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Original Paper

Survey of the Administration of Quality of Life (QL) Questionnaires in Three Multicentre Randomised Trials in Cancer

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We surveyed centres collaborating in two trials in lung cancer (LU12, LU13) and one in lung and head and neck cancer (CHART) to find out how QL questionnaires were being administered, with the aim of standardising procedures and improving compliance. Dedicated local trials staff were funded for CHART but not for the other trials. In all three trials, patients completed a Rotterdam Symptom Checklist (RSCL) and a Hospital Anxiety and Depression Scale (HADS) at specified times. 17 of 22 LU12 centres, 9 of 11 LU13 and all 10 CHART centres returned survey forms. In LU12 and LU13, the category of staff responsible for questionnaires varied widely; in CHART, only research staff were involved. This led to more consistency in CHART centres in the administration and collection of questionnaires, and more frequent checking of forms. However, even the CHART administration, although better than in the other two trials, could not be regarded as standardised. All centres were equally affected by logistical problems. These embraced organisational deficits (e.g. unavailability of staff, lack of questionnaires) and patient-related factors (e.g. patient deemed to be too ill, had difficulty reading or left before completing the form). Patient refusals were an uncommon reason for non-compliance and patients were considered to be generally in favour of QL assessment. As a result of these findings, a number of measures have been put in place to increase standardisation of procedures and improve compliance. These include publishing guidelines for protocol writing, providing centres with guidelines for QL administration and information leaflets for patients, together with introducing staff training. © **1998 Elsevier Science Ltd.**

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INTRODUCTION

It is increasingly expected that the outcomes measured in randomised trials of cancer treatment should incorporate aspects of quality of life (QL). These include performance status, adverse effects of treatment, palliation of symptoms, activities of daily living and psychological distress. Assessing QL in all these domains is essential when the primary aim of a trial is to improve palliative treatment in patients with poor prognosis, with little expectation of a survival benefit [1, 2].

The MRC Lung Cancer Working Party (LCWP) has been evaluating QL for many years. Initially, assessments were

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confined to the clinicians' assessment of patients' general condition, level of physical activity, degree of breathlessness and adverse effects of treatment [3, 4]. We then developed a Patient Diary Card to be completed daily by patients [5, 6]. It became apparent that the main value of this approach was in documenting rapid changes in physical symptoms and adverse effects during treatment [7, 8]. However, poor compliance was a major limitation of this approach. In more recent trials [9, 10], we have assessed QL using a cancer-specific multidimensional scale, the Rotterdam Symptom Checklist (RSCL) [11] (modified to include lung cancer symptoms), together with the Hospital Anxiety and Depression Scale (HADS) [12].

Whilst such data may be particularly important for patients in the palliative setting to balance symptomatic benefit against adverse effects of treatment, there is nevertheless, a major problem in studying QL in these patients because of the amount of data that is missing as they deteriorate and die, raising serious questions about the reliability of comparisons between treatment groups [13].

Poor compliance in the completion of forms may result from patients' failure to attend at designated times, or being perceived as too ill or distressed to be approached. However, frank refusal is uncommon and organisational problems within institutions may account for a large part of the failure to collect data. These include lack of staff, unavailability of forms, priority given to other matters, failure to check, collect and return forms and staff changes and absences. A first step towards improving compliance is to find out exactly how centres handle QL data collection and to develop guidelines and standard procedures to optimise both the quality and the quantity of information returned.

We therefore conducted the present survey to find out precisely how QL data were being collected in a wide range of U.K. centres and to explore reasons for failure to obtain these data.

MATERIALS AND METHODS

Centres surveyed

The centres surveyed were involved in three randomised trials in which QL endpoints were important. One (LU12) was comparing chemotherapy regimens in small cell lung cancer (SCLC) and the other two, radiotherapy policies in either non-small cell lung cancer (NSCLC) (LU13), or both NSCLC and head and neck cancer (CHART).

No specific support was available to the centres participating in LU12 and LU13. In contrast, in the CHART trial, which was centrally resourced by the Department of Health, staff were employed to collect all the relevant trial data and trained in the administration of QL questionnaires. The RSCL and the HADS were included in all three trials in response to the recommendations made by the MRC Quality of Life Working Party [14]. These three trials were the first MRC trials in which these instruments were used.

The CHART trial differed from the other two in that in each centre a research nurse or research radiographer was funded and assigned to oversee the completion and collection of all data including the QL forms. These research staff were instructed to ensure that questionnaires were answered in full. Centres were also regularly visited by the CHART QL coordinator and a workshop was held to discuss data collection.

