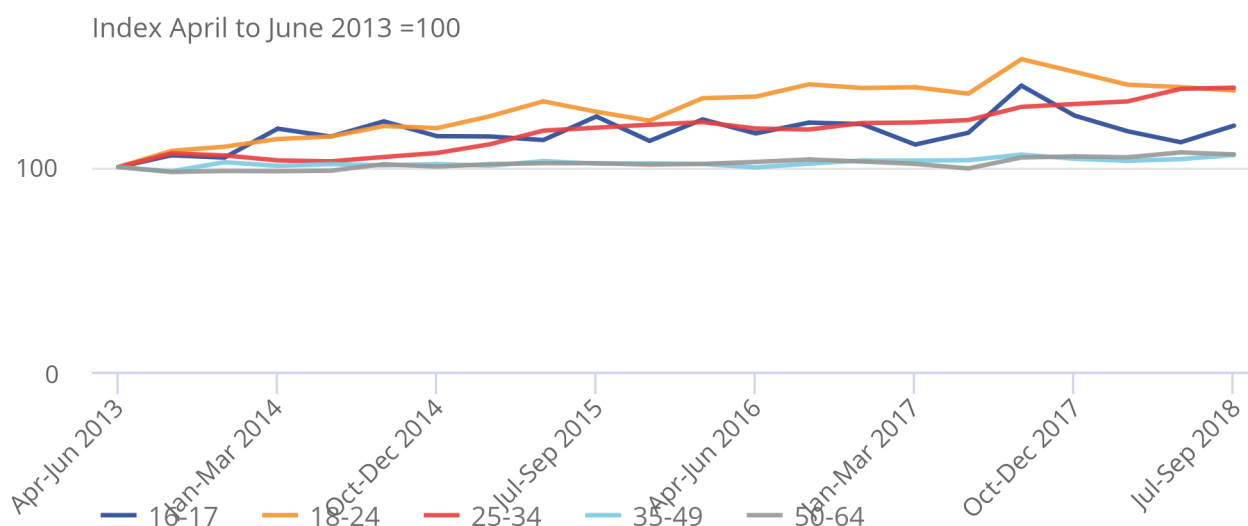
In summary, the volatile nature of the younger age groups (those aged 16 to 17 and 18 to 24 years) is particularly notable here. As the younger age groups represent a smaller sample size, this volatility is to be expected. The largest contribution to the annual change from Quarter 3 2016 to Quarter 3 2017 came from 25- to 34-year-olds and 35- to 49-year-olds. Contributions to change between Quarter 3 2017 and Quarter 3 2018 returned to previous levels, suggesting consistency with pre-Quarter 3 2017 patterns.

Figure 5b: Number of disabled people by age indexed to Quarter 2 (Apr to June) 2013, not seasonally adjusted, UK

April to June 2013 and July to September 2018

Figure 5b: Number of disabled people by age indexed to Quarter 2 (Apr to June) 2013, not seasonally adjusted, UK

April to June 2013 and July to September 2018



Source: Labour Force Survey, Office for National Statistics

Labour market status

Figure 6 examines the number of people with disabilities according to their labour market status and highlights that the increases (seen in Figure 2a) were more concentrated in the people classified as being in employment and being economically inactive (those people not in work and either not seeking nor available to work).

For subsequent data periods after the large increase in Quarter 3 2017, the employment level of disabled people has followed a broadly upward trend and it has remained elevated, while the economically inactive series has been more volatile. The unemployed level, while decreasing since Quarter 3 2017, has increased between Quarter 2 2018 and Quarter 3 2018, to a similar level as that seen at Quarter 3 2017.

Following the large increase in Quarter 3 2017, the economic inactivity series has decreased overall by Quarter 3 2018, despite an increase in Quarter 2 2018. This highlights both the volatility of the series, and the resuming of the downward trend exhibited prior to the large increase. This difference in the behaviour of people across the different labour market statuses could be because some groups are more likely to change their survey responses to health questions. For example, previous discontinuities have shown that those in employment are more likely to change their reported health status, perhaps because their activities are less severely (or less consistently) limited by their health condition.

