

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Multi-level Influences on Resilient Healthcare in Six Countries – An International Comparative Study Protocol
<b>AUTHORS</b>	Anderson, Janet; Aase, Karina; Bal, Roland; Bourrier, Mathilde; Braithwaite, Jeffrey; Nakajima, Kazue; Wiig, Siri; Guise, Veslemøy

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Mirjam Ekstedt Linnaeus University, Department of Health and Caring Sciences; Sweden.
<b>REVIEW RETURNED</b>	10-May-2020

<b>GENERAL COMMENTS</b>	<p>Dear Authors</p> <p>Thank you for the opportunity to review your research protocol which have an interesting comparative, multi-level and cross-country approach in the field of resilience in healthcare with focus on adaptive teams. The design and the methods that are planned to be used suits well to respond the research questions of what and how on the within-country levels. There is still some uncertainty about how data should be analyzed within and across cases, what "the agreed templates" and "joint protocol" includes, and I draw the conclusion that this will be developed during the course of research. However the comparative cross-case analysis will be the top-challenge as the researchers aims to go beyond mere descriptions and find causations of the how adaptation is shaped by organisational, cultural, economic and regulatory factors in the different countries. The conceptual framework used for analysis seems still to be at an overall abstract level and my concern is whether it will provide sufficient concrete guidance as analysis scheme on how you can interpret and understand empirical data. It will also be reviewed, modified and extended with the empirical findings of the study, thus contributing to the theoretical and practical advancement of resilient healthcare theory, which is a laudable purpose. My reflection is if the researchers consider to also consult other theoretical frameworks used to evaluate changes in health care organizations, both to build upon and to delineate the new frame to existing knowledge in implementation science and quality improvement science. However, this research is highly relevant and is well placed to meet the need of a deeper understanding of team adaptive capacity through a large cross-country and multi-level study. A minor comment is that the dates of the study should be included in the manuscript.</p>
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<b>REVIEWER</b>	Mark Sujan Human Factors Everywhere Ltd, UK
<b>REVIEW RETURNED</b>	20-May-2020

<b>GENERAL COMMENTS</b>	<p>Thank you for the opportunity to review this protocol, which describes the design of an important research project to investigate across six countries what factors contribute to resilient performance, and how these can be strengthened.</p> <p>This research is very timely as health systems worldwide are currently struggling with the Covid-19 pandemic, and anticipation, adaptation and learning are key mechanisms for managing the crisis. Even though the focus of the research is on normal situations, the learning generated by this study will no doubt be of relevance to situations such as the current pandemic.</p> <p>A strength of the research is the international setup, which allows to make comparisons across a range of health systems and cultures.</p> <p>I have a few minor suggestions:</p> <p>(1) It might be worth explaining how and why the six participating countries were chosen.</p> <p>(2) Maybe shorten the introduction in spend more words on the research design</p> <p>(3) Following on from (2), consider providing further detail about how the observational data will be recorded, e.g. is there a data collection instrument or structure? For the interviews, could you explain how these topics were identified and chosen?</p> <p>(4) The PPI description could be strengthened to explain how patients were involved in the design of the research, and how the research will add to patient benefit.</p> <p>(5) Will the project involve any kind of implementation or testing of interventions? This would strengthen the recommendations.</p> <p>Overall, this is going to be an excellent project, and I wish the team a successful research journey.</p>
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### VERSION 1 – AUTHOR RESPONSE

#### Response to reviewers

Reviewer 1	Author's response	Page No.
Thank you for the opportunity to review your research protocol which have an interesting comparative, multi-level and cross-country approach in the field of resilience in healthcare with focus on adaptive teams. The design and the methods that are planned to be used suits well to respond the research questions of what and how on the within-country levels.	Thank you very much for the positive comments	
There is still some uncertainty about how data should be analyzed within and across cases, what "the agreed templates" and "joint protocol"	Yes, the templates will be finalised as part of the study. However, we have provided more detail about the data	11

