

DATA CLEANING GUIDANCE

URGENT AND EMERGENCY CARE SURVEY 2020

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Updates

Before you use this document, check that you have the latest version, as there might be some small amendments from time to time (the date of the last update is on the front page). In the very unlikely event that there are any major changes, we will e-mail all trust contacts and contractors directly to inform them of the change.

This document is available from the [NHS Surveys Website](#).

Questions and comments

If you have any questions or concerns regarding this document, please contact the Survey Coordination Centre for Existing Methods (SCCEM) using the details provided at the top of this page.



For trusts and contractors taking part in the survey:

Contractors and trusts submitting final data for the Urgent and Emergency Care Survey **must not** clean their data before submitting it to the Survey Coordination Centre for Existing Methods. Please refer to the [survey handbook](#) and [Entering and Submitting Final Data](#) instructions for more details.

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Data Cleaning – An overview

Introduction

At the end of fieldwork for the 2020 Urgent and Emergency Care Survey participating trusts and contractors are required to submit data to the SCCEM in a raw / uncleaned format¹. The SCCEM will clean the data once all trusts and contractors have submitted their files. To ensure that the cleaning process is comparable across all NHS trusts, data for all trusts in the survey are collated and cleaning is carried out on the full collated dataset.

This document provides a description of the processes that will be used by the SCCEM to clean and standardise data submitted by contractors and trusts as part of the 2020 Urgent and Emergency Care Survey. By following the guidance in this document, it should be possible to recreate this cleaning process. Please note that no data cleaning should be conducted in advance of the data being submitted to the SCCEM, data cleaning should only be applied once the raw data has been submitted.

Definitions

Definitions of terms commonly used in this document, as they apply to the 2020 Urgent and Emergency Care Survey, are as follows:

Raw / uncleaned data

'Raw' or 'uncleaned' data are data that have been entered verbatim from completed questionnaires without any editing taking place to remove contradictory or inappropriate responses; thus, all response boxes crossed on the questionnaire should be included in the data entry spreadsheet (see the [Entering and Submitting Final Data document](#)). The requirement for raw / uncleaned data does not, however, preclude the checking of data for errors resulting from problems with data entry or similar. Ensuring high data quality is paramount and errors resulting from data entry problems can and should be corrected by checking against the appropriate completed questionnaire.

Data cleaning

The SCCEM uses the term 'data cleaning' to refer to all editing processes undertaken upon survey data once the survey has been completed and the data has been entered and collated.

Routing questions

These are items in the questionnaire which instruct respondents to either continue on to the next question or to skip irrelevant questions depending on their response to the routing question.

For the 2020 Urgent and Emergency Care Survey **Type 1** questionnaire, the routing questions in the questionnaire are **Q1, Q4, Q11, Q26, Q28, Q29, Q36, Q37 and Q49**.

¹ For specific information on how data is entered and coded by trusts/contractors before submission to the Survey Coordination Centre for Existing Methods, please refer to the [Entering and Submitting Final Data](#) guidance

For the 2020 Urgent and Emergency Care Survey **Type 3** questionnaire, the routing questions in the questionnaire are **Q1, Q9, Q22, Q24, Q31 and Q41**.

Filtered questions

These are items on the questionnaire that are not intended to be answered by all respondents. Whether individual respondents are expected to answer filtered questions depends on their responses to preceding routing questions.

For the 2020 Urgent and Emergency Care Survey **Type 1** questionnaire, the filtered questions in the questionnaire are **Q2, Q3, Q5, Q12, Q13, Q27, Q30, Q37-Q39, Q40-Q45, Q50 and Q51**.

For the 2020 Urgent and Emergency Care Survey **Type 3** questionnaire, the filtered questions in the questionnaire are **Q2, Q3, Q10, Q23-Q25, Q32-Q37, Q42 and Q43**.

Non-filtered questions

These are items in the questionnaire which are not subject to any filtering and which should therefore be answered by all respondents.

For the 2020 Urgent and Emergency Care Survey **Type 1** questionnaire, the non-filtered questions are **Q1, Q4, Q6-Q11, Q14-Q26, Q31-Q36, Q46-Q49 and Q52-Q58**.

For the 2020 Urgent and Emergency Care Survey **Type 3** questionnaire, the non-filtered questions are **Q1, Q4-Q9, Q11-Q22, Q26-Q31, Q38-Q41, Q44-Q50**.

Sample data

Patient data that is provided from the trust as part of the sampling process. This includes: gender, year of birth, ethnicity, patient's postcode, department type, date of attendance, time of attendance, CCG code, NHS site code and mobile phone indicator as it is recorded on the trust's system.

Response data

Data from the completed questionnaire which is provided from the patient. This includes answers to Q1 through Q58 for the Type 1 questionnaire, and Q1 to Q50 for the Type 3 questionnaire.

Out-of-range data

This refers to instances where data within a variable have values that are not permissible. For categorical data – most of the variables in this survey – this would mean a value not allowed in the data entry sheet for that specific variable. For example, a value of '3' being entered in for a variable with only two response categories (1 or 2). A full list of such responses for the 2020 Urgent and Emergency Care Survey can be found in [Appendix B: Out-of-range data – Type 1](#) and [Appendix C: Out-of-range data – Type 3](#).

Outcome

An outcome code is given to each patient to indicate the end result of their participation in the survey. These codes are used when calculating the adjusted response rate for the survey and is therefore vital to ensure all patients are coded appropriately. The coding for outcome is as follows:

- Outcome 1: Returned completed questionnaire
- Outcome 2: Undelivered / moved house
- Outcome 3: Deceased after the start of fieldwork
- Outcome 4: Too ill / opt out
- Outcome 5: Ineligible

Outcome 6: Unknown

Outcome 7: Deceased before the start of fieldwork

Non-specific responses

This term describes response options that do not provide evaluative information. Most commonly, these are responses such as “Don’t know / can’t remember”. Likewise, responses that indicate the question is not applicable to the respondent are considered ‘non-specific’ – for example, responses such as “I did not need any help” or “I did not need an explanation”. A full list of such responses for the 2020 Urgent and Emergency Care Survey can be found in [Appendix D: Non-specific responses – Type 1](#) and [Appendix E: Non-specific responses – Type 3](#).

