1 Report on the consideration of extending inpatient survey fieldwork period

This report discusses the reasons for, and the implications of, extending the fieldwork for the 2007 inpatient survey by approximately one month. This would result in the closing date for data being moved from 7th December 2007 to 4th January 2008. This would allow us to increase the fieldwork period by four weeks over the 2007 Christmas holiday period. For much of this time, there are likely to be fewer staff working in trusts, or at approved contractors, the Healthcare Commission, or the Acute Co-ordination Centre. The survey would thus have an increased collection period at very little cost to the analysis period. We believe this would lead to increased response rates for young and Black and minority ethnic (BME) groups, and the evidence for this is presented in this document.

1.1 Evidence from earlier surveys

A pattern of delayed questionnaire returns associated with ethnicity was first noticed during the 2006 Local Health Services sample survey which was run nationally by the Picker Institute. Ethnic group is not requested in the sample information for primary care surveys because ethnicity is not regularly, or reliably, recorded on general practice databases. Consequently, response rates cannot be provided for each ethnic group, but we can identify the percentage increase in responses received for each group over time.

The sample for this survey was just over 24,000 registered patients and the survey had an adjusted response rate of 43%. The ethnic groups of respondents who returned questionnaires after the cut-off date for survey fieldwork period indicated that a disproportionate number of late returns came from those in the Black or Black British group (see Table 1). However, the numbers of 'late' returns included in this case are rather small and no clear conclusions can be drawn.

Table 1: Late returned questionnaires in the 2006 PCT survey by ethnic group

	White	Mixed	Asian or Asian British	Black or Black British	Chinese or other ethnic group	Total
Returned useable questionnaire (for 2006 survey)	9,083	60	279	135	49	9606
Returned useable questionnaire (2006 survey plus late returns)	9,170	61	283	143	49	9706
Late returns	87	1	4	8	0	100
% increase in responses by ethnic group	1.0%	1.7%	1.4%	5.9%	0%	1.0%

A similar, but larger, effect was observed on the maternity survey pilot (2006) where greater proportions of women from BME groups returned their questionnaire after the closing date originally set for the end of the fieldwork period. It was decided to extend the fieldwork period of the pilot by one month to include these late returns in the final results.

Women from a white ethnic group returned 1,009 questionnaires during the initial fieldwork period and 69 after the closing date (hence an additional 6.8% of questionnaires were received from white respondents after the closing date). This increased the overall response rate from white respondents from 59.7% to 63.8% (a percentage point difference of 4.1%). A much larger proportion of questionnaires were received late from mixed (19.0%), 'Chinese or other' ethnic groups (17.4%), and Asian (14.6%) respondents. These late returns translated into increased response rates for all groups, but especially for those from mixed (+8.3%), 'Chinese or other' ethnic groups (+5.4%) and Asian (+5.2%) respondents.

Table 2: Late returned questionnaires in the 2006 maternity pilot survey by ethnic group

	White	Mixed	Asian or Asian British	Black or Black British	Chinese or other ethnic group	Total
Returned useable questionnaire (for pilot survey)	1,009	21	130	71	23	1254
Response rate at close of fieldwork (%)	59.7%	43.8%	35.3%	43.3%	31.1%	53.2%
Late returns (n)	69	4	19	5	4	101
Response rate including late returns (%)	63.8%	52.1%	40.5%	46.8%	36.5%	57.5%
% point difference in response rate,	4.1%	8.3%	5.2%	3.5%	5.4%	4.3%
% increase in responses by ethnic group	6.8%	19.0%	14.6%	7.0%	17.4%	8.1%

1.2 Questionnaires returned late for the 2006 inpatient survey

In order to investigate the effect of delayed returns more systematically, we required all participating trusts to undertake weekly outcome monitoring as part of the adult acute inpatient survey for 2006.

The fourth national survey of adult inpatients was conducted between September and December 2006 in 167 NHS acute trusts. Across the country, a total of 141,447 individuals recently discharged from hospital after an inpatient stay of at least one night were sent questionnaires, with up to two reminders sent to non-responders over the fieldwork period. Within the normal fieldwork period, responses were received from 80,694 of these participants, representing an adjusted response rate of 58.7% once non-contactable and deceased patients had been accounted for.

Weekly monitoring

For the 2006 adult inpatient survey, the Acute Co-ordination Centre requested trusts, or their approved contractor, to send us their first, second and third mailing dates and the totals for each of the six participant outcome codes each Thursday of the fieldwork period. During data entry they were also required to log the dates on which all case-level outcomes – e.g. completed questionnaires being received, mail being returned undelivered, patients opting out, reported as deceased, ineligible, or reason unknown – occurred. These additional data provided information on the patterns of response to the survey and, coupled with the late returns from the three largest contractors, allows us to examine differences between demographic groups in terms of their patterns of response and how these may impact on the overall representativeness of the survey data.

