NHS Staff Survey 2023: Note on data relating to experience of physical violence and harassment, bullying or abuse at work

Summary

A short while before the NHS Staff Survey 2023 was due to be published, a potential problem was discovered with the data for question 13. It was decided that this should not prevent the majority of the survey's results being published, but results for question 13, and the measures that use it, were suppressed pending further investigations.

The issue was traced to question 13 being missed by some respondents completing the survey on an iPhone. To note, this affected only a small proportion of respondents (<3% of the total).

Detailed analysis also revealed those who missed question 13 were likely to answer question 14 differently.

Statistical techniques have been used to compensate for the problems in questions 13 and 14 (see below for details) allowing all results to be published. This means results for question 13 are now available for the first time, and the results for question 14 have been modified from those published previously.

Further detail

When the results of the NHS Staff Survey 2023 were published on 7 March 2024 we were unable to report some results due to an issue with the quality of the data which was identified close to the publication date.

Specifically, we had identified a higher-than-expected rate of missing data for the set of questions relating to experience of physical violence (Q13a-d). Our investigations revealed that for some respondents at some organisations working with one of the main providers of survey services, questions 13 a to d were not always presented as expected where those respondents were using an iPhone to complete the online survey. This was the first time an issue of this nature had arisen and affected only a minority of respondents.

Consequently, 2023 results for the following measures could not be reported as part of the publication of survey results in March:

- **Q13a** – In the last 12 months how many times have you personally experienced physical violence at work from patients/service users, their relatives, or other members of the public.
- **Q13b** – In the last 12 months how many times have you personally experienced physical violence at work from managers

Unclassified

- o **Q13c** – In the last 12 months how many times have you personally experienced physical violence at work from other colleagues.
- o **Q13d** – The last time you experienced physical violence at work, did you or a colleague report it.
- o The People Promise element sub-score "**Negative experiences**" which uses questions 13a, 13b and 13c in its calculation.
- o The People Promise element sub-score "**Health and safety climate**" which uses question 13d in its calculation.
- o The People Promise score "**We are safe and healthy**", which uses the "Negative experiences" and "Health and safety climate" sub-scores in its calculation.

Following publication, further investigation revealed that the questions which relate to harassment, bullying or abuse (Q14a-d), were also indirectly affected by this issue. The minority of respondents who did not see Q13a-d were found to have a different pattern of responses to Q14a-d. This is most likely due a difference in how they interpreted these questions in the absence of the preceding questions on physical violence. This affects the results previously published for 2023 for the following measures:

- o **Q14a** – In the last 12 months how many times have you personally experienced bullying, harassment or abuse at work from patients/service users, their relatives, or other members of the public.
- o **Q14b** – In the last 12 months how many times have you personally experienced bullying, harassment or abuse at work from managers
- o **Q14c** – In the last 12 months how many times have you personally experienced bullying, harassment or abuse at work from other colleagues.
- o **Q14d** – The last time you experienced bullying, harassment, or abuse at work, did you or a colleague report it.

In line with our commitment to ensuring that the results from the survey are of the highest quality, following publication the Survey Coordination Centre and NHS England developed, tested, and agreed an approach to correcting the results for the above measures.

The correction approach is adapted from the standard methods used for weighting the survey results, which are described in the Technical Guidance. The correction takes the responses for q13a-d and q14a-d provided by staff who were *not* affected by the issue (c.97% of all respondents) and calculates the results for the affected measures based on this group alone. The weights which are ordinarily applied to the whole sample of respondents at an organisation are recalculated to account for this reduced base. This helps to correct for the bias that may occur due to a difference in the profile of affected and unaffected respondents. Additionally, for results where weights are not usually applied, new weighting corrects the profile of the responses from unaffected respondents to match that of all survey respondents.

Following the application of this correction, 2023 results for the affected measures, including corrected data for Q14a-d, were published on **30 May 2024**.

Further details of the impact of the issue and the approach to correcting the results are provided within this document.