Missing responses

This term is used to describe data which are not stored as a valid response for a question or variable in a dataset. There can be a number of different types of missing data, with the most common being classed as ‘user missing’ data. Within the data cleaning process, a number of different missing response codes are used to identify how data for a particular respondent has been handled. These codes are as follows:

- 999: this code is used when someone should have answered a question, but did not. For example, non-filtered questions or filtered questions where the respondent meets the filter criteria.
- 998: this code is used when someone answered a question but should not have. For example, filtered questions.
- 996: this code is used to suppress data at trust level when a question has fewer than 30 responses. These responses would also remain suppressed from the overall base at a national level

Entering and coding data prior to submission

For the 2020 survey, in house trusts and contractors are required to submit raw (‘uncleaned’) data to the SCCEM. For clarification, raw data is created as follows:

- All responses should be entered into the dataset, regardless of whether or not the respondent was meant to respond to the question (e.g. where patients answer questions that they have been directed to skip past, these responses should still be entered).
- Where a respondent has selected more than one response category on a question, this question should be set to ‘missing’ for that person in the data (i.e. left blank, or coded as a full stop (.)). The exceptions to this are for the ‘multiple response’ questions, where respondents may select more than one response option.
- For Q47 the overall experience question (Q39 in Type 3 questionnaire), where a respondent has circled two numbers on the scale or has placed a marker inbetween two numbers on the scale a code of ‘98’ should be inputted.
- Where a respondent has crossed out a response, this should not be entered in the data (the response should be left blank, or coded as a full stop (.)). Where a respondent has crossed out

a response and instead selected a second response option, the second choice should be entered into the data.

- Where a respondent has given their response inconsistently with the formatting of the questionnaire but where their intended response is nonetheless unambiguous upon inspection of the completed questionnaire, then the respondent's intended response should be entered. For example, where a respondent has written their date of birth underneath the boxes at Q55 in the Type 1 questionnaire ("What was your year of birth?"), then their year of birth should be entered.
- For the year of birth / age questions, unrealistic responses should still be entered except following the rule above. For example, if a respondent enters '2019' in the year of birth box, this should still be entered unless the respondent has unambiguously indicated their actual year of birth to the side.
- Once the data has been entered, no responses should be removed or changed in any way except where responses are known to have been entered incorrectly or where inspection of the questionnaire indicates that the patient's intended response has not been captured. This includes 'out-of-range' responses, which must not be automatically removed from the dataset. Responses in the dataset should only be changed before submission to the Survey Coordination Centre for Existing Methods where they are found to have been entered inconsistently with the respondent's intended response

Editing and Cleaning Final Data

Approach and rationale

The aim of the SCCM in cleaning the collated final data is to ensure an optimal balance between data quality and completeness. We do this by removing responses that are known to be erroneous or inappropriate, but do so in a relatively permissive way to enable as many responses as possible to contribute to the overall survey results.

Cleaning filtered questions

Some of the questions included in the survey are only relevant to a subset of respondents, and in these cases filter instructions are included in the questionnaire to route respondents past questions that are not applicable to them.

It is necessary to clean the data to recode responses where filter instructions have been incorrectly followed. In such cases, participants' responses to questions that were not relevant to them are recoded in the dataset. Responses are only recoded where respondents have answered filtered questions despite selecting an earlier response on a routing question instructing them to skip these questions. In such cases, participants' responses to questions that were not relevant to them are recoded to '998' to indicate a non-applicable response². See table 1 for a list of all routing questions

² Code '998' is an arbitrary value chosen because it is out of range for all other questions on the survey.

included in the 2020 Urgent and Emergency Care Survey Type 1 questionnaire, and table 2 for the 2020 Urgent and Emergency Care Survey Type 3 questionnaire, the response values that require cleaning and the appropriate filtered questions to recode as '998'.

Table 1. Appropriate cleaning for routing questions in the 2020 Urgent and Emergency Care Survey – Type 1 Questionnaire

Routing question	Response values requiring cleaning	Filtered questions to be recoded as '998'
Q1	1	Q2 - Q3
Q4	2	Q5
Q11	1	Q12 - Q13
Q26	2	Q27 - Q30
Q28	1	Q30
Q28	2 or 3	Q29
Q28	4	Q29 - Q30
Q29	1 or 2 or 3 or 4	Q30
Q36	1	Q37 - Q45
Q37	2	Q38 - Q39
Q49	2	See Cleaning Special Cases

Please note that these instructions should be followed in the order shown above.

Table 2. Appropriate cleaning for routing questions in the 2020 Urgent and Emergency Care Survey – Type 3 Questionnaire

Routing question	Response values requiring cleaning	Filtered questions to be recoded as '998'
Q1	1	Q2 - Q3
Q9	1	Q10
Q22	2	Q23 - Q25
Q24	2 or 3 or 4	Q25
Q31	1 or 2	Q32 – Q37
Q41	2	See Cleaning Special Cases

Please note that these instructions should be followed in the order shown above.

A worked example of the cleaning process for removing unexpected responses to filtered questions is included in [Appendix A: Example of Cleaning](#).

The recoding of filtered questions into 998 only applies where the response to the routing question is not missing. Indeed, in this case, it is considered that the respondent contradicted their previous answer as seen in example 1 below.

Example 1:

TESTS

26. Did you have any tests (such as x-rays, scans or blood tests) when you visited A&E?

1 Yes → Go to 27

2 No → Go to 31

27. Did a member of staff explain **why you needed** these test(s) in a way you could understand?

1 Yes, completely

2 Yes, to some extent |

3 No

In the example above, the response to Q27 would be recoded to '998' because according to their answer from Q26 (the routing question), respondents were supposed to skip Q27.