The survey questionnaire

The survey questionnaire (see Appendix) was sent to each centre for each trial in which they were collaborating. It was openly worded to encourage comments and the reporting of all relevant problems. It covered the procedures for handing out, completing and collecting QL questionnaires and included questions on changes in staff and procedures, compliance and the potential usefulness of instructions or guidelines for patients and staff.

Named clinicians were targeted in each participating centre and were asked to pass on the survey questionnaire to the person responsible for QL data collection in the trials. When necessary, centres were prompted by telephone to return their completed questionnaire.

Relevant details from the trial protocols

In the LCWP trials, LU12 compared two palliative chemotherapy regimens in patients with SCLC and poor prognosis [9] and LU13 evaluated palliative versus more intensive thoracic radiotherapy in patients with inoperable NSCLC and good performance status [10]. The CHART trial compared continuous hyperfractionated accelerated radiotherapy (CHART) versus conventional radiotherapy in both head and neck cancer and inoperable NSCLC considered amenable to radical treatment [15].

In LU12, patients were asked to complete RSCL and HADS questionnaires pretreatment, at each attendance for treatment (three cycles of chemotherapy at 3-week intervals), then monthly to 6 months from randomisation, 2-monthly to 1 year and 3-monthly thereafter. In LU13, patients were asked to complete RSCL and HADS questionnaires pretreatment, at 1, 2, 4, 6, 9 and 12 months after the start of radiotherapy and 6-monthly thereafter. In the CHART trial, patients were asked to complete RSCL and HADS questionnaires pretreatment, on day 21 of conventional radiotherapy or 3 weeks after the start of CHART, on day 28 of conventional radiotherapy or 4 weeks after the start of CHART, then in both groups 6 weeks and 3, 6, 12, 18, 24 and 30 months after the start of treatment.

For the purpose of this analysis, compliance in providing QL data at baseline was defined in two ways in all three trials as (i) questionnaires completed before the start of treatment (as required by the protocols) and (ii) questionnaires completed within 14 days of the start of treatment, in order to look at the extent of variation in baseline compliance.

RESULTS

Centres and patients studied

As shown in Figure 1, a total of 29 centres took part in one or more of the trials. Survey questionnaires were received from 22 (76%) of the 29 centres.

A total of 2300 patients were randomised in the three trials. In LU12, 310 patients were randomised from 22 centres; 18 centres responded but one had not used QL instruments at all and did not complete the survey questionnaire. The 17 contributing centres accounted for 283 (91%) patients in the analyses. In LU13, 509 patients were randomised from 11 centres, the 9 participating centres accounted for 487 (96%) patients. In the CHART trial, a total of 1481 patients were randomised from 10 U.K. centres and all 10 centres returned survey questionnaires. However, QL assessments did not begin until the trial had been underway for

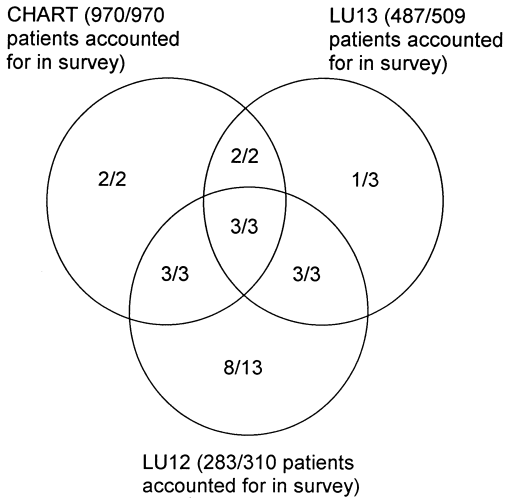

Figure 1. Diagram to show number of participating centres/ number of centres approached for the survey, in each trial: 13 centres in LU12 alone, 3 in LU13 alone, 2 in CHART alone, 3 in both LU12 and LU13, 3 in LU12 and CHART, 2 in LU13 and CHART, and 3 in all three trials.

9 months. There were 970 patients (356 with NSCLC, 614 with head and neck cancer) in the QL study.

The number of patients per centre ranged from 1 to 92 for LU12, from 7 to 149 for LU13 and from 34 to 163 for CHART. In the following analyses, therefore, numbers of centres are shown together with the numbers of patients for which they accounted.

