Author's response to reviews

Title: A pre-post test evaluation of the impact of the PELICAN MDT-TME Development Programme on the working lives of colorectal cancer team members

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Author's response to reviews: see over
Dear Diana,

A pre-post test evaluation of the impact of the PELICAN MDT-TME Development Programme on the working lives of team members
Taylor, C; Sippitt, J; Collins, G; McManus, IC; Richardson, A; Dawson, J; Richards, MA; Ramirez, A.J

Thank you for accepting this manuscript for publication in BMC Health Services Research, subject to response to comments from reviewers’ and the editorial board. We have aimed to address all comments received.

Reviewer One

- Rationale for the strong recommendation to attend the Pelican MDT-TME Development Programme: As we are sure the reviewer is aware, this was in response to the fact that rectal cancer survival rates in the UK were lagging far behind those in other countries such as USA, Japan and France (Coleman et al, 2008). This poor survival was likely to be related in part to surgical technique, and in particular to poor usage or poor quality of TME surgery (which has been proven to reduce recurrence of rectal cancer, reduce the incidence of morbidity such as impaired sexual function, and improve survival). The Development Programme began as a surgical course, modelling the success of the course in Stockholm (Martling et al, 2004), but very quickly became MDT-based due to recognition of the importance of the contribution of other core team members on patient outcome. As the reviewer implies, surgical precision is reliant on sharing of accurate histology and imaging pre- and post-operatively, and the Development Programme included education from leaders in the field of histopathology and radiology for rectal cancer for the benefit of the MDT histologists and pathologists. The invitation to attend the Pelican MDT-TME Development Programme was extended to all English colorectal teams. There was no attempt to select colorectal surgeons or other team members according to their relevant competence in TME surgery. We found no evidence that there was resentment about attending this course.

Nature of the interpretation of the reduction in job stress experienced by study participants: Our interpretation of these findings is indeed speculative. The findings have been challenging to interpret but we have used the best available evidence to do so. As Reviewer 1 himself acknowledges that the course was "an extremely valuable process that increased standards nationally". It is this increase to standards nationally, resulting from sharing of best practice that we think may explain the changes to job stress, and we have included personal communications regarding MRI usage and lymph node harvesting to support these improvements to standards nationally, due to the fact that clinical outcomes data has yet to be published. The perceived benefit of the MDT-TME Programme is further reinforced by the fact that the Programme is now being rolled-out across Denmark. In response to reviewer 1's comments that our interpretation is 'arrogant' we would emphasise that these data are based on average changes. We are not claiming that changes to scores would have been identical in direction or magnitude of change for every team member. We have inserted the word 'average' into the first sentence of the discussion, which now reads: "For the colorectal team members we evaluated, participating in the MDT-TME Development Programme was associated with a decrease in average levels of job stress and job satisfaction six to eight weeks post-course". We have also revised the second paragraph of the discussion to ensure the speculative nature of our interpretation is explicit. This now reads "These findings are challenging to interpret. The decrease in team members' job stress may reflect the improved knowledge and skills that the Development Programme conferred". We have made a similar change to the text in the conclusion of the paper which now reads: “Although challenging to interpret, the decrease in team members’ job stress may reflect the improved knowledge and skills conferred to many participants by the Programme”.

Colorectal cancer, MDT working and poor mental health: It was an oversight that we did not include citation of the Sharma et al 2007 paper. We have now included reference to this paper in the introduction where we present the rationale for undertaking this evaluation. We did not measure psychiatric morbidity in this study but have previously established the relationship between the job stress/satisfaction measures and psychiatric morbidity in cancer consultants (Taylor et al, 2005). This previous work enabled us to draw inferences regarding the meaningfulness of the findings in this current study in relation to their potential impact on mental health of team members. We agree unreservedly with reviewer 1’s comment about the importance of the relationship between job stress/satisfaction, poor mental health and patient care. Indeed we have previously published data that demonstrate the association between poor mental health in doctors and poor quality patient care. Over 1300 consultants completed our national survey in 2002 which revealed that doctors with poor mental health (GHQ-12 scores ≥4) are twice as likely to be irritable with their patients and with their colleagues, to reduce their standards of care (such as taking short cuts), to drink hazardous levels of alcohol, and to intend to retire early, compared to doctors with GHQ scores <4 (Taylor et al, 2007). We have not included reference to this body of work or that highlighted by Reviewer 1 in the revised manuscript but we would be happy to do so, if that was considered appropriate.


Reviewer 2:

- **The prevalence of poor mental health in UK cancer consultants:** We did not mean to imply that a third of our sample was mentally ill, rather that a third reached the threshold on an instrument that estimates psychiatric morbidity. We estimated the prevalence of psychiatric morbidity in a national sample of hospital consultants using the General Health Questionnaire (12-item version). This instrument has been validated against gold standard clinical interviews where scores of 4+ (out of 12) indicate the likely presence of psychiatric morbidity. The sensitivity and specificity of the measure validated in a study of UK NHS staff was found to be 73% and 86% respectively (Borrill et al, 1996). Although the GHQ-12 only provides an estimate of psychiatric morbidity, the same instrument has been used in general working population samples (such as the British Household Panel Surveys) where the prevalence of the population with scores of 4+ is much lower than that found in consultant populations (around 18% compared to 27-32% in our previous studies of hospital consultants). We have included reference to the measure and threshold (GHQ-12 scores $\geq$ 4) in the introduction and discussion when we refer to these previous studies and inserted the word 'estimated' into sentence that describe the prevalence we found in these studies.