Since trusts were not required to mail on a specified date, there was some variance in exactly when mailings were sent out and, therefore, in the length of time between the first mailing and the end of the fieldwork period. Overall, though, the mean and median date of first mailing was the 30th September 2006, with 90% of first questionnaires sent within two weeks of these dates.

Analysis

All mailing dates for each trust were merged to the main dataset (containing survey responses) in SPSS. From these and the case level 'log' dates it was possible to calculate the number of days between each mailing and a patient's eventual response being recorded. This enabled two key avenues of analysis:

- Overall time to respond – the number of days taken to receive a response from, or relating to, a patient following the initial mailing of the survey questionnaire.
- An approximate indication of *which* mailing the patient responded to. This is necessarily inaccurate to some degree because of unaccountable variations in postage time and other delays in recipients' actually reading letters, but nonetheless gives a broad indication of which mailing prompted the recipient to respond. This is perhaps best thought of as a classification of patients into three 'response waves': first, second, and third mailing responders.

Despite the survey being devolved, nearly 80% of the work was undertaken by only three approved survey contractors. These three contractors sent questionnaires to a total of 109,989 recent patients, and received a total of 61,437 responses by the end of the fieldwork period in December 2006. In order to establish the likely impact of an extension to the survey period, these three contractors were asked to continue to process questionnaire returned between the end of the prescribed fieldwork period on 8th December 2006 and the 31st January 2007.

The three contractors were also asked to provide key demographic responses for these late respondents. That is, their responses to question one (route of admission) and all questions in the 'about you' section. Unfortunately, the exact date on which each questionnaire was logged after the end of the survey was not universally available. Consequently it was not possible to determine the exact length of time taken to respond for all patients logged after the end of the fieldwork period. Instead, analysis of responses received after the close of the initial fieldwork is limited to categorical analyses. This was done in two ways: firstly by comparing all responses from before and from after the close of fieldwork, and secondly by appending late responses as a fourth 'response wave' to the three waves described above. All analyses are based on a dataset filtered only to include the three approved survey contractors who participated in this exercise.

Results

Table 3 shows when patients known to be from each of the various ethnic groups responded to the survey[1]. More than two thirds (68%) of respondents from a white ethnic group responded in the first wave of the survey, while only half of respondents from mixed or Chinese or other ethnic groups responded in this period. Only 45% of Asian respondents and 46% of Black respondents replied in the first response wave, and almost 30% waited until the third wave to reply.

Fewer than two percent of white respondents replied after the closing date to the survey, but this increased to 4% of respondents from a mixed ethnic group, 5% of respondents from a Black or Chinese or other ethnic group, and 6% of respondents from an Asian ethnic group. Chi-square tests for ethnicity against response wave showed there was clear difference between the findings for these ethnic groups (see Table 4).

Table 3: Proportions of ethnic groups in each response wave (Inpatient survey 2006)

		Response wave				Total
		Responded to Wave 1	Responded to Wave 2	Responded to Wave 3	Responded after close of fieldwork	
White	Count	39,720	7,785	9,739	1,136	58,380
	% in each wave	68.0%	13.3%	16.7%	1.9%	100.0%
Mixed	Count	200	70	113	17	400
	% in each wave	50.0%	17.5%	28.3%	4.3%	100.0%
Asian or Asian British	Count	836	376	556	108	1,876
	% in each wave	44.6%	20.0%	29.6%	5.8%	100.0%
Black or Black British	Count	602	286	358	59	1,305
	% in each wave	46.1%	21.9%	27.4%	4.5%	100.0%
Chinese or other Ethnic Group	Count	163	60	87	15	325
	% in each wave	50.2%	18.5%	26.8%	4.6%	100.0%
Total	Count	41,521	8,577	10,853	1,335	62,286
	% in each wave	66.7%	13.8%	17.4%	2.1%	100.0%

Table 4: Chi square tables of ethnic group difference in response waves (Inpatient survey 2006)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	874.361[a]	12	.000
Likelihood Ratio	793.944	12	.000
Linear-by-Linear Association	707.959	1	.000
N of Valid Cases	62286		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.97.

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[1] Only patients with a known ethnic group are included in these figures. Because of this, there are fewer respondents included in this table (62,289) than were received from the three major contractors (62, 784 when the 1,347 useable late questionnaires are included).