Questionnaire administration at first visit (Table 1)

In LU12 and LU13, there was considerable variation between centres in the category of staff handing out questionnaires at patients' first visits. In the majority of centres, it was either a doctor or a research nurse or research radiographer, but clinic nurses were also involved. In contrast, in all the CHART centres it was a research staff member.

The RSCL and HADS questionnaires include brief explanations on why and instructions on how they should be completed. All centres except one LU12 centre (accounting for only 8 patients) gave verbal explanations as well and most centres gave instructions for completion. The explanations varied in detail, but predominantly concerned the importance of individual patients' information. The value of the data obtained for the management of future patients was, however, emphasised in some centres. Many centres routinely gave detailed verbal instructions, while others gave brief instructions or simply answered any queries raised.

Only one LU12 centre and one LU13 centre (accounting for only 16 patients between them) administered the questionnaires before randomisation. All the others did this after randomisation on or before the day of treatment. Questionnaires were handed out after consultation with the doctor in the vast majority of centres in all three trials.

Questionnaire administration at subsequent visits (Table 2)

The staff handing out questionnaires at subsequent visits were essentially the same as those at the first visit, the figures in Tables *1* and *2* being very similar. At visits subsequent to the first, all the LU13 and CHART centres and all but two of the LU12 centres briefly reminded patients how to complete questionnaires and/or answered queries. Three LU12 and two LU13 centres found that for some patients they needed to supervise completion of questionnaires or give assistance.

Of particular concern, the survey showed that in contrast to the first visit, there was no clear pattern between centres concerning the time at which questionnaires were handed out: before, during or after consultation with the doctor. This was also true for the trained CHART staff.

Problems often affecting the administration of questionnaires (Table 3)

Only two LU12 and two LU13 centres said they had no common problems handing out questionnaires and these accounted for only 19 patients. The problems mentioned by other centres could be categorised as those involving patients, or staff and organisational aspects. The problem most frequently mentioned (affecting a potential 75–96% patients) was that the patient was considered by the staff to be too ill. A related problem, potentially affecting 5–31% patients, was difficulty administering forms if patients were to receive or had received bad news. Surprisingly, at times patients were being asked to complete forms even when they had no or poor English or difficulty in reading. Only one centre (involved in both LU12 and CHART) mentioned patient refusal as a problem.

Table 1. Handing out the questionnaires at the first visit (based on 17 LU12, 9 LU13 and 10 CHART centres)

	Numbers of centres (patients)		
At first visit*	LU12	LU13	CHART
Staff handing out questionnaires (1a)			
Doctor	9 (92)	4 (140)	0 –
Research nurse/radiographer	5 (67)	5 (347)	10 (971)
Nurse or doctor	2 (32)	0 –	0 –
Nurse	1 (92)	0 –	0 –
Stage questionnaires administered (1c)			
Before randomisation	1 (1)	1 (15)	0 –
After randomisation before treatment	9 (191)	7 (363)	8 (818)
On day treatment begins	7 (91)	1 (109)	2 (153)
When questionnaires handed out (1d)			
Before consultation with doctor	2 (94)	0 –	1 (113)
During consultation	2 (11)	0 –	0 –
During or after consultation	0 –	2 (142)	1 (163)
After consultation	13 (178)	7 (345)	8 (695)

*Numbers in parentheses indicate the relevant question in the questionnaire.

Table 2. Handing out the questionnaires at subsequent visits (based on 17 LU12, 9 LU13 and 10 CHART centres)

	Numbers of centres (patients)		
At visit*	LU12	LU13	CHART
Staff handing out questionnaires (2a)			
Doctor	8 (38)	3 (31)	0 –
Research nurse/radiographer	5 (67)	5 (347)	10 (971)
Nurse or doctor	2 (60)	0 –	0 –
Nurse	2 (118)	1 (109)	0 –
When questionnaires handed out (2c)			
Before consultation with doctor	6 (201)	5 (333)	6 (621)
During consultation	2 (28)	0 –	0 –
Before or after consultation	2 (11)	1 (133)	2 (239)
After consultation	7 (43)	3 (21)	2 (111)

*Numbers in parentheses indicate the relevant question in the questionnaire.