However, where the response to a routing question is missing, responses to filtered questions are not removed. It is considered that the respondent might have been unsure or missed the routing question and therefore, their responses to filtered questions are still relevant (example 2 below).

Example 2:

TESTS

26. Did you have any tests (such as x-rays, scans or blood tests) when you visited A&E?

1 Yes → Go to 27

2 No → Go to 31

27. Did a member of staff explain **why you needed** these test(s) in a way you could understand?

1 Yes, completely

2 Yes, to some extent

3 No

In the example above (example 2), Q26 would be coded as missing ('999') and the response to Q27 would remain as code 2.

Cleaning Special Cases

Cleaning of the long-term condition questions

The long-term condition questions refer to **Q49**, **Q50** and **Q51** in the **Type 1** questionnaire and **Q41**, **Q42** and **Q43** in the **Type 3** questionnaire. The cleaning rules are the same for both questionnaires though in the following instructions, **Type 1** question numbers are used.

Q49 Do you have any physical or mental health conditions, disabilities or illnesses that have lasted or are expected to last for 12 months or more? Include problems related to old age.

Q50 Do you have any of the following? Select ALL conditions you have that have lasted or are expected to last for 12 months or more.

Q51 Do any of these reduce your ability to care out day-to-day activities?

Although **Q49** is a routing question and **Q50** and **Q51** are the corresponding filtered questions, these three questions are cleaned differently due to the nature of the questions.

When a respondent has answered “No” to **Q49** but has answered **Q50** by selecting one or more long term condition, their response to **Q49** is cleaned by setting it to missing (code ‘999’). This is because their response to **Q50** indicates that they do in fact consider they have a long-standing condition. Instead of changing their response to **Q49** to an answer the patient did not select (i.e. “Yes”), we set it to missing so that it is no longer inconsistent with their response to **Q50**.

However, when a respondent has answered “No” to **Q49** and has not selected any long-term conditions in **Q50** but has answered **Q51** then their response to **Q51** is cleaned by setting it to not-applicable (code ‘998’). As they have indicated that they do not have a long-term condition and have also skipped **Q50**, this would suggest that **Q51** was not applicable to them. See table 3 for a summary of how **Q49**, **Q50** and **Q51** in the Type 1 questionnaire are cleaned, and table 4 for a summary of how **Q41**, **Q42** and **Q43** in the Type 3 questionnaire are cleaned.

Table 3. Cleaning for Q49, Q50 and Q51 in the Type 1 questionnaire

Q49 response	Q50 response	Q51 response	Cleaning
Ticked option 2 (no)	Ticked one or more options	No response	Q49 is set to missing – ‘999’ and as there was no response to Q51 this would also be set to missing ‘999’.
Ticked option 2 (no)	Ticked one or more options	Ticked any option	Q49 is set to missing – ‘999’.
Ticked option 2 (no)	No response	Ticked any option	Q51 is set to not-applicable – ‘998’.

Table 4. Cleaning for Q41, Q42 and Q43 in the Type 3 questionnaire

Q41 response	Q42 response	Q43 response	Cleaning
Ticked option 2 (no)	Ticked one or more options	No response	Q41 is set to missing – ‘999’ and as there was no response to Q43 this would also be set to missing ‘999’.
Ticked option 2 (no)	Ticked one or more options	Ticked any option	Q41 is set to missing – ‘999’.
Ticked option 2 (no)	No response	Ticked any option	Q43 is set to not-applicable – ‘998’.

Dealing with multiple response questions

For most questions, each column corresponds to one survey question. There are three exceptions to this rule; Q2, Q33, Q50 and Q52 in the Type 1 questionnaire and Q2, Q28, Q42 and Q44 in the Type 3 questionnaire where each response option is treated as a separate question.

For Q2, Q50 and Q52 (or Q2, Q42 and Q44 in the Type 3 questionnaire) each response option that is ticked are coded as ‘1’ in the data file and all other responses are coded as ‘0’. This is to ensure these questions can be appropriately counted for when assessing usability.

Example

2. Before going to this A&E department, where did you go to, or contact, for help with your condition? **(Cross ALL that apply)**

1 999 emergency service

2 NHS 111 telephone service

3 NHS 111 online service

4 A different A&E department

5 Pharmacist

6 GP practice

7 GP out-of-hours service

8 Urgent Treatment Centre/ Urgent Care Centre / Minor Injuries Unit / Walk-in Centre

9 Somewhere else

The above example would be coded as the following:

Column headings	Q2_1	Q2_2	Q2_3	Q2_4	Q2_5	Q2_6	Q2_7	Q2_8	Q2_9
Codings for this example	1	0	1	0	0	1	0	0	0

For Q33 in the Type 1 questionnaire and Q28 in the Type 3 questionnaire, the responses will be coded slightly different, as this question is formatted as a grid question. Each response option will be treated as a separate question, like a multiple response question, however each response option will be coded as either '1', '2' or '3' depending on whether a respondent selected 'Yes', 'No' or 'Don't know'. If a respondent has missed a response option and left it completely blank this should be coded as 999. Example

33. While you were in A&E, did you see any of the following?			
	1 Yes	2 No	3 Don't know
1 Social distancing measures (such as markers on the floor or signage at the entrance)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Handwashing with hand sanitiser or soap	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3 Staff wearing PPE (e.g. gloves, masks, plastic aprons, eyewear)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Staff disposing of gloves and plastic aprons	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 Cleaning of surfaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Tissues available	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7 Waste bins provided	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The above example would be coded as the following:

Column headings	Q33_1	Q33_2	Q33_3	Q33_4	Q33_5	Q33_6	Q33_7
Codings for this example	1	2	1	2	999	3	3

Eligibility

Age / Year of birth

There may be instances where the sample and response data is mismatched and the response data indicates that the respondent is under the age of 16. When this occurs, respondents will *not* be considered ineligible for the survey and therefore remain as outcome 1 (see table 5). This is because of the difficulty of inferring the source of errors when year of birth from sample and response data are mismatched. We cannot be certain whether this mismatch occurs due to an error in the sample file or an error in the patient's completion of the questionnaire form.