We also investigated the effect of age upon delayed return of questionnaires[2]. Hospital records of patient age have a much greater degree of accuracy than records of patient ethnicity and are nearly 100% intact. For this reason, and because this information is less sensitive to some respondents who sometimes choose not to submit their ethnicity in the survey, slightly more patients are included in the analysis of age.

This analysis shows that there is an age effect. The oldest respondents were most likely to return a questionnaire in the first wave (71%) and youngest respondents most likely to return a late questionnaire (4.8%) (see Table 5). There is a weak (r=0.107), but highly significant correlation (p<0.0005) between increasing age and responding earlier in the survey fieldwork period, and Chi-square tests support the independence of the findings for the age groups investigated (see Table 6).

Table 5: Proportions of age groups in each response wave (Inpatient survey 2006)

		Response wave				Total
		Responded to Wave 1	Responded to Wave 2	Responded to Wave 3	Responded after close of fieldwork	
16-35 year	Count	3,618	961	1,668	312	6,559
	% in each wave	55.2%	14.7%	25.4%	4.8%	100.0%
36-50 years	Count	6,270	1,449	2,232	349	10,300
	% in each wave	60.9%	14.1%	21.7%	3.4%	100.0%
51-65 years	Count	11,103	2,228	2,767	324	16,422
	% in each wave	67.6%	13.6%	16.8%	2.0%	100.0%
Over 65 years	Count	20,819	4,012	4,310	363	29,504
	% in each wave	70.6%	13.6%	14.6%	1.2%	100.0%
Total	Count	41,810	8,650	10,977	1,348	62,785
	% in each wave	66.6%	13.8%	17.5%	2.1%	100.0%

Table 6: Chi square tables of age group difference in response waves (Inpatient survey 2006)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1140.469[a]	9	.000
Likelihood Ratio	1076.252	9	.000
Linear-by-Linear Association	1050.300	1	.000
N of Valid Cases	62785		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 140.82.

[2] Only patients with a known age (derived from year of birth) are included in these figures. Because year of birth was available for all respondents, the number of respondents included in this table (62,784) matches the number received from the three major contractors (62, 784 when the 1,347 useable late questionnaires are included).

Thus, given that patients from black and minority ethnic groups tend to be younger than white patients (see table 7), there is reason to suspect that the increased proportions of patients from black and minority ethnic groups in later response waves could actually be due to a tendency of younger people to take longer to respond. To test this hypothesis, it is necessary to look at the mean time to respond for each age/ethnic group.

Table 7: Mean age for white and non-white participants in 2006 inpatient survey 2006

	Mean age (years)		
	Sample ethnic group	Response ethnic group	All patients
White	60 years	62 years	59 years
BME	48 years	50 years	61 years

Since the precise date of questionnaire return is not available for all patients returning the questionnaire after the close of fieldwork, however, it is not possible to use a scalar measure of time to respond in such an analysis. Instead, we used the ordinal response wave variable for analysis. To verify the suitability of this approach, we tested the correlation between response wave and actual time to respond in days[3]: this showed an extremely strong correlation ($r=0.904$, $p<0.001$).

Following this, response wave was set as the dependent variable for a general linear model featuring age group, sex, ethnic group, and method of admission as independent variables (these being the key demographics used in analysis of the national inpatient surveys). This showed significant main effects of ethnic group ($p<0.001$) and age group ($p=0.039$), as well as a significant interaction between age group and ethnic group ($p<0.001$). The interaction between ethnic group and sex was approaching significance ($p=0.059$), but no other significant effects were observed (see Appendix 1: General linear model of key demographic factors influencing response rate to the 2006 inpatient survey). This modelling showed evidence that the trend of later responses from patients from black and minority ethnic groups could not be entirely attributed to the younger age distributions observed in these groups.

We then investigated the effect of the other demographic questions provided to us in the late returns data by contractors (see Appendix 2: Correlations of significant factors to returning a useable questionnaire). All demographic questions were found to correlate with the length of time taken to return the questionnaire ($p<0.005$), other than gender ($p=0.377$). Using Pearson's correlation coefficient, age had the greatest effect on the time taken to respond ($r = -0.130$), then ethnic group ($r = 0.104$), being a patient at a London-based trust ($r = 0.064$), age leaving full-time education ($r = 0.050$), and whether the patient was a planned or emergency admission ($r = 0.039$). While significant, disability and health status demonstrated very weak correlation with response time ($r = 0.012$ for both).

Respondents who were patients in London-based trusts were less likely to respond in the first wave (60%) compared to those who were inpatients outside of London (67%). Instead they were much more likely to respond to the third wave ie when they have received an initial questionnaire, one reminder, and then a second questionnaire approximately 5-7 weeks after the first mailing. This delay in responding most likely causes the higher proportion of questionnaires returned late from these patients (3%), compared to those seen in trusts outside London (1%).