Please note:

1. The impact of the correction at the national level is relatively small. For example, applying the correction leads to an increase of 0.22 percentage points in the national estimate of the proportion of staff experiencing physical violence from patients/service users, their relatives, or other members of staff, compared to the estimate based on uncorrected data.
2. Results presented in all reporting outputs have the correction applied to affected measures and no further adjustment is required.
3. Q14a-d results for organisations unaffected by the data issue (e.g. those who worked with a different survey contractor) are unchanged from those originally published. However, results for organisations affected by the issue and benchmark values may differ from those originally published. Aggregated results (national, regional and system level) for q14a-d will also differ from those originally published, as these include results for affected organisations.
4. The issue also affected bank workers taking part in the NHS Staff Survey for bank only workers, and so the equivalent measures are affected in the bank results (Q18a-d, Q19a-d, the 'We are safe and healthy' score and two of its sub-scores). Since the results for bank only workers are not weighted by occupation group as standard, a new corrective weighting approach has been developed which mirrors that described above. That is, results are based on the responses provided by bank workers unaffected by the issue, and the data are weighted to adjust the occupation group profile of those unaffected respondents to match the profile of all bank only workers who responded at the organisation.

.

Unclassified

Analytical explanation

Background

A higher-than-expected level of missing data was identified by the Survey Coordination Centre and the Picker contractor team. Investigations have determined that some respondents who used an iPhone to access the online version of the survey provided by Picker (which uses software provided by Qualtrics) were not automatically presented with Q13. These respondents are likely to have failed to complete Q13a-d, a set of questions on staff experiences of violence at work. Overall, around two thirds of iPhone respondents accessing the Picker/Qualtrics online survey failed to answer Q13a-d but did answer Q14a-d which appear on the same page.

Overall, the number of affected cases is low as a proportion of all responses. 20,346 cases in the main survey are believed to have been affected, from a total of 707,460 – 2.88% of the total. Nevertheless, we were concerned about the potential biasing effect of the error, as non-office-based staff were disproportionately more likely to be affected. This group are also more likely to experience violence at work on average, which would likely have the effect of reducing the rate at which experiences of violence were reported overall.

As well as the immediate impact on Q13, we noted a risk that other items might be affected due to context or order effects. The way survey respondents interpret and answer questions can be influenced by surrounding items, and so we examined whether issues with the presentation of Q13 were associated with staff responses to other items. We found that the subsequent block of questions – Q14a-d, which cover harassment, bullying or abuse – were affected, with people who did not see Q13a-d more likely than other similar staff to report harassment, bullying or abuse.

Because our concerns around bias are related to a) impact on the proportion of responses to q13 and q14 from different occupational groups and b) the knock-on effect of incorrect presentation of Q13 on responses to Q14, there is a potential remedy. Provided that missing data is otherwise effectively random in relation to the outcome variable – that is, whether iPhone users saw a correctly formatted Q13 had nothing to do with whether they experienced violence, nor with other common-cause characteristics except occupational group – then there should be adequate data still available to compile reliable estimates for the affected measures. The same approach can be used for both Q13 and Q14, with the additional requirement for the deletion of Q14a-d responses from staff who were affected by the incorrect presentation of Q13a-d.

Options considered

We have considered four main options for reporting the data:

1. Imputation of missing data based on other measures from the survey.
2. Reweighting of the data for Q13a-d and Q14a-d to account for the unexpectedly higher item non-response from certain occupational groups for these measures.
3. Excluding affected responses for q14 and applying no further correction to q14 and no correction to q13.
4. Including affected responses for q14 and applying no correction to q13 or q14.

Imputation is a statistical technique for replacing missing data with plausible values based on patterns observed in other respondents. There are multiple approaches to this; in simple terms, however, they involve estimating the likely responses from individuals who missed a question based on how similar respondents who did answer the same question responded to it. This can be a useful methodology for preserving the sample size of a survey and allowing respondents with missing data to be included in analyses that require listwise deletion. However, we consider it unattractive in the context of reporting on the national staff survey, as it is hard to explain and justify an approach that effectively creates new data not provided by staff. Imputation is even less attractive in the case of Q14, where most affected staff *did* respond – deletion of their actual responses and replacement with imputed responses is deemed not to be appropriate.

Reweighting of the data for Q13a-d and Q14a-d is an alternative strategy that accepts that missing or otherwise compromised data cannot be replaced, but that instead affords a greater contribution to individuals from staff groups that are underrepresented due to the iPhone issue. National and organisational level results for the survey are already weighted by occupational group, which is intended to standardise the profile of respondents within each participating organisation to the average profile within their benchmarking group. This standardisation is applied at a survey level: the same weights are used for all questions. The alternative proposal here is to calculate separate weights for Q13a-d & Q14a-d, excluding the 2.88% of respondents who were affected by the presentation issue. We would then also recalculate organisational weights and combined occupational/organisational weights.

Given the clear impact to q13 and q14, excluding affected q14 responses and applying no further correction or reporting all data uncorrected was not deemed to be appropriate.