Table 3. Problems often affecting the handing out of questionnaires (question 2d) (based on 17 LU12, 9 LU13 and 10 CHART centres)

	Numbers of centres (patients)		
Problems*	LU12	LU13	CHART
Problems involving patients			
Considered to be too ill	12 (271)	5 (451)	7 (727)
Received bad news	2 (13)	1 (149)	2 (271)
No or poor English	2 (21)	1 (16)	1 (70)
Difficulty reading	3 (26)	1 (16)	3 (253)
Refusal	1 (3)	0 –	1 (149)
Problems involving staff			
On holiday	3 (54)	2 (60)	1 (70)
Not available	2 (107)	3 (154)	4 (364)
Unfamiliar with procedures	1 (54)	1 (109)	1 (119)
Compliance at peripheral clinics	1 (2)	1 (133)	2 (276)
Overlooked in error	2 (3)	2 (148)	1 (163)
Problems with questionnaires			
Not available or run out	4 (163)	2 (242)	3 (352)
No problems	2 (3)	2 (16)	0 –

*Not mutally exclusive.

Problems involving staff were mentioned by fewer centres than those involving patients. Those most frequently mentioned were staff being on holiday or not available for other reasons, staff being unfamiliar with procedures, poor compliance with trial procedures in peripheral clinics and simply forgetting to hand out the questionnaires. Training and resourcing of CHART centres appeared to have no impact on these organisational problems. Moreover, lack of availability of questionnaires was reported by four LU12, two LU13 and three CHART centres, potentially accounting for substantial numbers of patients (163, 242 and 352, respectively).

Completing questionnaires (Table 4)

There was no consistent pattern across trial centres as to when questionnaires were filled in and this largely reflects the variation in timing of administration. Questionnaires could be completed before or after seeing the doctor. One CHART centre indicated that questionnaires were given to patients to be completed at home after a clinic visit and that such patients were provided with stamped addressed envelopes. Many centres were affected by lack of privacy and quietness for patients completing their forms. In all three trials, most centres never or rarely gave help or only when needed or requested. When help was given, this could be provided by any categories of staff, or by relatives or, in one LU13 centre, a secretary.

Patients' reactions to completing QL instruments as reported by staff

We asked centre staff to provide comments on patients' reactions to completing QL instruments (question 3d) and categorised these as essentially favourable, neutral or unfavourable. Among the 20 (91%) centres that answered the question, responses were generally favourable in 14, neutral in 5 and unfavourable in only 1. A number of centres commented that patients took these questionnaires seriously and were impressed by the interest being shown in how they felt. However, they reported that exception was sometimes taken to the question on decreased sexual interest. It is assumed that patients, many of them old and ill, found this question embarrassing and irrelevant. Some centres considered that patients found the HADS questions more difficult to answer than the RSCL questions and that there was too much repetition between the two. It is beyond the scope of this survey to explore any relationship between perceived reactions and category of staff involved due to wide variation between centres.

Table 4. Completing questionnaires at first and subsequent visits (based on 17 LU12, 9 LU13 and 10 CHART centres)

Completion of questionnaires*	Numbers of centres (patients)		
	LU12	LU13	CHART
When completed (3a)			
At home before visit to clinic	1 (2)	0 –	0 –
Before seeing doctor	5 (61)	4 (224)	4 (468)
Before or after seeing doctor	1 (92)	0 –	0 –
After seeing doctor†	7 (115)	5 (263)	3 (230)
IP before, OP after seeing doctor	1 (8)	0 –	0 –
Immediately before treatment	1 (2)	0 –	0 –
At home after visit‡	0 –	0 –	1 (90)
Question not answered	1 (3)	0 –	2 (183)
Where completed (3b)§			
Inpatients			
Open ward	6 (98)	2 (125)	2 (189)
Side room or quiet room	4 (39)	2 (156)	1 (122)
Outpatients			
Consulting room	4 (106)	5 (300)	4 (393)
Cubicle	3 (127)	0 –	1 (70)
Clinic room	1 (15)	1 (16)	1 (70
Waiting room	8 (77)	8 (480)	6 (628)
Corridor	1 (54)	1 (109)	1 (119)
Wherever patients happen to be	1 (54)	1 (109)	1 (119)
At home	1 (54)	2 (118)	2 (209)
Question not answered	1 (3)	0 –	2 (183)

*Numbers in parentheses indicate the relevant question in the questionnaire. †Sometimes at home (stamped addressed envelope then usually provided). ‡Stamped addressed envelope usually provided. §Not mutally exclusive.

Checking and collection of completed questionnaires (Tables 5 and 6)

As can be seen from Table 5, staff in all three trials varied greatly in when they collected completed questionnaires and in who was responsible, although there was more consistency in the CHART centres. Approximately half the centres said that they did not experience any problems with the collection of questionnaires. When forms were not collected, the most frequently mentioned problem was that patients were leaving the clinic before completing them. More CHART centres said that it was their practice to check questionnaires and give them back to patients if they had not been completed than centres involved in the LCWP trials. The five LU12 and two LU13 centres that did not check questionnaires accounted for a potential 174 and 177 patients, respectively.