Another scenario could be that the respondent has indicated they are under the age of sixteen in the response data, but year of birth is missing from the sample data. As this is the only available data for their year of birth, these respondents would be considered ineligible for the survey and would therefore be recoded to outcome 5 (see table 5 and table 6).

Table 5. Eligibility and outcome codes of patients based on sample and response data of age – Type 1 questionnaire

Original outcome code	Sample data	Response data	Eligibility	Final outcome code
1	YoB ≤ 2004	Q55 > 2004	Eligible	1
1	YoB ≤ 2004	Q55 ≤ 2004	Eligible	1
1	YoB ≤ 2004	Q55 = missing	Eligible	1
1	YoB ≤ 2004	Q55 = out of range (≤ 1901 ≥ 2005)	Eligible	1
1	YoB = missing	Q55 > 2004	Ineligible	5
1	YoB = missing	Q55 ≤ 2004	Eligible	1
1	YoB = missing	Q55 = missing	Ineligible	5

Table 6. Eligibility and outcome codes of patients based on sample and response data of age – Type 3 questionnaire

Original outcome code	Sample data	Response data	Eligibility	Final outcome code
1	YoB ≤ 2004	Q47 > 2004	Eligible	1
1	YoB ≤ 2004	Q47 ≤ 2004	Eligible	1
1	YoB ≤ 2004	Q47 = missing	Eligible	1
1	YoB ≤ 2004	Q47 = out of range (≤ 1901 ≥ 2005)	Eligible	1
1	YoB = missing	Q47 > 2004	Ineligible	5
1	YoB = missing	Q47 ≤ 2004	Eligible	1
1	YoB = missing	Q47 = missing	Ineligible	5

Demographics

In a small number of cases, sample data and response data does not correspond for age and gender. For example, the sample may identify a patient as male only for them to report being female, or the sample data may identify an individual as being born in 1980 only for the patient to report being born in 1985.

Where responses to demographic questions are present, it is assumed these are more likely to be accurate than sample data (since it is assumed that respondents are best placed to know their own gender and age). However, because questions about demographics tend to produce relatively high item non-response rates, it is not appropriate to rely on response data alone.

For demographic analysis on groups of cases, it is therefore necessary to use some combination of the information supplied in the sample data and response data. To do this, we first copy all valid responses to survey demographic questions into a new variable. Where response data is missing we then copy in the relevant sample data (note that for a very small number of respondents demographic information

may be missing in both the sample and response data; in such cases data must necessarily be left missing in the new variable)³.

Out-of-range data

A common error when completing year of birth questions on forms is for respondents to accidentally write in the current year. In this case, the response to **Q55** in the Type 1 questionnaire (**Q47** in the Type 3 questionnaire) would be considered as an out-of-range response and would therefore be set to missing. For the 2020 Urgent and Emergency Care Survey, out of range responses for **Q55** in Type 1 (and **Q47** in Type 3) are defined as **Q55 ≤ 1901 or ≥ 2005 (this is the same for Q47 in the Type 3 questionnaire)**. This must only be done after eligibility has been set as described in the earlier section titled '[Eligibility](#)'.

Out-of-range data must also be set for invalid responses to all other questions in the survey. The out-of-range responses will depend on the number of response options given for each question. For instance, all questions with 3 response options (i.e. Q13, Q15, Q17, Q19, Q20, Q22, Q24, Q27, Q30, Q34, Q41, Q44, Q45, Q46 and Q51 in the Type 1 questionnaire, and Q6, Q12, Q14, Q16, Q19, Q20, Q23, Q29, Q31, Q33, Q36, Q37, Q38 and Q43 in the Type 3 questionnaire) with response data of **≤ 0 or ≥ 4** would be set to missing. A full list of out-of-range responses for the 2020 Urgent and Emergency Care Survey is listed in [Appendix B: Out-of-range data – Type 1](#) and [Appendix C: Out-of-range data – Type 3](#).

Usability

Sometimes questionnaires are returned with only a very small number of questions completed. As in previous years, for the 2020 Urgent and Emergency Care Survey, questionnaires containing fewer than five responses are considered 'unusable' – we will set all responses pertaining to such cases as missing and recode outcome to 6. This should only affect a very limited number of cases and so should not have a significant impact on response rates. The number of responses per questionnaire (including responses to the demographic questions) will be counted after all cleaning has been conducted.

When counting the total number of responses for the purpose of determining if a questionnaire is usable, multiple choice questions are counted once. For instance, Q50 from the Type 3 questionnaire would be counted as one response in the below scenario.

³ The exception to this is when response rates are calculated. Because response rates vary between demographic groups, using response and sample data to calculate response rates would create a systematic source of bias in that we are only able to amend information for the *respondents*. Therefore, only the sample data should be used to calculate response rates by demographic groups.

Q50. Do you have any of the following?

Select **ALL** conditions you have that have lasted or are expected to last for 12 months or more.

- 1 Breathing problem, such as asthma
- 2 Blindness or partial sight
- 3 Cancer in the last 5 years
- 4 Dementia or Alzheimer's disease
- 5 Deafness or hearing loss
- 6 Diabetes
- 7 Heart problem, such as angina
- 8 Joint problem, such as arthritis
- 9 Kidney or liver disease
- 10 Learning disability
- 11 Mental health condition
- 12 Neurological condition
- 13 Another long-term condition

It is possible that a questionnaire could be considered usable because there are five or more responses, despite having an outcome code of 2, 3, 4, 6 or 7. In this case the outcome would be recoded to 1 to indicate a complete usable questionnaire and the response data kept for this patient.