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[3] Obviously, we would expect this correlation to be high – but since response wave is calculated based on mailing dates and the number of days between mailing dates varies between trusts and contractors the test is not redundant and is indeed necessary.

Table 8: Time taken to respond for patients treated in trusts inside and outside London (Inpatient survey 2006)

		Response wave				Total
		Responded to Wave 1	Responded to Wave 2	Responded to Wave 3	Responded after close of fieldwork	
Trust outside London	Count	39,360	8,882	9,509	839	58,590
	% in each wave	67.2%	15.2%	16.2%	1.4%	100.0%
London-based trust	Count	6,556	1,748	2,254	330	10,888
	% in each wave	60.2%	16.1%	20.7%	3.0%	100.0%
Total	Count	45,916	10,630	11,763	1,169	69,478
	% in each wave	66.1%	15.3%	16.9%	1.7%	100.0%

Table 9: Chi square tables of London effect on response waves (Inpatient survey 2006)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	320.174[a]	3	.000
Likelihood Ratio	294.292	3	.000
Linear-by-Linear Association	285.934	1	.000
N of Valid Cases	69478		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 183.20.

Respondents who were aged 16 years or younger when they left full-time education responded to the survey faster than those who were still in full-time education or left aged 19 or over (usually having at least some tertiary education). The proportion of respondents still in full-time education who returned the questionnaire late was twice that of those who left aged 19 or over, and almost four times greater than those who left aged 16 year or less (see Table 10: Age of leaving full-time education effect on response wave (Inpatient survey 2006)). The age of leaving full-time education correlates significantly with the age of the respondent ($r = 0.349$)

Table 10: Age of leaving full-time education effect on response wave (Inpatient survey 2006)

		Response wave				Total
		Responded to Wave 1	Responded to Wave 2	Responded to Wave 3	Responded after close of fieldwork	
16 years or less	Count	27911	5336	6952	710	40909
	% in each wave	68.2%	13.0%	17.0%	1.7%	100.0%
17 or 18 years	Count	6416	1433	1640	250	9739
	% in each wave	65.9%	14.7%	16.8%	2.6%	100.0%
19 years or over	Count	5263	1299	1501	272	8335
	% in each wave	63.1%	15.6%	18.0%	3.3%	100.0%
Still in full-time education	Count	491	147	229	61	928
	% in each wave	52.9%	15.8%	24.7%	6.6%	100.0%
Total	Count	40081	8215	10322	1293	59911
	% in each wave	66.9%	13.7%	17.2%	2.2%	100.0%

Table 11: Chi square tables of age of leaving full-time education on response waves (Inpatient survey 2006)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	309.239[a]	9	.000
Likelihood Ratio	272.710	9	.000
Linear-by-Linear Association	165.542	1	.000
N of Valid Cases	59911		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.03.

While initially a smaller proportion of respondents that had been admitted for an emergency or urgent admission answered in the first wave (65%) when compared to those from a waiting list or planned admission (68%), most of this disparity was made up in the third wave and there was very little difference in the proportion of late returns (see Table 12: Effect of admission route on response wave (Inpatient survey 2006)). It seems unlikely that there would be any effect on extending the fieldwork period on the proportions of questionnaires returned from urgent or planned admission patients.

Table 12: Effect of admission route on response wave (Inpatient survey 2006)

		Response wave				Total
		Responded to Wave 1	Responded to Wave 2	Responded to Wave 3	Responded after close of fieldwork	
Emergency or urgent	Count	26690	6289	7279	724	40982
	% in each wave	65.1%	15.3%	17.8%	1.8%	100.0%
Waiting list or planned admission	Count	23785	5328	5201	532	34846
	% in each wave	68.3%	15.3%	14.9%	1.5%	100.0%
Total	Count	50475	11617	12480	1256	75828
	% in each wave	66.6%	15.3%	16.5%	1.7%	100.0%

Table 13: Chi square tables of route of admission on response waves (Inpatient survey 2006)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	126.343[a]	3	.000
Likelihood Ratio	126.887	3	.000
Linear-by-Linear Association	115.530	1	.000
N of Valid Cases	75828		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 577.18.