Changes in procedure or staff (question 5a)

In eight LU12, two LU13 and seven CHART centres, there had been changes in procedure or staff involved in data collection during the course of the trial.

Ways compliance could be improved (question 5b)

The great majority of responses to the question about ways compliance could be improved related to staff. In order of frequency, they were: identifying staff members responsible for and dedicated to QL study (9 centres), more staff or more staff per patient (5), adequate staff cover (3), centralising follow-up (2), fewer staff changes (1) and instruction of new staff (1). Other suggestions were: QL leaflets to give to patients (3), simpler instruments (3), labels for patients' notes (2) issuing questionnaires in advance (2). However, 13 centres made no suggestions.

Written instructions (questions 5c and 5d)

28% of centres, including nearly half the CHART centres, said that written instructions about QL administration for staff would be helpful and a further 14% were equivocal, saying they would need to see the instructions before giving a firm answer. 64% said that they would or might find information on scoring useful.

Identifying trial patients and procedures

Only 53% of LU12, 56% of LU13 but all CHART centres said that it was always clear to the staff if a patient was in a trial and when to administer QL instruments.

Comments and suggestions

There were three comments from centres concerning the QL questionnaires themselves. First, the layout of any one instrument should always be identical across trials (this was not the case for the RSCL in the trials surveyed as both the LCWP and CHART steering groups had redesigned the layout from the original Dutch design). Second, the RSCL and HADS together were considered too detailed and too repetitive. Third, some centres thought questionnaires should be printed single-sided.

Additional comments relating to patients included: patients' need for more privacy when completing questionnaires; those unwilling to comply with QL assessments should not be randomised into trials; and some did not understand the word 'nausea'.

Two general comments were made. First, all the trial forms for each assessment should be attached together, to ensure that none of them were missed; and second, QL assessments were perceived to be difficult to make and hence of limited value during terminal illness.

Compliance in providing baseline QL data

In the LU12 trial, RSCL questionnaires were received before the start of treatment for 194 (63%) of the 310 patients and a further 73 (24%) were returned within 14 days of the start of treatment. Baseline RSCLs were missing for 43 (14%) patients.

In the LU13 trial, pretreatment RSCLs were received for 400 (79%) of the 509 patients. During the first 2 weeks, RSCLs were received for a further 81 (16%) patients. Baseline RSCLs were missing for 28 (6%) patients.

In the CHART trial, pretreatment RSCLs were received for 848 (87%) of the 970 patients, with a further 86 (9%) received during the first 2 weeks. Baseline data were missing for 36 (4%) patients.

The compliance rates in providing pretreatment HADS forms were very similar (LU12, 62%; LU13 78%; CHART 87%). Baseline HADS were missing for 46 (15%) LU12 patients, 29 (6%) LU13 patients and 30 (3%) CHART patients.

Compliance in providing questionnaires was statistically significantly worse in LU12 than in the other two trials ($P < 0.0001$).

Missing items

Of the total baseline RSCL forms returned, missing responses to one or more questions occurred more frequently in LU12 and LU13 than in the CHART trials. The proportions were 22, 14 and 6%, respectively. There was no difference in the percentage of missing items for those forms returned before versus after the start of treatment in any of the trials. There were more missing items in LU12 than in LU13 ($P = 0.002$) and in LU12 and LU13 than in CHART ($P < 0.0001$). Items were rarely missing from the HADS forms.

DISCUSSION

Experience of these early trials has shown that it is more difficult to complete the QL component successfully in clinical trials protocols than was anticipated. Concern about the level of missing QL data motivated this survey, to try to shed light on data collection procedures and identify ways to improve them. The survey was exploratory and descriptive in design, to encourage QL staff to make comments and suggestions.

As an indicator of the possible impact of local data collection practices, the number of trial patients treated at each centre was included. Centres not returning the survey forms accounted for a small proportion of patients, so that the data presented represents over 90% of the workload.

Some factors which we now know may have been important with regard to compliance were not covered by the survey. For example, QL staff may be involved in a number of trials within any one centre and no attempt was made to look at the throughput of patients overall, or at the time available for QL studies. Equally, no attempt was made to ascertain the experience or awareness of staff in QL research generally. Thus, the motivation for and the understanding of the priority given to QL protocols cannot be judged, but may be important.