Missing responses

It is useful to be able to see the number of missed responses for each question. Responses are considered to be missing when a respondent is expected to answer a question but no response is present. For non-filtered questions, responses are expected from all respondents – thus any instance of missing data constitutes a missing response. For filtered questions, only respondents who have answered a previous routing question instructing them to go on to that filtered question or set of filtered questions are expected to give answers. Where respondents have missed a routing question, they are not expected to answer subsequent filtered questions; thus only where respondents were explicitly instructed to answer filtered questions should such blank cells be coded as missing responses.

The SCCEM codes missing responses in the data as '999'⁴. For results to be consistent with those produced by the SCCEM, missing responses should be presented but should not be included in the base number of respondents for percentages.

The SCCEM will suppress results at both national and trust level for questions that have fewer than 30 respondents and code as '996'.

Non-specific responses

As well as excluding missing responses from results, the SCCEM also removes non-specific responses from base numbers for percentages. The rationale for this is to facilitate easy comparison between institutions by presenting only results from those respondents who felt able to give an evaluative response to questions. For a full listing of 'non-specific' responses in the 2020 Urgent and Emergency Care Survey, please see [Appendix D: Non-specific responses – Type 1](#) and [Appendix E: Non-specific responses – Type 3](#).

⁴ This is an arbitrary value chosen because it is 'out-of-range' for all other questions on the survey.

Appendix A: Example of cleaning

Figure 1 shows hypothetical raw / uncleaned data for eight patients, five of whom have responded to the survey. It can be seen from this data that some of the respondents have followed instructions from routing questions incorrectly:

Respondents '0005' and '0007' have reported that before they left A&E they were not prescribed any new medications (Q37=2), but have both responded to subsequent filtered questions which are only applicable for patients that were prescribed new medications before leaving A&E (respondent '0005' has answered the first filter question (Q38) before skipping the remaining filter questions, whilst respondent '0007' has answered Q38 and Q39).

Record	Outcome	Q37	Q38	Q39
Patient Record Number	Outcome of Sending questionnaire (N)	Before you left A&E, were you prescribed any new medications?	Did a member of staff explain the purpose of the medications you were to take at home in a way you could understand?	Did a member of staff tell you about medication side effects to watch for?
UEC20...00001	6			
UEC20...00002	1	2	.	.
UEC20...00003	1	1	2	3
UEC20...00004	4			
UEC20...00005	1	2	1	.
UEC20...00006	6			
UEC20...00007	1	2	3	2
UEC20...00008	1	1	1	2

Figure 1. Example of raw/'uncleaned' data.

Following the cleaning instructions, the filter instructions specify that:

Routing question	Response values requiring cleaning	Filtered questions to be recoded
Q37	2	Q38 – Q39

In accordance with this, all responses for **Q38** and **Q39** must be set to missing (not applicable code 998) in cases where the respondent has ticked **Q37 = 2** (i.e. "no they were not prescribed any new medication before leaving A&E").

Figure 2 below shows how the data would look after cleaning is complete by the SCCEM to remove responses to filtered questions that should have been skipped – cells where responses have been set to missing are shaded.

Record	Outcome	Q37	Q38	Q39
Patient Record Number	Outcome of Sending questionnaire (N)	Before you left A&E, were you prescribed any new medications?	Did a member of staff explain the purpose of the medications you were to take at home in a way you could understand?	Did a member of staff tell you about medication side effects to watch for?
UEC20...00001	6			
UEC20...00002	1	2	.	.
UEC20...00003	1	1	2	3
UEC20...00004	4			
UEC20...00005	1	2	998	.
UEC20...00006	6			
UEC20...00007	1	2	998	998
UEC20...00008	1	1	1	2

Figure 2. Example of cleaned data.

Appendix B: Out-of-range data – Type 1

Variable	Out-of-range data
Birth	≤ 1901 ≥ 2005
Gender	≤ 0 3-8 ≥ 10
Ethnicity	Anything except A-H, J-N, P, R, S or Z
DateOfAttendance	≤ 0 ≥ 31
MonthOfAttendance	≤ 8 ≥ 10
YearOfAttendance	≤ 2019 ≥ 2021
TimeOfAttendance	Anything not between the hours of 00:00 and 23:59
DayQRec	≤ 0 ≥ 32
MonthQRec	≤ 0 4-9 ≥ 13
YearQRec	≤ 2019 ≥ 2022
Q1	≤ 0 ≥ 3
Q2_1	< 0 ≥ 2
Q2_2	< 0 ≥ 2
Q2_3	< 0 ≥ 2
Q2_4	< 0 ≥ 2
Q2_5	< 0 ≥ 2
Q2_6	< 0 ≥ 2
Q2_7	< 0 ≥ 2
Q2_8	< 0 ≥ 2

Variable	Out-of-range data
Q2_9	< 0 ≥ 2
Q3	≤ 0 ≥ 7
Q4	≤ 0 ≥ 3
Q5	≤ 0 ≥ 8
Q6	≤ 0 ≥ 5
Q7	≤ 0 ≥ 5
Q8	≤ 0 ≥ 6
Q9	≤ 0 ≥ 6
Q10	≤ 0 ≥ 6
Q11	≤ 0 ≥ 8
Q12	≤ 0 ≥ 6
Q13	≤ 0 ≥ 4
Q14	≤ 0 ≥ 9
Q15	≤ 0 ≥ 4
Q16	≤ 0 ≥ 5
Q17	≤ 0 ≥ 4
Q18	≤ 0 ≥ 5
Q19	≤ 0 ≥ 4
Q20	≤ 0 ≥ 4
Q21	≤ 0 ≥ 5
Q22	≤ 0 ≥ 4

