Virtual courtroom experiment: Data report
Third evaluation of a virtual trial pilot study conducted by JUSTICE

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Executive Summary

Introduction

This report provides a summary of the views of almost a hundred people who participated in the virtual jury trial experiments conducted by JUSTICE in conjunction with AVMI (now part of Kinly) in the summer of 2020. This is the third in a series of reports on the JUSTICE experiments.

1. The COVID-19 pandemic has caused considerable disruption to court business. The criminal justice system is said to be now facing a backlog of 40,000 cases that will be difficult to clear. Some Crown courts have now opened for jury trials with social distancing measures in place but this is not sufficient to manage existing demand or begin to clear the backlog. The backlog has caused a number of serious problems. These include defendants on remand being incarcerated for longer periods; increased waiting times; risks of more abandoned prosecutions; increased stress and a lack of work for the legal profession.

2. The purpose of the four experiments was to determine whether it is possible in a crisis such as the one we are facing to hold 'dispersed' or virtual trials in which the principles of fairness, accuracy of evidence and certainty can be met. In order to test the case for virtual jury trials JUSTICE and a firm of technology experts (AVMI) organised four virtual trial experiments between April-June 2020.

3. In virtual trials all the participants appear from their separate locations so that the courtroom takes the form of a shared 'public' screen. A series of other secure virtual rooms also exist behind this shared view of the virtual courtroom. These include a virtual room for the defendant to consult with counsel and a jury deliberation room. The platform that AVMI have designed for this experiment also allows documents to be viewed on screen. Certain elements of the experimental design, such as the type of case and the people involved, were consistent across all four trials, however, this was a piece of action research where improvements were made between trials, culminating in the creation of a physical jury hub.

4. The fourth trial with a physical jury hub was widely considered by the organisers to be the most successful of the four experiments. There were far fewer technical problems and all of the responsibilities of jurors regarding technical provision were removed. These findings are in addition to the benefits outlined in the first report of the pilot which suggested that the defendant being more central to deliberations on screen that they would be in a physical court had a democratizing effect. This report adds the voices of those who took part in each of the experiments and responded to a questionnaire sent out by JUSTICE.

Methods

5. After each of the experiments all those who had taken part were asked to complete a survey which included a series of questions related to:
    * Demographic data;
    * Experiences of information supplied in advance of the trial;
    * The technology used;

- Experiences of being in a virtual court; and
- Perceptions of the fairness of the virtual trials.

6. This was an 'action research' project in which improvements were made to the process and procedures after each experiment. This meant that respondents to successive surveys were not always comparing like with like. As a result of the improvements made across time it was anticipated that satisfaction rates would increase with each survey. Because of this we have mainly focused on comparing the evaluations of participants who took part in experiments three (everyone separate) and four everyone (jury gathered in a building with technical support). Evaluations from earlier surveys have however been included when conditions remained stable across all four experiments.

The Provision of Information Before Proceedings Started

7. Respondents to the survey were generally very happy with the advice and information they were given in advance of the trials. Satisfaction generally increased over the course of the experiments as improvements were made by JUSTICE and AVMI.

8. While people were satisfied with the information provided to them about how they ought to arrange the physical space from which they were appearing, it soon became clear that transforming private space into something suitable for public proceedings was not always an easy task in reality.

9. Problems with technology was likely to cause frustration or anxiety which can impact on performances or the quality of proceedings. This was an area in which there were obvious teething problems as evidenced by the survey results in the earlier trials. However, there was a notable increase in levels of satisfaction between trials three and four.

10. Participants across all trials stressed the importance of having clear information about everything to do with the trial in one document, sent to participants well in advance of proceedings.

11. Several comments were made across the trials as to the importance of having well trained technicians used to dealing with people who may not be confident in using technology. Having clear lines of communication with those technicians was also considered to be important.

12. Advance information on how to behave in the virtual court was improved upon after every experiment and this was reflected in the fact that by the fourth experiment, respondents were generally very satisfied that they knew how to behave in the virtual court.

13. Anxiety about who to contact if something went wrong reduced considerably over the course of the experiments; by trial four only two participants remained extremely dissatisfied.

14. Further suggestions to improve procedures prior to the commencement of the trial included having the chat function integrated with the videoconferencing platform; having a person responsible for alerting the judge when a participant has been forced to leave the proceedings; and having thorough briefing materials circulated as to what to do when something goes wrong.

Getting Connected

15. The number of people who had issues joining the videolink connection reduced across the first three trials; predictably far fewer problems were encountered in the fourth trial when the jury gathered together in a community hall, reducing the numbers of connections and providing the jurors with immediate in person assistance when required.

16. While the majority of participants had reliable connections, it was very frustrating for those who lost connectivity or suffered frozen screens. Respondents acknowledged that connection problems for counsel, jurors and witnesses were frequently resolved within minutes.

17. Some of the problems encountered by participants by trial three were deemed to be insurmountable. These included background noises or disruptions in home environments that were difficult to control or prevent and were out of the control of judges, court staff and the technical team. These problems were the major reason for the jury gathering in a community hall in the fourth experiment. Satisfaction improved considerably as a result of all the jurors being in one room using AVMI equipment and supported by on-site technicians.

Being in Court

18. Respondents were asked a number of questions that related to various aspects of their capacity to see and hear participants, and to seek help during the virtual trial. When asked whether they understood everything that was going on nearly all those surveyed judged that they did know what was going on with 72 out of the 75 respondents that answered this question across all four surveys being in this category, with those who did not understand everything predominantly being involved in trial one. Respondents were also asked whether they understood the role that everyone on screen was performing. It was only in the first trial that there were any respondents who did not understand the role that everyone on screen was playing, suggesting that induction and acclimatisation got much better after this.

19. Respondents were generally satisfied with how they appeared onscreen and extremely satisfied with sightlines across all four trials. Several participants noted that sightlines and visibility were an improvement on meeting in physical buildings. This raises important issues about the potential of virtual trials to improve experiences of the trial.

21. Respondents were also very happy with the view they had of documents and this improved in the fourth trial. It was noted here by some that using screens to display evidence actually improved experiences of the trial by ensuring that everyone was looking at the same document at the same time.

22. A number of commentators mentioned that they were impressed by the way that transitioning between sections of the trial was swift; particular mention was made of the ease in which jurors could be moved in and out of the courtroom for legal discussion, as well as how defendants and witnesses were easily transitioned to the virtual 'witness box' as required.

23. Concerns were raised that there could be persons present with the witness or a juror appearing from home that could be intimidating them; and that jurors may more likely to be both identified and intimidated if more measures are not put in place (such as blurring of faces, or obscuring names). Solutions to these issues have since been proposed by JUSTICE and AVMI.

24. On-site technical support for jurors in the final trial made a significant difference to the ease with which jurors could access proceedings. Physical facilities in the fourth trial for the jury hub were well regarded; all jurors who responded to the survey in the fourth trial answered positively to all questions asked about the suitability of the location, the COVID measures put in place and adequate information and signage.