Table 5. *Collection of completed instruments (based on* 17 *LU*12, 9 *LU*13 *and* 10 *CHART centres)*

	Numbers of centres (patients)		
Collection*	LU12	LU13	CHART
When collected (4a)			
On arrival in the clinic	1 (2)	0 –	0 –
As soon as completed	5 (62)	3† (69)	3 (302)
Before consultation	0 –	1 (149)	1 (122)
During consultation	3 (147)	2 (124)	0 –
During treatment	2 (15)	0 –	0 –
IPs as soon as completed, OPs during consultation	1 (26)	0 –	0 –
IPs during consultation, OPs when patient leaves	1 (8)	0 –	0 –
After consultation†	1 (1)	2 (140)	1 (163)
When patient leaves†	2 (19)	1 (5)	2 (111)
At any time during visit	0 –	0 –	1 (90)
Question not answered	1 (3)	0 –	2 (183)
By whom collected (4b)			
Doctor	6 (73)	3 (131)	0 –
Doctor or nurse	2 (94)	0 –	0 –
Research nurse/radiographer	3 (27)	4 (214)	8 (788)
Research nurse or nurse	1 (37)	0 –	0 –
Nurse	1 (9)	1 (9)	0 –
IPs doctor, OPs nurse	1 (8)	0 –	0 –
IPs nurse, OPs doctor	1 (26)	0 –	0 –
Doctor, research nurse, nurse or receptionist	0 –	1 (133)	0 –
Whoever issued them	1 (6)	0 –	0 –
Question not answered	1 (3)	0 –	2 (183)
Checked, given back if necessary (4c)			
Yes	10 (52)	6 (201)	8 (788)
Sometimes	1 (54)	1 (109)	0 –
No	5 (174)	2 (177)	0 –
Question not answered	1 (3)	0 –	2 (183)

*Numbers in parentheses indicate the relevant question in the questionnaire.†Sometimes at home (stamped addressed envelope then usually provided).

Table 6. Problems affecting the collection of questionnaires (question 4d) (based on 17 LU12, 9 LU13 and 10 CHART centres)

Problems*	Numbers of centres (patients)		
	LU12	LU13	CHART
Problems involving patient			
Leaves before completing†	2 (11)	2 (164)	1 (122)
Called away for tests	1 (92)	0 –	0 –
Takes them home to fill in†	2 (64)	2 (258)	1 (122)
Problems involving staff			
Doctor on leave	1 (2)	0 –	0 –
Research nurse not in clinic	1 (15)	1 (16)	1 (70)
Compliance in peripheral clinics	0 –	1 (133)	1 (163)
No problems	9 (80)	4 (65)	5 (433)
Question not answered	1 (3)	0 –	2 (183)

*Not mutually exclusive. †Stamped addressed envelope then usually provided.

It was anticipated that it would be possible to collect virtually all baseline data, but in reality the figures were far lower (63–87%). We set out to contrast centres that had additional resources for QL (CHART) with those that did not, but any comparison is necessarily limited. First, there was an overlap of centres contributing to the respective trials and second, a number of factors may confound reliable comparisons of compliance. These include differences in cancer type, levels of performance status, logistics of treatment and survival expectations. As a result, a comparison of compliance was limited to baseline data, where some of these confounders would have a minimal impact. Whilst we have to accept that the characteristics of the patients varied considerably between trials, the procedure to collect baseline data should be generalisable across the three trials. A relationship between decreasing compliance and increasing impairment of performance status has often been reported [16, 17] and will affect all centres treating patients with advanced cancer. Attempting to collect QL data in patients in an advanced stage of disease is difficult, as raised by some participants' comments. Treatment comparisons are made earlier in the course of the disease. Nevertheless, attempts are needed to collect data during terminal illness; we cannot assume such data would be uninformative, if they could be obtained and it is important to study the adequacy of palliative treatment for as long as is feasible.

It was surprising to find that more than 10% of baseline data was missing for the CHART trial, given the added resources and training inputs designed to ensure high compliance. The amount of missing data in the LCWP trials (LU12, LU13) is of even greater concern. The trial coordinating centre can only do so much and individual centres must take responsibility for setting up and implementing local procedures.

