PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Cross-sectional Study of the Provision of Interventional Oncology Services in the United Kingdom
AUTHORS	Zhong, Jim; Atiiga, Peter; Alcorn, Des; Kay, David; Illing, Rowland; Breen, David; Railton, Nicholas; McCafferty, Ian; Haslem, Philip; Wah, Tze

VERSION 1 - REVIEW

REVIEWER	Miltiadis Krokidis MD, PhD, EBIR, FCIRSE, FRCR Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK
REVIEW RETURNED	30-Apr-2017

GENERAL COMMENTS	This is truly an interesting analysis of the provision of interventional oncology services in the United Kingdom. My main points are the following: - It will be useful to include in your results the responses of the section A of the questionnaire. We take for granted that IO will be provided within an IR department, however this is not always the case, as there are diagnostic radiologists that may also perform therapeutic procedures. What needs to be included in the analysis is if IO is provided by IRs (that perform also on-call service for general emergency procedures i.e. bleeding embolisation etc) or not. - I retain that is difficult to consider tumour biopsy as a supportive/ symptomatic procedure as it is a purely diagnostic procedure and can be performed by the vast majority of diagnostic radiologists. It is useful to know which trusts can perform biopsies for cancer however I am not sure that this is an IO service and I think the result is a bit deceiving. Specifically on the document: - Line 100:The numbers are a bit confusing. 70 + 73 = 143, the one is missing is included in the text and is the one with formal referral pathway for supportive IO, but this needs to be clarified in the abstract. I retain that since 144 were those that provide IO services of some form, the % have to be out of 144. 43+14= 16, what is the response of those 16? Have they got plans for a future pathway? - Line 181: Did you also consider therapeutic TAE or only the chemoembolization service? - Line 190: It will be useful to provide a chart of the whole number analysis

	- Line 234: You need to emphasise that IO is linked with IR recruitment and the provision of general and on-call IR services. Line 247: As mentioned above, I think that the IR out of hours provision is actually linked with the provision of IO services not only for the presence of supportive services in small district hospitals but also for the provision of therapeutic services in big centres, as recruitment for IO will have to come through IR, and the main recruitment drive at the moment is the provision of on-call IR services. Line 399: I think that the Table 1 needs to split between the supportive and the therapeutic trusts. % should be out of 144 in my view. Interestingly image-guided biopsy is not provided by all Trusts. How is this explained? If biopsies are not provided by 144-137=7 Trusts then what other procedures are performed? Line 403: Is the prostate ablation performed for cancer reasons? Figure 3: I don't think it is necessary as everything is described in the Tables.

REVIEWER	Pippa Hawley British Columbia Cancer Agency and University of British Columbia, Canada
REVIEW RETURNED	07-Jun-2017

GENERAL COMMENTS	Thanks for caring it this exhaustive survey of interventional oncology services in the UK. I think it adds usefully to the literature to guide service development in the UK and also provides a reference for other health care systems to use when developing their services. I think it is a bit over-long and some superfluous sections can be removed without losing content. For example, the 2 tables and 2 figures describing the types of procedures offered duplicate the presentation of simple numerical data. I would pick one (table) or the other (figure) but not both. If you choose the tables I would reverse the order so that the most common are at the top (as per the figures). I also wonder why cementoplasty is not mentioned in the report, as in my experience it is a ver common and effective palliative procedure. Some explanation as to why it wasn't included would be helpful if that data was not able to be collected. Some discussion of the benefits of the need to carry out a minimum number of procedures to maintain competency would be helpful, so that readers don't get the impression that you are suggesting that all patients should have access to complex procedures even where they are low volume. I wonder why the term "palliative" is not used, instead of "supportive and symptomatic" throughout. There are a number of minor grammatical errors, such as starting a sentence with a number (page 8, 205 on); missing an "a" before 100% response rate (in the abstract and elsewhere);the second paragraph of page 10 about training is not clear (reflects?); need explanation of acronyms (TACE, SIRT page 11); second last paragraph of page 11 is to clear (why does out of hours capacity need to be provided for procedures usually does electively?). The maps need to be able to be clear when printed in black and

	white, which is not the case with the different coloured identical toned and shaped dots. Could different shapes be provided please? These constitute relatively minor suggestions and once addressed I think the paper will be ready for publishing. I would recommend the authors have someone edit it for clarity before resubmission to pick up other minor issues, such as punctuation, which can be hard to pick up unless you have a fresh eye. .