25. Several suggestions for further improvement were made including: matching backgrounds for counsel to create an even playing field; introducing a notification sound for the chat function for witnesses awaiting their appearance; need for tech support for the public gallery; customized holding screens giving waiting information; adjustable web-cams for the jurors and hard copies of jury packs of documents at the jury hubs for revisiting documentary evidence during jury deliberation.

The Fairness of Proceedings

Respondents were asked various questions about the perceived fairness of proceedings which went directly to the credibility of the virtual trial experiments.

26. When asked whether they understood everything that was going on most respondents were very positive about their experience More specifically they were asked whether:
    - They understood everything that was going on
    - Had opportunities to ask the judge or clerk a question if they wished to
    - The way that others listened to them
    - The way that others treated them, and
    - The way that others behaved while in court

    Other questions were focused on issues that are associated with the common law notion of a fair trial or natural justice. These consisted of questions on:
    - They felt that proceedings were conducted fairly

- They felt that the judge was neutral
- The process was biased towards any party or participant
- All participants were treated equally
- All participants were treated with respect
- The way that the proceedings ended

28. Satisfaction with natural justice was high in the experiments in which no one was in the same room and the fourth experiment in which the jury gathered together in a hall. Levels of satisfaction improved in trial four with 19 out of 22 respondents being extremely satisfied that the trial was fair. A minority were concerned about fairness to the defendant.

29. Improved satisfaction levels in the fourth experiment when the jury were gathered together suggests that those surveyed were most confident about a fair trial for the defendant when the jury were able to assemble in one place and were supported by on-site technical assistance. A number of respondents commented that they thought that the opportunities for the case to be heard were at least as good as in a physical courtroom, that it was just like a 'real' trial once technological problems were overcome, that jurors took the trial just as seriously, that it was not unduly intimidating and allowed for clear communication between the parties. Several noted that this was especially the case with a relatively short and straightforward trial of the kind piloted in the study. It was also notable that jurors in the fourth and final trial were particularly impressed by the initiative

30. While some respondents had reservations about the experiment they nonetheless concluded that increased use of remote participation was an acceptable compromise during a pandemic. Reservations were expressed as to whether everyone being in different locations would be suitable for more complex trials that were document heavy or required longer periods in court, vulnerable participants or interpreters.

31. Limited observations can be made as regards to the jury deliberations due to the set deliberation time being limited to 40 minutes, but are indicative of a positive experience.

32. It was argued by several observers that the importance of the press as a special category of observer needs to be acknowledged. Several journalists were worried about their loss of contact with court staff in the virtual court, and were concerned if the virtual jury trial were to be rolled out how this would affect their working practices and their ability to report.

Conclusions

33. The findings of the survey results analysed in this report would support the contention that the partial virtual trial model piloted in the fourth JUSTICE experiment has the most potential to contribute to ameliorating the backlog. This is largely due to the stabilising effect that reducing 12 different internet speeds, software and hardware configurations to a single system managed on-site had.

35. Levels of satisfaction across the sample in relation to a large number of measures suggests that the model developed by the fourth trial is worthy of consideration for further piloting and testing by HMCTS as a solution to a serious problem during the pandemic.

36. If adopted on a larger scale, the concerns raised in this report about the jury hub model and previous iterations would need to be addressed by HMCTS in the next iteration of the virtual jury trial tests. These include:

    - threats to juror safety,
    - anonymity and the increased potential for jury nobbling;
    - the potential for witness intimidation is addressed;
    - measures are in place to ensure that the press can access court staff;
    - participants being sufficiently supported and informed of what to do when technical difficulties arise and of what is happening in the court; and
    - sufficient trained technicians on hand to address participant's needs and concerns.

37. The study team suggests ongoing testing and piloting by HMCTS within their facilities and frameworks if a wider-scale roll-out is envisaged with ongoing evaluations to help improve and refine the virtual trial platform, along the lines of that conducted and analysed in this report.

Section A: Introduction

This report provides a summary of the views of almost a hundred people who participated in the virtual jury trial experiments conducted by JUSTICE in conjunction with AVMI in the summer of 2020. This is the third in a series of reports. Further details about how this project was set up, the problems encountered in the early stages and how they were responded to can be found in the first two reports which can be found on the JUSTICE website.[i] The first report evaluated the first two experiments in which everyone taking part in the trial was appearing from their home using their own equipment. The second report focused on the final trial in which the jury were assembled together in a physical 'jury hub' but all other participants appeared from different locations.

Why were the experiments conducted?

The COVID-19 pandemic has caused considerable disruption to court business. Some courts have managed to stay open but the criminal justice system is said to be facing a backlog of 40,000 cases that will be difficult to clear. HMCTS has expressed its commitment to avoiding physical hearings and arranging remote hearings wherever possible. A range of different Crown court processes are taking place remotely including sentencing hearings, urgent applications for bail or to extend custody, as well as pre-trial and case management hearings. Some Crown courts have now opened for jury trials with social distancing measures in place but this is not sufficient to manage existing demand or begin to clear the backlog. The backlog has caused a number of serious problems. These include defendants on remand being incarcerated for longer periods; increased waiting times; risks of more abandoned prosecutions; increased stress and a lack of work for the legal profession.

About the Virtual jury trial experiments

The purpose of the four experiments was to determine whether it is possible in a crisis such as the one we are facing to hold 'dispersed' or virtual trials in which the principles of fairness, accuracy of evidence and certainty can be met. In order to test the case for virtual jury trials JUSTICE and a firm of technology experts (AVMI) organised four virtual trial experiments between April-June 2020. Volunteers were recruited to play the various roles in a jury trial and the judge and barrister roles were played by experienced practitioners throughout. It was recognised that deliberation of what is technologically possible must be set against two important considerations about what is appropriate. The first of these is that virtual trials must engender confidence in the legal system. The second is that digital solutions to the current COVID-19 crisis must be set against concerns about the digitally excluded.

How do virtual trials work?

In virtual trials all the participants appear from their separate locations so that the courtroom takes the form of a shared 'public' screen. A series of other secure virtual rooms also exist behind this shared view of the virtual courtroom. These include a virtual room for the defendant to consult with counsel and a jury deliberation room. The platform that AVMI have designed for this experiment also allows documents to be viewed on screen. Certain elements of the experimental design, such as the type of case and the people involved, were consistent across all four trials. Other elements changed as the success of each experiment was evaluated by JUSTICE and AVMI.

