PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Recovery, rehabilitation, and follow-up services following critical illness: an updated UK national cross-sectional survey and progress report
AUTHORS	Connolly, Bronwen; Milton-Cole, Rhian; Adams, Claire; Battle, Ceri; McPeake, Joanne; Quasim, Tara; Silversides, John; Slack, Andrew; Waldmann, Carl; Wilson, Elizabeth; Meyer, Joel

VERSION 1 – REVIEW

REVIEWER	Paratz, Jennifer The University of Queensland, School of Medicine, Burns, Trauma & Critical Care Research centre
REVIEW RETURNED	03-May-2021

GENERAL COMMENTS	Congratulations on completing a very extensive survey and update for this important subject. This is an excellent survey and article. There was a very good response rate, particularly including the ongoing situation in the UK. The discussion was excellent and the point about multiprofessions required is important as is asking the primary care practitioner to be informed about potential problems . The free text and thematic coding gave another dimension to the article. All the results and tables were well done

REVIEWER	O'Sullivan, Oliver Defence Medical Rehabilitation Centre, Academic Department of Military Rehabilitation
REVIEW RETURNED	04-May-2021

GENERAL COMMENTS	Dear authors, Many thanks for the opportunity to read your manuscript. It provides a very valuable ‘snapshot’ of the post discharge follow up and rehabilitation services available in the UK across different sites. Firstly, excellent collaboration across multiple centres, and wonderful to tap into multiple organisations with a common cause. I think it is a valuable piece of work, and agree it will add evidence to the creation and improvement of these services, esp in the circumstances we currently find ourselves in. I think that there are a couple of areas to enhance to make it more likely to achieve its effect.

	Overall, I found it well written, and easy to read, with your study methodology and findings well laid out. The introduction would benefit from a paragraph explained ‘what should there be’ (from national guidelines) and ‘what is there’ (from the previous survey) to allow your findings to be contextualised. I was, however, disappointed to read your discussion, which appeared to be a superficial explanation of the results, without clear & specific areas to focus on for improvement. Elements of these areas were found in your comprehensive ODS, so perhaps moving these specific statements into your discussion would add more heft, especially as many of the authors are involved in the organisations who should be suggesting and promoting improvements in this area. Finally, I would have liked the authors opinion of the optimal care pathway, in the context of guidelines, with the make up of teams, and potential engagement with Rehabilitation Medicine, Primary Care and specialist AHPs who are likely to have areas of overlap and expertise to bring to the party – esp given the lack of staff / money / resources mentioned as barriers. With all that in mind, I have suggested to the editor that a Minor Revision is appropriately prior to acceptance. I have provided some more detailed feedback below, and I hope you are able to take my comments in the spirit in which they are intended – to improve your work and the care we provide for all our patients. I would be happy to review an amended manuscript if appropriate. Good luck! Abstract Mostly clear abstract, well laid out. Final two sentences of the results (line 50-55) are unclear, I am not sure what meaning you wish the reader to gain – please could you review these for clarity? Article summary – good Introduction Articulate and well laid out. The obvious question that is left is; do you think that clear international guidance / criteria on models should be generated? By whom? Is the UK a good model to follow? What did the previous survey say? And what do the standards say, can you articulate what Gold Standard is please. Methods Service identification - Do you feel that 242 ICUs is fully representative? Are there any centres which aren’t on ICNARC or SICSAG? Survey development – Easily understandable development process with multiple review processes.

	Survey distribution – Multiple routes, good window span, clear methods PPI – Not at given time Ethical approval & data analysis – Appropriate Results Responding institutions – suggest add a comma following UK nations, line 37. Why was there such a poor England response rate do you think? Inpatient critical illness recovery – line 50, you have already abbreviated Online Data Supplement so you don't need to repeat it here. Pretty grim reading about the funding, can understand why it's the primary barrier. Outpatient critical illness recovery – what does contemporaneously and sequentially mean? Is that time related? Or model related? Please could you expand this slightly to explain the difference. Pg 12 line, I think 'is' is a redundant word'. Line 14, a comma after comprehensive might be helpful. Again, grim reading re funding. Peer support – please can you check your parenthesis, especially line 48-49. Post hospital discharge – It would be good to know if these programmes were F2F or virtual Future plans – no comments Impact of COVID-19 – No comments Discussion You refer to an expansion of outpatient services, but haven't previously mentioned what the previous services were like. Please could you add a 'baseline measurement' into the introduction so readers know how things have improved/not improved? I note this data appears later in the discussion, line 46, but I think it would be better introduced earlier. Lines 17-24 – how are these being addressed? Interpretation of findings- Suggest this first sentence is moved to the top of the discussion to frame your significant finding first up. Line 59 – in your results you report that "Staff input was multi-professional", but then you say "uni-professional service delivery…prevailed". I don't understand this conclusion. It would be fairer to say that uniprofessional service delivery prevailed in XX% without an intensivist/AHP/psychologist. I appreciate that there might be a difference in 'team lead' and 'team composition', but I think this needs to be clarified. Regarding engagement with primary care, 'information provision' is already a mandated element of handover, using a discharge summary (NICE QS136). So I don't feel you made a new

