Author's response to reviews

Title: An implementation study of the crisis resolution team model in Norway: Are crisis resolution teams fulfilling their role?

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Author's response to reviews: see over
Cover letter:

A point-by-point response to the concerns:

Dear Associate Editor Prof Thomas Kallert and Section Editor Prof Hilary Pinnock,

Thank you for the peer reviews of our manuscript. The manuscript has now been revised according to the responses from the referees. In the subsequent text, we give a point-by-point response to the concerns of the referees.

Best regards,

Nina Hasselberg
Referee 1: Lars Kjellin

1. Aims and study design. Reading that one aim (d) was to examine if the implementation was successful, and that it was a prospective study, led me to believe that this was a study of patient outcomes. I think that ‘... successful in relation to the international model ...’ should be clarified. Successful in what way?
To meet these concerns, we have:
- changed the last aim both in the background section in the abstract and in the background section in the last paragraph and in the first part of the discussion section to:
  “d) examine whether the CRTs in Norway is organized according to the international CRT model”.
- changed the conclusion of the abstract section:
  “Conclusions: The CRT model has been implemented in Norway without a rapid response, gate-keeping function and 24/7 availability. These findings indicate that the CRTs do not completely fulfil their intended role in the mental health system.”
- clarified further what the international CRT model are (the beginning of the background section).
  “The key characteristics of the CRT model are separate multidisciplinary mobile teams offering rapid short term emergency services in the community, as an alternative to inpatient admission [1]. CRTs are intended to operate 24 hours, 7 days per week with a gate keeping function to acute wards.”
- deleted or replaced the term “prospective” from the revised manuscript.

2. Sample, second paragraph. I think the subordinate clause ‘... but the way ....are still representative’ should be deleted. It is not convincingly shown that the eight CRTs are representative for all 35, and the matter is sufficiently elaborated in the discussion.
We have further quantified this suggestion in the revised manuscript (in the sample section, second paragraph):
“These 35 CRTs were operating without a gate-keeping function and 24/7 availability and there was still a lack of full-time psychiatrist in these teams. About half of the teams operated extended hours. This indicates that the way the CRTs are organized and operate have not
changed significantly since our data-collection and that our data was still representative for these teams”

3. Registration form, … Are the reliability data presented referring to the Norwegian version of the HoNOS? It is said that scale 8 was excluded from analyses, but still this scale appears in table 2.

In the methods, registration form section we have add:

“These reliability data were from the approved Norwegian translation of HoNOS as used in this study.”

The numbers from HoNOS subscale 8 is deleted from table 2.

4. Data analysis, second paragraph. A great number of analyses were done, but it appears as if Bonferroni adjustment was applied only for the ANOVAs. If so, why?

Multiple comparisons with Bonferroni post hoc tests were used to limit the probability of Type 1 errors in all relevant tests, not just ANOVA. We have clarified this in the text in the methods, the data analysis section, :

“Multiple comparisons with Bonferroni post hoc corrections were used to reduce the probability of type 1 errors. Thus, with an alpha level of 0.05, the individual error rate was reduced to 0.002 when using 25 items (0.05 divided by 25).”

- in the results section:

“After Bonferroni adjustment for multiple comparisons, there were no significant differences between the CRTs on socio-demographic variables, except whether patients were living alone, and whether patients were employed, with the two urban CRTs serving more unemployed patients.”

“As shown in Table 3, after Bonferroni adjustment for multiple comparisons, patients admitted during CRTs…”

- and in the tables 2 and 3 as footnotes:

“ □ not significant using Bonferroni adjustment for multiple comparisons”

5. Results. I think there are some unnecessary repetitions in the text of data presented in tables. On the other hand, in ‘Patient characteristics’, fourth paragraph, some clinical measure data could be presented, and not just the range of p-values.

We have revised the text in the result section, and mostly deleted repetitions in the text of data presented in tables. In addition, we have added clinical measure data on patient characteristics, the result-section:
“Patients with previous contact with the mental health services had significantly more severe mental problems on most clinical measures (HoNOS total score; 13.6/11.0, \(p < .001\), GAF symptoms; 46.7/50.7, \(p < .001\), and GAF functioning; 47.5/52.1, \(p < .001\)).”

“Patients with emergency referrals had significantly more severe mental problems on most clinical measures than those who were not referred as an emergency (HoNOS total score; 13.2/10.7, \(p < .001\), GAF symptoms; 47.2/51.2, \(p < .001\), and GAF functioning; 48.5/52.3, \(p < .001\)). Those who self-referred did not differ significantly on any clinical measures from those who were referred (HoNOS total score; 12.9/12.4, \(p = 0.42\), GAF symptom; 47.5/48.6, \(p = 0.28\), and GAF functioning; 48.0/50.1, \(p = 0.05\)).”