Timing	Changes made by organisers of the trials when problems identified
After trial 1	Created a jury information sheet with information about the technology; how to arrange room to best effect; the oath/affirmation; how to behave in the hearing, what to do if a technical issue arises and how to conduct a deliberation.
	Created a witnesses information sheet, which includes much of the same information list above tailored to witnesses.
	Creation of a crib sheet for the judge outlining all the points they need to address to ensure that a virtual court hearing runs smoothly.
	Notes for Clerk created to address issues that arise in a virtual court room
	Role of jury bailiff created
	Participants made aware of all the behind the scenes roles being undertaken by people that may not appear on the screen
	Jurors assigned a number to protect their anonymity
	An American voice alerting participants to the fact that they were "the only caller remaining" lowered in volume and only activated when someone unexpectedly leaves
	Need for participants to disconnect and log in again if the technology failed explained to jurors in a test call the day before the hearing.
	Function and use of separate chat link explained in the test call. The jury chat function is also being used to communicated with jurors via the jury bailiff.
	Participants alerted to the fact that in common with a physical court setting they might be asked to wait around for things to happen.
	Instructions about how to address the judge included in the information sheet and explained by judge at the start of the hearing.
	Advice about which browsers were best to use given to participants
	Clearer instructions about the use of the mute button given.
	Instructions about how people should position themselves in front of screens provided including request for plain backgrounds.
	Advice given on servers and tips to maintain a strong connection in pre-trial call. Minimum specifications for laptops given.
	Participants asked to raise hands or use chat function if technical problems and provided with tech support email address which was monitored throughout.
	List of agreed signals e.g., raised hand.
	Participants given five minutes notice before entering court
	Extended introduction given by judge for those not familiar with legal proceedings and importance of proceedings stressed.
	Wearing of wigs in addition to other formal court dress for the judge and barristers and formal court dress for the court staff.
After trial 2	Juror and witness orientation video created with virtual court images.
	User guide created for jurors and witnesses containing joining instructions for test call and mock trial.
	General improvements to information provided.
	More "court presence", such as Crown Court holding shots while observers were waiting to enter.
	Introduction of document view for observers in public gallery.
	Increasing the number of technical staff on hand to five, including an event manager.
After trial 3	Inclusion of HMCTS staff to perform the roles of clerk and usher/jury bailiff.
	Provision of a new backdrop for the judge showing a coat of arms (supplied by HMCTS).
	Appearance of a defendant (played by a custody manager) by way of a prison link booth from HMP Leeds.
	Creation of a physical jury hub with signposting and "court presences" such as posters and free standing back drops provided by HMCTS and equipment provided by AVMI and supported on site by them.

Table one to show changes made at various times between the first and fourth trial.

Details of the sort of changes made between each trial are summarized in table one above. The most significant changes in the fourth trial was the creation of a physical jury hub and the use of a prison link, as well as on-site technical support for jurors.

Responding to concerns: The creation of a physical justice hub

At the end of the third experiment it was decided to try and overcome some of the technological challenges posed in earlier trials caused by members of the jury having to use their own equipment and internet connection. It was decided to bring together the jurors in one location with social distancing measures in place. Four AVMI employees made up an on-site technical team which were there to support jurors in person, rather than through a chat function within the videoconferencing program. Each juror had two screens on their desk, one for viewing the virtual courtroom and the other for viewing trial documents. Both of these were supplied and operated remotely by AVMI together with high quality over ear headphones. Hygiene practices were maintained on site through several strategies, including the provision of face masks, hand sanitizer, regular cleaning by an onsite worker and the provision of alcohol wipes. A sense of civic space was created by the use of posters and Crown court banners supplied by HMCTS placed at entrances. Jurors attended the virtual courtroom via the monitors supplied but deliberated in person in socially distanced spacing.

The focus of this report

The fourth trial with a physical jury hub was widely considered by the organisers to be the most successful of the four experiments. There were far fewer technical problems and all of the responsibilities of jurors regarding technical provision were removed. These findings are in addition to the benefits outlined in the first report of the pilot which suggested that the defendant being more central to deliberations on screen that they would be in a physical court had a democratizing effect. This report adds the voices of those who took part in each of the experiments and responded to a questionnaire sent out by JUSTICE.

Section B: Methods

After each of the experiments all those who had taken part were asked to complete a questionnaire designed by the authors and administered using the Qualtrics survey platform. Survey participants were asked a series of questions related to:

- Demographic data;
- Experiences of information supplied in advance of the trial;
- The technology used;
- Experiences of being in a virtual court; and
- Perceptions of the fairness of the virtual trials.

Questionnaires were designed so that participants could respond to pre-coded answers or Likert scales. There were also opportunities for participants to write additional text in free form boxes. Pre-codes were utilised to reduce the amount of time it took to fill in the questionnaire but the free text sections provided rich qualitative data which we have cited throughout this report. The survey was administered by JUSTICE and ethical approval for two of the authors (Teeder and Mulcahy) to analyse the data collected was granted by the University of Oxford ethics committee.[ii] The four surveys produced 95 responses with less than ten participants taking part in more than one trial.[iii]

Details of survey respondents

Table two shows the breakdown of the number of respondents in each age band across all four experiments. When mapped on to statistics on the general population the sample had more people of working age than in the general population.[iv] There was some concern after the first trial that volunteer jurors were in younger age categories than might be the norm. As a result an attempt was made, with some success, to redress this imbalance as the experiments progressed.

Age Band	Trial 1		Trial 2		Trial 3		Trial 4		Total	National proportions[v]
18-29	9	43%	2	12%	3	13%	9	27%	**23**	19%
30-39	5	24%	4	24%	3	13%	6	18%	**18**	17%
40-49	3	14%	4	24%	2	9%	5	15%	**14**	16%
50-59	3	14%	4	24%	6	26%	6	18%	**19**	17%
60-69	1	5%	2	12%	8	35%	6	18%	**17**	13%
70 or older	0	0%	1	6%	1	4%	1	3%	**3**	17%
Total	**21**		**17**		**23**		**33**		**94**	

Table two: Breakdown of number of respondents in each age band by virtual trial.

In the fourth trial, respondents were asked to provide additional demographic information relating to employment status, gender and ethnicity. This revealed that the majority of those taking part were employed (17); followed by unemployed (9) or retired (6). [vi] Table three shows participants by gender excluding observers.

Gender	Trial 1	Trial 2	Trial 3	Trial 4	Total	National Proportions[vii]
Male	5 26%	9 43%	9 48%	9 47%	**36**	**49%**
Female	14 74%	12 57%	11 52%	10 53%	**50**	**51%**
Total	**19**	**21**	**20**	**19**	**94**	

Table three: Breakdown of gender of respondents excluding observers by virtual trial.

Overall 42 per cent of participants were men and 58 per cent were women, meaning that the sample was slightly skewed in favour of the latter. The ethnicity of the 32 participants in the fourth trial who provided data made clear that a slightly lower proportion than in the general population were white, Asian or Black but that a higher proportion identified as being of mixed race.[viii]

Role	Trial 1	Trial 2	Trial 3	Trial 4	Total
Judge	0	0	0	1	**1**
Juror	10	8	8	11	**37**
Barrister for Prosecution	1	0	0	1	**2**
Barrister for Defence	1	0	0	1	**2**
Clerk	0	0	0	0	**0**
Witness	3	4	2	2	**11**
Observer	4	5	6	13	**28**
Defendant	1	0	0	1	**2**
Other[ix]	2	0	6	3	**11**
Total	**22**	**17**	**22**	**33**	**94**

Table four: Breakdown of respondents' role in proceedings by virtual trial.

