Dear Jia-Ping Yan,

Thank you for your e-mail and the reviewers' comments.

We have responded to each of these in detail below and believe that the manuscript is now improved as a result. We hope that it is now suitable for publication.

If there are any other issues then please do not hesitate to contact us.

Kind regards,

Stephen Leslie (on behalf of the co-authors)

Detailed response to the reviewer's comments

Reviewer #1

RQ 1.1 What is the method of data transmission? Is there any difference between the 3 companies RM systems? What does it mean that no obvious differences between the four providers in the part of safety? Is there any specific data to support it?

AR 1.1 Thank you for these comments, we have added the following text to the methods section of the manuscript (page 4 lone 9-17) 'All RM systems transmit a variety of parameters, (such as lead parameters, battery status, therapy delivery, arrhythmias, intracardiac electrograms, heart rate and rhythm statistics and patient activity levels) from the patients' device via a mobile network link of landline, to the manufacturer's central repository. Clinicians responsible for the follow up of patients receive automated email notifications if pre-specified criteria are met (e.g. shock delivered). All transmitted data is stored on a dedicated, secure, password protected website. Follow up arrangements between groups were similar, and on a case by case basis at the discretion of the follow up clinician. All ad-hoc reviews prompted by events highlighted from home monitoring were also arranged at the discretion of the clinician.'

RQ 1.2 Under what circumstances will the RM group and clinical group undergo medical evaluation?

AR 1.2 Thank you for this comment, medical evaluation was at the discretion of the clinicians as per usual local practice (as above) we have added some information in the methods section, page 4, lines 77-85

RQ 1.3 Is it possible to obtain the satisfaction survey results of patients to show that RM has a positive effect on the psychological impact of patients?

AR 1.3 Thank you for this valid comment, however this was outwith the scope of this service evaluation.

Reviewer #2

RQ 2.1 Add some detail describing the form of remote monitoring that was applied, what the monitoring frequency was and what parameters were monitored

AR 2.2 Thank you for these comments, we have added the following text to the methods section of the manuscript (page 4 lone 9-17) 'All RM systems transmit a variety of parameters, (such as lead parameters, battery status, therapy delivery, arrhythmias, intracardiac electrograms, heart rate and rhythm statistics and patient activity levels) from the patients' device via a mobile network link of landline, to the manufacturer's central repository. Clinicians responsible for the follow up of patients receive automated email notifications if pre-specified criteria are met (e.g. shock delivered). All transmitted data is stored on a dedicated, secure, password protected website. Follow up arrangements between groups were similar, and on a case by case basis at the discretion of the follow up clinician. All ad-hoc reviews prompted by events highlighted from home monitoring were also arranged at the discretion of the clinician.'

RQ 2.2 Was it a health care professional monitoring the ICD parameters, intra-cardiac ECG, impedance, or were other monitoring devices included? Was an app used? Were remotely managed patients called in a regular basis?

AR2.2 Thank you for your comments, we have added some information in the methods section, (as per response to 2.1), detailing in clinic follow up. We have also clarified that it was trained cardiac physiologists who reviewed the intra-cardiac EGM (page 5, line 11).

Reviewer #3

RQ 3.1 The authors suggested the usefulness of RM in patients living in remote and rural area. If so, the approximate distance and/or time from each patient house or clinic to the medical centre should be clarified, and the increased value of RM should be discussed more.

AR 3.1 We appreciate the usefulness of this information and the added value it would give to the paper, unfortunately we do not have access to this information.

RQ 3.2 This is a retrospective observational study, and patient numbers in Table 1 should be 45 and 111.

AR 3.2 Thank you – this has been corrected.

RQ 3.3 In table 2, the prevalence of death in lost patients seems higher in the clinic group. I consider the possibility of higher incidence of sudden cardiac death due to VF storm.

AR 3.3 We acknowledge that the death rate is higher in the clinic group, and accept appreciate that this could be due to VF storm.

RQ 3.4 The tables should be re-arranged along to the description in the manuscript.

AR 3.4 Thank you for this comments the tables have been rearranged as suggested.

RQ 3.5 The variability of TMA should be more clearly shown using box-whisker or scatter plot.

AR 3.5 Thank you this has been added to the paper as Figure 1.

RQ 3.6 The number of inappropriate shock is very small and could be a statistical limitation.

AR 3.6 Thank you for this comments. We agree and have added the following text (page 10, lines 13-18) ‘The number of inappropriate shocks in both groups is small and this is a

statistical limitation of the study. It is also recognised that this study does not include data regarding anti-tachycardia pacing delivered to patients, whilst this would provide additional therapy and arrhythmia information it was out with the scope of this review.'

RQ 3.7 There was no data or comment for anti-tachycardia pacing.

AR 3.7 This is a very valid point and we fully acknowledge that this data would add value to the review. Unfortunately this data was out with the scope of the review and we have commented on this on page 10, lines 216-218