



## **Recommended Standard Final Outcome Categories and Standard Definitions of Response Rate for Social Surveys**

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Further information about the BHPS and other longitudinal surveys can be obtained by telephoning +44 (0) 1206 873543.

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## ABSTRACT

Response rates are one of the most important indicators of survey quality and one of the indicators most likely to be reported. In order to be able to make valid comparisons between response rates obtained on different surveys and by different organisations, response rates must be defined and calculated in a standard way. At present in the UK there are no standards in this area. In consequence, practice varies considerably between surveys and between organisations. The authors of this paper became aware of minor differences between *Social Survey Division, ONS* and the *National Centre for Social Research* in definitions and calculations of response on major government surveys that they carry out and between surveys within each organisation. We were also aware that international comparisons, for example of response on Labour Force Surveys and Time Use Surveys in different countries, are affected by the fact that each country has a different definition of what counts as response and often differ in how response rates are calculated.

Progress has been made in the USA by the American Association of Public Opinion Research (AAPOR) to draw up standard definitions applicable to random digit dial telephone surveys, face-to-face surveys where one person is selected per household and mail surveys of named persons. The AAPOR standards (AAPOR, 2000) provide models which might be adapted and extended for UK purposes. This paper proposes standards which are applicable to the UK, in particular to major government, academic and public sector surveys. We hope that adoption of these standards will enable meaningful comparisons to be made between surveys and will aid understanding of trends and patterns in response rates. We hope that eventually commissioners of surveys will specify and assess response rates on the basis of these standards, thus improving the utility, validity and fairness of comparisons and judgements. This is particularly important when surveys are commissioned via competitive tendering.

This paper deals with face-to-face interviewer surveys of households and of individuals. We aim to gain acceptance of standards for these surveys and to gain experience of implementing the standards before extending the recommendations to encompass other types of surveys. In due course we hope to make recommendations with respect to panel surveys, mail surveys, telephone surveys and surveys of establishments. In the meanwhile, we hope that this paper will serve as a useful reference document for anyone planning a survey, commissioning a survey or producing a survey technical report or quality profile.

## 1. Introduction

Response rates are one of the most important indicators of survey quality and one of the indicators most likely to be reported. They are widely reported and quoted in survey technical reports, and survey commissioners often specify a response rate target as an indicator of the quality they wish to achieve. Response rates are frequently used to compare survey quality between surveys, survey organisations and countries and over time. Response rates are important as nonresponse can introduce bias. Methodological research (e.g., Groves 1989; Groves and Couper 1998; Groves et al 2002) shows that nonrespondents generally differ from respondents in important characteristics. In the presence of bias, high precision does not guarantee accurate estimation. A second reason for the importance of response rates is that low response means that fewer cases are available for analysis, thus reducing the precision of estimates.

In order to be able to make valid comparisons between response rates obtained on different surveys and by different organisations, response rates must be defined and calculated in a standard way. At present in the UK there are no standards in this area. In consequence, practice varies considerably between surveys and between organisations. The authors of this paper became aware of minor differences between *Social Survey Division, ONS* and the *National Centre for Social Research* in definitions and calculations of response on major government surveys that they carry out and between surveys within each organisation. (The first and third authors worked at the National Centre for Social Research at the time when this project was initiated.)

Through our involvement in the International Workshop on Household Survey Nonresponse and other international activities, we were also aware that international comparisons are hampered by considerable variation between countries in definitions of what counts as response and in methods of calculating response rates. Increasingly surveys are being co-ordinated or commissioned at the international level (e.g. European). Cross-national and international comparisons of survey data are set to become even more important because of an increasing need for policies at this level. There is evidence that the lack of standards for response rate calculation leads to invalid comparisons of survey quality between countries. In a study by de Heer (1999) for example, response rates on the Labour Force Survey are compared between 16 countries, but the study admits there is a lack of precise definitions and

formulae to calculate the response rates. A report on the methodology of the pilots of the Eurostat Time Use Survey also highlights the lack of information regarding response rate definitions and the difficulties in making cross-national comparisons (Rydenstam and Wadeskog 1998). On the European Household Panel Survey (EHP) attempts were made to standardise definitions of the main outcome categories and response rate calculations. However, other differences in survey implementation meant that comparison of rates between countries were not always valid. It is proposed that the European Social Survey will introduce standardised contact and outcome definitions and will undertake centralised non-response analysis in order to maximise comparability as well as publishing meta-data regarding sampling and data collection procedures to aid interpretation (European Science Foundation 1999).

Although the absence of standard definitions of outcome categories and response rates has long been recognised (Kviz 1977; Platek and Gray 1986), there have been relatively few attempts to introduce standards across survey organisations. A survey of major international and American professional and trade associations involved in survey and market research found that only three out of 14 associations have any kind of guidelines on calculating and reporting response rates (Smith 2000). One of the earlier efforts to develop standards in this area was made in the USA by the Council of American Research Organizations (CASRO) in 1982 (Frankel 1983). More recently, progress has been made by the American Association for Public Opinion Research (AAPOR). Based on the earlier CASRO work, AAPOR published a report with an updated set of outcome codes and operational definitions, including formulas for calculating different response rates (AAPOR 2000).

However, the AAPOR recommendations are limited and are not directly applicable to the UK for at least three reasons. First, they deal only with surveys involving a single respondent within a household. However, many surveys collect information from (or regarding) *all* members of the household. Second, they deal only with RDD telephone surveys, in-home surveys based on samples of residential addresses using procedures common in the USA and mail surveys of specifically named persons. The nature of the sampling methods and sampling frames used for social surveys in the UK – and elsewhere in Europe - for example, raises issues that are not dealt with in the AAPOR document. Considerable work is therefore needed before the AAPOR standards can be adapted for use in the UK. This work includes both

conceptual development and careful “translation” of existing concepts. Third, the AAPOR document does not provide practical guidance for field implementation, nor deal with a number of technical issues that we feel are important.

In this paper, we attempt to deal with those issues. We have taken the AAPOR standards as a starting point and have adapted and extended them for UK purposes. We also address related issues not dealt with by AAPOR. This paper proposes standards applicable to the UK, in particular to major government, academic and public sector surveys. We hope that adoption of these standards will enable meaningful comparisons to be made between surveys and will aid understanding of trends and patterns in response rates. We hope that eventually commissioners of surveys will specify and assess response rates on the basis of these standards, thus improving the utility, validity and fairness of comparisons and judgements. This is particularly important when surveys are commissioned via competitive tendering.