Table four shows the breakdown of respondents' roles in proceedings. Predictably, some roles such as jurors feature more than others because there were more people playing that role. Observers included judges, academics, law students, representatives of HMCTS and HMPPS, representatives of the Law Society and Bar Council and MPs.

This was an 'action research' project in which improvements were made to the process and procedures after each experiment. This meant that respondents to successive surveys were not always comparing like with like. As a result of the improvements made across time it was anticipated that satisfaction rates would increase with each survey. Because of this we have mainly focused on comparing the evaluations of participants who took part in experiments three (everyone separate) and four everyone (jury gathered in a building with technical support). Evaluations from earlier surveys have however been included when conditions remained stable across all four experiments.

Section C: Findings -The Provision of Information Before Proceedings Started

Participants were asked a series of questions about how satisfied they were with the information provided to them before the virtual trial started.[x] These included questions about how they should arrange the room from which they were appearing, information about how to join the proceedings, the use of a chatroom facility, how they should behave in the virtual courtroom and what they should do if something went wrong. Respondents to the survey were generally very happy with the advice and information they were given in advance of the trials. Indeed, the only instance of dissatisfaction arose after the first trial and by the fourth trial 11 out of 12 respondents were extremely satisfied or somewhat satisfied.[xi] Detail about the responses to these questions is shown in Appendix One.

Arranging the room from which they appeared

In virtual trials the spaces from which participants appear become part of the courtroom on screen. This requires additional attention to be given to framing images so that participants can be seen clearly, do not have distracting backdrops and present themselves in the best way possible. After the first trial, in which images of jurors sometimes appeared against cluttered backdrops made up of personal possessions in their home, participants were asked to simplify their backdrop. In subsequent experiments, all participants, including barristers and the judge were given advice about how to position themselves in relation to the screen and improve the organisation of the room they were in. While people were satisfied with the information about what they ought to do, it soon became clear that transforming private space into something suitable for public proceedings was not always an easy task in reality. As one respondent to the survey indicated:

> The request for a quiet room, plain background and appropriate lighting required quite a lot of organisation, including moving furniture up and downstairs. Possible [health and safety] implications. Need to say something in the guidance about the extent of household reorganisation that is expected? (T3r.16 juror)

Respondents also mentioned that the requirement for people to adapt their surroundings might be particularly difficult for people living in shared accommodation or with children.

Information about how to join the video-link and chat room facility

It was important to JUSTICE that participants felt confident and comfortable with using the technology designed and provided by AVMI. It was acknowledged that problems with technology was likely to cause frustration or anxiety which might impact on performances or the quality of proceedings. For the first three experiments, in which jurors appeared from their own homes, it was also an element of the proceedings where participants had to be proactive in accessing and logging into unfamiliar software.

This was an area in which there were obvious teething problems with four out of 20 respondents being somewhat dissatisfied or extremely dissatisfied with the information provided in the first trial about how to join the video-link. This compared with none of the 21 respondents in the final experiment being dissatisfied once many of the problems identified

early on had been addressed.[xii] But, there was also a notable change in levels of satisfaction between trials three and four. In trial three, where jurors were in their own homes, two out of eight respondents were extremely satisfied compared with trial four in which the comparable figure was eight out of ten. Participants across all trials did however stress the importance of having clear information about everything to do with the trial in one document sent to participants well in advance of proceedings.

A key theme running across all four experiments was the level of praise reserved for the AVMI technical staff before and during the hearings. The following were common of general feelings of satisfaction:

> Having not joined a video link before and not being particularly technical I felt quite anxious about the task in hand. However, I was able to access technical support quite quickly and set up video and chat links successfully. Everyone supporting jurors very patient and efficient in communication in what needed to be done.(T3r.4 juror)

> I feel the tech team did a great job and were outstandingly patient in getting everyone ready to go in terms of tech. (T3r.20 juror)

> All explanations were clear and painstaking , and those delivering them were extremely patient. (T3r.23 juror)

These comments stress the importance of having well trained technicians used to dealing with people who may not be confident using technology. In this context respondents to the survey noted that this was particularly important for people who were unfamiliar with the sort of software programme being used, were dyslexic or faced other learning difficulties.

In addition to being able to join a virtual courtroom, jurors and witnesses had access to separate chatroom facilities which allowed them to ask for technical support and raise questions directed at the judge or clerk. This was a source of more dissatisfaction than any other feature of the software. Half of the 18 respondents who completed a questionnaire about the first trail were 'extremely dissatisfied' or 'somewhat dissatisfied' in the first trial with t the information provided about the chatroom. Satisfaction improved over time as information sheets and technical support was improved (see further table one). Concerns did not really dissipate until the fourth trial when technical support staff were on site, in lieu of using a chat function at all, and survey respondents did not record any instances of dissatisfaction regarding the technical support being provided in the room.

This may in part be due to a lack of familiarity with chatrooms at the beginning of lockdown but it was noticeable that in the first three trials participants were frustrated that the chat room and video link were run using separate software packages. This required them to follow separate links to access them and use a spilt screen set up when they had. Another respondent was concerned that:

> The live call video link triggered the Chrome browser but the Live call chat link triggered the Edge browser, which made ironing out confusion between the two difficult. (T3r.9 juror)

The value of simple instructions designed for use by people of all abilities was clear. Not all respondents were clear in advance that the chatroom and online court were reached through different links and systems. In one instance this appeared to cause some stress:

> The instructions had two methods of joining the call detailed – which was I to use? One required a password. When called as a witness (by email) I then had to scramble to work out how to join conscious I was holding up proceedings. (T1r.7 witness)

Further problems were experienced because split screen were more complicated to organise on some devices:

> Because I was using an iPad not a laptop, and therefore could not use a split screen, I was advised to use my phone to access the chat room facility. This advice was clearly at variance with the instruction not to have access to a phone during the proceedings. I mentioned this problem, but was reassured that it did not matter. This seems like an inconsistency that needs to be thought about.(T3r.23 juror)

A suggestion was also made that the 'chatroom' should be renamed "Court Communication Line", as chatroom sounded too informal and did not reflect the gravity of proceedings. Finally, concerns were also raised about having a shared witness chatroom which made it possible for witnesses to communicate with each other. These problems are capable of being addressed and software programmes such as Microsoft Office Teams and Zoom already offer integrated chatrooms. Other software programmes also make it possible to assign participants into separate waiting rooms.

Advance information about how to behave in the virtual court

Advance information about how to behave in court was improved after every experiment. By the fourth trial respondents were generally very satisfied that they knew how to behave in a virtual trial. Advance information and introductory speeches by the judge made clear the solemnity of the proceedings and importance of everyone paying attention to what was going on.