	recommendation, although I note in only 42% of cases this is sent to the GP. How could this be improved, using a more active method of engagement? Routine appt is a sensible starting point, but again, I would be surprised if this were not routine practice. Post hospital physical rehabilitation is discussed more widely than ref 10, inc in ref 13 (CG83); given the lack of tangible progress, is there anything more you wish to recommend in the discussion? What peer support barriers and enablers are you referring to, and how can you data support the improvement in this area? What outcome measures are routinely measured? And what do you advise in the future direction of travel to enable this relative lack of evidence to not be a permanent barrier? It appears that national standards exist – so why are they not more rigorously applied? You haven't previously mentioned payment tariffs – given that you feel this change of this would be transformational, I would advise please expanding on this to make it clear how this might work and what it would require. Critique of methods Were they any attempts to contact non-responders? If so, how? Do think that specialty ICUs might be different in their patients rehab/recovery/follow up needs, and might this contribute to differences. References please can you check that all journal titles are correctly abbreviated to the same format as it appears some haven't been. Can you check ref 10 parenthesis please. Is the ref for 29 the final ref, I suspect it might have been published in print by now. Supplementary data Thank you for providing a copy of the questionnaire. I feel there are elements of E2, E3, E4 that should be incorporated into your discussion, to provide further detail, explanation & depth of analysis. It is unclear who will read the supplementary files in as much detail as your manuscript.

REVIEWER	Bartolo, Michelangelo HABILITA Zingonia, Rehabilitation
REVIEW RETURNED	06-May-2021

GENERAL COMMENTS	By means of this study, the Authors provides a snapshot in UK of post critical illness recovery, follow-up, and rehabilitation services . Moreover, they reported observations about the impact of the Covid19 pandemic. The main aim is to improve the knowledge about the care pathways of survivors of critical illness deriving suggestions for stakeholder. The study was designed and performed as online survey self-administered. Institutions were centres providing adult critical care services, identified from national databases and participants were multi-professional critical care clinicians.

	Authors' conclusions were that data showed a proliferation of recovery, follow-up, and rehabilitation services for critically ill adults with some gaps that remain and that suggest future research in order to promote guideline implementation and to solicit stakeholder. Obviously, data reported that the COVID-19 pandemic, recall to a reformat of service provision. Among interesting points solicited by participants and relevant to reason for future implementation of the services, there is the absence of some figure such as psychologists. Overall, the study was well planned and conducted. I have only few minor suggestions before acceptation: In the Abstract, Authors reported "intensivist" probably for physician? At page 9 "Any changes to existing, or development of new services due to the pandemic were captured". I suggest to specify that "… introducing at the end of the survey a question about …." (recalling to question 112). Pag. 9 line 19 (ii); line 21 (ii): please correct Pag. 10 line 55 "Twenty sites (11.4%) sites focused …" please correct Pag.11 I suggest to put in parentheses …..intensive care issues (e.g. anxiety and depression……or psychological status). Pag. 14 line 10 you cite "rehabilitation assistant": please, can better specify the figure? Is a physiotherapist? In Discussion, it should be interesting to include some observations by authors, about other figure than psychologists, that should be included in the multiprofessional team such as occupational therapists. At the end (but this point is not mandatory), I well undestand that Authors included some results as supplement in order to reduce the lenght of the paper: personally I don't appreciate data reported in Online Data supplement (E2, E3, E4, E5, E6, E7, E8) that in my opinion, methodologically, should be included in the results section maintaining the subheadings.

REVIEWER	Falvey, Jason University of Maryland School of Medicine, Physical Therapy and Rehabilitation Science
REVIEW RETURNED	10-May-2021