This document deals with face-to-face interviewer surveys of households and of individuals. We aim to gain acceptance of standards for these surveys and to gain experience of implementing the standards before extending the recommendations to encompass other types of surveys, such as panel surveys, mail surveys, telephone surveys and surveys of establishments.

## 2. Our Proposals for Standardisation

Our proposals for standardisation have been developed after consultation within both *ONS Social Survey Division* and the *National Centre for Social Research* as well as limited external consultation, including discussion at a meeting of the Social Statistics Section of the Royal Statistical Society. We have also overseen trial implementations of our proposed outcome categories and procedures on both the British Social Attitudes Survey and the General Household Survey. Some minor amendments to our proposals were made in the light of experiences on those trials.

The core of this paper provides standards and definitions covering three key aspects of the definition and calculation of response rates:

- i) a list of final outcome categories, arranged hierarchically;
- ii) detailed definition of each category listed;
- iii) specification of the calculation of different kinds of rates based on the outcome categories, with descriptions of how they should be used and interpreted.

There will inevitably be variation between surveys in response rules and the detail of outcomes that need to be recorded. Our aim has been to develop a hierarchical schema which is standard across surveys at the highest level but which allows for variation by survey at lower levels. Thus surveys with particular requirements can introduce specific categories at the lower level without affecting the overall structure.

Section 3 of this paper provides the list of standard outcome categories for household surveys, where the aim is to collect information about the household as a whole and about its individual members. Examples of such surveys include many major government surveys such as the Labour Force Survey, Family Resources Survey, Family Expenditure Survey, Health Survey for England, Survey of English Housing, General Household Survey and National Travel Survey. Section 4 covers outcomes for surveys of individuals – either pre-selected individuals or surveys which involve interviewers making a random selection of one individual at each address. We will in due course extend the work to cover other types of survey (telephone, postal, panels, business etc.).

The proposals contained in sections 3 and 4 are for standard final outcome categories – codes given to each sampled unit which indicate its final status with regards to eligibility and response. In practice, sample units (e.g. addresses) are often issued to the field more than once – for example if the initial interviewer withdraws, or if a refusal conversion is to be attempted. For sample control purposes, survey organisations therefore need to apply an outcome code to each *issue* of a sample unit. The codes proposed here (possibly with some additions) can be used for that purpose and then combined subsequently across issues of a sample unit to produce a single final outcome for each unit. Section 5 provides guidance regarding the process of combining issue outcomes.

Section 6 proposes definitions for outcome rates that should be calculated and published based upon the outcome information. Some other related issues are discussed in sections 7 and 8.

### **3. Outcome Categories for Surveys of Households**

#### **3.1 Introduction**

These categories apply to face-to-face surveys of households. By surveys of households, we mean surveys where the household is the sampling unit. This includes surveys where the data regarding the household can be collected from any household member or must be collected from a person with a particular role in the household (e.g. a householder) and surveys where data should be collected from every member of the household meeting some criterion (e.g. all household members, all adult household members, all employed household members). The presumption is that PAF would be the sampling frame for such surveys, though the categories have been designed to be easily adaptable to surveys based on other sampling frames.

Surveys of individuals are dealt with in section 4.

The proposed categorisation of outcomes is presented as a 3-level hierarchical schema. The first two levels should be used as described here on all surveys, except in so far as some categories will not apply in some cases. Use of the third level might be optional, but the suggested categories should be used whenever the third level detail is needed. Surveys will sometimes have specific characteristics that require the use of extra outcome categories in addition to those provided here. It should be possible to fit those within the proposed hierarchy without altering any of the standard codes. In other words, survey-specific codes should consist of a standard two-level code with a survey-specific third-level digit.

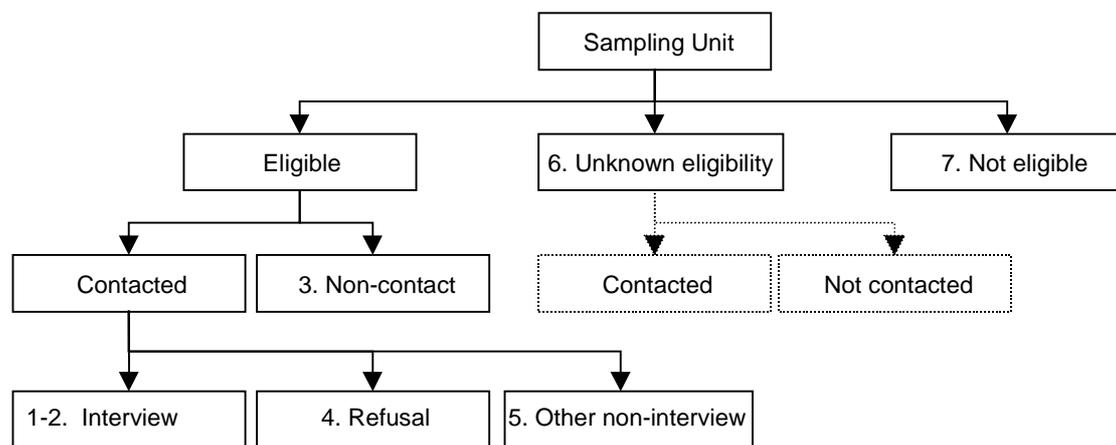
It should also be noted that this document refers to the initial interview component of surveys. Surveys that also involve other data collection instruments (self-completion documents, diaries, physical measurements, blood samples, etc) will require additional instrument-specific outcome codes that are not dealt with here.

For ease of reference, the categories are numbered with 3-digit codes, each digit representing one level of the hierarchy. It is not essential that these particular numbers are used as codes on documents or in data sets. It is the definition of the categories that is of paramount importance.

It should be noted that the 3-level hierarchy proposed here in fact masks a more complex theoretical hierarchy. For example, the first level categories proposed here are:

1. Full interview
2. Partial interview
3. Non-contact
4. Refusal
5. Other non-interview
6. Unknown eligibility
7. Not eligible

But there is in fact a logical hierarchy to these codes, as can be seen in diagrammatic form:



These distinctions are hopefully reflected in the descriptions of the categories. They become important when it comes to the calculation and presentation of response rates and their components (see section 6).