Information about what to do if something went wrong

Anxiety about who to contact if something went wrong reduced considerably over the course of the experiments. In the first trial, eight out of 19 respondents were extremely dissatisfied and a further three were somewhat dissatisfied. By trial three respondents were still expressing some dissatisfaction that participants with low technical skills could hold up proceedings. An example was given of one juror needing 45 minutes in a one to one tuition before being ready for the third trial.

> It was a very painful process getting everyone set up pre the trial. In fear of generalising and stereotyping, the older jurors struggled with the technology which made for a tedious and time consuming process (2.5 hours to set up before proceedings started). I completely empathise with the technical challenges but simple video call etiquette was not known or understood, which made for a stressful start! Having said that- the technical support was very patient and resolved most of the issues. (T3r.21 juror)

By trial four only the defendant who was appearing from prison over the prison-link equipment and one juror remained extremely dissatisfied. Somewhat ironically, the only concern about this final trial was that everyone was in place and linked up to others on screen perhaps too far in advance of the planned start of the trial. Despite this, feedback was very positive with the following comment being common:

> [It] was really good not to have to rely on own equipment or internet from home and to have this all provided plus the knowledge that someone was available to help should issues arise. Because everything was set up ready to go, arriving a whole hour early felt unnecessary. (T4r.16juror)

Several other respondents made suggestions about how the procedure could be improved for the future. These included:

- Circulating as much information in advance about what to do if something goes wrong with the connection e.g., leaving the facility and logging back on again;
- Ensuring that someone is responsible for alerting the judge if an important participant has been forced to leave the proceedings. The barristers were very good at this but could easily be distracted by other matters in the trial;
- Integrating the chat room facility within the same platform as the videolink;
- The 'chat' link also being referred to as the 'Halo' link,
- Avoiding participants having to cut and paste hyperlinks from the documentation sent out in advance; and
- The use of complex passwords which meant that mistakes were easily made.

These suggestions could usefully be considered in future virtual trial initiatives.

Section D: Findings - Getting connected

The availability of customised programmes and access to a good internet connections and equipment is obviously essential to the success of a virtual trial. The first three trials relied heavily on those involved having access to a strong internet signal in their home and a good quality computer. It remained the case that however well designed the computer programmes designed by AVMI were, the success or failure of any project rested on conditions put in place and paid for by participants. Access to a consistent internet connection was particularly important in this context. Problems with these aspects of the virtual trial experiment continued to be an issue as long as participants were responsible for them.

The number of people who had issues joining the video-link connection reduced across the first three trials, with eight out of 20 people having a problem in trial three. Predictably, given that technicians made the connection on behalf of jurors in the fourth trial, far fewer people had a problem in the final experiment (two out of 26). In the fourth trial only one out of eleven jurors said they had trouble joining and was given immediate assistance. In trial three nine out of 20 respondents said their video link was interrupted and nine out of 19 said their sound was interrupted.

While the majority of participants had a reliable connection it was very frustrating for those who lost connectivity or suffered with frozen screens. In the words of one respondent, who had been keen to praise the technical staff supporting jurors:

> However, just as we were to be given juror numbers my bandwidth failed suddenly and I lost all contact. I managed to get back to [the] jury room but understandably the time for preparation had run out. I live in South Wales where our internet speeds are not fast and bandwidth not great. I mention this as it could be a factor in many parts of the country and something that needs to be taken in to account. (T3r.4 juror)

And in the words of another:

> I was selected as a juror. Huge connection difficulties, even though I have two separate normally well-functioning wifi systems in the house. Eventually had to abandon set-up process as connection was playing up. I abandoned being a juror and sat in the virtual public gallery instead. However, I think there were other technical glitches so the trial eventually started an hour or so late, and I had given up monitoring the screen so missed the first part of it (jury swearing and prosecution opening). (T3r.11 other)

These problems were only exacerbated for those with more challenging circumstances:

> As a witness, the only situation where I would have felt fully heard for the purposes of justice would involve being in a controlled office setting where I was using a government computer and a government internet connection. As someone with ADHD [Attention deficit hyperactivity disorder] , it was very difficult to give testimony from my bedroom without getting distracted. This was the only room available in our home for these purposes. The technical issues only increased my anxiety, and I realise that many of these issues arise from users attempting to participate from their own homes in variable, uncontrolled conditions. (T2r.17 witness)

Several observers also complained of sound cutting out in the public gallery during the third experiment. Respondents who experienced technical problems mentioned that it caused considerable stress to them because they were worried that they were responsible for holding up proceedings:

> The first time I joined the courtroom, the audio/video worked perfectly. However, when I joined shortly afterwards for a second time, my audio cut out and I could neither hear nor be heard. When I attempted to rejoin the courtroom, the 'join' page kept 'timing out'. After 10 minutes of trying, I managed to rejoin. I did not change my location or change my internet settings. I did restart my computer several times. Then I simply kept refreshing the 'join' page until it worked. (T2r.17 witness)

Respondents acknowledged that connection problems for counsel, jurors and witnesses were frequently resolved within minutes. The judge and barristers were also praised for their ability to adapt to the new setting by explaining what had occurred in someone's absence or going over the material again when they returned to screen. In other instances the judge checked to make sure that participants were happy to proceed after an interruption of this kind.

Some of the problems faced by trial three were insurmountable. Those answering the survey mentioned that it was often very difficult to control levels of noise when in their home environment where dogs might bark, delivery might arrive or there were other people in the house. In short, there were several aspects of the environment that were out of the control of judges, court staff and the technical team. As one observer surmised:

> The selection of a jury for a trial using this kind of technology is predicated on the necessity that those selected will have access to:-A computer that they can use exclusively for the duration of the proceedings; reliable broadband which will not be required by anyone else in their household for the duration of the proceedings. A quiet private space, available for the duration of the proceedings. Both of these preconditions will certainly exclude a significant proportion of the people who would ordinarily be candidates to serve on a jury. In particular, capacity to satisfy these requirements is likely to skew a jury significantly in favour of higher income groups, resident in towns and in larger homes. The social skewing of the membership of the jury would therefore undermine the notion that a jury represents a random selection of members of society.(T3r.23 observer)

These problems were the major reason that the jury gathered together in a community hall in the fourth experiment. Satisfaction with the technology improved considerably as a result of all the jurors being in one room using AVMI equipment and supported by on-site technicians. Significantly there were no expressions of dissatisfaction about how to join the video link. As one juror made clear:

> [It] was really good not to have to rely on [my] own equipment or internet from home and to have this all provided plus the knowledge that someone was available to help should issues arise.(T4r.16 juror)

In the same trial 4 out of 25 said that their video link was interrupted and six out of 26 reported that their sound was interrupted. In all these instances of problems there was a technician on hand to deal with the problem and contact the court if necessary.