Prior to the large increase, the average share of disabled people who were employed was 46.3%, which increased to 50.6% in the period following the large increase (Quarter 3 2017 to Quarter 3 2018). On the other hand, the average share of unemployed and inactive people reporting disability decreased following the large increase, from 5.9% and 47.8%, respectively to 5.1% and 44.3%, respectively.

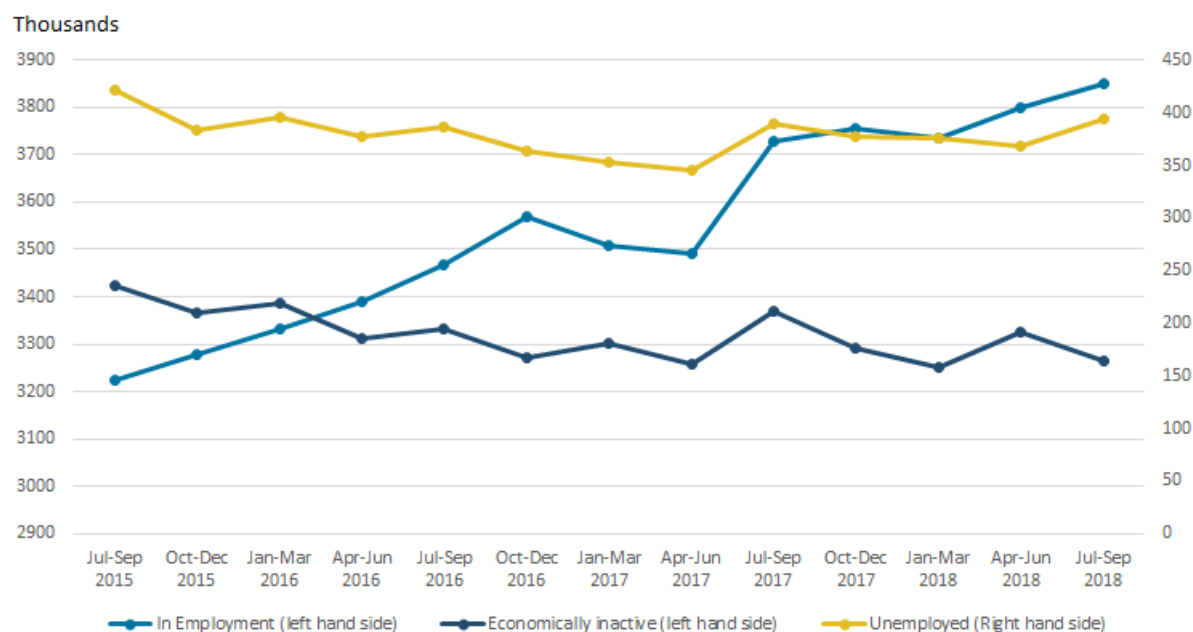
The biggest contribution to the change seen between Quarter 2 2017 and Quarter 3 2017 came from employment (3.3 percentage points), followed by the contribution from inactivity (1.6 percentage points). Both contributions are the largest for the current series.

Between Quarter 3 2016 and Quarter 3 2017, none of the contributions to the change seem out of line with previous contributions. However, the contribution from employment (4.3 percentage points) and unemployment (0.3 percentage points) to the change between Quarter 2 2017 and Quarter 2 2018 stand out as higher than the contributions seen in previous periods, although the annual contribution of employment to an increase has reached 4 percentage points or higher on previous occasions (Quarter 4 2016 and Quarter 3 2014). Contributions to the change seen between Quarter 3 2017 and Quarter 3 2018 were in the lower range of the scale, with 1.6 percentage points for employment and 0.3 percentage points for unemployment, which are in line with previous contributions.

In summary, despite the large increases in all labour market statuses from Quarter 2 2017 to Quarter 3 2017, the post-Quarter 3 2017 average share for each status is consistent with the share prior to the large increase, suggesting continuity across this period.