The categories presented here are final outcome categories. In other words, when a survey is complete, each sample case should be assigned a code denoting one of these categories. For operational reasons, it may be necessary also to have some temporary outcome codes that reflect the current status of a case (see section 8). Those are not dealt with here, as they will be organisation and survey specific. The important point is that all cases must eventually be assigned a final outcome code.

It should also be noted that neither the codes nor the descriptions presented here are necessarily what would be presented to interviewers and field staff on survey documents. The question of how best to implement this categorisation is a separate task and could be organisation/survey specific. Therefore this is not dealt with in this document. For example, some codes would only ever be assigned in the office, e.g. 41, 55 (the latter would supplant interviewer-assigned codes).

The categories allow for the possible existence of a single household interview schedule plus an individual interview schedule, to be completed by each eligible member of the household. On some surveys, the "household interview" will consist of little more than a roster of demographic details. The categorisation can still be used for surveys which have fewer schedules than this (e.g. only a household schedule, or only individual schedules) – some categories will simply not apply. However, for surveys which have more schedules than this, additional outcome categories will be needed. These could either be incorporated as extra third-level categories within the standard structure or an independent parallel coding scheme could be used (so the main outcome categorisation reflects only the core schedules, and the presence or otherwise of additional schedules is reported additionally.)

### **3.2 The Categories: Surveys of Households**

#### **Eligible, Interview**

##### **1 Complete Interview**

The distinction between a complete and partial interview should be defined and stated explicitly for each survey. The definition of the desired respondent(s) and any other acceptable respondents should also be stated. These definitions should be published in technical reports/appendices alongside the response analysis.

##### **11 Complete interview by desired respondent (s)**

All interviews in the household are completed. In all cases, they are completed by the target person. To constitute completion, the end of the questionnaire must have been reached and all sections attempted. Some item non-response may, of course, remain.

##### **12 Complete interview: partly by desired respondent(s) and partly by proxy**

All interviews in the household are completed. Not in all cases are they completed by the target person. This includes situations where a single interview is partly-completed by the target person and partly by a proxy respondent, and situations where there are

multiple interviews in the household and one or more is completed by the target person and one or more by a proxy respondent.

13 Complete interview by proxy

All interviews in the household are completed. In no cases are they completed by the target person. This will rarely apply on surveys where an individual interview is sought with each household member (typically, where the proxy respondent is outside the household - e.g. someone answering on behalf of an elderly parent), but will more often apply on surveys where a single household interview is sought with a target respondent who has a particular position in the household – e.g. a householder.

2 Partial Interview

The distinction between a partial interview and non-response should always be defined and stated explicitly for each survey. As general guidance, it is suggested that pre-defined key questions/sections should be answered and/or at least half of the relevant questions/sections. If less than this is completed, then see code 44. (See also categories 55 and 56).

21 Partial interview by desired respondent

211 Partial household interview

The household interview is only partially completed, but by the target respondent.

212 Household interview but non-contact with one or more elements

The household interview is completed by the target respondent, but at least one of the individual interviews is missing due to a failure to contact the individual.

213 Household interview but either refusal or incomplete interview by one or more elements (all elements contacted)

The household interview is completed by the target respondent, but at least one of the individual interviews is missing due to a refusal by the individual. All individuals in the household are contacted. (So, if two individual interviews are missing, one due to non-contact and one due to refusal, category 212 applies.)

214 Other partial interview by desired respondent(s)

The household interview is completed; none of the individual interviews are missing due to either non-contact or refusal, but not all individual interviews are complete. This includes situations where one or more of the individual interviews are only partially completed and situations where one or more of the individual interviews are missing due to reasons other than non-contact or refusal (e.g. ill health or incapacity)

22 Partial interview: partly by desired respondent and partly by proxy

23 Partial interview by proxy

231 Partial household interview by proxy

232 Household interview by proxy but non-contact with one or more elements

- 233 Household interview by proxy but refusal or incomplete interview by one or more elements
- 234 Other partial interview by proxy

### **Eligible, Non-Interview**

#### **3 Non-contact**

##### **31 No contact with anyone at the address**

This code is to be used when the sampled address is known to be eligible, but the interviewer is unable to make contact with any resident. (If eligibility is uncertain, see categories 63 and 65.) This includes cases where the interviewer is unable to reach the sampled dwelling, for example if the sampled address is a dwelling in a multi-dwelling building and the interviewer is unable to enter the building. If any contact is made with a person believed to be a resident, e.g. through an entryphone or in a public area outside the building, see categories 42-43. It is recommended to document in each survey how many times interviewers were advised to attempt contact before the use of the code was allowed and also, for non-contacts, the distribution of number of contact attempts (see section 7 of this paper).

##### **32 Contact made at the address, but not with any member of the sampled dwelling/household**

This code is only to be used for multi-dwelling/household addresses.

##### **33 Contact made at sampled dwelling/household, but not with any responsible resident**

This code applies both to single-dwelling addresses and to selected dwellings within multi-dwelling addresses. It is to be used in situations where, for example, contact is only made with a child, visitor, workman, au pair, etc. The survey definition of responsible resident should be explicitly documented.

#### **4 Refusal**

##### **41 Office refusal**

A decision not to participate in the survey is communicated directly to either the survey organisation or the sponsoring organisation. Only refusals made before the initial interviewer contact should be coded as office refusals (otherwise, see category 43.) Also it is to be underlined that the code applies only to refusals; if the reason for not participating is due to, for example, illness or language, see codes 51-54. The refusal could be either by a resident of the sampled household/address or by proxy – for example, the son/daughter of an elderly person(s) may insist that their parent(s) should not be contacted. Surveys sometimes operate an “opt-out” procedure in advance of the main field work. This category applies also to households that opt out of the survey at that stage. If an opt-out procedure is used, it may be desirable/ appropriate to separately identify households who opt out and those that refuse at a later stage (by using sub-categories).