Methods

Identifying affected cases

Missing data for Q13a-d is not necessarily an administrative error: respondents can choose to skip any question that they would prefer not to answer. Some level of missing data is thus normal.

For the current issue, we have determined that a particular pattern of missing data is prevalent, and that this is unusual. In general, only a vanishingly small proportion of respondents miss Q13a-c and yet go on to answer at least one of items Q14a-c (a similarly structured set of questions on harassment, bullying or abuse). But this pattern is likely to arise where respondents do not see Q13 as intended. As such, we have identified 'affected cases' as those meeting the following criteria:

- o Q13a-c are all blank; AND
- o At least one of Q14a-c is not blank; AND
- o *UserAgent* includes "*iPhone*"

The '*UserAgent'* variable is an additional metadata field available in the raw Picker survey dataset which indicates the type of device and browser used to complete the online survey.

Overall, 20,346 cases meet these criteria.

Weights

The existing standardisation methodology for the survey involves two sets of weights, which can be combined multiplicatively.

- o *Occupational group weights* or *occ_weight* adjust the distribution of respondents by occupational group within each trust to match the average distribution for that trust's benchmark group. *Occupational group weights* are calculated as the average proportion of each occupational group within each benchmark group divided by the proportion of each occupational group within each trust. That is, for trust *y* and occupational group *x* within benchmark group *z*, the weight is $occ\_weight_{xyz} = \frac{(\sum n_{xz})/(\sum n_z)}{(\sum n_{xyz})/(\sum n_{yz})}$ These weights are capped at a maximum value of 5
- o *Trust size weights* or *org_weight* adjust the contribution of organisations to the national, regional, and ICS level outputs. They are calculated as the organisation's total eligible population, N_y, divided by its number of respondents, n_y: eg for trust *y*, $org\_weight_y = N_y/n_y$. Within any give organisation all respondents will have the same value of *org_weight*, and this value is uncapped.
- o Combining these two weights provides a third weighting variable that both standardises the trust-level occupational group distributions within benchmark groups *and* corrects for the impact of response on the relative contribution of organisations to the national results – eg *org_occ_weight = occ_weight * org_weight*.

Each of these weights is calculated at survey level: that is, the same value of *occ_weight*, *org_weight*, or *occ_org_weight* is used for every question which is weighted. This is appropriate because the survey uses the same eligible population throughout. However, the impact of the Q13 error has been, in effect, to create an alternative cohort that excludes a proportion of iPhone respondents. The proposed solution is therefore to recalculate survey weights specifically for the affected questions and composites.

Specifically:

- o A new set of o*ccupational group weights* or *occ_weight_adjusted* should use an alternative calculation of the denominators: that is, the proportion of each occupational group within each trust is calculated after excluding the 20,346 respondents flagged as affected by the Q13 issue.

- Calculation of the numerators – the proportion of respondents within each occupational group within each benchmark group – are unchanged, such that the same weighting targets are being used as for other questions: data is being standardised to the survey level distributions.
- A new set of *trust size weights* or *org_weight_adjusted* should use an alternative calculation where the number of respondents per organisation excludes the 20,346 affected respondents.
- A new set of combined weights can be calculated:
  *org_occ_weight_adjusted = occ_weight_adjusted * org_weight_adjusted* .
- These new weights are suitable for use with both Q13 and Q14, provided that Q14 responses from the 20,346 affected respondents are first filtered out.

Note that the only changes involved in these calculations is the exclusion of affected cases when calculating organisation weights and trust level occupational group distributions. This means that the new weights are survey-level weights that can be applied to all calculations that rely on this reduced cohort.

This methodology can also be extended for reporting results that are not normally weighted by occupational group, including where sub-group breakdowns are applied, or where results are aggregated to region or system level. For these outputs, the occupational group weights can be calculated as above but with revised numerators – the survey-level distribution by occupational group for each trust. Using these figures as weighting targets has the effect of creating weights that counterbalance for the impact on Q13 and Q14 without performing additional standardisation. This approach creates a further two new weights for use where standardisation weighting is not applicable - *occ_weight_corrective* and *occ_org_weight_corrective (= occ_weight_corrective * org_weight_adjusted).*

Question and composite results

Data excluded from the published reports to date includes Q13a-d as well as composites that rely on this data: the People Promise element 4 ('we are safe and healthy') score, and two sub-scores, PP4_1 ('health and safety climate') and PP4_3 ('negative experiences'). Results from Q14a-d have been reported as the biasing effect of the omission of Q13 had not been identified at the time of publication. The actual impact on national results for Q14a-d is very small, but nevertheless merits correction.