Section E: Being in Court

Respondents were asked fifteen questions about various aspects of the respondents' ability to see and hear participants on screen and their ability to seek help during the virtual trial. These included questions on:

- The location of each person on the screen
- The way that they appeared on screen
- Their view of the judge
- Their view of the witnesses
- Their view of the prosecution barrister
- Their view of the defence barrister
- Their view of members of the jury
- Their view of documents
- Their ability to see all the relevant documents that they wished to see
- How well they could hear the judge
- How well they could hear the witnesses
- How well they could hear the prosecution barrister
- How well they could hear the defence barrister
- How well they could hear members of the jury
- Their capacity to seek help if the setup at their end was not working
- Whether they understood what was going on

It is essential for the purposes of due process that participants understand what is going on in trials and that they can see and hear everything clearly. When asked whether they understood everything that was going on nearly all those involved in the survey judged that they did know what was going on with 72 out of the 75 respondents that answered this question across all four surveys being in this category, with those who did not understand everything predominantly being involved in trial one. Respondents were also asked whether they understood the role that everyone on screen was performing. It was only in the first trial that there were any respondents who did not understand the role that everyone on screen was playing, suggesting that induction and acclimatisation got much better after this initial run.

Seeing and hearing

The way people appeared on the trial screen was consistent over all four trials except for a Ministry of Justice sign that was placed behind the judge from trial two onwards. A new dynamic introduced into virtual trials conducted on screens is that it is possible for participants can see themselves in addition to other people. This provides them with opportunities to adjust camera angles, lighting and posture in order to create the best impression of themselves. In the experiments reported here the judge, barristers, defendant, and jurors could see themselves throughout the trial and witnesses and the clerk could see themselves when presenting to the court.[xiii] Some participants were not aware that they could turn this self-view function off if they wished to, while also keeping their camera on for the benefit of other participants being able to see them. Regardless, 40 out of 51 participants in the survey were satisfied or extremely satisfied with how they appeared on screen.

Figure One: Screenshot of the virtual courtroom on screen in fourth trial from the public gallery

Respondents were asked to evaluate the way that participants were positioned on screen. More specifically, questions were posed about the location of each person, the way others appeared and their view of themselves and others. The layout of the screen did not change significantly across the four experiments and a typical screenshot is shown at Figure One above. Chart one below shows satisfaction levels with the location of everyone on screen across all four trials.
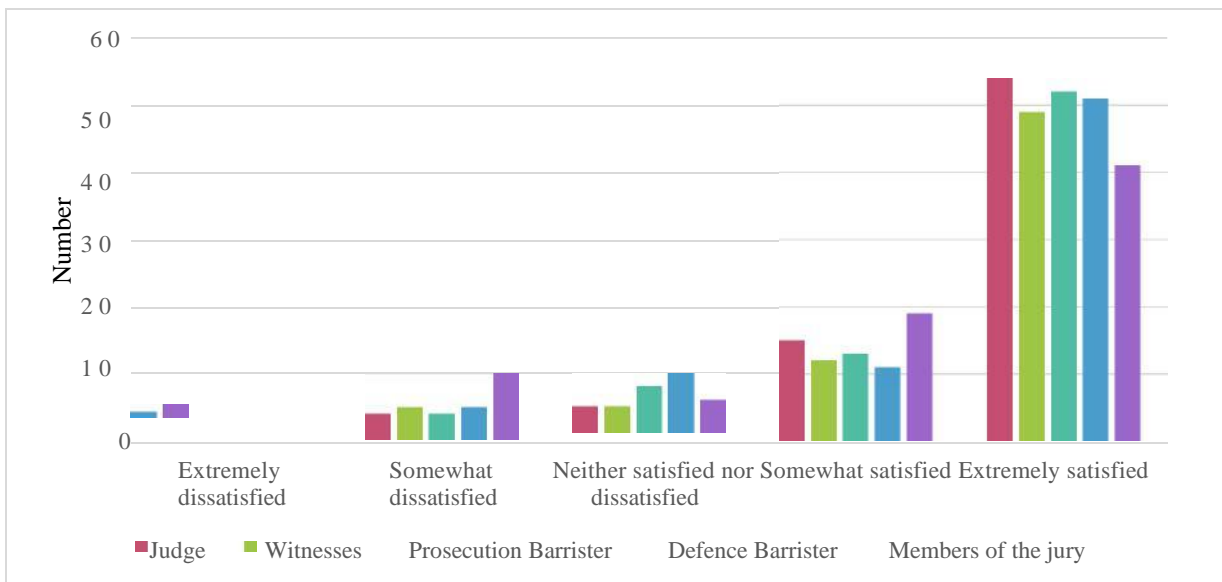

Chart one: Satisfaction with sightlines by participant in the virtual court (all four trials)[xiv]

Respondents were generally content with the positioning of people on screen and the number of respondents who were *extremely* satisfied increased from ten out of 21 in trial one, to 21 out of 24 in trial four.[xv] In the words of one respondent:

> Sound and images were clear. The layout gave a clear sense of the identity of all participants and was not distracting. Transitions between contexts occurred without difficulty. (T3r.23 juror)

Several participants even noted that sightlines and visibility were an improvement on meeting in physical buildings:

> Having everybody facing the camera and being clearly visible brings a completely different dynamic to the court. There's almost a sense of everyone facing inwards together, nobody has their back to you, which is unusual as an observer. The quality of the evidence being shown on screen was excellent as the press are not usually volunteered copies of the evidence (although we have the right to be shown if we ask). (T3r.15 other)

Not everyone was as satisfied. One juror opined:

> As compared to the experience of being physically present in court as a member of a jury, this remotely enabled version, allowed for no informal social contact between jurors prior to or during the trial (in breaks etc). I found this disconcerting, and inimical to the normal developing processes of group formation, which would help a group of people such as a jury communicate effectively with one another. (T3r.23 juror)

Another commented that they found the virtual courtroom lacking in dignity and gravitas. However several others commented that 'the 'virtual court' was very well set up and gave me ... the ability to see all parties at least as well [as if] not better than in 'real court'. I felt at least equally connected to them' (T3, r.20 juror). or 'I liked being able to see some of the exhibits clearly on screen. From prior experience in the public gallery in a physical courtroom this is not usually so clear. (T3, r.6 observer). This raises some important issues about how virtual courts can improve experiences of the trial. It is certainly the case that in physical courts barristers and solicitors routinely sit with their backs to the defendant and that courts observers have restricted sightlines.