- 42 Sampling unit information refused
- Contacted person(s) refuse(s) to give the information needed for the interviewer to identify the sampled dwelling/household.
- 421 Information refused about number of dwellings/households at address
- 422 Information refused that would allow identification of desired respondent(s) within dwelling/household
- 43 Refusal at introduction / before interview
- Refusal that is given to the interviewer before the interview has commenced.
- 431 Refusal by desired respondent
- 432 Refusal by proxy
- 44 Refusal during the interview
- Respondent refuses to continue the interview, and insufficient data has been collected for the interview to count as a useable partial interview (see categories 21-23). (If the respondent completes all or part of the interview but subsequently refuses permission for the data to be used, see categories 561 - 562.)
- 45 Broken appointment, no re-contact
- Contacted person(s) is/are willing to be interviewed later at an agreed time, but interviewer is unable subsequently to re-contact them.
- 5 Other non-response
- 51 Ill at home during survey period
- Code to be used for sampled persons who are temporarily ill, i.e. who might have been able to complete the interview at a different time. (If (expected to be) permanently ill, see code 53.) Intoxicated persons to be included here.
- 52 Away/in hospital throughout field period
- 53 Physically or mentally unable/incompetent
- This relates to relatively permanent or stable conditions (see also category 51).
- 54 Language
- No one is able to speak adequate English or other languages that the survey uses, and no one to act as an interpreter is available
- 55 Lost interview
- Full or partial interview achieved but file/questionnaire corrupted/lost/not transmitted
- 56 Other non-response
- 561 Full interview achieved but respondent requested data be deleted

562 Partial interview achieved but respondent requested data be deleted

563 Other non-response (give details)

## **Unknown Eligibility**

### 6 Unknown eligibility, non-interview

These codes are needed in order to be able to take explicit account of the uncertainty that often surrounds the eligibility of a sampled address. For example, it is sometimes difficult to be certain whether an address at which no contact has been made is occupied or vacant. In the past, interviewers have been forced to make an assumption. This leaves researchers and others no means of taking the uncertainty into account when assessing survey outcomes or estimating response rates.

#### 61 Not attempted

611 Not issued to an interviewer

For example, no interviewer was available in the area and/or within the time available, or not issued because the area was deemed unsafe.

612 Issued but not attempted

Included here should be cases where the interview was carried out incorrectly, but this was discovered too late for re-issuing to be possible.

#### 62 Inaccessible

Include remote areas temporarily inaccessible due to weather or other causes.

#### 63 Unable to locate address

Sample addresses for which the description of the sampled unit is errant or inadequate to allow an interviewer to find the address.

#### 64 Unknown whether address contains residential housing

641 Information refused about whether address is residential

642 Unknown whether address is residential due to non-contact

#### 65 Residential address - unknown if eligible household(s).

The interviewer knows that the address is residential but the existence of resident(s) eligible for the survey is unknown. This includes cases where the interviewer is unsure whether any household is resident.

651 Information refused about whether there are eligible resident(s)

652 Unknown whether there are eligible resident(s) due to non-contact

#### 66 No screener completed

Failure to complete a needed screener. (Surveys involving a major screening/sifting operation are likely either to use a number of sub-categories of this code or to record outcomes separately for the screen and main stages of the fieldwork.)

661 Refusal to complete screener

662 Screener not completed due to non- contact

67 Other unknown eligibility (details to be recorded)

## **Not Eligible**

7 Not Eligible

71 Not yet built/ under construction

72 Demolished /derelict

73 Vacant /empty

Residential address known not to contain any resident household on the date of the contact attempt.

74 Non-residential address

Address occupied solely by a business, school, government office, other organisation, etc., with no resident persons

75 Address occupied, but no resident household

Address is residential and occupied, but is not the main residence of any of the persons staying there (see standard definitions of residency). This is likely to apply to seasonal/vacation/temporary residences. But note that seasonal/vacation/temporary residences that are not occupied at the time of the contact attempt, belong to category 73.

76 Communal establishment/institution

Address is residential and occupied, but does not contain any private household(s), e.g. institutions and barracks (see standard definitions of institutions).

77 Resident household(s), but not eligible for the survey

Address is residential and occupied by a private household(s), but does not contain any household eligible for the survey. Note the distinction from code 73. This code will only be used when the survey has an eligibility criterion that renders some households ineligible – e.g. that the household must contain person(s) within a certain age range.

78 Address out of sample

Address is not properly part of the sample. The code is used for example in situations where addresses that were listed in the sampling frame:

- a) turn out to be outside the relevant geographical area
- b) other misclassification of the frame.

79 Other ineligible (details to be recorded)

## 4. Outcome Categories for Surveys of Individuals

### 4.1 Introduction

These categories apply to face-to-face interview surveys of individual persons. By surveys of individuals, we mean surveys where the individual is the sampling unit. This includes surveys where households are sampled initially (e.g. via PAF), followed by random selection of one individual, as well as surveys where named individuals are sampled from some other frame.

Section 3 proposes categories for surveys of households. The categories proposed for surveys of individuals adopt the same principles adopted for surveys of households and this section should be read in conjunction with section 3.1.

It should be noted that differences from the categories for surveys of households are minor. There are some differences in the categories for full and partial interviews (major categories 1 and 2) and there are additional categories for failure to make contact with selected person (34) and for the situation where the individual has moved and the interviewer is unable to attempt contact at new address (68). There are, however, also some categories where the definition is either more restrictive or, conversely, broader than for household surveys. There are also many categories that would not apply to the case of surveys of named individuals, for example categories 42, 64-66 and 71-77.

### 3.2 The Categories: Surveys of Individuals

#### Eligible, Interview

##### 1 Complete Interview

The distinction between a complete and partial interview should be defined and stated explicitly for each survey, in technical reports/appendices alongside the response analysis.

##### 11 Complete interview by selected person

To constitute completion, the end of the questionnaire must have been reached and all sections attempted. Some item non-response may, of course, remain.

- 12 Complete interview: partly by selected person and partly by proxy  
The interview is partly-completed by the selected person and partly by a proxy respondent.
- 13 Complete interview by proxy  
The interview is completed by someone other than the selected person, on their behalf.

## 2 Partial Interview

The distinction between a partial interview and non-response should always be defined and stated explicitly for each survey. As general guidance, it is suggested that pre-defined key questions/sections should be answered and/or at least half of the relevant questions/sections. If less than this is completed, then see code 44. (See also categories 55 - 56).