Figure 6: Number of disabled people aged 16 to 64 years by labour market status, not seasonally adjusted, UK

July to September 2015 to July to September 2018



Source: Labour Force Survey, Office for National Statistics

Interview type

There were increases across most response types from Quarter 2 2017 to Quarter 3 2017; however, personal responses saw a bigger increase (in volume terms) than proxy responses (which saw a higher increase in percentage terms), while cases brought forward decreased slightly. Over the year from Quarter 3 2017 to Quarter 3 2018, there was a substantial increase in cases brought forward. Personal and proxy responses decreased, with the biggest decrease in proxy responses.

Regions

From Quarter 2 2017 to Quarter 3 2017, there were increases across all regions except Northern Ireland. Five regions (North East, North West, East Midlands, South East and South West) had higher contributions than usual to the quarterly change between Quarter 2 2017 and Quarter 3 2017. Two regions (North East and East Midlands) had larger contributions than usual to the change between Quarter 3 2016 and Quarter 3 2017. Over the year to Quarter 3 2018, following the large increase, regional disability reporting has been more mixed, with equal numbers of regions continuing to increase and decrease. The average shares of people reporting disability per region are relatively unchanged between the pre and post large increase periods.

Interview mode

Increases were seen across both modes of interview (face-to-face and telephone) from Quarter 2 2017 to Quarter 3 2017, but the increase in face-to-face was more prevalent. Following the large increase, between Quarter 3 2017 and Quarter 3 2018 the increase in telephone reporting continued, while reporting in face-to-face interviews decreased.

The average shares of people reporting disability through the different modes of interview have stayed relatively stable; 55.9% before compared with 55.1% after the large increase for telephone interviews and 44.1% before compared with 44.9% after the large increase for face-to-face interviews.

Conditions

From Quarter 2 2017 to Quarter 3 2017, increases were seen across most health conditions, with legs or feet, depression, bad nerves, learning difficulties, back or neck and other disabilities seeing the largest increases. The biggest contribution (1.2 percentage points) to the growth between Quarter 2 2017 and Quarter 3 2017 came from people reporting legs or feet as their condition. This is the highest contribution this group has made to a change on a quarterly basis but only marginally, as there was a 1.1 percentage points contribution in Quarter 3 2013. The only other category that had a higher contribution than usual on the quarter was skin conditions, allergies.

On an annual basis, between Quarter 3 2016 and Quarter 3 2017, the largest contribution to the change came from depression, bad nerves (1.7 percentage points) but this is not unprecedented. The only contribution to this period that was above the norm was from skin conditions, allergies (0.3 percentage points). In Quarter 3 2018, the contribution to the annual change for depression, bad nerves had reduced to 2.1, from 2.9 percentage points in Quarter 2 2018, but remained high. Chest, breathing problems had reduced its contribution for the year to Quarter 3 2018 substantially, to 0.2 percentage points.

Over the year from Quarter 3 2017 to Quarter 3 2018, increases have continued to be seen across several health conditions, and depression has continued to have the greatest increase, while conditions relating to the back or neck have seen a large decrease.

Wave analysis

The role of random fluctuations was examined by looking at the share of the population reporting disability by wave. This enables us to track individual cohorts of respondents over time, as they join the survey at “wave 1” in a given quarter, then are interviewed five times over five consecutive quarters, before leaving after “wave 5”.