GENERAL COMMENTS	Dear Editorial Board: Thank you for the opportunity to review this manuscript from Dr. Connolly and colleagues entitled "Recovery, rehabilitation, and follow-up services following critical illness: an updated UK national survey and progress report". This paper covers a timely topic, and is bolstered by a robust response rate of 76%. I have included comments and a few suggested revisions below to help clarify some key points of this paper. However, I think this paper is immensely important, well-written, and will be a valuable roadmap for future care pathways development. Overall Comments: This paper covers an important topic—availability of post-discharge supportive services for survivors of critical illness. This paper build on a prior survey, and includes key questions about adaptions of services secondary to COVID-19 that provide helpful context and a roadmap for future studies. The strong response rate and detailed information provided are key strengths of this paper as well as careful attention to survey reporting guidelines. Additionally, the range of supports documented, including medical and peer groups, highlight the authors strong content knowledge

	on contemporary care pathways for critical illness survivors. This paper informs efforts in the UK and elsewhere to expand access to these programs, and identifies helpful local and national policy targets that would facilitate expansion. Considerations for Revision: • While I read, one concern I had was how multiple responses from the same hospital would be adjudicated by the author team. It seems from the sampling strategy that multiple providers from a single hospital could respond to the survey—which raises some concerns about reliability of those responses. How did the authors address these mismatches when they occurred, and importantly how many responses of the 176 had to be adjudicated? • It appears that an invitation to complete the survey was only sent out once. Were there reminder emails to all facilities or those who had not filled out the initial invitation? • Inconsistent formatting of response rates—some survey responses included numerator, denominator, and % and some only included the %. It would be helpful to include numerator/denominator and % in all responses for consistency and clarity especially when the denominator changes between sections based on response rates. • When discussing availability of services, one thing that was underdiscussed in the manuscript was a potential underutilization of home-based services. Homebased services may be essential for patients with serious mobility limitations, are socially isolated or lack caregiver support, or live in rural areas. This may be even more important for older ICU survivors. I think the authors should discuss this a little more, as this is an untapped avenue for post-ICU care and only a handful of hospitals offered these services. • Was there any indication that hospitals were actively engaged in helping patients return to work or offering any specific programs? Or helping with unemployment or other government benefits (through social workers or similar)? Return to work is a critical factor for many ICU survivors and would be an interesting target for post-ICU clinics.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Congratulations on completing a very extensive survey and update for this important subject. This is an excellent survey and article. There was a very good response rate, particularly including the ongoing situation in the UK. The discussion was excellent and the point about multi-professions required is important as is asking the primary care practitioner to be informed about potential problems. The free text and thematic coding gave another dimension to the article. All the results and tables were well done.

Response
Thank you to the Reviewer for this complimentary feedback regarding our study and manuscript.

Reviewer: 2
Dear authors,

Many thanks for the opportunity to read your manuscript. It provides a very valuable 'snapshot' of the

post discharge follow up and rehabilitation services available in the UK across different sites.

Firstly, excellent collaboration across multiple centres, and wonderful to tap into multiple organisations with a common cause. I think it is a valuable piece of work, and agree it will add evidence to the creation and improvement of these services, especially in the circumstances we currently find ourselves in. I think that there are a couple of areas to enhance to make it more likely to achieve its effect.

Overall, I found it well written, and easy to read, with your study methodology and findings well laid out. The introduction would benefit from a paragraph explained 'what should there be' (from national guidelines) and 'what is there' (from the previous survey) to allow your findings to be contextualised. I was, however, disappointed to read your discussion, which appeared to be a superficial explanation of the results, without clear & specific areas to focus on for improvement.

Elements of these areas were found in your comprehensive ODS, so perhaps moving these specific statements into your discussion would add more heft, especially as many of the authors are involved in the organisations who should be suggesting and promoting improvements in this area. Finally, I would have liked the authors opinion of the optimal care pathway, in the context of guidelines, with the make-up of teams, and potential engagement with Rehabilitation Medicine, Primary Care and specialist AHPs who are likely to have areas of overlap and expertise to bring to the party – especially given the lack of staff / money / resources mentioned as barriers.

With all that in mind, I have suggested to the editor that a Minor Revision is appropriately prior to acceptance. I have provided some more detailed feedback below, and I hope you are able to take my comments in the spirit in which they are intended – to improve your work and the care we provide for all our patients.

I would be happy to review an amended manuscript if appropriate. Good luck!

Response
Thank you to the Reviewer for these valuable comments regarding our manuscript. We have addressed these through responding to the specific comments detailed below.

1. Abstract
Mostly clear abstract, well laid out.
Final two sentences of the results (line 50-55) are unclear, I am not sure what meaning you wish the reader to gain – please could you review these for clarity?

Response
These sentences have been clarified (Lines 74-77).

i) Article summary – good

Response
Thank you; no changes have been made as a result of this comment.

2. Introduction

Articulate and well laid out. The obvious question that is left is; do you think that clear international guidance / criteria on models should be generated? By whom? Is the UK a good model to follow?

What did the previous survey say? And what do the standards say, can you articulate what Gold

Standard is please.