A complicating factor is that composite results are calculated at case level (i.e. for individual respondents) with rules in place regarding the handling of missing data: too much missing data across the questions of the composite results in respondents being excluded from the composite calculation. There is no satisfactory way to include the 20,346 affected cases within these composites, because their missing data is non-random. Instead, we propose that composites PP4, PP4_1, and PP4_3 are recalculated using a reduced cohort that excludes these 20,346 respondents. This is not ideal – we aim to avoid removing usable data wherever possible – but maintains a consistent approach to calculation and enables the use of the new weights for these composites. It also allows for the efficient handling of Q14 data, which also contributes to PP4, PP4_1, and PP4_3. However, the weights described above can be applied to PP4, PP4_1 and PP4_3, affording a greater contribution to individuals from staff groups that are underrepresented within these measures due to the iPhone issue.

Testing & validation

Q13

For Q13a, there is evidence that the higher rate of missing data for iPhone respondents has a biasing effect on national level estimates. The iPhone error disproportionately affects non-office-based staff, who are also more likely to experience violence from patients and the public.

For example, in acute and community trusts, 29.7% of unaffected respondents vs 49.1% of affected respondents are registered nurses and midwives; conversely, 16.0% of unaffected respondents vs 2.5% of affected respondents are in admin & clerical roles. Overall, 77.0% of registered nurses and midwives versus 97.2% of admin & clerical staff say that they 'never' experienced violence from patients, family members, or the public in the last 12 months (Q13a).

There are similar but less pronounced differences for Q13b (violence from colleagues) and Q13c (violence from managers). For example, in ambulance trusts, 34.5% of unaffected versus 43.3% of affected(?) respondents are paramedics, and 15.2% vs 11.2% are ambulance control staff. Overall, 98.1% of paramedics versus 99.1% of ambulance control staff say that they 'never' experienced violence from their managers (Q13c).

Reweighting the data should, therefore, have the effect of decreasing the proportion of staff who say that they 'never' experienced violence. But the differences in weighted results should not be expected to be large in absolute terms, because:

o   The proportion of affected cases is small at 2.88%.
o   Some groups report similar experiences of violence to one another; variation in their representation in the affected and unaffected groups is less likely to be material than the examples cited above.
o   Even where differences are large, their influence on the national results may be modest. For example, the data above suggests that in the acute and acute community benchmarking group around 7,243 registered nurse & midwife responses may be missing from Q13 due to the error – from a total for this group of 141,732 and a total in the benchmarking group of 467,350 respondents from all occupations. Assuming that the 7,243 missing nurses and midwives would have answered consistently with their colleagues from the same occupational group, the difference in the unweighted proportion of staff saying 'never' at Q13 would be 0.15percentage points - 86.30% vs 86.45%.
o   Finally, and importantly: results are already weighted to the average occupational group profile for the benchmark group. This means that in organisations where the proportion of staff from certain occupational groups is lower than average – for whatever reason, *which could include underrepresentation due to the Q13 error* – the responses from these groups are given a higher weighting. This will go some way towards reducing the impact of the error in weighted versus unweighted results.

As expected, reweighting has a small but overall negative effect on results compared to unweighted data or data using the original weights – that is, a greater proportion of staff are estimated to have experienced violences. The impact is more substantial for ambulance trusts, where the impact on the occupational group distribution is the most substantial.

Unclassified

Type of organisation	Weighting method	q13a	q13b	q13c	q13d
All trusts	Original weights	13.47%	0.70%	1.71%	73.59%
Acute and Acute & Community trusts		13.38%	0.78%	1.88%	69.38%
Acute Specialist trusts		5.18%	0.54%	1.39%	70.92%
Mental Health & Learning Disability and MH/LD & Community trusts		13.39%	0.45%	1.18%	89.43%
Community trusts		6.94%	0.30%	0.75%	75.86%
Ambulance trusts		26.58%	0.98%	1.91%	74.68%
All trusts	Adjusted weights	13.69% (+0.22%)	0.71% (+0.01%)	1.72% (+0.02%)	73.62% (+0.02%)
Acute and Acute & Community trusts		13.55% (+0.17%)	0.78% (+0.01%)	1.89% (+0.01%)	69.48% (+0.1%)
Acute Specialist trusts		5.25% (+0.07%)	0.54% (+0.01%)	1.41% (+0.02%)	71.13% (+0.21%)
Mental Health & Learning Disability and MH/LD & Community trusts		13.47% (+0.07%)	0.45% (n.c.)	1.19% (+0.01%)	89.46% (+0.02%)
Community trusts		6.97% (+0.02%)	0.30% (n.c.)	0.75% (n.c.)	75.91% (+0.05%)
Ambulance trusts		27.56% (+0.99%)	1.01% (+0.03%)	1.95% (+0.04%)	74.9% (+0.22%)