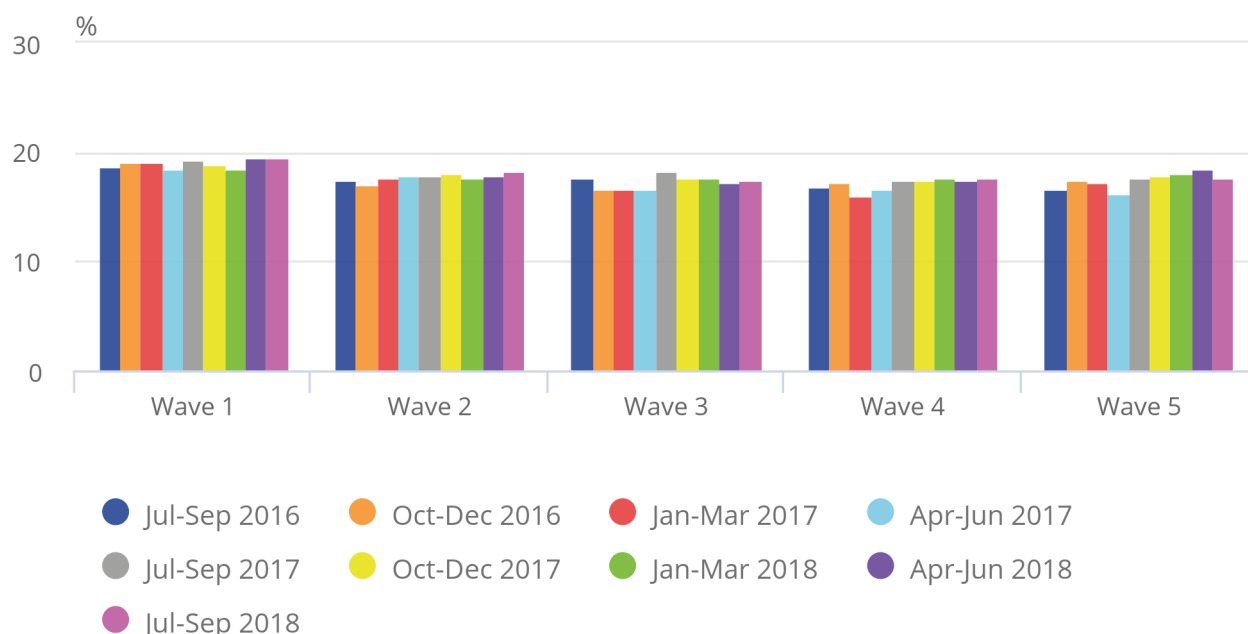
Figure 7 shows a comparison between disabled people as a proportion of the population by interview waves. This allows us to see how the current waves compare historically. In Quarter 3 2017, there was a large increase in the share of respondents reporting a disability status across all waves except for wave 2. From Quarter 3 2017 to Quarter 3 2018, except for wave 3, the reporting of a disability increased across all waves, with the greatest increase occurring in wave 2.

Figure 7: Disabled people as a proportion of the population by wave, not seasonally adjusted, UK

July to September 2016 to July to September 2018

Figure 7: Disabled people as a proportion of the population by wave, not seasonally adjusted, UK

July to September 2016 to July to September 2018



Source: Labour Force Survey, Office for National Statistics

As can be seen from Figure 8, the wave 1 that was interviewed for the first time in July to September 2017 came near the top of the distribution. In subsequent quarters, apart from Quarter 3 2018 as wave 5, this wave contributed towards the decrease we have seen in the number of disabled people. The wave starting in April to June 2017 also saw decreases in the periods after the large increase, although it too increased at wave 5, while the remaining two waves (the waves starting in January to March 2017 and October to December 2016) feeding in to the July to September period, and staying in the sample for at least one more period, had more inconsistent behaviour in subsequent quarters.