Having identified the additional demographics affecting late returns, we re-ran the general linear model with response wave set as the dependent variable and investigating age group, ethnic group,

age of leaving full-time education, route of admission to hospital, and location of trust (London or non-London based trusts) as independent variables. The revised model showed that ethnic group had the largest and most significant effect upon which wave the questionnaire was received in (F = 9.362, p<0.0005). The next greatest effect attributable to a single factor was staying in a London-based trust (F = 5.966, p = 0.015), then age (F = 2.802, p = 0.038). Age of leaving full-time education was significant (F = 2.716, p = 0.043) but route of admission was not (p = 0.842). There was significant interaction between ethnic group and age of leaving full-time education (p = 0.005), as well as age group and route of admission (p = 0.014) (see Appendix 3: Revised general linear model of demographic factors influencing response rate to the 2006 inpatient survey). This modelling supports evidence presented earlier that while age of respondent, location of the inpatient stay, and age of leaving full-time education are factors in delayed response to the inpatient survey, the ethnic group of the respondent has the largest and most significant factor and this cannot be entirely attributed to the effects of BME patients having younger age distributions and large proportions being clustered in and around London that we observe in these patient groups.

The effect on the 2006 inpatient survey of including late returns

We propose to extend the fieldwork period for the 2007 inpatient survey by four weeks. Based upon the data sent to us by the three contractors handling the largest number of the trusts in the 2006 inpatient survey, the response rates to the survey would have increased as follows:

There were 1417 late questionnaires returned up until 31st January, of which 1,347 were returned complete and useable (outcome=1). 1,345 questionnaires were returned within four weeks of the close of fieldwork and of these, 1,276 of these had been returned complete and useable (outcome=1). If the outcomes of these late questionnaires are added to those which arrived before the closing date of the survey, the adjusted response rate of the 2006 inpatient survey would increase one percentage point, from 59% to 60%.

Table 14: Response rate for the 2006 inpatient survey and by including late returns

Outcome	Inpatient 2006 survey	Extended 2006 inpatient survey
Returned useable questionnaire	80,694	81,970
Returned undelivered or patient moved house	1,628	1,648
Patient died	2,083	2,087
Too ill, opted out or returned blank questionnaire	7,926	7,954
Patient not eligible to fill in questionnaire	340	339[4]
Questionnaire not returned - reason not known	48,776	47,449
Total	141,447	141,447
Adjusted response rate (%)	58.73%	59.67%

This increase in response rates is variable across the five major ethnic categories in the survey with disproportionately larger improvements noted for Mixed (+3.0%), Asian (+2.6%), and Black (+2.0%)

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[4] This decrease from 340 to 339 is due to the contractor being contacted by the patient to say they had been in hospital after a family member had erroneously advised them they had not been an inpatient.

ethnic groups than for white respondents (1.4%). This difference was not evident in the 'Chinese or other' ethnic group.

Table 15: Effect of including late returns on response rate of the 2006 inpatient survey for the three major contractors

	White	Mixed	Asian or Asian British	Black or Black British	Chinese or other ethnic group
Outcome=1	46,890	221	1,452	1,136	654
Response rate (%)	59.4%	44.5%	39.0%	42.3%	42.1%
Late returns by ethnic group	1,090	15	97	55	10
Response rate including late returns (%)	60.7%	47.5%	41.6%	44.4%	42.7%
% increase from late returns (%)	+1.4%	+3.0%	+2.6%	+2.0%	+0.6%
% increase in responses by ethnic group	2.3%	6.8%	6.7%	4.8%	1.5%