Variable	Out-of-range data
Q23	≤ 0 ≥ 6
Q24	≤ 0 ≥ 4
Q25	≤ 0 ≥ 5
Q26	≤ 0 ≥ 3
Q27	≤ 0 ≥ 4
Q28	≤ 0 ≥ 5
Q29	≤ 0 ≥ 5
Q30	≤ 0 ≥ 4
Q31	≤ 0 ≥ 6
Q32	≤ 0 ≥ 6
Q33_1	≤ 0 ≥ 4
Q33_2	≤ 0 ≥ 4
Q33_3	≤ 0 ≥ 4
Q33_4	≤ 0 ≥ 4
Q33_5	≤ 0 ≥ 4
Q33_6	≤ 0 ≥ 4
Q33_7	≤ 0 ≥ 4
Q34	≤ 0 ≥ 4
Q35	≤ 0 ≥ 6
Q36	≤ 0 ≥ 3
Q37	≤ 0 ≥ 3
Q38	≤ 0 ≥ 5
Q39	≤ 0 ≥ 5

Variable	Out-of-range data
Q40	≤ 0 ≥ 5
Q41	≤ 0 ≥ 4
Q42	≤ 0 ≥ 5
Q43	≤ 0 ≥ 5
Q44	≤ 0 ≥ 4
Q45	≤ 0 ≥ 4
Q46	≤ 0 ≥ 4
Q47	< 0 ≥ 11 to 97 ≥ 99
Q48	≤ 0 ≥ 5
Q49	≤ 0 ≥ 3
Q50_1	< 0 ≥ 2
Q50_2	< 0 ≥ 2
Q50_3	< 0 ≥ 2
Q50_4	< 0 ≥ 2
Q50_5	< 0 ≥ 2
Q50_6	< 0 ≥ 2
Q50_7	< 0 ≥ 2
Q50_8	< 0 ≥ 2
Q50_9	< 0 ≥ 2
Q50_10	< 0 ≥ 2
Q50_11	< 0 ≥ 2
Q50_12	< 0 ≥ 2

Variable	Out-of-range data
Q50_13	< 0 ≥ 2
Q50_14	< 0 ≥ 2
Q50_15	< 0 ≥ 2
Q51	≤ 0 ≥ 4
Q52	≤ 0 ≥ 5
Q53	≤ 0 ≥ 3
Q54	≤ 0 ≥ 3
Q55	≤ 1901 ≥ 2005
Q56	≤ 0 ≥ 10
Q57	≤ 0 ≥ 6
Q58	≤ 0 ≥ 19

Appendix C: Out-of-range data – Type 3

Variable	Out-of-range data
Birth	≤ 1901 ≥ 2005
Gender	≤ 0 3-8 ≥ 10
Ethnicity	Anything except A-H, J-N, P, R, S or Z
DateOfAttendance	≤ 0 ≥ 32
MonthOfAttendance	≤ 7 ≥ 10
YearOfAttendance	≤ 2019 ≥ 2021
TimeOfAttendance	Anything not between the hours of 00:00 and 23:59
DayQRec	≤ 0 ≥ 32
MonthQRec	≤ 0 4-9 ≥ 13
YearQRec	≤ 2019 ≥ 2022
Q1	≤ 0 ≥ 3
Q2_1	< 0 ≥ 2
Q2_2	< 0 ≥ 2
Q2_3	< 0 ≥ 2
Q2_4	< 0 ≥ 2
Q2_5	< 0 ≥ 2
Q2_6	< 0 ≥ 2
Q2_7	< 0 ≥ 2
Q2_8	< 0 ≥ 2

Variable	Out-of-range data
Q2_9	< 0 ≥ 2
Q3	≤ 0 ≥ 7
Q4	≤ 0 ≥ 5
Q5	≤ 0 ≥ 6
Q6	≤ 0 ≥ 4
Q7	≤ 0 ≥ 7
Q8	≤ 0 ≥ 6
Q9	≤ 0 ≥ 8
Q10	≤ 0 ≥ 6
Q11	≤ 0 ≥ 6
Q12	≤ 0 ≥ 4
Q13	≤ 0 ≥ 5
Q14	≤ 0 ≥ 4
Q15	≤ 0 ≥ 5
Q16	≤ 0 ≥ 4
Q17	≤ 0 ≥ 5
Q18	≤ 0 ≥ 5
Q19	≤ 0 ≥ 4
Q20	≤ 0 ≥ 4
Q21	≤ 0 ≥ 5

Variable	Out-of-range data
Q22	≤ 0 ≥ 3
Q23	≤ 0 ≥ 4
Q24	≤ 0 ≥ 5
Q25	≤ 0 ≥ 5
Q26	≤ 0 ≥ 6
Q27	≤ 0 ≥ 6
Q28_1	≤ 0 ≥ 4
Q28_2	≤ 0 ≥ 4
Q28_3	≤ 0 ≥ 4
Q28_4	≤ 0 ≥ 4
Q28_5	≤ 0 ≥ 4
Q28_6	≤ 0 ≥ 4
Q28_7	≤ 0 ≥ 4
Q29	≤ 0 ≥ 4
Q30	≤ 0 ≥ 6
Q31	≤ 0 ≥ 4
Q32	≤ 0 ≥ 5
Q33	≤ 0 ≥ 4
Q34	≤ 0 ≥ 5
Q35	≤ 0 ≥ 5
Q36	≤ 0 ≥ 4
Q37	≤ 0 ≥ 4
Q38	≤ 0 ≥ 4