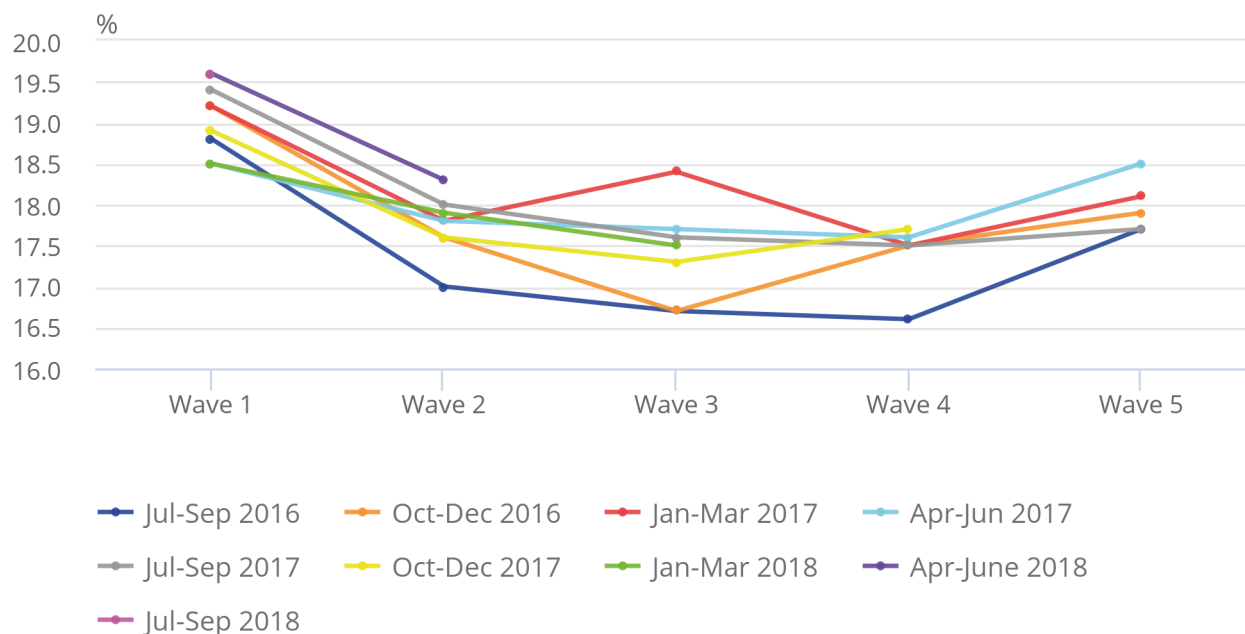
Since Quarter 3 2017, we can see that both wave 1s that joined the sample in October to December 2017 and January to March 2018 are towards the middle of the distribution and lower than the wave 1 that joined the sample in July to September 2017. However, the wave 1 that joined the sample in April to June 2018 came at the very top of the distribution, and the wave 1 that joined in July to September 2018 came in at a similarly high level. The remaining three waves feeding into the July to September 2018 period have seen overall decreases in reporting, consistent with the pattern across waves.

Figure 8: Disabled people as a proportion of the population by wave, following the respondents journey not seasonally adjusted

July to September 2016 and July to September 2018

Figure 8: Disabled people as a proportion of the population by wave, following the respondents journey not seasonally adjusted

July to September 2016 and July to September 2018



Source: Labour Force Survey, Office for National Statistics

13-week moving average

The reporting rate for GSS harmonised disabled was tracked across individual survey weeks, to establish whether the change happened at a very specific point in time.

Random fluctuations (and variations in short-term sample structure) make it difficult to pinpoint precise timings, but Figure 9 takes a 13-week moving average of the disability rate over time. It also shows the 13-week moving average of the previous year, for comparison. The timings of recent changes appear to be closely aligned to LFS quarters.