Response
We have addressed the latter of these questions with additional text in the Introduction (Lines 145-147) to highlight the recommendations from the UK guidelines with regards post critical care discharge follow-up. The former comments have been responded with edits in the Discussion to consider these points more broadly.

3. Methods

a) Service identification - Do you feel that 242 ICUs is fully representative? Are there any centres which aren't on ICNARC or SICSAG?

Response
We are confident that 242 hospitals is a representative sample to act as a denominator for this survey study. The ICNARC Case Mix Programme includes all NHS adult, general, critical care units in England, Wales, and Northern Ireland, as well as a number of specialist (e.g. neurosciences and cardiothoracic units) and high dependency units. It also includes a number (n=18) of non-NHS ICUs. Likewise, the SICSAG database contains all NHS hospitals with ICUs in Scotland. However we included only NHS sites, in keeping with our original survey1, and because our focus for the current survey was exploring nationally funded services and care pathways. It is possible that institutional status-related factors may influence recovery, rehabilitation, and follow-up services offered by non-NHS hospitals, and limiting the sample to NHS sites afforded consistency and standardisation. Furthermore, determining an accurate number of non-NHS critical care services is challenging, and this would have reduced the reliability of our denominator.

We have clarified in the Methods (Line 162) that included sites were NHS.

b) Survey development – Easily understandable development process with multiple review processes.

Response
Thank you; no changes have been made as a result of this comment.

c) Survey distribution – Multiple routes, good window span, clear methods

Response
Thank you; no changes have been made as a result of this comment.

d) PPI – Not at given time

Response
No applicable changes necessary.

e) Ethical approval & data analysis – Appropriate

Response
Thank you; no changes have been made as a result of this comment.

4. Results

a) Responding institutions – suggest add a comma following UK nations, line 37. Why was there such a poor England response rate do you think?

Response
The comma has been added (Line 230). Our feeling is that the lower response rate in England is primarily due to the much larger national denominator compared to the other nations (England, n=195 vs Scotland, Wales, Northern Ireland, ranging n=9-23). Therefore, despite our processes for repeated profiling of the survey and prompting responses, the number of respondents in England would have required additional targeting over a longer timeframe. Importantly, the response rate for England still exceeded our target threshold of 70%.

b) Inpatient critical illness recovery – line 50, you have already abbreviated ODS so you don't need to repeat it here. Pretty grim reading about the funding, can understand why it's the primary barrier.

Response
The text has been edited (Line 237) to include only the abbreviation.

c) Outpatient critical illness recovery – what does contemporaneously and sequentially mean? Is that time related? Or model related? Please could you expand this slightly to explain the difference. Pg 12 line, I think 'is' is a redundant word'. Line 14, a comma after comprehensive might be helpful. Again, grim reading re funding.

Response
Contemporaneously referred to all clinicians reviewing the patient together, and sequentially, where individual clinicians reviewed the patient separately one at a time. These terms have been clarified in the text (Lines 262-263).

The edits to 'is' (Line 272) and inclusion of a comma (Line 274) have been made.

d) Peer support – please can you check your parenthesis, especially line 48-49.

Response
These have been checked (Lines 317-320).

e) Post hospital discharge – It would be good to know if these programmes were F2F or virtual

Response
We did not specifically ask this question in this section of the survey, so are unable to respond in full to this comment. We did ask the question 'Do you use telehealth or other interactive forms of intervention delivery?', and only one respondent indicated positively to this (included in the data reported in the ODS, Section E7). Respondents also indicated that post hospital discharge physical rehabilitation programmes were primarily hospital-based (n=22, 71.0%), community-based (n=5, 16.1%), home-based (n=2, 6.5%), or a combination (home and community, n=2, 6.5%) of delivery (ODS, Section E7); these data suggest face-to-face delivery for the majority. Our data on the impact of COVID-19 services, indicated a change in follow-up services towards virtual models, albeit this question was not focused on any one particular service.

f) Future plans – no comments

Response
No applicable changes necessary.

g) Impact of COVID-19 – No comments

Response
No applicable changes necessary.

5. Discussion

a) You refer to an expansion of outpatient services, but haven't previously mentioned what the previous services were like. Please could you add a 'baseline measurement' into the introduction so readers know how things have improved/not improved? I note this data appears later in the discussion, line 46, but I think it would be better introduced earlier.

Response
We have checked this data is reported in the Introduction: "…only 27% of UK intensive care units (ICU) offered such a follow-up service" (Line 149).

b) Lines 17-24 – how are these being addressed?

Response
Our data do not include strategies for addressing these aspects, but these points have been moved to the Conclusion (which has been rephrased) to signal future direction in this area.
c) Interpretation of findings - Suggest this first sentence is moved to the top of the discussion to frame your significant finding first up.