Respondents were also very happy with the view they had of documents and this improved in the fourth trial. This can be explained by the fact that AVMI supplied all the equipment for this final experiment which meant that all jurors, who made up the largest group of respondents in the survey, had two full size screens with the court appearing on one and documents on the other. One observer noted that using screens to display evidence actually improved experiences of the trial by helping to ensure that everyone was looking at the same document at the same time. A member of the press who watched the fourth trial from the public gallery noted:

> The ability to display on screen key contents of the bundle, e.g. the indictment, photograph of the location of incident and the graphic demonstrating nature of the injuries, was immensely helpful. For my student journalists learning court reporting, these would have been invaluable (T4r.15 observer)

A number of commentators mentioned that they were impressed by the way that transitioning between sections of the trial was swift. In the words of one observer:

> The way in which the jury was removed whilst legal discussions took place was very effective. Similarly when witnesses and the defendant had finished in the witness box they were seamlessly removed or their position altered on screen as applicable. (T4r.5 observer)

And in the words of others:

> You could see all parties and defence counsel could move to another virtual room without having to move actual rooms as you do now with Justice Video System. (T4r.24 observer)

> When defence counsel asked for a point of law, we, the jurors, were asked to "retire". Instead of shuffling out of the courtroom, the person responsible for virtually "moving" the jury to the virtual retirement room simply pressed a button, which was much much smoother and quicker than how it used to happen pre-lockdown. (T4r.8 juror)

It is clear from responses to questions about being in the court room that there were several aspects of the virtual trial that worked as well as, if not better, than physical trials. But two issue were raised by respondents which are worthy of further debate. Firstly, a small number of respondents raised the issue of the court not being able to tell whether jurors or witnesses had someone hiding nearby to them who might have been intimidating them.

> Although the judge asked if the witness was alone in the room this was a bit of an empty question as I'm not sure how anyone would know or find out. It is obviously a concern but we have to trust witnesses to do the right thing which the majority will but there will be some who don't. (T3r.13 observer)

Secondly, jury safety was an issue that came up in a number of the additional comments supplied by respondents. In the words of one:

> [I would query] whether it is appropriate for the public to be able to see the jurors (obviously they need to be able to hear them) - given the risk of intimidation in some trials (perhaps less of an issue for the kind of trials that would take place via video links). (T3r.2 other)

And again:

> One point about being in the public gallery: I not only learnt the names of the jurors but could screenshot their faces as well. I did this twice during the session. You had no means of stopping me. Does this have potential for jury nobbling? In the real public gallery, the public may see the jurors but cannot photograph them. To have both their names and faces could be problematic. In the case of R v Twomey et al, the Heathrow armed robbers, associates managed to interfere with jurors in two of the collapsed trials. Virtual trials this way has the potential to make juror identification and intimidation even easier. At the very least, the images could easily be uploaded on social media and, with the wrong case, go viral. Even with a run of the mill case, the uploading of the photographs of the jurors could bring them unwanted attention from those with connections to the case. It is fair to argue that such an act would be contempt of court but that's slamming the stable door after the horse has bolted. Given there is no mechanism for stopping any viewer taking screenshots, is it possible to

control what the public gallery sees? Perhaps have the jury in view for trial participants and the press but not the public gallery? (T4r.15 observer)

'Jury nobbling' has been a matter that has caused considerable debate in physical courtrooms where the open trials can cause similar problems. In many ways this risk might be easier to deal with in virtual trials where images can more easily be blanked out or 'smudged' so that identification is not possible. It would be useful to explore whether the view of the jury could be made unavailable to those in the public gallery, or significantly blurred to avoid identification, while still being visible to the judge, defendant and counsel.

The issue of not knowing whether there was anyone in the room with the witness or juror had been considered. Knowing who was in the room with the jurors was not a problem in the fourth experiment when the jury were gathered together with someone playing the role of a court clerk and technical staff. As regards witnesses each was asked to show their room was empty on joining the trial and it would be possible to request that they kept the door in view after this. This would not have been apparent to observers but it would be easy to make this known to the public gallery. If there are particular concerns for witnesses, they could also give pre-recorded evidence from another location in accordance with special measures directions.
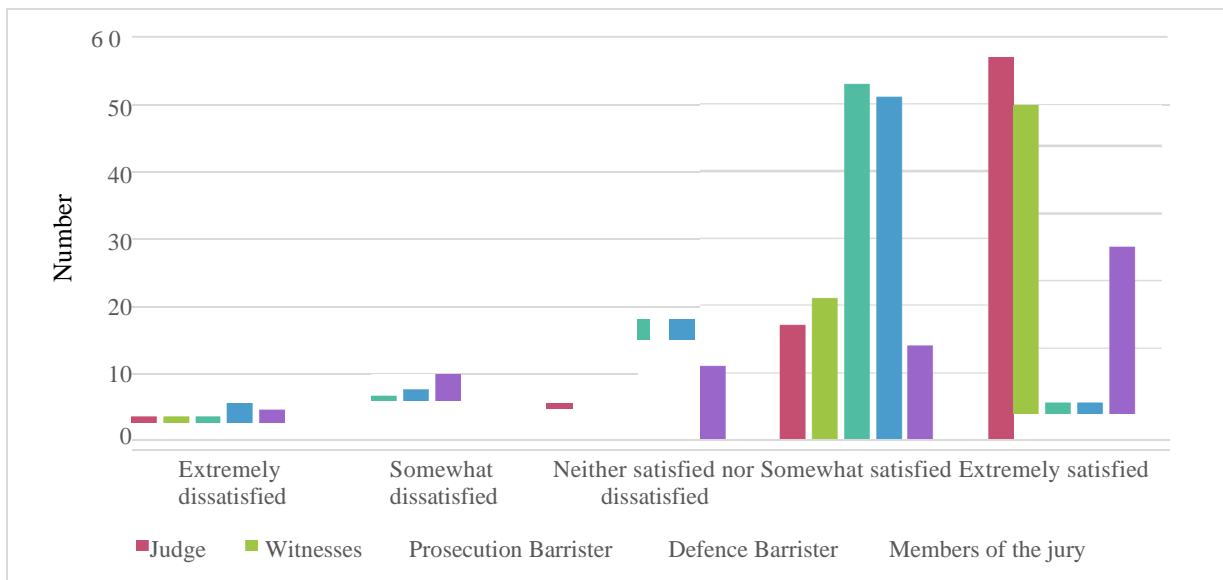

Chart two: Satisfaction with ability to hear particular participants in the virtual court (all four trials)[xvi]

Respondents were also asked to rate their ability to hear various participants in the trial; the judge, witnesses, barristers and members of the jury. A full breakdown of responses in trials three and four to this set of questions can be found at appendix three. As with the questions concerning ability to see various participants, the responses to questions concerning how well respondents could hear the judge, witnesses and barristers were relatively similar across all four trials.In section C we reported how participants felt about information provided to them in advance of the trial about how to seek help if there were technical issues. The survey also invited evaluations of their capacity to seek help if they were having problems with connectivity or the technology during the trial. This was an issue that the designers continued to work on between in trial in order to improve the smooth running of the virtual trial experiments (see further table one). For this reason it is most valuable to compare evaluations of the third trial in which the most improvements has been made and fourth trial. Survey responses suggest that respondents were much more satisfied with connectivity in the fourth and final trial when none of the jurors expressed any dissatisfaction.[xvii] This suggests that on-site technical support for jurors in the final trial made a significant difference to the ease with which jurors could access proceedings.