Figure 1: Response rate by ethnic group and the effect of including late returns

Effect of extending fieldwork period of inpatient 2006 survey by four weeks
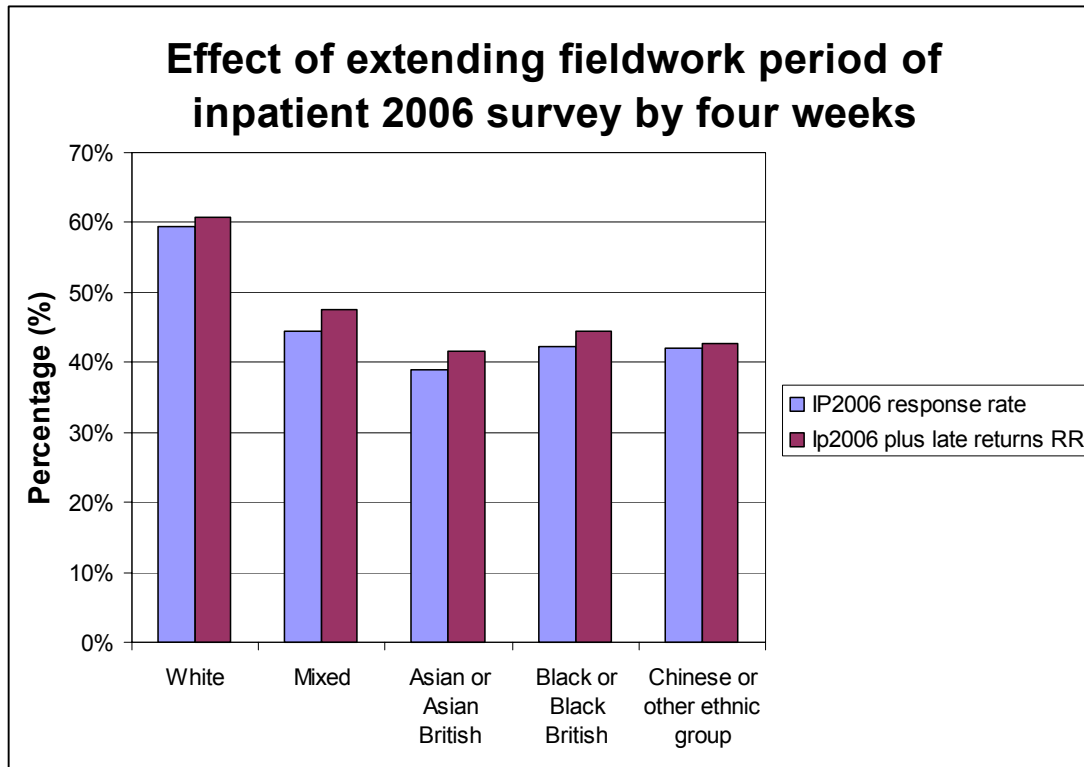
Obviously, increasing the fieldwork period is not a solution that would result in the response rates of BME groups becoming equivalent to those from a white ethnic group, but it does result in a greater proportion of responses arriving from most Black and ethnic minority groups. The extension of fieldwork would be used in conjunction with other methodologies currently being piloted by the Co-ordination Centre which may help increase the response rate overall, and particularly for BME groups.

1.3 Who might need the data early?

In previous years, some deadlines for the submission of the final datasets to the Healthcare Commission were determined in part by the requirement of client teams within the Healthcare Commission to use these data. Specifically, the 2005 survey was required by 31st December 2005 by the Acute Hospital Portfolio Team. The due date for the 2006 inpatient survey data was extended from the 5th January 2007 to 19th January 2007 because of the unexpectedly high workload upon Healthcare Commission teams, due to other patient surveys being extended due to difficulties.

There may be groups within the Healthcare Commission which require the dataset before the proposed date of 8th February 2008. We ask if the survey team at the Healthcare Commission can investigate this and let us know if this is the case.

1.4 Feedback from approved contractors

This extension of fieldwork would impact upon contractor's workload and timescales for this survey. The Acute Co-ordination Centre has discussed this with the three contractors who handle most of the trusts for the national inpatient survey (130 of the 167 trusts which took part). All three contractors supported the idea of extending the fieldwork, especially as they are aware that those from Black and minority ethnic groups are taking longer to respond to the survey.

1.5 Conclusions

This analysis provides clear evidence that patients from black and minority ethnic groups take longer on average to return completed questionnaires than patients from white ethnic groups. There is also evidence that younger people tend to take longer to respond than older people. Whilst patients from black and minority ethnic groups also tend to be younger than white patients, the difference in age distributions does not appear to be responsible for all of the variation in response times between ethnic groups. Extending the fieldwork period for patient surveys should increase response rates disproportionately for two populations identified as having the lowest response rates to the survey programme: young patients and those from BME groups.

The Co-ordination Centre advises that the fieldwork period for the 2007 inpatient survey is extended by four weeks to the timetable detailed below, on page 12.

Timetable for Inpatients survey 2007 (based upon 2006 survey)

		Nov 2007					Dec 2007				Jan 2008				Feb 2008					March 2008				April 2008				
		W1	W2	W3	W4	W5	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W5	W1	W2	W3	W4	W1	W2	W3	W4	W5
Fieldwork	As above	■	■	■	■	■																						
Data due	Final data due to ACC						■																					
Analysis	Analysis						■	■	■		■																	
Reporting	Reporting (benchmarks, spreadsheets, briefing note, key finding report)										■	■	■	■	■	■	■	■	■	■	■							
Dissemination of results	Post-publicity and patient information from trusts																					■	■	■	■	■	■	■

Timetable for Inpatients survey 2007 (extended sampling period)

		Nov 2007					Dec 2007				Jan 2008				Feb 2008					March 2008				April 2008				
		W1	W2	W3	W4	W5	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W5	W1	W2	W3	W4	W1	W2	W3	W4	W5
Fieldwork	As above	■	■	■	■	■	■	■	■	■																		
Data due	Final data due to ACC										■																	
Analysis	Analysis										■	■	■															
Reporting	Reporting (benchmarks, spreadsheets, briefing note, key finding report)														■	■	■	■	■	■	■	■	■					
Dissemination of results	Post-publicity and patient information from trusts																							■	■	■	■	■