Variable	Out-of-range data
Q39	< 0 ≥ 11 to 97 ≥ 99
Q40	≤ 0 ≥ 5
Q41	≤ 0 ≥ 3
Q42_1	< 0 ≥ 2
Q42_2	< 0 ≥ 2
Q42_3	< 0 ≥ 2
Q42_4	< 0 ≥ 2
Q42_5	< 0 ≥ 2
Q42_6	< 0 ≥ 2
Q42_7	< 0 ≥ 2
Q42_8	< 0 ≥ 2
Q42_9	< 0 ≥ 2
Q42_10	< 0 ≥ 2
Q42_11	< 0 ≥ 2
Q42_12	< 0 ≥ 2
Q42_13	< 0 ≥ 2
Q42_14	< 0 ≥ 2
Q42_15	< 0 ≥ 2
Q43	< 0 ≥ 4
Q44	≤ 0 ≥ 5
Q45	≤ 0 ≥ 3
Q46	≤ 0 ≥ 3

Variable	Out-of-range data
Q47	≤ 1901 ≥ 2005
Q48	≤ 0 ≥ 10
Q49	≤ 0 ≥ 6
Q50	< 0 ≥ 19

Appendix D: Non-specific responses – Type 1

The following table lists all ‘non-specific responses’ included in the 2020 Urgent and Emergency Care Survey Type 1 questionnaire. Numbers in the final column indicate the response option(s) that should be considered non-specific. Where the ‘non-specific responses’ column contains only a dash, the relevant question has no such response options. The data presented in the table below is for all questions, whether they are scored or not. The non-specific responses given below are defined for all survey outputs (trust level data and national level reporting).

No.	Question	Non-specific responses
Q1	Was this A&E department the first service you went to, or contacted, for help with your condition?	-
Q2	Before going to this A&E department, where did you go to, or contact, for help with your condition? (Cross ALL that apply)	-
Q3	What was the MAIN reason for going to A&E following your contact with the service above?	-
Q4	Were you taken to A&E in an ambulance?	-
Q5	Once you arrived at A&E, how long did you wait with the ambulance crew before your care was handed over to the A&E staff?	7
Q6	Were you given enough privacy when discussing your condition with the receptionist ?	4
Q7	Were you treated in a separate area of A&E because you had coronavirus, or symptoms of coronavirus? <i>This is regardless of your reason for visiting.</i>	3, 4
Q8	Before your most recent visit to A&E, had you previously been to the same A&E department about the same condition or something related to it?	5
Q9	How long did you wait before you first spoke to a nurse or doctor? <i>This does not include staff screening for coronavirus at the entrance to A&E.</i>	5
Q10	Did the nurse or doctor explain what would happen next?	4, 5
Q11	Sometimes, people will first talk to a doctor or nurse and be examined later. From the time you arrived , how long did you wait before being examined by a doctor or nurse?	7

No.	Question	Non-specific responses
Q12	Were you informed how long you would have to wait to be examined?	5
Q13	While you were waiting, were you able to get help with your condition or symptoms from a member of staff?	3
Q14	Overall, how long did your visit to A&E last?	8
Q15	Did you have enough time to discuss your condition with the doctor or nurse?	-
Q16	While you were in A&E, did a doctor or nurse explain your condition and treatment in a way you could understand?	4
Q17	Did the doctors and nurses listen to what you had to say?	-
Q18	If you had any anxieties or fears about your condition or treatment, did a doctor or nurse discuss them with you?	4
Q19	Did you have confidence and trust in the doctors and nurses examining and treating you?	-
Q20	Did doctors or nurses talk to each other about you as if you weren't there?	-
Q21	While you were in A&E, how much information about your condition or treatment was given to you ?	-
Q22	Were you given enough privacy when being examined or treated ?	-
Q23	If you needed attention, were you able to get a member of medical or nursing staff to help you?	5
Q24	Sometimes, a member of staff will say one thing and another will say something quite different. Did this happen to you?	-
Q25	Were you involved as much as you wanted to be in decisions about your care and treatment?	4
Q26	Did you have any tests (such as x-rays, scans or blood tests) when you visited A&E?	-
Q27	Did a member of staff explain why you needed these test(s) in a way you could understand?	-
Q28	Before you left A&E, did you get the results of your tests?	3, 4
Q29	Did a member of staff explain the results of the tests in a way you could understand?	4

No.	Question	Non-specific responses
Q30	If you did not get the results of the tests when you were in A&E, did a member of staff explain how you would receive them?	3
Q31	Were you in any pain while you were in A&E?	4, 5
Q32	In your opinion, how clean was the A&E department?	5
Q33	While you were in A&E, did you see any of the following?	3
Q34	While you were in A&E, did you feel threatened by other patients or visitors?	-
Q35	Were you able to get suitable food or drinks when you were in A&E?	5
Q36	At the end of your visit to A&E, were you transferred to a hospital ward?	-
Q37	Before you left A&E, were you prescribed any new medications?	-
Q38	Did a member of staff explain the purpose of the medications you were to take at home in a way you could understand?	4
Q39	Did a member of staff tell you about medication side effects to watch for?	4
Q40	Did a member of staff tell you about what symptoms to watch for regarding your illness or treatment after you went home?	4
Q41	Did hospital staff tell you who to contact if you were worried about your condition or treatment after you left A&E?	3
Q42	Did staff give you enough information to help you care for your condition at home?	4
Q43	Before you left the hospital, did a member of staff discuss your transport arrangements for leaving A&E?	3, 4
Q44	Did hospital staff discuss with you whether you may need further health or social care services after leaving A&E (e.g. services from GP, physiotherapist or community nurse, or assistance from social services or the voluntary sector)?	3
Q45	After leaving A&E, was the care and support you expected available when you needed it?	3
Q46	Overall, did you feel you were treated with respect and dignity while you were in A&E?	-
Q47	Overall...(Please circle a number)	-