Q14

For Q14a-c, there is evidence that people who did not see Q13 correctly presented ('affected cases') were more likely to report bullying, harassment, or abuse compared to those who saw Q13 as intended. For example, comparing only iPhone respondents, 54% of those affected vs only 40% of those unaffected by the Q13 issue said that they had personally experienced bullying, harassment, or abuse from patients/service users, their relatives, or other members of the public. This difference was broadly consistent across staff groups and organisational times, indicating bias from the omission of Q13.

We hypothesise that this effect may have occurred because of a context effect on how people interpret the terms "bullying, harassment, or abuse". We posit that the cognitive process for response to Q14 involves staff forming an internal operationalisation of what severity of antisocial behaviour meets the threshold of "bullying, harassment, or abuse"; retrieving their own worst experiences over the past 12 months; and then evaluating those experiences to determine whether

Unclassified

they exceed that threshold level. People who see the reference to "physical violence" in Q13 may then interpret "bullying, harassment, or abuse" to encompass relatively more serious incidents than people who have not been primed to consider "physical violence" as a potential part of one's working experience, because the two groups make different judgements of the threshold.

Because the impact of Q13 issue will have been to make some respondents more likely to report bullying, harassment, or abuse at Q14, an effective mitigation strategy should have the impact of decreasing the reported proportion of staff saying that they had experienced this. This is the opposite to Q13, where the effect of the error was to positively bias results. But for similar reasons as described for Q13, the difference should once again be small.

As expected, reweighting of the data – and the exclusion of responses from affected cases – has a positive effect on results compared to using the original weights. That is, a smaller proportion of staff are estimated to have experienced bullying, harassment, or abuse. The impact is markedly more substantial for ambulance trusts, especially for Q14a – here, the rate of staff reporting bullying, harassment, or abuse falls by as much as 2.2 percentage points.

Type of organisation	Weighting method	q14a	q14b	q14c	q14d
All trusts	Original weights	25.78%	10.17%	18.09%	51.86%
Acute and Acute & Community trusts		25.70%	10.64%	19.25%	49.78%
Acute Specialist trusts		17.16%	9.77%	17.22%	50.86%
Mental Health & Learning Disability and MH/LD & Community trusts		24.27%	8.06%	14.12%	61.65%
Community trusts		19.23%	7.06%	12.76%	59.05%
Ambulance trusts		44.41%	13.84%	19.22%	48.63%
All trusts	Adjusted weights	25.15% (-0.64%)	9.94% (-0.24%)	17.66% (-0.44%)	51.80% (-0.06%)
Acute and Acute & Community trusts		25.02% (-0.68%)	10.38% (-0.25%)	18.77% (-0.48%)	49.72% (-0.06%)
Acute Specialist trusts		16.93% (-0.23%)	9.68% (-0.10%)	17.03% (-0.20%)	50.83% (-0.03%)
Mental Health & Learning Disability and MH/LD & Community trusts		24.05% (-0.22%)	7.97% (-0.08%)	13.95% (-0.17%)	61.58% (-0.08%)
Community trusts		18.93% (-0.30%)	6.95% (-0.11%)	12.52% (-0.24%)	58.97% (-0.09%)
Ambulance trusts		42.17% (-2.24%)	13.02% (-0.82%)	18.09% (-1.13%)	48.31% (-0.32%)

Are 'affected' respondents similar to other respondents?

The error affected around two thirds of iPhone respondents in organisations working with Picker. One way to test whether these respondents are otherwise typical is to look at how they compare to Picker's iPhone respondents who were not affected. If there are no significant differences, then it is reasonable to conclude that the error occurred randomly with respect to the survey outcomes. Conversely, if there are significant differences, then this points to an association (of indeterminate directionality) between the error and staff experience.