- 21 Partial interview by selected person
- 22 Partial interview: partly by selected person and partly by proxy
- 23 Partial interview by proxy

## **Eligible, Non-Interview**

### 3 Non-contact

- 31 No contact with anyone at the address

This code is to be used when the sampled address is known to be eligible, but the interviewer is unable to make contact with any resident. (If eligibility is uncertain, see categories 63 and 65.) This includes cases where the interviewer is unable to reach the sampled dwelling, for example if the sampled address is a dwelling in a multi-dwelling building and the interviewer is unable to enter the building. If any contact is made with a person believed to be a resident, e.g. through an entryphone or in a public area outside the building, see categories 42-43. It is recommended to document in each survey how many times interviewers were advised to attempt contact before the use of the code was allowed and also, for non-contacts, the distribution of number of contact attempts (see section 7 of this paper).

- 32 Contact made at the address, but not with any member of the sampled dwelling/household

This code is only to be used for multi-dwelling/household addresses.

- 33 Contact made at sampled dwelling/household, but not with any responsible resident

This code applies both to single-dwelling addresses and to selected dwellings within multi-dwelling addresses. It is to be used in situations where, for example, contact is

only made with a child, visitor, workman, au pair, etc. The survey definition of responsible resident should be explicitly documented.

34 Contact made with responsible member of sampled dwelling/household, but not with the selected person

#### 4 Refusal

41 Office refusal

A decision not to participate in the survey is communicated directly to either the survey organisation or the sponsoring organisation. Only refusals made before the initial interviewer contact should be coded as office refusals (otherwise, see category 43.) Also it is to be underlined that the code applies only to refusals; if the reason for not participating is due to, for example, illness or language, see codes 51-54. The refusal could be by the sampled person or by proxy – for example, the son/daughter of an elderly person(s) may insist that their parent(s) should not be contacted. Surveys sometimes operate an “opt-out” procedure in advance of the main field work. This category applies also to households that opt out of the survey at that stage. If an opt-out procedure is used, it may be desirable/ appropriate to separately identify households who opt out and those that refuse at a later stage (by using sub-categories).

42 Sampling unit information refused

Contacted person(s) refuse(s) to give the information needed for the interviewer to identify the respondent.

421 Information refused about number of dwellings/households at address

422 Information refused about persons within household

43 Refusal at introduction / before interview

Refusal that is given to the interviewer before the interview has commenced.

431 Refusal by selected person

432 Refusal by proxy

44 Refusal during the interview

Respondent refuses to continue the interview, and insufficient data has been collected for the interview to count as a useable partial interview (see categories 21-23). (If the respondent completes all or part of the interview but subsequently refuses permission for the data to be used, see categories 561 - 562.)

45 Broken appointment, no re-contact

Contacted person(s) is/are willing to be interviewed later at an agreed time, but interviewer is unable subsequently to re-contact them.

- 5 Other non-response
- 51 Ill at home during survey period  
Code to be used for sampled persons who are temporarily ill, i.e. who might have been able to complete the interview at a different time. (If (expected to be) permanently ill, see code 53.) Intoxicated persons to be included here.
- 52 Away/in hospital throughout field period
- 53 Physically or mentally unable/incompetent  
This relates to relatively permanent or stable conditions (see code 51).
- 54 Language  
Selected person is not able to speak adequate English or other languages that the survey uses, and no one to act as an interpreter is available (includes cases where the interviewer is to select one person at each sampled address, but no-one at the address speaks adequate English)
- 55 Lost interview  
Full or partial interview achieved but file/questionnaire corrupted/lost/not transmitted
- 56 Other non-response
  - 561 Full interview achieved but respondent requested data be deleted
  - 562 Partial interview achieved but respondent requested data be deleted
  - 563 Other non-response (give details)

### **Unknown Eligibility**

- 6 Unknown eligibility, non-interview  
These codes are needed in order to be able to take explicit account of the uncertainty that often surrounds the eligibility of a sampled address. For example, it is sometimes difficult to be certain whether an address at which no contact has been made is occupied or vacant. In the past, interviewers have been forced to make an assumption. This leaves researchers and others no means of taking the uncertainty into account when assessing survey outcomes or estimating response rates.
- 61 Not attempted
  - 611 Not issued to an interviewer  
For example, no interviewer was available in the area and/or within the time available, or not issued because the area was deemed unsafe.
  - 612 Issued but not attempted

Included here should be cases where the interview was carried out incorrectly, but this was discovered too late for re-issuing to be possible.

62 Inaccessible

Include remote areas temporarily inaccessible due to weather or other causes.

63 Unable to locate address

Sample addresses for which the description of the sampled unit is errant or inadequate to allow an interviewer to find the address.

64 Unknown whether address contains residential housing

641 Information refused about whether address is residential

642 Unknown whether address is residential due to non-contact

65 Residential address - unknown if eligible person(s).

The interviewer knows that the address is residential but the existence of resident(s) eligible for the survey is unknown. This includes cases where the interviewer is unsure whether any household is resident.

651 Information refused about whether there are eligible resident(s)

652 Unknown whether there are eligible resident(s) due to non-contact

66 No screener completed

Failure to complete a needed screener. (Surveys involving a major screening/sifting operation are likely either to use a number of sub-categories of this code or to record outcomes separately for the screen and main stages of the fieldwork.)

661 Refusal to complete screener

662 Screener not completed due to non- contact

67 Other unknown eligibility (details to be recorded)

68 Moved – unable to attempt contact at new address

Only applies to samples of pre-selected persons.

681 No longer at sample address – current address could not be ascertained

682 No longer at sample address – current address ascertained but could not be attempted

For example, if new address is abroad or otherwise out of the areas in which interviewers are available.

## Not Eligible

### 7 Not Eligible

Codes 71 to 77 only apply to surveys involving a sample of addresses and subsequent selection of an individual at each address. For surveys involving samples of named persons, categories 78 and 79 are the only permitted categories of ineligible.

### 71 Not yet built/ under construction

### 72 Demolished /derelict

### 73 Vacant /empty

Residential address known not to contain any resident household on the date of the contact attempt.