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1 (Miltiadis Krokidis)
Comments addressed in turn:

-Comment 1: It will be useful to include in your results the responses of the section A of the questionnaire. We take for granted that IO will be provided within an IR department, however this is not always the case, as there are diagnostic radiologists that may also perform therapeutic procedures. What needs to be included in the analysis is if IO is provided by IRs (that perform also on-call service for general emergency procedures i.e. bleeding embolisation etc) or not.

Answer 1: 143 trusts (80%) had an IR department in their trust. All trusts with an IR department offered IO procedures. Only 1 trust without an IR department offered IO. We were unable to capture if most of the IO procedures were done by the IR department or not, with institutions occasionally splitting non-vascular (ablation) and vascular (TACE/ SIRT etc) between the diagnostic radiologists and the interventional radiologists who also had the on-call service for non-oncology related emergency procedures such as trauma, bleeding or aortic syndromes.

- Comment 2: I retain that is difficult to consider tumour biopsy as a supportive/ symptomatic procedure as it is a purely diagnostic procedure and can be performed by the vast majority of diagnostic radiologists. It is useful to know which trusts can perform biopsies for cancer however I am not sure that this is an IO service and I think the result is a bit deceiving.

Answer 2: Thank you for the valid point. This has been clarified in the results section (sentence 206). 129 trusts out of 179 (72%) offered therapeutic IO procedures after excluding trusts, which only offered diagnostic image guided biopsy.

Specifically on the document:
- Comment 3: Line 100:The numbers are a bit confusing. 70 + 73 = 143, the one is missing is included in the text and is the one with formal referral pathway for supportive IO, but this needs to be clarified in the abstract.
Answer 3: This has now been added to the abstract.

- Comment 4: I retain that since 144 were those that provide IO services of some form, the % have to be out of 144. 43+14= 16, what is the response of those 16? Have they got plans for a future pathway?
Answer 4: 30 trusts (41%) did not have a referral pathway for disease modifying procedures out of the .

- Comment 5: Line 181: Did you also consider therapeutic TAE or only the chemoembolization service?
Answer 5: Therapeutic TAE was not included in the original questionnaire. I have now included isolated perfusion chemotherapy (although a small number) in the table of procedures now.

- Comment 6: Line 190: It will be useful to provide a chart of the whole number analysis
Answer 6: A pie chart (Figure 1) has been created to show the whole number analysis for each of the countries.

- Comment 7: Line 234: You need to emphasise that IO is linked with IR recruitment and the provision of general and on-call IR services.
Answer 7: See added sentence 254, which also covers the next point (comment 8) from this reviewer.

Comment 8: Line 247: As mentioned above, I think that the IR out of hours provision is actually linked with the provision of IO services not only for the presence of supportive services in small district hospitals but also for the provision of therapeutic services in big centres, as recruitment for IO will have to come through IR, and the main recruitment drive at the moment is the provision of on-call IR services.
Answer 8: Your point is taken into account and this sentence has been amended.

Comment 9: Line 399: I think that the Table 1 needs to split between the supportive and the therapeutic trusts. % should be out of 144 in my view. Interestingly image-guided biopsy is not provided by all Trusts. How is this explained? If biopsies are not provided by 144-137=7 Trusts then what other procedures are performed?
Answer 9: 7 trusts that did not provide details of what IO procedures were offered were excluded. This sentence has been added to results (sentence 196 and 204)

Comment 10: Line 403: Is the prostate ablation performed for cancer reasons?
Answer 10: Yes, prostate embolization was performed for cancer reasons at Southampton and Oxford Hospitals.