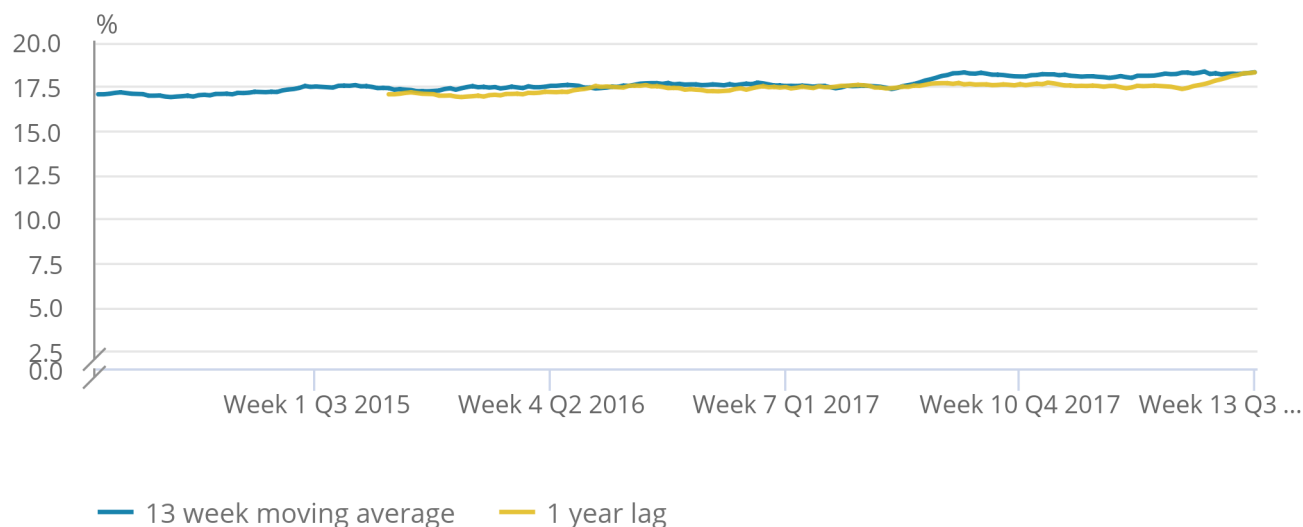
The line increases steadily for around 13 weeks, as the moving average includes more and more Quarter 3 2017 weeks, then appears to reach a steadier state at the end of the quarter, when the moving average is entirely based on Quarter 3 2017 weeks. The levels decrease in Quarter 4 2017 and Quarter 1 2018, suggesting there might be a minor “settling down”. By Quarter 2 2018, however, the level has picked up again, and this increase is maintained through Quarter 3 2018 showing a return to the higher levels seen in Quarter 3 2017.

Figure 9: 13-week moving average comparing the rate of disability reporting with the previous year

October to December 2014 to July to September 2018

Figure 9: 13-week moving average comparing the rate of disability reporting with the previous year

October to December 2014 to July to September 2018



Source: Labour Force Survey, Office for National Statistics

Impact of external drivers on disability reporting status

In addition to examining the LFS, analysis also looked at whether there was any evidence that the step increase in people reporting disability could have been caused by external factors.

External drivers of reporting behaviour are difficult to measure, but we would expect them also to impact on public awareness of disabilities. One proxy measure for public awareness is volumes of Google searches using specific words, with data available from the Google Trends website. Large numbers of searches will not necessarily translate into higher numbers of people reporting disabilities and the timings may be lagged. However, if the large increase had been caused by an increase in public awareness, we would expect to see some sort of spike in related Google searches.