The survey has helped to shed light on potentially reversible reasons for reduced compliance. These include organisational factors such as staff absences, lack of availability of forms, lack of awareness of patients in trials and forgetfulness. Clearly defined procedures and efficient handovers can minimise these problems. The MRC Cancer Trials Office now provides case-note stickers for trial patients and reminders about crucial assessment points. Timetabling of future assessments may also help in staff planning to cover holidays. Interim analyses of these trials revealed that a substantial proportion of clinicians' report forms had also not been returned when expected. However, active liaison between the trials office and individual trials centres resulted in 98% of baseline clinicians' data being finally obtained. In some cases, case-notes were reviewed by the clinicians to obtain the necessary data. In the case of QL forms, reminders for late forms are much less productive. If the forms are not completed on the day, they cannot be provided one or two months later. However, even designated research personnel can only work within the resources of their own institution and such trials should be adequately costed to ensure that support for the essential data collection is provided.

Other avoidable reasons for missing data include the obvious problems of approaching patients who do not speak or read English or who have declined to participate in the QL study. Clear eligibility criteria are now written into protocols and patients are provided with information sheets about QL questionnaires so that this can be discussed at the stage of informed consent. The survey revealed that it was unusual for the first questionnaires to be completed before randomisation, yet this might help ensure good compliance at baseline and is now (usually) an eligibility requirement. This still requires centres to develop a reliable system of informing QL staff of new trial recruits and more recent analyses show that it is still difficult to achieve 100% compliance pretreatment. In addition to logistical problems, this may reflect an ongoing lack of serious commitment to QL protocols as well as a continuing lack of resources.

The survey revealed no general pattern to the administration and completion of questionnaires and there were few differences between the CHART centres and other trial centres with respect to timing of QL data collection (before or after consultation with a doctor) or problems encountered. This is surprising, given the opportunities for training in the CHART trial. We can conclude that the category of staff (designated research person versus varied personnel) is not in itself an important determinant of successful data collection. By implication, the standardisation of procedures, taking account of problems raised in this survey, must be a major aim in both protocol guidelines and training initiatives. Where there was a significant and important difference in the quality of the data was in the proportion of missing items from completed questionnaires. Here the CHART data were superior (presumably as a result of training and monitoring), although there was also a significant difference between LU13 and LU12 data, suggesting that the physical status of patients may also be a factor. CHART centre staff were more consistent in identifying the person responsible for administering QL assessment and in the important function

of checking forms. This has implications for the provision of support and training for all QL personnel.

In all three trials, the most common reported reason for staff not handing out questionnaires was that the patient was considered to be too ill (or was about to be given or had been given bad news). It is important to appreciate that the 'burden' of completing a QL questionnaire is a staff perception and does not directly reflect refusal rates by patients (which were low). However, although we can well understand the reticence of staff in these situations, we need to consider the possible negative impact on patients of abruptly withdrawing this form of assessment, particularly given the feedback from staff that patients were appreciative of this interest in their well-being. To stop asking about quality of life when patients are withdrawn from trial treatment or know their disease is progressive may increase their fears of abandonment by the professionals or their assumptions that 'nothing can be done'. Training staff with communication skills to handle these sensitive situations would make them more comfortable in approaching, rather than avoiding, patients at this stage. This is particularly necessary for data managers or research staff who are not otherwise handling patients in the clinical setting. It is perhaps worth noting that other trials reporting high levels of compliance in patients with advanced lung cancer either restricted QL to patients with a moderately high performance status grade [18] or limited QL to patients 'judged to be capable of complying' [19] and therefore avoided the problems outlined above.

Were other potentially useful training inputs revealed by the survey? Areas of ignorance were apparent. First, some staff were unaware of the justification for using two patient-rated scales or thought they could be shortened for an easier assessment of QL. They perceived an overlap of questions without appreciating the different domains of interest in the two questionnaires. We suspect that few centres used the HAD scale as a clinical screening tool, although it has considerable potential in this application. QL staff need to understand why specific QL forms are selected, the reasons for the inclusion of all the items (particularly those such as sexual interest that may not always be applicable) and to be shown the kind of information that can be generated by such tools. Second, QL staff need to understand the implications for analysis of missing data and the importance of specific assessment points. They need clear instructions about how to proceed if there is deviation from the protocol, for example, a patient attending too early or too late. We now discuss with staff the concept of protocol 'windows' (i.e. the range of dates around an assessment point for which data will be acceptable) and what to do if a window is missed. Staff also need easy access to a named person in the trials office for advice on such problems as and when they arise.

Some constructive criticisms were fed back to us from survey respondents, showing the value of asking 'front line' staff about their experiences (this has proved valuable in subsequent training days also, particularly in relation to trial-specific issues). A number of these comments have been acted on, such as providing a patient information leaflet, development of guidelines for QL administration, identifying designated QL staff, providing labels for patients' notes and providing adequate supplies of questionnaires. The need to standardise the format of the RSCL was also a serious point raised, highlighting the need for better coordination of QL research within the trials office.