Comment 11: Figure 3: I don't think it is necessary as everything is described in the Tables.
Answer 11: This has been removed as it is a duplicate of table data.

Reviewer: 2 (Pippa Hawley)
Comments addressed in turn:

Comment 1: I think it is a bit over-long and some superfluous sections can be removed without losing content. For example, the 2 tables and 2 figures describing the types of procedures offered duplicate the presentation of simple numerical data. I would pick one (table) or the other (figure) but not both. If you choose the tables I would reverse the order so that the most common are at the top (as per the figures).

Answer 1: Thank you for this suggestion. The figure demonstrating the table data has been removed to avoid duplication and the order of data has been removed to show most common at the top as suggested.

Comment 2: I also wonder why cementoplasty is not mentioned in the report, as in my experience it is a ver common and effective palliative procedure. Some explanation as to why it wasn't included would be helpful if that data was not able to be collected.

Answer 2: Cementoplasty is not carried out as commonly in the UK and hence was not included in the original questionnaire however 6 centres say they carry this out (in additional procedures offered section of questionnaire). I have added this to the report now and it is included in the table of procedures.

Comment 3: Some discussion of the benefits of the need to carry out a minimum number of procedures to maintain competency would be helpful, so that readers don't get the impression that you are suggesting that all patients should have access to complex procedures even where they are low volume.
Answer 3: This has now been integrated into sentence 293 following discussion of cancer services in the UK.

Comment 4: I wonder why the term "palliative" is not used, instead of "supportive and symptomatic" throughout.
There are a number of minor grammatical errors, such as starting a sentence with a number (page 8, 205 on); missing an "a" before 100% response rate (in the abstract and elsewhere);

Answer 4: The definition of supportive and symptomatic was based on the Royal College of Radiologists document. “Interventional oncology: guidance for service delivery. 2013”. You are correct as these are effectively palliative procedures and I have added this into sentence 195 to explain this. In the RCR definition image guided biopsy is also included hence the inclusion.

Comment 5: the second paragraph of page 10 about training is not clear (reflects?); need explanation of acronyms (TACE, SIRT page 11);
Answer 5: This has been elaborated on and acronyms have been explained.

Comment 6: second last paragraph of page 11 is to clear (why does out of hours capacity need to be provided for procedures usually does electively?).
Answer 5: Apologies for confusion. I have taken this paragraph out. Our point was that with emergency IR services already stretched on the ground, the addition of extra IO procedures would impact on their other work (vascular, urological or biliary work). I feel this sentence has now been covered in paragraph 2 of the discussion.

Comment 7: The maps need to be able to be clear when printed in black and white, which is not the case with the different coloured identical toned and shaped dots. Could different shapes be provided please?

Answer 7: As we had based our maps on the royal college of radiologists maps of out of hours IR provision, hence this choice of colour coding was made (Royal College of Radiologists. Provision of Interventional Radiology Services. 2013.
https://http://www.rcr.ac.uk/system/files/publication/field_publication_files/BFCR(14)12_POIR.pdf). We felt using shapes given that the maps would be quite small on the paper that it would not appear very clearly and that readers can refer to the online colour maps or endeavor to print the maps in colour for their use.

Many thanks for the detailed review and comments that we have addressed.

VERSION 2 – REVIEW

REVIEWER	Miltiadis Krokidis Cambridge University Hospitals, Cambridge,UK
REVIEW RETURNED	08-Jul-2017

GENERAL COMMENTS	Many thanks for your response.

REVIEWER	Pippa Hawley UBC Canada
REVIEW RETURNED	07-Jul-2017

GENERAL COMMENTS	Thanks for making changes, it is now much more readable and understandable, but Fig 3 still prints in black and white with no difference between the dots. Please change the shape of the dots to two different shapes as well as different colours. Otherwise good to go!

VERSION 2 – AUTHOR RESPONSE

Figure 3 has been amended to include different shapes that will allow easier reading in black and white.