6. Discussion, Patient characteristics, first paragraph. It seems to me that there are some unnecessary repetitions from the Background.
All the sentences and references in the discussion section (patient characteristics, first paragraph) that repeat referred findings in the background section are deleted.

7. Discussion, Patient characteristics, second paragraph. I don’t understand in what way the sentence “This might give … criticized” can be derived from the preceding text.
This sentence is deleted in the revised manuscript.

8. To me, the most interesting finding of this study is that the national health authorities decided to implement the CRT model nationwide, but that other kinds of services than CRTs were established. How come? Lack of resources following the decision? Unspecific national guidelines for CRTs? The authors have some comments on this here and there in the discussion, but I think this could be more elaborated (even though a further investigation of barriers to implementation is recommended).
We have changed the conclusion in the abstract to meet these considerations (see previous paragraph in this cover letter).

We have written about that Lack of resources following the decision and unspecific national guidelines for CRTs in the original manuscript in the discussion section:
“There are a number of possible explanations for not having implemented the whole CRT model in Norway. Firstly, it is less expensive to operate without 24/7 availability. Secondly, the geography of Norway, which is characterized by low density of population compared to
the UK, makes rapid response and home treatment more challenging. Thirdly, a gate-keeping function to acute wards requires a transfer of authority from acute wards to CRTs. This has not been done in Norway. Fourthly, the practice of treating patients who are not considered for hospital admission may be explained by a need to reduce pressure on other mental health services. It is therefore possible that the CRTs are reducing emergency referrals to outpatient clinics more than to the acute wards. Fifthly, independent of national and international guidelines, local and national variations in resources and available clinical staff can affect team composition at times. In addition, there is a greater risk of local variation when the national guidelines for CRTs in Norway can be criticized for being vague.”

“The establishment of CRTs in Norway was a priority of national mental health authorities, but the teams were not given the resources to operate with 24/7 availability or gate-keeping authority to acute wards. Clinical guidelines were developed in Norway, but these seemed to be less specific than similar guidelines from the UK, giving a greater risk of local variations. On an individual level, the lack of full-time consultant psychiatrists at CRTs in Norway may be related to more general problems in the mental health services, with a limited number of psychiatrists and problems recruiting psychiatrists to vacant positions. This lack of input from consultant psychiatrists makes the CRTs less multidisciplinary, and two teams in our study included mainly nurses and social workers.”

Minor issues not for publication:

9. *Some references in the text do not seem to be correct, for example [18] p. 7.*
We have corrected this reference number. We have also controlled all the other references as well.

10. *Results, second paragraph and table 1. Three or four teams with a full time psychiatrist/doctor?*
We have changed all the numbers to three full-time psychiatrists because it is recommended in the guidelines in several countries to have a full-time psychiatrist as a part of the CRT.

11. *Variation between teams ..., second paragraph. It is stated that there was a significant difference regarding waiting time for admission, but in table 2 the p-value is 0.137.*
This statement is deleted in the revised manuscript.
Referee 2: Mary-Anne Cotton

1. I am not sure that the authors can conclude that because the CRTs took on fewer people deemed to be psychotic compared to UK teams that they are necessarily not reaching the target group. This can only be one interpretation and I recognise was covered further in the discussion but perhaps should not be cited in the abstract conclusion.

We have changed the conclusion to:

“This CRT service has been implemented in Norway without a rapid response, gate-keeping function and 24/7 availability. This study indicates that one consequence of this way of operating is that the CRTs do not completely fulfil their intended role in the mental health system.”

2. On page 7 under the heading of 'sample', the authors refer to the fact that since their study there are now 35 CRTs in Norway. It is suggested that these new teams do not 'seem' to differ in the way they are organized and operate. This needs to be further qualified so that the results of the original 8 teams can be generalized.

We have further quantified this in the revised manuscript (see earlier paragraph in this cover letter).

3. The authors comment that the diagnosis was missing for 54% of patients in one team- it is not clear who was responsible in the team for making the ICD10 diagnosis and also whether the data on 'psychosis' was drawn from this or HoNOS. This does place a question on the reliability of the proportion of patients with a diagnosis of psychosis seen by the CRTs and needs to be firmed up.

In the methods section, data analysis we have written:

“In Norway, only physicians and psychologists are authorized to make ICD-10 diagnoses. The teams with the most missing values on the diagnosis variable operated without a physicians/psychiatrist or psychologist as a part of the team and with nurses and social workers as the majority of staff. In these teams, diagnoses were made by physicians who were not a part of the team. These physicians took part in some consultations that focused on issues such as psycho pharmacological treatment, admissions to acute psychiatric ward, suicidal risk,
violence risk or compulsory admission. In addition, the staff did use previous diagnoses made by physicians/psychologists in other mental health services.”