Appendix 1: General linear model of key demographic factors influencing response rate to the 2006 inpatient survey

Tests of Between-Subjects Effects

Dependent Variable: Response_wave Response wave

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Corrected Model	877.035[b]	79	11.102	19.018	.000	.026	1502.384	1.000
Intercept	7606.347	1	7606.347	13029.878	.000	.186	13029.878	1.000
Ethnic5Group	223.329	4	55.832	95.642	.000	.007	382.569	1.000
Age4group	4.890	3	1.630	2.792	.039	.000	8.377	.676
Q1_v2	.294	1	.294	.504	.478	.000	.504	.109
Sex	1.641	1	1.641	2.811	.094	.000	2.811	.389
Ethnic5Group * Age4group	21.984	12	1.832	3.138	.000	.001	37.659	.995
Ethnic5Group * Q1_v2	2.861	4	.715	1.225	.298	.000	4.902	.389
Age4group * Q1_v2	2.291	3	.764	1.308	.270	.000	3.924	.352
Ethnic5Group * Age4group * Q1_v2	10.694	12	.891	1.527	.106	.000	18.319	.827
Ethnic5Group * Sex	5.311	4	1.328	2.275	.059	.000	9.098	.669
Age4group * Sex	1.527	3	.509	.872	.455	.000	2.616	.243
Ethnic5Group * Age4group * Sex	6.074	12	.506	.867	.580	.000	10.405	.525
Q1_v2 * Sex	.048	1	.048	.083	.773	.000	.083	.060
Ethnic5Group * Q1_v2 * Sex	.949	4	.237	.406	.804	.000	1.626	.146
Age4group * Q1_v2 * Sex	3.098	3	1.033	1.769	.151	.000	5.306	.465
Ethnic5Group * Age4group * Q1_v2 * Sex	8.144	12	.679	1.163	.304	.000	13.951	.684
Error	33270.929	56994	.584					
Total	160479.000	57074						
Corrected Total	34147.964	57073						

a. Computed using alpha = .05

b. R Squared = .026 (Adjusted R Squared = .024)

Terms used

Ethnic5group: the column heading for the ethnic group of patients in the sample which comprises five categories; white, mixed, Asian or Asian British, black or black British, and Chinese or other ethnic group. This is primarily derived from the response information (Q75) but, if this is missing, sample information is used.

Age4group: the column heading for the age band of patients in the sample and is comprised of four categories; 16-35, 36-50, 51-65, and over 65 years. This is primarily derived from the response information (Q70) but, if this is missing, sample information is used.

Q1_v2: the column heading for the route of admission to hospital that the patient followed. V2 reflects that those who said the route of admission was 'something else' are recorded as being missing responses, so this question only differentiates between 'emergency or urgent admissions' and 'waiting list or planned admission' respondents.

Sex: the column heading for the gender of patients, either male or female. This is primarily derived from the response information (Q69) but, if this is missing, sample information is used.

Appendix 2: Correlations of significant factors to returning a useable questionnaire

Correlations

		Return wave for pts w/ outcome=1	Inside or outside of London	Age group from response or sample age if missing	Ethnic group from response data else sample information if response missing	How old were you when you left full-time education?	Overall, how would you rate your health during the past 4 weeks?	Do you have a long-standing physical or mental health problem or disability?	Was your most recent hospital stay planned in advance or an emergency? (excluding those admitted for 'something else')
Return wave for pts w/ outcome=1	Pearson Correlation	1	**	**	**	**	**	**	**
	N	80991							
Inside or outside of London	Pearson Correlation	.064**	1	**	**	**	**	**	**
	Sig. (2-tailed)	.000							
	N	69478	123257						
Age group from response or sample age if missing	Pearson Correlation	-.130**	-.060**	1	**	**	**	**	**
	Sig. (2-tailed)	.000	.000						
	N	80991	123254	141443					
Ethnic group from response data else sample information if response missing	Pearson Correlation	.104**	.321**	-.153**	1	**	**	**	**
	Sig. (2-tailed)	.000	.000	.000					
	N	80385	113398	130202	130205				
How old were you when you left full-time education?	Pearson Correlation	.050**	.137**	-.349**	.207**	1	**	**	
	Sig. (2-tailed)	.000	.000	.000	.000				
	N	77252	67138	78251	77863	78251			
Overall, how would you rate your health during the past 4 weeks?	Pearson Correlation	.012**	.011**	.130**	-.010**	-.119**	1	**	**
	Sig. (2-tailed)	.001	.005	.000	.005	.000			
	N	78651	68459	79678	79257	77568	79679		
Do you have a long-standing physical or mental health problem or disability?	Pearson Correlation	.012**	.014**	-.175**	.053**	.105**	-.378**	1	**
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.000		
	N	77246	67190	78242	77836	76261	77551	78242	
Was your most recent hospital stay planned in advance or an emergency? (excluding those admitted for 'something else')	Pearson Correlation	-.039**	-.016**	-.018**	-.021**	.003	-.170**	.092**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.476	.000	.000	
	N	74572	64924	75539	74997	72372	73545	72443	75540