As a result of this survey we have revised protocol procedures and published guidelines and a checklist for the preparation of protocols [8]. Protocols now include full justification both for making QL comparisons and for the choice of QL instrument(s). QL objectives and endpoints must also be clearly set out and defined [2].

An information pack is now sent to all participating centres. This details the procedures for QL assessment and includes copies of the guidelines for QL administration, copies of questionnaires and stickers for patients' notes.

The QL administration guidelines address: the rationale for collecting QL data, the choice of questionnaires, the importance of compliance and of checking completed questionnaires, default, staff responsibilities, absences and changes, and the role of the MRC Cancer Trials Office. The patient information leaflet is included and practical points are summarised in a checklist. The main points made in these guidelines are as follows.

(1) One named member of staff should be made responsible for the administration of QL questionnaires for each trial at each centre, and a named deputy appointed in their absence. The responsible staff member must explain to the patient the importance of QL assessment and how to complete the questionnaires.
(2) The first questionnaires should be completed before randomisation. During treatment periods, questionnaires should be completed before treatment is given; on all occasions, they should preferably be completed before the patient is seen by medical staff.
(3) The patient should complete the questionnaires without conferring with a relative or member of staff.
(4) The questionnaires must be checked to ensure that all questions have been answered. If necessary, the patient should be asked immediately to fill in any missing items. There must, however, be no compulsion.
(5) If an assessment is missed because of administrative failure, the patient should be contacted by telephone or letter and asked to complete and return (in a stamped addressed envelope provided) mailed questionnaires as soon as possible. Patients should be encouraged to ask for forms if not given them.
(6) If a QL questionnaire is completed not according to protocol—at home, with help, after seeing the doctor—this must be indicated on the form.

These approaches help to raise the profile of QL studies. It will be important to see how well they are followed and how they and training workshops, influence compliance and hence the reliability of treatment comparisons in the future.

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APPENDIX: THE QUESTIONNAIRE

Survey of administration of quality of life (QL) questionnaires

This is a survey of the problems associated with the application of quality of life questionnaires and in order to improve compliance we need to know what actually happens in your centre.

Throughout this survey please identify any difficulties in handling different quality of life questionnaires (RSCL and HADS).

Section 1—Handing out the questionnaire at the first visit

(1a) Who hands out the QL questionnaires?
(1b) What explanation and/or instructions are given to the patient when the questionnaires are handed out?
(1c) At what point in the procedure of consent, randomisation and attending for the first treatment are the questionnaires administered/completed?
(1d) When, exactly, are the questionnaires handed out at that visit? (e.g. before or after consultation with the doctor).

Section 2—Handing out the questionnaires at subsequent visits

(2a) Who hands out the QL questionnaires?
(2b) What instructions, if any, are given to the patient when the questionnaires are handed out?
(2c) At what point in the patient's visit are the questionnaires handed out (e.g. before or after consultation with doctor)?
(2d) Are there any associated problems that often affect the handing out of the questionnaires (e.g. patients too ill, questionnaires not available, nobody to administer the questionnaires, etc.)?

Section 3—Completing RSCL and HADS (at first and subsequent visits)

(3a) At what point in the patient's visit are the questionnaires completed?
(3b) Where does the patient complete the questionnaire (e.g. alone in consultation room, in busy waiting room)?
(3c) Does the patient complete the questionnaire without help? If not, what help is given by whom, and how often is help needed (a) RSCL (b) HADS?
(3d) How do patients react to completing (a) RSCL and (b) HADS?

Section 4—Collection of RSCL and HADS (at first and subsequent visits)

(4a) At what point in the patient's visit are the questionnaires collected?
(4b) By whom are the questionnaires collected?
(4c) Are the questionnaires checked and if necessary given back to the patient (e.g. for a missing item)?
(4d) Are there any associated problems regarding the collection of the questionnaires (e.g. patients leave before questionnaires are collected, etc.)?

Section 5—General queries

(5a) During the trial, have there been any changes in procedure or staff involved with the data collection?
(5b) In which way could compliance be improved in your centre?
(5c) Would written instructions about QL administration be helpful to you (not for the patient)?
(5d) Would information regarding scoring be useful?
(5e) Is it always clear to the staff if a patient is in a trial and if so when to administer QL?

Comments and suggestions