Response
We have not moved the sentence as it is, as we feel this links to the rest of the discussion around this finding. However, we have included a highlight phrase around ward-based input in the opening paragraph of the discussion.

d) Line 59 – in your results you report that "Staff input was multi-professional", but then you say "uni-professional service delivery…prevailed". I don't understand this conclusion. It would be fairer to say that uniprofessional service delivery prevailed in XX% without an intensivist/AHP/psychologist. I appreciate that there might be a difference in 'team lead' and 'team composition', but I think this needs to be clarified.

Response
Apologies for lack of clarity in this Discussion point. The Results referred to here by the reviewer are included under the 'Peer support after critical illness' section (Lines 312-313). Whereas in the Discussion, the prevailing 'uni-professional service delivery' relates to outpatient follow-up services. We have clarified this further in the Discussion (Lines 369 and 376).

e) Regarding engagement with primary care, 'information provision' is already a mandated element of handover, using a discharge summary (NICE QS136). So I don't feel you made a new recommendation, although I note in only 42% of cases this is sent to the GP. How could this be improved, using a more active method of engagement? Routine appt is a sensible starting point, but again, I would be surprised if this were not routine practice.

Response
We agree that the recommendation for information provision is not strictly a new recommendation and is included in the NICE guidance for discharging general hospitalised patients to community or care home settings. However, as our data show, and in our extensive, collective clinical experience, GP discharge letters are variable in quantity and quality of information pertaining to the ICU admission and critical illness experience of ICU survivors. This is likely because the focus is on the immediate pre-discharge period whilst on the ward. Yet the consequences of the ICU admission are long-lasting.

Again, empirically, we know that routine GP appointments do not happen for post ICU survivors, and there is a disconnect at this stage of recovery between patients and the healthcare system. We have edited this paragraph to refine this section of the Discussion (Lines 386-399).

f) Post hospital physical rehabilitation is discussed more widely than ref 10, inc in ref 13 (CG83); given the lack of tangible progress, is there anything more you wish to recommend in the discussion?

Response
Reviewer 4 also raised a comment regarding the discussion of post hospital physical rehabilitation programmes, in response to which we have expanded suggestions for future practice, which also addresses this current comment (Lines 408-415).

g) What peer support barriers and enablers are you referring to, and how can you data support the improvement in this area?

Response
We have provided examples of the barriers and enablers referred to (Lines 421-423), and indicated how our data could be used, with reference to these barriers and enablers, to support emergence of other models of peer support delivery in the future.

h) What outcome measures are routinely measured? And what do you advise in the future direction of travel to enable this relative lack of evidence to not be a permanent barrier? It appears that national standards exist – so why are they not more rigorously applied?

Response
There is currently no standardisation on outcome measures in use across follow-up services, and we have suggested this could be beneficial in the future (Lines 448-449). We have also highlighted that a limitation of current commissioning is a lack of mandating adherence of the national guidelines (Line 435).

i) You haven't previously mentioned payment tariffs – given that you feel this change of this would be transformational, I would advise please expanding on this to make it clear how this might work and what it would require.

Response
We have expanded the explanation of this point to indicate the change from existing funding models (Lines 464-465).

Critique of methods

j) Were they any attempts to contact non-responders? If so, how? Do think that specialty ICUs might be different in their patients rehab/recovery/follow up needs, and might this contribute to differences.

Response
During the course of the repeated survey dissemination, we used contacts from critical care networks to facilitate targeted responses from non-respondents where possible. We have added this detail to the Methods (Lines 200-202). It is possible that specialist ICUs may provide different recovery, rehabilitation, and follow-up services according to any specific needs of their patient populations. However, the small proportion of specialist ICUs within our sample (n=11, 6.3%) precluded robust comparison. We have clarified an existing comment in the Discussion (Line 484) that pertains to the issue of ICU specialty.

6. References

Please can you check that all journal titles are correctly abbreviated to the same format as it appears some haven't been. Can you check ref 10 parenthesis please. Is the ref for 29 the final ref, I suspect it might have been published in print by now.

Response
All reference details have been checked and amended where needed.

7. Supplementary data

Thank you for providing a copy of the questionnaire.

I feel there are elements of E2, E3, E4 that should be incorporated into your discussion, to provide further detail, explanation & depth of analysis. It is unclear who will read the supplementary files in as much detail as your manuscript.

Response
We would ideally include further data in the main text both in the Results and the Discussion, but given the volume of data acquired in our survey and the constraints of the word limit for the manuscript, we have had to carefully consider the key content to efficiently include in the main text and what to refer to in the ODS. We have ensured that signposting to the ODS is optimised within the text to direct the reader to this additional data.