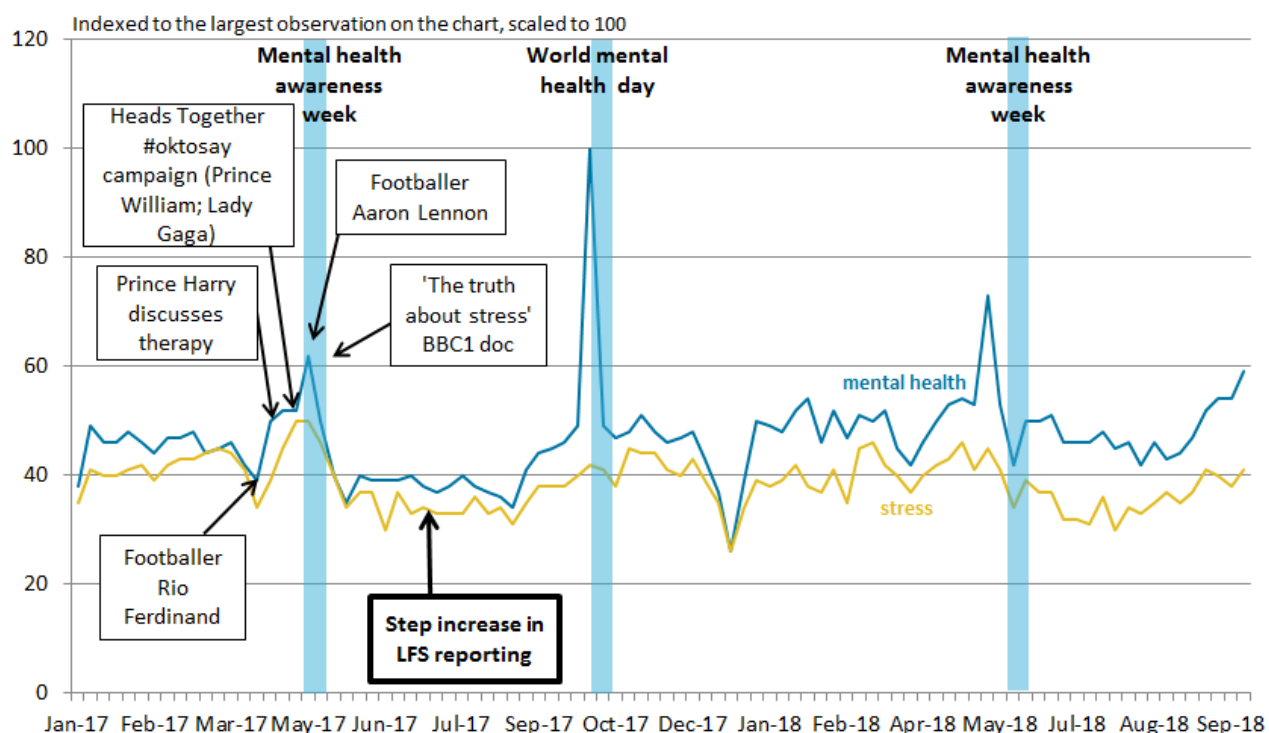
Some of the largest search volumes, and largest fluctuations, observed for the period since January 2017 relate to “mental health” – as shown in Figure 10 (indexed to the largest observation on the chart, scaled to 100). The three spikes, in April to May 2017, October 2017 and May 2018, have been annotated with some significant media stories, although we cannot directly measure their effect on public awareness and the list is not intended to be exhaustive. Even though there are spikes in the number of searches for certain words like “mental health” and “stress”, the timing of these spikes does not coincide with the large increase in disability reporting in the LFS.

Changes in public awareness may build up cumulatively over a period of time, so it is possible that LFS reporting in July 2017 was influenced in some way by the April to May 2017 spike in public awareness. However, it seems unlikely that there would be a two-month delay before a sudden impact. The most recent spike in May 2018 in Google searches coincides with the increase we have seen in the disability series, with no two-month delay, but a similar spike in October 2017 coincided with a fall in LFS reporting. This suggests that some of the impact we saw in Quarter 3 2017 could have potentially been influenced by the media events in April and May 2017 (outlined in Figure 10), although this is difficult to prove and it is not clear why this would not trigger an increase in the LFS until July 2017.

There appears to have been an increase in searches, particularly related to “mental health” in Quarter 3 2018 (July to September 2018), prior to World Mental Health Day in October 2018. This is consistent with patterns observed prior to mental health awareness events in previous years.

Figure 10: External factors that could have impacted the disability data, UK

January 2017 to September 2018



Source: Department for Work and Pensions analysis of Google Trends data

An assessment was also carried out to determine whether the benefits system had been a driver of reporting changes. As this analysis has concluded, the apparent step-increase in reporting disabilities between Quarter 2 2017 and Quarter 3 2017 was focused largely on people in employment and therefore it was unlikely that benefits administrative data was a direct link to this LFS increase.

Administrative statistics confirm that there were no major changes in the trends of numbers of people receiving disability-related benefits at, or shortly before, the July 2017 increase in LFS reporting. Similarly, the timings of benefit assessments were considered, since the results of such assessments may influence an individual's perception of their own disability. Although these trends showed some different timings to numbers of recipients, the increase in LFS reporting did not coincide with any peaks in assessments.

4 . Conclusions

While we acknowledge that the quarterly increase in Quarter 3 (July to Sept) 2017 is unusual, and cannot be explained by sampling volatility and seasonality alone, the annual increase is not unprecedented and serves to emphasise the point that users should not make short-term comparisons using not seasonally adjusted datasets.

Previous health warnings attached to [Dataset A08](#) have been removed and we suggest no further updates to this series of articles.

We will continue to monitor Labour Force Survey (LFS) disability data in line with our standard quality assurance practices.