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix 3: Revised general linear model of demographic factors influencing response rate to the 2006 inpatient survey

Tests of Between-Subjects Effects

Dependent Variable: Return wave for pts w/ outcome=1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent. Parameter	Observed Power[a]
Corrected Model	1565.974[b]	285	5.495	8.417	.000	2398.898	1.000
Intercept	2204.454	1	2204.454	3376.979	.000	3376.979	1.000
Age4group	5.487	3	1.829	2.802	.038	8.405	.678
Ethnic5Group	24.444	4	6.111	9.362	.000	37.446	1.000
Age of leaving full-time education	5.319	3	1.773	2.716	.043	8.147	.663
Route of admission	.026	1	.026	.040	.842	.040	.055
LondonOrNot	3.895	1	3.895	5.966	.015	5.966	.685
Age4group * Ethnic5Group	12.208	12	1.017	1.558	.096	18.701	.836
Age4group * Age of leaving full-time education	2.803	9	.311	.477	.891	4.295	.241
Ethnic5Group * Age of leaving full-time education	18.661	12	1.555	2.382	.005	28.587	.970
Age4group * Ethnic5Group * Age of leaving full-time education	22.821	33	.692	1.059	.375	34.960	.936
Age4group * Route of admission	6.927	3	2.309	3.537	.014	10.612	.788
Ethnic5Group * Route of admission	5.010	4	1.252	1.919	.104	7.674	.584
Age4group * Ethnic5Group * Route of admission	9.159	12	.763	1.169	.299	14.030	.687
Age of leaving full-time education* Route of admission	1.767	3	.589	.902	.439	2.707	.250
Age4group * Age of leaving full-time education* Route of admission	8.001	9	.889	1.362	.199	12.257	.673
Ethnic5Group * Age of leaving full-time education* Route of admission	13.421	12	1.118	1.713	.057	20.559	.877
Age4group * Ethnic5Group * Age of leaving full-time education* Route of admission	41.922	27	1.553	2.379	.000	64.220	1.000
Age4group * LondonOrNot	2.372	3	.791	1.211	.304	3.634	.328
Ethnic5Group * LondonOrNot	4.359	4	1.090	1.669	.154	6.677	.518
Age4group * Ethnic5Group * LondonOrNot	8.166	12	.681	1.042	.406	12.510	.624
Age of leaving full-time education* LondonOrNot	.900	3	.300	.460	.710	1.379	.144
Age4group * Age of leaving full-time education* LondonOrNot	7.381	9	.820	1.256	.255	11.306	.629
Ethnic5Group * Age of leaving full-time education* LondonOrNot	7.272	12	.606	.928	.517	11.140	.561
Age4group * Ethnic5Group * Age of leaving full-time education* LondonOrNot	21.158	26	.814	1.247	.180	32.411	.939
Route of admission* LondonOrNot	.004	1	.004	.007	.935	.007	.051
Age4group * Route of admission* LondonOrNot	1.157	3	.386	.591	.621	1.773	.174
Ethnic5Group * Route of admission* LondonOrNot	1.834	4	.458	.702	.590	2.809	.230
Age4group * Ethnic5Group * Route of admission* LondonOrNot	5.302	12	.442	.677	.775	8.122	.408
Age of leaving full-time education* Route of admission* LondonOrNot	.332	3	.111	.169	.917	.508	.082
Age4group * Age of leaving full-time education* Route of admission* LondonOrNot	6.771	8	.846	1.296	.240	10.372	.607
Ethnic5Group * Age of leaving full-time education* Route of admission* LondonOrNot	4.388	12	.366	.560	.875	6.722	.334
Age4group * Ethnic5Group * Age of leaving full-time education* Route of admission* LondonOrNot	15.105	23	.657	1.006	.453	23.139	.823
Error	40218.318	61610	.653				
Total	186142.000	61896					
Corrected Total	41784.292	61895					

a. Computed using alpha = .05

b. R Squared = .037 (Adjusted R Squared = .033)