Reviewer: 3
By means of this study, the Authors provides a snapshot in UK of post critical illness recovery, follow-up, and rehabilitation services. Moreover, they reported observations about the impact of the Covid19 pandemic. The main aim is to improve the knowledge about the care pathways of survivors of critical illness deriving suggestions for stakeholder. The study was designed and performed as online survey self-administered. Institutions were centres providing adult critical care services, identified from national databases and participants were multi-professional critical care clinicians.

Authors' conclusions were that data showed a proliferation of recovery, follow-up, and rehabilitation services for critically ill adults with some gaps that remain and that suggest future research in order to promote guideline implementation and to solicit stakeholder. Obviously, data reported that the COVID-19 pandemic, recall to a reformat of service provision. Among interesting points solicited by participants and relevant to reason for future implementation of the services, there is the absence of some figure such as psychologists. Overall, the study was well planned and conducted. I have only few minor suggestions before acceptation.

Response
Thank you to the Reviewer for these positive comments on our manuscript. We have addressed the specific comments detailed below.

a) In the Abstract, Authors reported "intensivist" probably for physician?

Response
This has been changed to 'ICU physician' (Lines 68-69, and throughout the text where the term 'intensivist appears).

b) At page 9 "Any changes to existing, or development of new services due to the pandemic were captured". I suggest to specify that "… introducing at the end of the survey a question about …."

(recalling to question 112).

Response
This wording has been added (Line 187-188).

c) Pag. 9 line 19 (ii); line 21 (ii): please correct Pag. 10 line 55 “Twenty sites (11.4%) sites focused …” please correct

Response
This correction has been made (Line 239).

d) Pag.11 I suggest to put in parentheses …..intensive care issues (e.g. anxiety and depression……or psychological status).

Response
This change has been made (Line 247-249).

e) Pag. 14 line 10 you cite “rehabilitation assistant”: please, can better specify the figure? Is a physiotherapist?

Response
We have added the following explanation of the role of a rehabilitation assistant to the legend of Figure 1 – “Generic Rehabilitation Assistants are healthcare workers (some may have healthcare qualifications, but this is not essential) who offer support to qualified clinicians with carrying out various rehabilitation activities with patients”. Rehabilitation assistants can be part of any aspect of rehabilitation e.g. physiotherapy, occupational therapy etc.

f) In Discussion, it should be interesting to include some observations by authors, about other figure than psychologists, that should be included in the multiprofessional team such as occupational therapists.

Response
We agree about the vital role of many other professions within the team in the management of post critical illness impairment. We have edited an earlier sentence to read “…despite the empirical value of many other disciplines…” including the word ‘many’ to emphasise this point (Line 376). And we have given used occupational therapy as another example to highlight in more detail, adding the following text: “Likewise, occupational therapy is another example of a key profession that would benefit from greater prevalence within services compared to the levels seen in the current findings, especially in the context of long-term cognitive impairment in critical illness survivors, and the challenges of returning to work in this patient population” (Lines 381-384).

g) At the end (but this point is not mandatory), I well undestand that Authors included some results as supplement in order to reduce the lenght of the paper: personally I don’t appreciate data reported in ODS (E2, E3, E4, E5, E6, E7, E8) that in my opinion, methodologically, should be included in the results section maintaining the subheadings.

Response
Thank you for this comment, which echoes the thoughts of Reviewer 2. However, the scale of data acquisition, balanced against our need to ensure the manuscript is as concise as possible, has meant we have had to carefully consider how best to present the dataset across the main text and the ODS. We have ensured that signposting to the ODS is optimised within the text to direct the reader to this additional data.

Reviewer: 4
Thank you for the opportunity to review this manuscript from Dr. Connolly and colleagues entitled "Recovery, rehabilitation, and follow-up services following critical illness: an updated UK national survey and progress report". This paper covers a timely topic, and is bolstered by a robust response rate of 76%. I have included comments and a few suggested revisions below to help clarify some key points of this paper. However, I think this paper is immensely important, well-written, and will be a valuable roadmap for future care pathways development.

Overall Comments:
This paper covers an important topic—availability of post-discharge supportive services for survivors of critical illness. This paper build on a prior survey, and includes key questions about adaptions of services secondary to COVID-19 that provide helpful context and a roadmap for future studies. The strong response rate and detailed information provided are key strengths of this paper as well as careful attention to survey reporting guidelines.

Additionally, the range of supports documented, including medical and peer groups, highlight the authors strong content knowledge on contemporary care pathways for critical illness survivors. This paper informs efforts in the UK and elsewhere to expand access to these programs, and identifies helpful local and national policy targets that would facilitate expansion.

Response
Thank you for these very supportive comments for our study and manuscript. We have responded to specific comments below.