- **Date of receipt of follow-up responses:** We did not record the date of receipt of responses to the follow-up questionnaire and so are unable to assess whether there was any bias introduced due to timing of response. We think this is unlikely as the period of response would have only varied by up to 6 weeks (from immediate responders to those who responded after a second reminder).

- **Job stress and satisfaction questionnaires:** Page 6/7, description of the job stress and satisfaction sources has been revised to state: ‘Job stress and satisfaction sources scores: Factor analysis was used to explore the grouping of individual stress and satisfaction items. All job satisfaction items aggregated too one of seven main sources of satisfaction. Most job stress items aggregated to one of eight main sources of job stress’.

- **Domains of the ATPI:** The domains of the ATPI are provided in table 2 which includes a short description of each domain. The following sentence has been inserted into the methods section: “Individual statements also aggregated to one of six domains of team-working (Table 2)”.

- **Adjustment for multiple testing:** As this study was an observational exploratory study we have not adjusted for multiple testing. All p-values presented are non-adjusted. The majority of p-values reported either far exceeds the traditional and arbitrary 0.05 level, or are much smaller than 0.05 and as such adjusting these p-values post-hoc would not change any of the conclusions in the paper. The sentence regarding multiple testing in the statistical method section has been changed to: “Due to the exploratory nature of this study, no adjustment was made for multiple testing”.


• **Content analysis of open question:** This text has been changed to read: “Responses to the pre-course open-ended question about team members’ expectations of the Development Programme were read and main themes described independently by four members of the research team. Once themes were agreed, one member of the research team coded each response according to the agreed framework”.

• **Adequacy of skills training:** The data presented about adequacy of skills training was completed prior to attending the Development Programme. This is clarified on p 8 in the methods section of the manuscript and re-emphasized on p12 in the results section.

• **P13 line 6-8:** This sentence refers to the previous studies conducted by the authors in which psychiatric morbidity was estimated using the GHQ-12 in cohorts of consultants in 1994 and 2002. These previous studies are relevant to the interpretation of findings of this current study because the same job stress and satisfaction measures were used and similar changes in job stress and satisfaction were observed over the time period of the previous cohort study which explained the deterioration in mental health. This section has now been revised to read: “The magnitude of the decrease in team members’ levels of job stress and job satisfaction was similar to the increase in levels of job stress reported by UK hospital consultants between 1994 and 2002 using the same measures (Taylor et al, 2005). The increase in levels of job stress explained a five percent increase in prevalence of estimated psychiatric morbidity among UK hospital consultants over that time period (from 27% to 32% with GHQ-12 scores ≥4).”


• **Line 14, line 9:** The evidence regarding the relationship between MDT working and job satisfaction and wellbeing of team members has been updated. This now reads: “This finding is consistent with findings from a national survey completed by over 2000 MDT members in England, of whom 90% agreed that MDT-working is beneficial to the mental health and wellbeing of team members, and 81% agreed that being an MDT member improves job satisfaction. The perception that teamworking improves patient care fits with the emerging evidence that multidisciplinary teams are beneficial in terms of disease management and clinical outcomes”.

Taylor C, Ramirez AJ. Multidisciplinary team members’ views about MDT working: results from a survey commissioned by the National Cancer Action Team. National Cancer Action Team (www.ncin.org.uk); 2009.


• **MDT coordinators:** MDT coordinators are a core member of the MDT model in the UK. The importance of adequate preparation and organisation for MDT members has recently been supported in a nationwide survey completed by over 2000 cancer MDT members. This survey has culminated in the publication by the UK National Cancer Action Team of ‘The Characteristics of Effective Multidisciplinary Teams’ (NCAT, 2010) wherein the importance of having an MDT coordinator who is recognised as a core member is explicitly acknowledged. Reference to this report and a previous study citing the importance of MDT coordinators specifically in the colorectal cancer setting (Kelly et al, 2003) has been included in the revised manuscript. The following sentence has been inserted in the discussion: “The importance of MDT coordinators for effective MDT working has been acknowledged (NCAT, 2010; Kelly et al, 2003)”
Additional strength of the sample: We have inserted the following sentence into the discussion: “We received completed questionnaires from 82% of delegates pre-course and found no difference in total job stress and satisfaction scores between those who responded to follow-up and those who did not”.

Length of follow-up: We have amended text in the discussion to read: “The relatively short timeframe of follow-up may have impacted on the results. Benefits may have dissipated in the long-term. Alternatively, gains in job satisfaction may have been reported in the longer term, once the challenges of instigating the necessary service changes had been overcome”.

P16: conclusions: This interpretation of findings is presented at the beginning of the discussion, as well as within the conclusion.

Manuscript length: We have incorporated the additional detail requested by Reviewer 2, without significantly increasing the length of the manuscript.

Editorial Board
• Possible impact of evaluation on staff in training: This issue did not arise because our evaluation only included the core members of the MDT (the consultant members of medical staff, the clinical nurse specialist and the MDT coordinator). Anyway, participation in our evaluation was confidential. Questionnaires were sent to each core member personally and neither their team members nor the course organisers would have known whether they had participated in the evaluation or not. We have inserted the word ‘consultant’ into the description of the participants in the methods section of the revised manuscript.

We look forward to hearing from you.

With kind regards,

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