### 74 Non-residential address

Address occupied solely by a business, school, government office, other organisation, etc., with no resident persons

### 75 Address occupied, but no resident(s)

Address is residential and occupied, but is not the main residence of any of the persons staying there (see standard definitions of residency). This is likely to apply to seasonal/vacation/temporary residences. But note that seasonal/vacation/temporary residences that are not occupied at the time of the contact attempt, belong to category 73.

### 76 Communal establishment/institution

Address is residential and occupied, but does not contain any private household(s), e.g. institutions and barracks (see standard definitions of institutions).

### 77 Resident household(s), but no person eligible for the survey

Address is residential and occupied by a private household(s), but does not contain any person(s) eligible for the survey. Note the distinction from code 73. This code will only be used when the survey has an eligibility criterion that renders some persons ineligible – e.g. a restricted age range or a requirement for persons to be in paid employment.

### 78 Out of sample

The address/person is not properly part of the sample. The code is used for example in situations where addresses/persons listed in the sampling frame:

- a) turn out to be outside the relevant geographical area
- b) other misclassification of the frame.

### 79 Other ineligible (details to be recorded)

## 5. Converting Issue Outcomes to Case Outcomes

On many surveys, sample cases can be “issued” to an interviewer more than once. There are many reasons why this happens. For example, the interviewer to which the case is initially issued may fall ill or become unable to work for some other reason (possibly after having already made some calls to the address). Alternatively, the interviewer may return the case as a non-contact or refusal but, in order to improve the response rate, the supervisor or field office may decide to issue the case again in an attempt to “convert” the non-respondent into a respondent. This reissuing could be either to the same interviewer or to a different one.

For fieldwork control purposes, an outcome code must be assigned to each issue of the case. Yet, when the field work is complete, a single final outcome code is needed for each case. Thus, for cases with multiple issues, a procedure is required for converting multiple issue outcomes into a single case outcome. That procedure should be as objective and automated as possible. We provide below a simple priority ordering of the outcome codes. The outcome with the highest priority code should be taken as the case outcome.

In addition to this automated conversion of issue outcomes to case outcomes, some final outcomes will only be assigned in the office, often thus over-riding previous issue outcome codes. This can apply, for example, to categories 55, 561 and 562, and to switches between full and partial responding codes as a result of edit checks.

## Priority ordering of outcomes

<u>Outcome</u>	<u>Priority code</u>	
11 Complete interview by desired respondent (s)	99	<b>Responding</b>
12 Complete interview: partly by desired respondent and partly by proxy	98	
13 Complete interview by proxy	97	
213 <sup>1</sup> Hh interview but refusal or incomplete interview by 1+ elements (all elements contacted)	95	
212 <sup>1</sup> Household interview but non-contact with 1+ elements	93	
211 <sup>1</sup> Partial household interview	91	
214 <sup>1</sup> Other partial interview by desired respondent	89	
21 Partial interview by desired respondent	88	
22 Partial interview: partly by desired respondent and partly by proxy	86	
233 <sup>1</sup> Household interview by proxy but refusal or incomplete interview with 1+ elements	84	
232 <sup>1</sup> Household interview by proxy but non-contact with 1+ elements	80	
231 <sup>1</sup> Partial household interview by proxy	78	
234 <sup>1</sup> Other partial interview by proxy	76	
23 Partial interview by proxy	74	
55 Interview achieved but file/questionnaire corrupted/lost/not transmitted	72	
561 Full interview achieved but respondent requested data be deleted	71	
562 Partial interview achieved but respondent requested data be deleted	70	<b>Deadwood</b>
76 Communal establishment/institution	66	
78 Address out of sample	64	
74 Non-residential address	62	
75 Address occupied, but no resident household	60	
77 Resident household (s), but no-one eligible for survey	58	
71 Not yet built/ under construction	56	
72 Demolished /derelict	54	
73 Vacant /empty	52	
79 Other ineligible	50	
44 Refusal during the interview	49	
431 Refusal by desired respondent <sup>1</sup> / Refusal by selected person <sup>2</sup>	47	
432 Refusal by proxy	45	
43 Refusal at introduction / before interview	44	
422 Information refused that would allow identification of desired respondent within h'hold	43	
421 Information refused about number of dwellings/households at address	41	
42 Sampling unit information refused	40	
41 Office refusal	38	
45 Broken appointment, no re-contact	36	

53	Physically or mentally unable/incompetent	33	} <b>Unable to respond</b>
54	Language	32	
52	Away/in hospital all field period	31	
51	Ill at home during survey period	30	
563	Other non-response (other)	29	
56	Other non-response	28	} <b>Non-contact</b>
34 <sup>2</sup>	Contact made with responsible member of sampled dwelling/household, but not with the selected person	25	
33	Contact made at the sampled dwelling/ household, but not with a responsible resident	24	
32	Contact made at address, but not with any member of the sampled dwelling/ household	23	} <b>Unknown eligibility</b>
31	No contact with anyone at the address	21	
682 <sup>2</sup>	No longer at sample address – current address ascertained but could not be attempted	17	
681 <sup>2</sup>	No longer at sample address – current address could not be ascertained	16	
68 <sup>2</sup>	Moved – unable to attempt contact at new address	15	
651	Residential, but unknown whether there is an eligible person/household due to refusal	14	
652	Residential, but unknown whether there is an eligible person/h'hold due to non-contact	13	
65	Residential, but unknown whether there is an eligible person/household	12	
641	Unknown whether address contains residential housing due to refusal of information	11	
642	Unknown whether address contains residential housing due to non-contact	10	
64	Unknown whether address contains residential housing	9	
62	Inaccessible	8	
63	Unable to locate address	7	
66	No screener completed	6	
67	Other unknown eligibility	4	
612	Issued but not attempted	3	
611	Not issued to an interviewer	2	
61	Not attempted	1	

<sup>1</sup> Household surveys only

<sup>2</sup> Individual surveys only

## 6. Proposed Definitions of Response Rates

Non-response is a complex phenomenon and presenting it in a single figure can give a distorted or inadequate impression of the survey performance. For example, some surveys may have higher refusal rates than others, and the non-contact rate can be exceptionally low due to substantive fieldwork efforts. At the same time another survey having a similar overall response rate may have invested more effort on refusal conversion, but been less able to minimise the non-contact rate due to a very short field work period. Therefore the response rates to be reported should be informative of the main components of non-response.