No.	Question	Non-specific responses
Q48	Who was the main person or people that filled in this questionnaire?	-
Q49	Do you have any physical or mental health conditions, disabilities or illnesses that have lasted or are expected to last for 12 months or more? Include problems related to old age.	-
Q50	Do you have any of the following? Select ALL conditions you have that have lasted or are expected to last for 12 months or more.	-
Q51	Do any of these reduce your ability to carry out day-to-day activities?	-
Q52	Have you experienced any of the following in the last twelve months? (Cross ALL that apply)	-
Q53	Around the time of your A&E visit, were you responsible for looking after, giving support to, or helping family members, friends, neighbours or others because of their: Long-term physical or mental ill health / disability, or Problems related to old age?	-
Q54	Are you male or female?	-
Q55	What was your year of birth?	-
Q56	What is your religion?	-
Q57	Which of the following best describes how you think of yourself?	-
Q58	What is your ethnic group?	-

Appendix E: Non-specific responses – Type 3

The following table lists all ‘non-specific responses’ included in the 2020 Urgent and Emergency Care Survey Type 3 questionnaire. Numbers in the final column indicate the response options that should be considered non-specific. Where the ‘non-specific responses’ column contains only a dash, the relevant question has no such response options. The data presented in the table below is for all questions, whether they are scored or not. The non-specific responses given below are defined for all survey outputs (trust level data and national level reporting).

No.	Question	Non-specific responses
Q1	Was this Urgent Treatment Centre the first service you went to, or contacted, for help with your condition?	-
Q2	Before going to this Urgent Treatment Centre, where did you go to, or contact, for help with your condition? (Cross ALL that apply)	-
Q3	What was the MAIN reason for going to the Urgent Treatment Centre following your contact with the service(s) above? (Cross ONE only)	-
Q4	Were you given enough privacy when discussing your condition with the receptionist ?	4
Q5	Before your most recent visit to this Urgent Treatment Centre, had you previously been to the same Urgent Treatment Centre about the same condition or something related to it?	5
Q6	Did you have an appointment on your most recent visit to the Urgent Treatment Centre?	3
Q7	How long did you wait before you first spoke to a health professional? <i>This does not include staff screening for coronavirus at the entrance to the Urgent Treatment Centre.</i>	6
Q8	Did the health professional explain what would happen next?	4, 5
Q9	Sometimes, people will first talk to a health professional and be examined later. From the time you arrived , how long did you wait before being examined ?	7
Q10	Were you informed how long you would have to wait to be examined?	5
Q11	Overall, how long did your visit to the Urgent Treatment Centre last?	5

No.	Question	Non-specific responses
Q12	Did you have enough time to discuss your condition with the health professional?	-
Q13	While you were in the Urgent Treatment Centre, did a health professional explain your condition and treatment in a way you could understand?	4
Q14	Did the health professional listen to what you had to say?	-
Q15	If you had any anxieties or fears about your condition or treatment, did a health professional discuss them with you?	4
Q16	Did you have confidence and trust in the health professional examining and treating you?	-
Q17	Did health professionals talk to each other about you as if you weren't there?	4
Q18	While you were at the Urgent Treatment Centre, how much information about your condition or treatment was given to you ?	-
Q19	Were you given enough privacy when being examined or treated ?	-
Q20	Sometimes, a member of staff will say one thing and another will say something quite different. Did this happen to you?	-
Q21	Were you involved as much as you wanted to be in decisions about your care and treatment?	4
Q22	Did you have any tests (such as x-rays, scans or blood tests) when you visited the Urgent Treatment Centre?	-
Q23	Did a member of staff explain why you needed these test(s) in a way you could understand?	-
Q24	Before you left the Urgent Treatment Centre, did you get the results of your tests?	3, 4
Q25	Did a member of staff explain the results of the tests in a way you could understand	4
Q26	Do you think the staff did everything they could to help control your pain?	4, 5
Q27	In your opinion, how clean was the Urgent Treatment Centre?	5
Q28	While you were in the Urgent Treatment Centre, did you see any of the following?	3

No.	Question	Non-specific responses
Q29	While you were in the Urgent Treatment Centre, did you feel threatened by other patients or visitors?	-
Q30	Were you able to get suitable food or drinks when you were at the Urgent Treatment Centre?	5
Q31	What happened at the end of your visit to the Urgent Treatment Centre?	-
Q32	Did a member of staff tell you about what symptoms to watch for regarding your illness or treatment after you went home?	4
Q33	Did a member of staff tell you who to contact if you were worried about your condition or treatment after you left the Urgent Treatment Centre?	3
Q34	Did staff give you enough information to help you care for your condition at home?	4
Q35	Before you left, did a member of staff discuss your transport arrangements for leaving the Urgent Treatment Centre?	3, 4
Q36	Did a member of staff discuss with you whether you may need further health or social care services after leaving the Urgent Treatment Centre (e.g. services from GP, physiotherapist or community nurse, or assistance from social services or the voluntary sector)?	3
Q37	After leaving the Urgent Treatment Centre, was the care and support you expected available when you needed it?	3
Q38	Overall, did you feel you were treated with respect and dignity while you were in the Urgent Treatment Centre?	-
Q39	Overall...(Please circle a number)	-
Q40	Who was the main person or people that filled in this questionnaire?	-
Q41	Do you have any physical or mental health conditions, disabilities or illnesses that have lasted or are expected to last for 12 months or more? Include problems related to old age	-
Q42	Do you have any of the following? Select ALL conditions you have that have lasted or are expected to last for 12 months or more.	-
Q43	Do any of these reduce your ability to carry out day-to-day activities?	-
Q44	Have you experienced any of the following in the last twelve months? (Cross ALL that apply)	-

No.	Question	Non-specific responses
Q45	Around the time of your Urgent Treatment Centre visit, were you responsible for looking after, giving support to, or helping family members, friends, neighbours or others because of their: Long-term physical or mental ill health / disability, or Problems related to old age?	-
Q46	Are you male or female?	-
Q47	What was your year of birth? (Please write in)	-
Q48	What is your religion?	-
Q49	Which of the following best describes how you think of yourself?	-
Q50	What is your ethnic group?	-