Considerations for Revision:

a) While I read, one concern I had was how multiple responses from the same hospital would be adjudicated by the author team. It seems from the sampling strategy that multiple providers from a single hospital could respond to the survey—which raises some concerns about reliability of those responses. How did the authors address these mismatches when they occurred, and importantly how many responses of the 176 had to be adjudicated?

Response
During circulation of the survey, we highlighted that a designated lead respondent should coordinate responses where necessary, collating responses from other members of the local multi-professional team in order to generate the most accurate and comprehensive survey completion. There were 23 (/176, 13.1%) occasions where more than one clinician registered a response (or where one respondent listed two entries). On these occasions, we contacted sites to request confirmation from respondents to de-duplicate and amalgamate into one single response set – in these instances, we clarified responses to any questions where differing responses had been provided. Whilst we did not prospectively monitor how many questions varied between respondents, our experience is that these were minimal. When respondents replied, common reasons for the duplication of responses included starting the survey, but not being able to complete it in time before another commitment and there was no functionality to save existing responses and complete them later, and in other cases a miscommunication between clinicians around who was completing the response entries.

If we did not have a response from respondents, we adjudicated to use the most complete response set. In the Discussion we acknowledge this limitation – "However, any limitation in availability or cooperation of colleagues could hypothetically have impacted the quality and reliability of responses", editing the existing statement to include "…and reliability" to reflect this comment by the reviewer

(Line 480).

b) It appears that an invitation to complete the survey was only sent out once. Were there reminder emails to all facilities or those who had not filled out the initial invitation?

Response
Our apologies this detail was omitted. Regular reminder emails were circulated throughout the 8 week time-frame when the survey was formally open. Furthermore, there was a 4 week period for follow-up with sites for missing data (which included responses from non-responder sites where an initial survey registration had been made in the survey platform). This has been clarified in the Methods (Line 200-202) section.

c) Inconsistent formatting of response rates—some survey responses included numerator, denominator, and % and some only included the %. It would be helpful to include numerator/denominator and % in all responses for consistency and clarity especially when the denominator changes between sections based on response rates.

Response
All results throughout the main text and ODS have been checked for reporting of numerator, denominator, and %, and edits made for consistency.

d) When discussing availability of services, one thing that was underdiscussed in the manuscript was a potential underutilization of home-based services. Homebased services may be essential for patients with serious mobility limitations, are socially isolated or lack caregiver support, or live in rural areas. This may be even more important for older ICU survivors. I think the authors should discuss this a little more, as this is an untapped avenue for post-ICU care and only a handful of hospitals offered these services.

Response
Thank you for this important suggestion. We have included the following text into the paragraph discussing rehabilitation programmes: "The limited overall availability of these rehabilitation services speaks to the need to consider alternative strategies to deliver therapeutic interventions. One option is to consider home-based services, which may be essential for those patients where mobility limitations preclude physical attendance at other venues, as well as those in rural areas, with social isolation, or relatively less caregiver support. The impact of the COVID-19 pandemic has seen an exponential rise in diverse models of care with greater use of virtual platforms that could be investigated further in the future to ensure maximum inclusivity of patients into rehabilitation programmes." (Lines 408-415).

e) Was there any indication that hospitals were actively engaged in helping patients return to work or offering any specific programs? Or helping with unemployment or other government benefits (through social workers or similar)? Return to work is a critical factor for many ICU survivors and would be an interesting target for post-ICU clinics.

Response
We agree that return to work is a vital component of recovery for many survivors of critical illness, and the literature pertaining to this aspect of survivorship is expanding with many recent studies. We did identify return to work as a feature of both outpatient recovery and follow-up services (Table 3, n=50/130, 38.5%, respondents reported this was included in services), as well as post hospital discharge physical rehabilitation programmes (Table E3, n=12/31, 38.7% respondents reported this was include as part of the educational programme within services; multi-professional clinicians delivering these education sessions were reported as physiotherapists, medics, nurses, occupational therapists, and vocational specialists).