Furthermore, response rates serve at least two important purposes, which have quite distinct implications for the definition of response rate. The first purpose is as a survey (output) quality indicator. The second is as a field work (process) quality indicator. For the first purpose, the response rate should correctly reflect the structure of the survey population. This therefore requires weighting by inverse selection probabilities (design weights) to be used in the response rate calculation. For the second purpose, unweighted response rates are generally agreed to be more appropriate.

To meet these different requirements, it is recommended that at least six rates should be calculated and published for each survey:

- Overall response rate (weighted)
- Overall response rate (unweighted)
- Full response rate (weighted)
- Full response rate (unweighted)
- Co-operation rate (unweighted)
- Contact rate (unweighted)

In addition to these, it is also good practice to report weighted co-operation and contact rates. A fourth type of rate that can be informative is the refusal rate.

Additionally, as an indicator of quality of the sampling frame and to provide information useful to the design of future surveys, the (weighted) eligibility rate should be published.

In this section, we define each of these rates. The definitions have drawn heavily upon the AAPOR “standard definitions” (AAPOR, 2000) but have been adapted for the purpose of this guidance. We have deliberately used the same notation as AAPOR as far as possible. The numbers in parentheses refer to the outcome categories defined in sections 3 and 4 of this paper.

## 6.1 Notation used

RR	=	Response rate
COOP	=	Co-operation rate
CON	=	Contact rate
REF	=	Refusal rate
ELIG	=	Eligibility rate
I	=	Complete interview (1)
P	=	Partial interview (2)
NC	=	Non-contact (3)
R	=	Refusal (4)
O	=	Other non-response (5)
UC	=	Unknown eligibility, contacted (641, 651, 661, proportion of 67)
UN	=	Unknown eligibility, non-contact (61, 62, 63, 642, 652, 662, 68 and remainder of 67)
NE	=	Not eligible (7)
$e_c$	=	Estimated proportion of contacted cases of unknown eligibility that are eligible
$e_n$	=	Estimated proportion of non-contacted cases of unknown eligibility that are eligible

## 6.2 Response rate

The ultimate purpose of the response rate is to serve as an overall survey performance indicator. The response rate indicates how many interviews were achieved as a proportion of those eligible for the survey.

We propose that the standard definition of overall response rate should be one that includes partial interviews as respondents. This is why the definition of acceptable partial interview is extremely important (see outcome category 2 in sections 3 and 4). The inclusion of partial interviews should not be used as a mean to increase response rates for presentational purposes. Rather, partial interviews should be solely those cases that can be used in estimation of at least the key survey estimates.

Another important feature of the proposed response rate definition is that the denominator includes an estimate of the number of eligible non-responding cases amongst those cases where eligibility is uncertain.

$$RR_o = \frac{I + P}{(I + P) + (R + NC + O) + e_c UC + e_N UN}$$

In estimating  $e_c$  and  $e_N$ , one must be guided by the best available objective information and one must not select a proportion in order to boost the response rate. The basis for the estimate must be explicitly stated and detailed. For some surveys it will be appropriate to assume that the proportion of eligibles amongst those cases where eligibility is uncertain is the same as that amongst cases where eligibility has been established. For other surveys, it will be appropriate to assume  $e=1$ . For yet others, different proportions might be assumed for different categories of uncertain eligibility.

It will be noted that the response rate is the product of the co-operation and contact rates (defined in 6.3 and 6.4 below).

In addition to the overall response rate, the “full response rate” should also be published. This differs from the overall response rate in that only fully responding cases are counted in the numerator:

$$RR_F = \frac{I}{(I + P) + (R + NC + O) + e_C UC + e_N UN}$$

### 6.3 Co-operation rate

The co-operation rate indicates the number of achieved interviews as a proportion of those ever contacted during the fieldwork period.

$$COOP = \frac{I + P}{(I + P) + R + O + e_C (UC)}$$

### 6.4 Contact rate

The contact rate measures the proportion of all cases in which some household member was reached by the interviewer, even though they might then have refused or been unable to give further information about the household composition or to participate to the survey. To constitute having “reached” someone, verbal interaction is required – leaving a note through a letterbox or a message on an answerphone is not sufficient.

$$CON = \frac{(I + P) + R + O + e_C (UC)}{(I + P) + (R + NC + O) + e_C UC + e_N UN}$$

In the case of surveys where one person within a household is the target respondent (e.g. a random within-household selection), the proportion of cases where the target respondent was reached by the interviewer may also be of interest.

## 6.5 Refusal rate

In recent years the proportion of refusals has increased significantly on many general population surveys. Therefore it has become increasingly important to monitor refusals separately. If a refusal rate is to be published (though we think this should be optional), we suggest the following definition. The purpose of the refusal rate is to indicate the proportion of all (estimated) eligible cases that refuse.

$$REF = \frac{R}{(I + P) + (R + NC + O) + e_C UC + e_N UN}$$

## 6.6 Eligibility rate

We propose that the eligibility rate is defined as the ratio of the estimated number of sample cases that are eligible to all sample cases:

$$ELIG = \frac{(I + P) + (R + NC + O) + e_C UC + e_N UN}{(I + P) + (R + NC + O) + (UC + UN) + NE}$$

(An alternative definition often used is the ratio of cases determined to be eligible to cases for which eligibility was determined.)

## 6.7 Weighted outcome rates

Weighted response rates estimate the proportion of the population that would have responded to the survey under similar survey conditions while the unweighted response rates provide a measure of data collection performance only for the sample or sub-sample pertaining to a specific area or class (Platek and Gray, 1986). We have stated above that both these rates should be published and labelled as such.

The importance of weighted outcome rates stems from the possibility that response rates could differ across strata or other intermediate sampling units which have different inclusion probabilities. For example, as a survey coverage (output quality) measure, it would be

misleading to quote a response rate that had been artificially inflated by the fact that a high-response stratum had happened to be over-sampled (or *vice versa*).

The weighted outcome rates (i.e. response rate, contact rate, co-operation rate, etc) can be derived simply by applying the sample (design) weight  $\pi_i^{-1}$  to each case (both responding and non-responding cases) when calculating the rates defined above. Thus, I is now the weighted number of complete interviews, NC the weighted number of non-contacts, etc.