includes, and I draw the conclusion that this will be developed during the course of research.	collection template in the section Observations of adaptive teamwork, and about the interview topics in the section Interviews.	
However the comparative cross-case analysis will be the top-challenge as the researchers aims to go beyond mere descriptions and find causations of the how adaptation is shaped by organisational, cultural, economic and regulatory factors in the different countries.	We agree this phase will be challenging however we propose to use the Qualitative Comparative Analysis method for comparing cases, which will provide structure and rigour to the analysis. We have slightly amended the wording in this section to reflect this.	12
The conceptual framework used for analysis seems still to be at an overall abstract level and my concern is whether it will provide sufficient concrete guidance as analysis scheme on how you can interpret and understand empirical data. It will also be reviewed, modified and extended with the empirical findings of the study, thus contributing to the theoretical and practical advancement of resilient healthcare theory, which is a laudable purpose. My reflection is if the researchers consider to also consult other theoretical frameworks used to evaluate changes in health care organizations, both to build upon and to delineate the new frame to existing knowledge in implementation science and quality improvement science.	Since submitting this paper for review, we have since published another paper that defines adaptive capacity and describes how adaptive capacity is created at different system scales. It proposes a new Integrated Resilience Attributes Framework which provides more detailed guidance. We believe using this framework together with e.g. the CARE model will provide enough detail for structuring the data analysis. We have described this framework towards the end of the Phase 2 section.	11-12
However, this research is highly relevant and is well placed to meet the need of a deeper understanding of team adaptive capacity through a large cross-country and multi-level study. A minor comment is that the dates of the study should be included in the manuscript.	Thank you. We have added dates to the study design section.	6
Reviewer 2		
Thank you for the opportunity to review this protocol, which describes the design of an important research project to investigate across six countries what factors contribute to resilient performance, and how these can be strengthened.		
This research is very timely as health systems worldwide are currently struggling with the Covid-19 pandemic, and anticipation, adaptation and learning are key mechanisms for managing the crisis. Even though the focus of the research is on normal situations, the learning generated by this study will no doubt be of relevance to situations such as the current pandemic.	Thank you for the positive feedback. We agree that this study will generate learning about response to the pandemic and will seek to elucidate this in the study outputs. We also think the pandemic has important implications for how we implement the study, given restrictions on hospital access now in place in many countries. We have added a section to the methods discussing options we	12

	have considered for carrying out the study without hospital access, and also for eliciting information about adaptive responses to the pandemic.	
A strength of the research is the international setup, which allows to make comparisons across a range of health systems and cultures.	Thank you.	
1. It might be worth explaining how and why the six participating countries were chosen.	Thank you, we agree. The section on Phase 1 Mapping of country characteristics has been revised to provide more details about the Resilient Healthcare Network and the research teams.	7
2. Maybe shorten the introduction in spend more words on the research design	Thank you for the suggestion. We felt that it is important that the introduction provides sufficient information to frame the study theoretically and so have decided to retain it as is. However, we have added further details about the design and methods in response to reviewer comments and hope this clarifies these sections.	7-12
3. Following on from (2), consider providing further detail about how the observational data will be recorded, e.g. is there a data collection instrument or structure? For the interviews, could you explain how these topics were identified and chosen?	Thank you for this suggestion. We have added more detail about collection of observation data in the section "Observations of adaptive teamwork". We have added to the section "Interviews" to provide more detail and have added a reference to previous work which has informed the topic guide examples.	11
4. The PPI description could be strengthened to explain how patients were involved in the design of the research, and how the research will add to patient benefit. .	As described, PPI representatives were consulted during the project design. The PPI representative currently co-chairing the EAB contributed with feedback on several occasions during the project proposal development and as part of the project design. The representative has also spent one month at the SHARE head office at the University of Stavanger as visiting researcher working in the project start up phase. Patients and stakeholders will benefit from the project because the entire research is oriented around quality as the outcome of resilience, as described in the recent paper where the RIH research team defines the boundaries of resilience (Wiig et al	13

	2020). We have added some further details about this in the PPI section.	
5. Will the project involve any kind of implementation or testing of interventions? This would strengthen the recommendations	No, the international cross-country study does not involve testing interventions as the purpose is to identify factors that support or hinder healthcare teams of different types to develop guidance on effective adaptive teams. However, we agree that interventions are important and have added a sentence to the discussion explaining that results of this study will inform intervention development and testing in other studies conducted in the SHARE Centre. The Norwegian part of the RIH project includes interventions, but this is not part of the international study protocol and is therefore not covered here.	14
Overall, this is going to be an excellent project, and I wish the team a successful research journey.	Thank you, we are excited to embark on this important study.	

### VERSION 2 – REVIEW

<b>REVIEWER</b>	Mirjam Ekstedt Linnaeus University
<b>REVIEW RETURNED</b>	20-Sep-2020

<b>GENERAL COMMENTS</b>	The protocol has undergone substantial improvement, and as the research is urgently relevant, especially in the traces of the ongoing pandemic, it will be exciting to follow this research. I wish the team a successful research journey.
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<b>REVIEWER</b>	Mark Sujan Human Factors Everywhere
<b>REVIEW RETURNED</b>	15-Sep-2020

<b>GENERAL COMMENTS</b>	<p>Thank you for making revisions to the manuscript. The issues I raised in my earlier review have been addressed.</p> <p>I believe this is an important study that aims to help us understand how we can move from descriptive studies of resilient health care towards strategies for improving resilience. It is a particular strength of the project that different countries with different health systems and cultural backgrounds are considered.</p> <p>Good luck with this work.</p>
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