To test this – and as part of our investigation of whether the Q13 issue might affect other items through context effects – we performed binary logistic regressions with a range of binarized survey measures as dependent variables and the iPhoneMissing code, organisational type, and occupational group as explanatory variables. For the majority of items, we found no statistically significant main effect of the 'iPhoneMissing' status. Exceptions to this were Q14a-d; Q15; Q16a & b, and Q17a. However, for Q15, Q16a & b and for Q17a the size and direction of differences between iPhone respondents who did and, did not see Q13 was inconsistent, pointing to random variation. For Q14a-d, there were consistent and sizable differences between the groups.

Based on this, we conclude that only Q14a-d are materially affected by context effects from the omission of Q13. The omission of Q13 otherwise has little relationship with other survey outcomes, suggesting that the missing responses (or the deleted responses in the case of Q14) were unlikely to have been systematically different from those of other similar respondents had Q13 been presented correctly. This supports the use of reweighting based on occupational group.

NHS Staff Survey for bank only workers (NSSB)

Does the issue affect the results for bank only workers?

Yes. Some bank workers at some organisations working with one of the main survey providers who completed the survey on an iPhone were affected by the issue, that is questions 18a-d (the questions relating to experience of physical violence) were not always presented as expected. Consequently, their responses to the questions on harassment, bullying or abuse (q19a-d) which followed were also impacted.

Which organisations were affected, and to what extent?

Only some organisations working with one survey provider were affected. For organisations working with that survey provider, the proportion of bank only workers who were affected ranged from 0% to 37%. Across all bank workers responding to the survey this year, 8.92% were affected by the issue.

How have the results been corrected?

The results for the affected measures listed below have been adjusted for reporting. In reporting the result for these measures, the data are based only on responses received from bank workers who were unaffected by the issue:

- **Q18a** – In the last 12 months how many times have you personally experienced physical violence at work from patients/service users, their relatives, or other members of the public.
- **Q18b** – In the last 12 months how many times have you personally experienced physical violence at work from managers
- **Q18c** – In the last 12 months how many times have you personally experienced physical violence at work from other colleagues.
- **Q18d** – The last time you experienced physical violence at work, did you or a colleague report it.
- **Q19a** – In the last 12 months how many times have you personally experienced bullying, harassment or abuse at work from patients/service users, their relatives, or other members of the public.
- **Q19b** – In the last 12 months how many times have you personally experienced bullying, harassment or abuse at work from managers
- **Q19c** – In the last 12 months how many times have you personally experienced bullying, harassment or abuse at work from other colleagues.
- **Q19d** – The last time you experienced bullying, harassment or abuse at work, did you or a colleague report it.
- The People Promise element sub-score "**Negative experiences**" which uses questions 18a-c and q19a-c in its calculation.
- The People Promise element sub-score "**Health and safety climate**" which uses questions 18d and 19d in its calculation.
- The People Promise score "**We are safe and healthy**", which uses the "Negative experiences" and "Health and safety climate" sub-scores in its calculation.

Where these results are reported, the data have corrective weights applied. This reweighting is necessary because affected and unaffected bank workers are known to differ in terms of the occupation groups to which they belong. And because different occupation groups have different experiences, reporting only on unaffected workers without correcting the profile by occupation group would introduce a bias into the results.

The corrective weighting is applied to each individual's responses to the affected measures. Initially all bank workers are assigned to one of three groups, based on their response to the occupation group question:

- Group 1 - Nursing or Healthcare Assistants, Emergency Care Assistants, Patient Transport Service, Social Care, Maintenance and 'Other'
- Group 2 - Registered Nurses and Midwives, Allied Health Professionals, Medical and Dental, Scientific and Technical, Paramedics, Emergency Care Practitioners, and Ambulance technicians (plus 'missing' occupation group)
- Group 3 - Admin and clerical, Central Functions, General Management, Ambulance Control Staff, Public Health and Commissioning

Weights are then calculated to adjust the proportions of unaffected respondents in each of the three groups to match the proportion in that group amongst all bank respondents at that organisation. In effect, this upweights the responses from staff groups most affected by the issue (Group 1, who are underrepresented when reporting only on unaffected staff) and down-weights responses from those groups least affected (Group 3).

What is the impact of the corrective weighting on the bank results?

At the national level, the impact is small. For example, the difference between corrected and uncorrected estimates of experience of physical violence from patients/service users, their relatives, or members of the public (q18a) is in the region of 0.1 percentage points. For questions around harassment, bullying or abuse, the impact is slightly greater (e.g. 1.0 percentage point for q19a). Due to the relatively small base sizes for the bank worker results at organisation level, where a large proportion of bank workers at an individual organisation were affected by the issue and missed q18a-d, the impact of the correction on an affected organisation's results may be larger.