Minor Essential Revisions

1. *Throughout the paper there is reference 'to mental problems' - a more preferable term would be mental health problems.*

The term “mental problems” has been change to “mental health problems” throughout the manuscript.

2. *All the tables could be more compact by making them more tabular*

We have made the tables more compact.

3. *I am not sure of the usefulness and accuracy of subdividing the HoNOS items in table 2*

We chose to present the HoNOS subscales because of the missing values in the diagnose variable to give a more valid and complete picture of the mental health problems of the patients admitted to the CRTs.

4. *There is a minor typo error in the last sentence at the end of the 'Variation between teams and their patients' - the 'hads' are in the wrong order!*

This has been corrected in the revised manuscript.

Discretionary revision

1. *It would be useful if the authors have any data on whether the introduction of CRTs has had an impact on hospital admissions*

The reason why we can not report data on whether the introduction of CRTs has had an impact on hospital admission is that the acute psychiatric inwards have a larger catchment area than the CRTs. This means that the acute psychiatric inwards admit patients from areas both with CRTs and without CRTs. The Regional Ethical Committee did not allow us to collect data on the municipalities in which the patients lived. To our knowledge there exist no such data in Norway. Therefore it is impossible to calculate whether the introduction of CRTs has had any impact.
2. It would also be useful to clarify why the teams with the extended hours seemed to take longer to assess patients compared to those operating within office hours - I would have thought that they would have been able to see patients in a more timely fashion. After Bonferroni adjustment, this finding is no longer significant.

Referee 3: Stephen Niemiec

I regard the paper as a useful paper in that it demonstrates the difficulty in implementing new ways of working in areas where there is no prior experience in delivering similar services. The NHS went through a torrid time implementing CRHTs as there was little experience within the local workforce. Areas that were successful in the early days of implementation had the benefit of experiences in Australia or those who had worked recently with clinicians and managers when these Teams were implemented. The mantra of `you don`t know what you don`t know` rings more true (perhaps) in relation to these Teams especially in the presence of good evidence that they do make a positive impact for patients, carers and for services when implemented properly. The notion of proper implementation has been called model fidelity and has been written about by other researchers and clinicians. I think more needs to be made of this point in the text before publication and this is the only suggestion I would make. Minor essential revision. Some comments about what would make implementation more successful would assist Policy makers.

We consider the essential points of this referee regarding difficulties in implementing new ways of working in the mental health services to be discussed in the following sections of the original manuscript:

In the background section:
“Several authors have pointed out that there is a gap between models based on what is known about effective treatment, and the implementation of effective routine clinical practice [26–28]. Tansella and Thornicroft [26] described three phases, including different barriers or facilitators at the national, local and individual levels, in understanding the translation of knowledge in the health science into routine clinical practice. The three phases are called adoption in principle, early implementation and persistence of implementation. This is a study
of how the transfer of knowledge from the CRT model has been implemented into routine clinical practice in Norway.”

In the discussion section:
“There are a number of possible explanations for not having implemented the whole CRT model in Norway. Firstly, it is less expensive to operate without 24/7 availability. Secondly, the geography of Norway, which is characterized by low density of population compared to the UK, makes rapid response and home treatment more challenging. Thirdly, a gate-keeping function to acute wards requires a transfer of authority from acute wards to CRTs. This has not been done in Norway. Fourthly, the practice of treating patients who are not considered for hospital admission may be explained by a need to reduce pressure on other mental health services. It is therefore possible that the CRTs are reducing emergency referrals to outpatient clinics more than to the acute wards. Fifthly, independent of national and international guidelines, local and national variations in resources and available clinical staff can affect team composition at times. In addition, there is a greater risk of local variation when the national guidelines for CRTs in Norway can be criticized for being vague.”

“The establishment of CRTs in Norway was a priority of national mental health authorities, but the teams were not given the resources to operate with 24/7 availability or gate-keeping authority to acute wards. Clinical guidelines were developed in Norway, but these seemed to be less specific than similar guidelines from the UK, giving a greater risk of local variations. On an individual level, the lack of full-time consultant psychiatrists at CRTs in Norway may be related to more general problems in the mental health services, with a limited number of psychiatrists and problems recruiting psychiatrists to vacant positions. This lack of input from consultant psychiatrists makes the CRTs less multidisciplinary, and two teams in our study included mainly nurses and social workers.”

In the conclusion section:
“In our study, we found that the CRTs in Norway did not implement the whole CRT model and this may lead to the result that CRTs were only reaching part of the target group. Norwegian CRTs do not serve as an adequate alternative to admission in the same way as international CRTs and therefore do not completely fulfil their role in the mental health system. For fuller implementation of the CRT model, fidelity scales and supporting toolkits for achieving fidelity might be useful. A further investigation of barriers to implementation is recommended.”