References
1. Connolly B, Douiri A, Steier J, et al. A UK survey of rehabilitation following critical illness: implementation of NICE Clinical Guidance 83 (CG83) following hospital discharge. BMJ Open 2014;4:e004963. doi: 10.1136/bmjopen-2014-004963

VERSION 2 – REVIEW

REVIEWER	O'Sullivan, Oliver Defence Medical Rehabilitation Centre, Academic Department of Military Rehabilitation
REVIEW RETURNED	19-Jul-2021

GENERAL COMMENTS	Dear Team, Thank you for asking me to re-review the manuscript ‘Recovery, Rehabilitation, and follow up services following critical illness’, which details the inpatient and outpatient provision for post critical care services in the UK. You have provided exceedingly good feedback to all peer reviewers following the previous version, addressing all points that have been raised, explaining why certain elements remained as they were, and what adaptations had been made to the manuscript. The study includes responses from over 70% of sites, detailing the type, manner and style of services, with reference to the national guidance and identification of barriers. The context for these results is well described during the introduction. Once barriers are identified, the paper offers some recommendations on how these could be improved. As previously, I feel this is a very valuable piece of work, building upon your previous survey, and giving some very helpful real life data on the current provision of services following critical illness in a very comprehensive dataset. I think this will add to the medical canon. I have made some very minor suggestions below, and once they are done, I will advise that the Editor Accept this manuscript. Well done. Abstract – good, clear. Is a CI for numbers of hospitals required? Key messages – appropriate Intro – good to set the scene with guideline recommendations and adherence to them – with reasons why this hasn’t been achieved. Much better to read, and sets the paper up nicely with the context of its results Methods – clear description of survey set up & distribution, including follow up for queries Results – good signposting to supplementary files Depressing reading about barriers!

	Pg 10, line 17 please add IQR in parenthesis following its first use. You use IQR throughout the remainder of the document Pg 12, line 17, please write out InS:PIRE in full – which you do for CAIRO. Interpretation of results – much better, enjoying the recommendations which have fed from your findings I have enjoyed the peer support paragraph, especially the WONDERFUL use of 'armamentarium'. Well done!! Pg 20, line 23, I think NHS would suffice here, especially as you have previously used the term Figures – my only comment here would be the use of medic, ITU physician and intensivist – are they different roles? If not, I would consider the use of a single term. You have changed this in the text, so I would suggest being consistent for the figures & ODS too.

VERSION 2 – AUTHOR RESPONSE

Reviewers' comments
Reviewer: 2

Dear Team,

Thank you for asking me to re-review the manuscript 'Recovery, Rehabilitation, and follow up services following critical illness', which details the inpatient and outpatient provision for post critical care services in the UK. You have provided exceedingly good feedback to all peer reviewers following the previous version, addressing all points that have been raised, explaining why certain elements remained as they were, and what adaptations had been made to the manuscript.

The study includes responses from over 70% of sites, detailing the type, manner and style of services, with reference to the national guidance and identification of barriers. The context for these results is well described during the introduction. Once barriers are identified, the paper offers some recommendations on how these could be improved. As previously, I feel this is a very valuable piece of work, building upon your previous survey, and giving some very helpful real life data on the current provision of services following critical illness in a very comprehensive dataset.

I think this will add to the medical canon. I have made some very minor suggestions below, and once they are done, I will advise that the Editor Accept this manuscript.

Well done.

Response
Many thanks for these kind comments and feedback. This is much appreciated.

Abstract – good, clear. Is a CI for numbers of hospitals required?

Response

On reflection, this is not essential to include and this has been removed (from both the abstract and main text).

Key messages – appropriate

Response
Thank you. No changes needed as a result of this comment.

Intro – good to set the scene with guideline recommendations and adherence to them – with reasons why this hasn't been achieved. Much better to read, and sets the paper up nicely with the context of its results

Response
Thank you. No changes needed as a result of this comment.

Methods – clear description of survey set up & distribution, including follow up for queries

Response
Thank you. No changes needed as a result of this comment.

Results – good signposting to supplementary files

Response
Thank you. No changes needed as a result of this comment.

Depressing reading about barriers!

Response
Acknowledged. No changes needed as a result of this comment.

Pg 10, line 17 please add IQR in parenthesis following its first use. You use IQR throughout the remainder of the document

Response
This has been completed (Line 215, Marked Copy).

Pg 12, line 17, please write out InS:PIRE in full – which you do for CAIRO.

Response
This has been added (Lines 311-312, Marked Copy).

Interpretation of results – much better, enjoying the recommendations which have fed from your findings

Response
Thank you. No changes needed as a result of this comment.

I have enjoyed the peer support paragraph, especially the WONDERFUL use of 'armamentarium'. Well done!!

Response
Many thanks for this comment.

Pg 20, line 23, I think NHS would suffice here, especially as you have previously used the term

Response
This has been completed (Line 476, Marked Copy).

Figures – my only comment here would be the use of medic, ITU physician and intensivist – are they different roles? If not, I would consider the use of a single term. You have changed this in the text, so I would suggest being consistent for the figures & ODS too.

Response
Thank you for highlighting this. We have edited to be consistent with the term ‘ICU physician’ throughout main text, tables, Figure 1, and the Supplement, with the exception of Table E3 (Supplement) where the response of ‘Doctor’ was not defined per specialty for those particular questions.