## 7. Related Information on Field Outcomes

It is recommended that for every sample case a record is kept of the total number of interviewer calls needed to establish contact with the resident household, and the total number of subsequent calls (if any) needed to achieve the final case outcome. These two numbers sum to the total number of calls to the address. For non-contacts (outcome category 3), the distributions of total number of calls should be published. This is an important survey process quality indicator and also provides interpretative information regarding the nature of non-contacts (i.e. the extent to which they are likely to be due to inadequate field work effort *vis à vis* inherent characteristics of the survey population). For contacted addresses, the distribution of total number of calls to establish contact should be published. This provides important process information as well as a benchmark for evaluation of the numbers of calls made to non-contacted sample cases. Ideally (but optionally) the distribution of each of the two components of number of calls should also be published for the whole selected sample.

In addition to publication of the outcome rates defined above, the complete frequency distribution (both weighted and unweighted) of cases across all outcome categories – at least to the second level of the hierarchy – should be published. This provides the information needed to allow calculation of alternative outcome rates when needed, for example to allow comparison with surveys for which the response rates published are non-standard (e.g. surveys which pre-date the use of this guidance). This information is also useful for future field work planning (e.g. estimating eligibility rates for a survey intending to use the same sampling frame but a different definition of eligibility).

The essential requirement (described in section 6) is that all the main outcome rates should be published based upon the full sample. Additionally, wherever possible and appropriate we recommend that these rates should also be published separately for key sample subgroups. In the case of national surveys, these should include Government Office Regions.

Finally, information should be published about the number of cases that were “re-issued.” Re-issuing is when the case is returned by the interviewer as completed (typically with an outcome of non-contact or refusal) but is then returned to the field by a supervisor or field staff for

further attempts at contact or for refusal conversion attempts. The case may be returned either to the same interviewer or to a different one (typically a senior interviewer or supervisor). For cases that were reissued, the survey technical report should ideally include a cross-tabulation of outcome at first issue against outcome at final issue.

“Reissue” should be distinguished from “reallocation”. The latter refers to situations where an interviewer was unable to complete the necessary work on a sample case and consequently the case had to be reallocated to another interviewer. Reasons for this happening might include the interviewer leaving the employment of the survey organisation or becoming temporarily unavailable for reasons of illness, family circumstances, etc.

## **8. Distinctions between Field Outcomes, Provisional Survey Outcomes and Final Survey Outcomes**

### **8.1 Field Outcomes**

Closely related to the distinction between issue and case outcomes – discussed in section 5 above – is the distinction between field and survey outcomes. The first six sections of this document have addressed solely survey outcomes. For the management and monitoring purposes of the field department of a survey organisation, different outcome categories, and different definitions of response rates, may sometimes have to be used.

For example, a refusal received in the office in advance of fieldwork (“office refusal”) is a valid survey outcome for a case, but it is not relevant to any assessment of the field work operation, as the case was never eligible to be attempted. Thus, a response rate for the purpose of assessing the success of the field work operation might exclude office refusals from the denominator, whereas a response rate for the purpose of assessing the overall quality of the survey (coverage of the selected sample) should certainly include office refusals in the denominator.

Furthermore, field departments will typically want to calculate response rates and other outcome indicators for each interviewer who has worked on a survey. For this, they require the concept of an “interviewer case outcome”. This will only be identical to the issue outcome if no cases were issued to the same interviewer more than once. And of course it will only be identical to the case survey outcome if no cases were issued to more than one interviewer. Field departments may in any case require a more detailed breakdown of certain outcome categories at the interviewer level – for example, to be able to distinguish different reasons why an interviewer did not attempt a case.

This document does not attempt to provide guidance on the definition and use of field outcome categories, either at the case or interviewer level. However, we feel that the proposed survey outcome categories could easily be adapted for these purposes. Organisations will have their own specific requirements for this adaptation. The use of field outcome categories will in any

case usually be internal to the organisation, so we suggest that organisations make their own decisions on how best to adapt our survey outcomes to provide field outcomes.

## **8.2 Provisional Survey Outcomes**

It is often necessary to present outcome rates during the course of field work and/or immediately after the completion of field work, but before the completion of all survey operations (e.g. coding, editing and certain quality control procedures). In this case, the outcome rates published before all operations are completed should be considered provisional. The final outcome rates may differ due to a number of factors, including the amendment of outcome codes in the office.

## References

AAPOR (2000), *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*, AAPOR, Ann Arbor, Michigan.

De Heer, W. (1999), 'International response trends: results of an international survey', *Journal of Official Statistics*, 15, pp. 129-142.

European Science Foundation (1999), *The European Social Survey (ESS) – a research instrument for the social sciences in Europe*, European Science Foundation, Strasbourg.

Frankel, L. (1983), 'The report of the CASRO task force on response rates', in *Improving Data Quality in a Sample Survey* (ed. F. Wiseman), Marketing Science Institute, Cambridge MA.

Groves, R. M. (1989), *Survey Errors and Survey Costs*, Wiley Interscience, New York.

Groves, R. M. and Couper, M.P. (1998), *Nonresponse in Household Interview Surveys*, John Wiley & Sons, New York.

Groves, R.M., Dillman, D.A., Little, R. and Eltinge, J. (2002, forthcoming), *Survey Nonresponse*, John Wiley & Sons, New York.

Kviz, F.J. (1977), 'Toward a standard definition of response rate', *Public Opinion Quarterly*, 41, pp. 265-267.

Platek, R. and Gray, G.B. (1986), 'On the definitions of response rates', *Survey Methodology*, 12, pp. 17-27.

Rydenstam, K. and Wadeskog, A. (1998), *Evaluation of the European Time Use Pilot Survey*, Eurostat Time Use Surveys Task Force, Document E2/TUS/5/98, Eurostat, Luxembourg.

Smith, T. (2000), *Standards for Final Disposition Codes and Outcome Rates for Surveys*. NORC/University of Chicago. <http://www.fcsn.gov/papers/smith.html>.

Statistics Canada (1993), *Standards and Guidelines for Reporting of Nonresponse Rates: Definitions, Framework and Detailed Guidelines*, Statistics Canada, Ottawa.