Physical facilities in the fourth trial

In the final trial the arrangements for jurors were altered significantly. Rather than jurors taking part in a completely virtual trial from their own homes, a hall was specially adapted to accommodate their physical attendance at a jury hub. A more detailed account of the facilities used is available in Mulcahy et al (2020a). All respondents who indicated 'juror' were asked a series of questions about these arrangements and about their orientation. More specifically they were asked whether:

- They felt that adequate social distancing measures had been put in place in the hall used?',[xviii]
- They were given clear instructions of what to do when they entered the building?',
- There was adequate signage in the building?' and
- The building was a suitable one in which to hold a trial?',
- They thought that the room provided for the jury to take part in the trial was a suitable one in which to hold a trial?'

Overall there was considerable satisfaction among the jurors at the measures put in place in the hall. Eleven out of twelve jurors completed the survey and all who responded answered positively to the questions listed above. Respondents commented on the importance of the hall selected being light and airy, it being a legible building that was easy to navigate. They also appreciated the hand sanitiser, masks and social distancing measures in place. In the words of one respondent:

> When I first approached the building on a side road of a quiet residential area, rather than in the centre of the city, I initially thought it seemed a little unprofessional. However, this actually allowed us to be far more focused on the case, as there were very few distractions even when we took our breaks.

In many ways the choice of a single storey elegant building in a quiet location challenged traditional notions of courthouses as being placed in the centre of towns:

> I think having the setting in a community area pushed home the human nature of the work we were doing. It did inevitably detract from the solemnity of the court (which the judge and barristers did well to reclaim by still appearing in full garb and with a royal court of arms visible), but I think this was balanced out by this human aspect. This wouldn't have been the case if, for example, we had met in a conference room; in that case I think we might have lost both the solemnity and the humanity. (T4r.13 juror)

Suggested improvements to the in-court experience

Respondents to the survey were also keen to make suggestions about how the setup could be improved for the future:

- Both counsel should have identical backgrounds to create a level playing field. If they had the same colour background this would help to distinguish them from other participants.
- Having a notification sound for the chat function for witnesses would be useful so that they were alerted to the fact that they should check for messages. This is important when witnesses are waiting around to be called for significant periods of time.

- There is a need for technical help to be made available for observers in public gallery. Several observers mentioned that they lost connectivity and were not sure how to get back in.
- Customised holding screens which gave more information than informing participants that they were 'in the virtual crown court' were also recommended. It was suggested that screens might usefully inform participants that they had successfully entered and that someone would attend to them soon.
- Observers also asked for screen with more details about timetables when the court was in recess
- It was noted that the position of the web-cam meant that it was easy to get a good centre picture of jurors in the fourth trial. Shorter people had to sit up very straight otherwise their face only appeared the very bottom of the screen and not in the centre. Adjustable web-cam would have enabled a better shot to have been achieved in accordance with the passport-style instructions.
- Having hard copies of the juries packs at the jury hub would have been helpful so that they could re-visit documentary evidence during deliberation.

Section F: Findings - The fairness of proceedings

Respondents were asked various questions about the perceived fairness of proceedings which went directly to the credibility of the virtual trial experiments. More specifically they were asked whether:

- They understood everything that was going on
- Had opportunities to ask the judge or clerk a question if they wished to
- The way that others listened to them
- The way that others treated them, and
- The way that others behaved while in court

Other questions were focused on issues that are associated with the common law notion of a fair trial or natural justice. These consisted of questions on whether:

- They felt that proceedings were conducted fairly
- They felt that the judge was neutral
- The process was biased towards any party or participant
- All participants were treated equally
- All participants were treated with respect
- They approved of the way that the proceedings ended.

Detailed responses to these questions appear at appendices four and five.[xix]

When asked whether they understood everything that was going on most respondents were very positive about their experience in both trials three and four. Those involved in the final experiment were particularly satisfied that they had opportunities to ask the judge or clerk a question. The fact that jurors could call on technical support to facilitate the asking of a question may account for this difference between the two trials. There was also a clerk on hand to address issues in the jury hall. Respondents were also much more satisfied in the fourth trial that others were listening to them with 11 out of 12 respondents being extremely satisfied. More generally there was no dissatisfaction with the way that others behaved while in court in either trial three or four.

Responses to the questions that focused on due process principles are shown below. Chart three shows responses to these questions after trial three and Chart four shows responses from those who participated in the survey after trial four.

Chart three to show responses to questions about the perceived fairness of proceedings in Trial 3[xx]
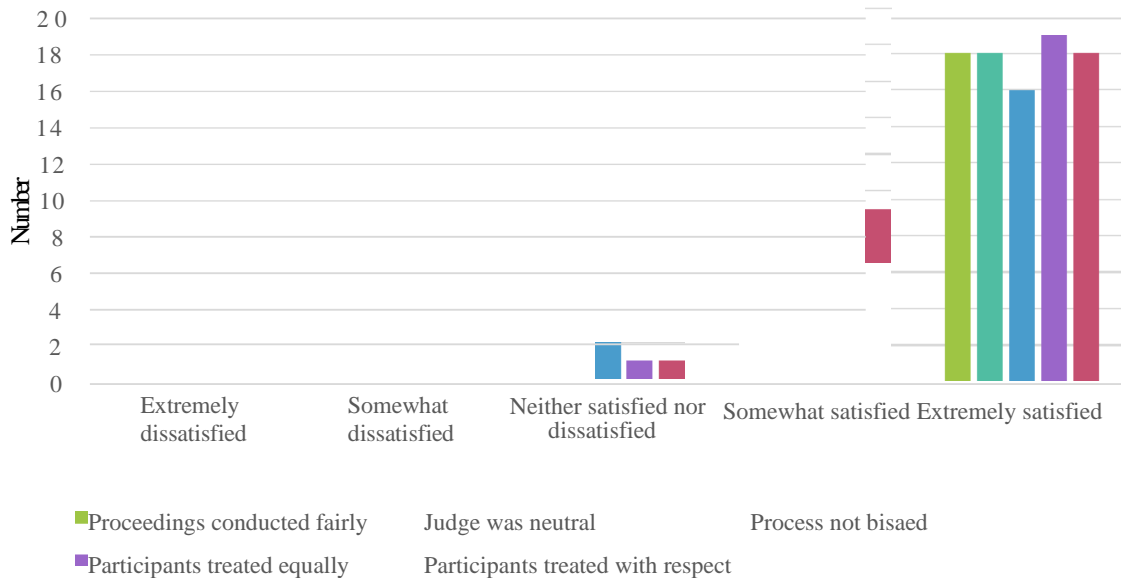
Chart four to show responses to questions about the perceived fairness of proceedings in Trial 4[xxi]

This suggests that satisfaction with natural justice was high in both the completely virtual and partially virtual experiments conducted, with a marginal improvement in the degree of satisfaction in the fourth trial especially as regards more generic perceptions of whether proceedings were conducted fairly.

All respondents were asked, if a real trial were conducted in this way, would it be conducive to a fair trial for the defendant. Respondents were given the option of yes, no or maybe. Chart five shows responses to this question and demonstrates that a minority were concerned about fairness to the defendant.
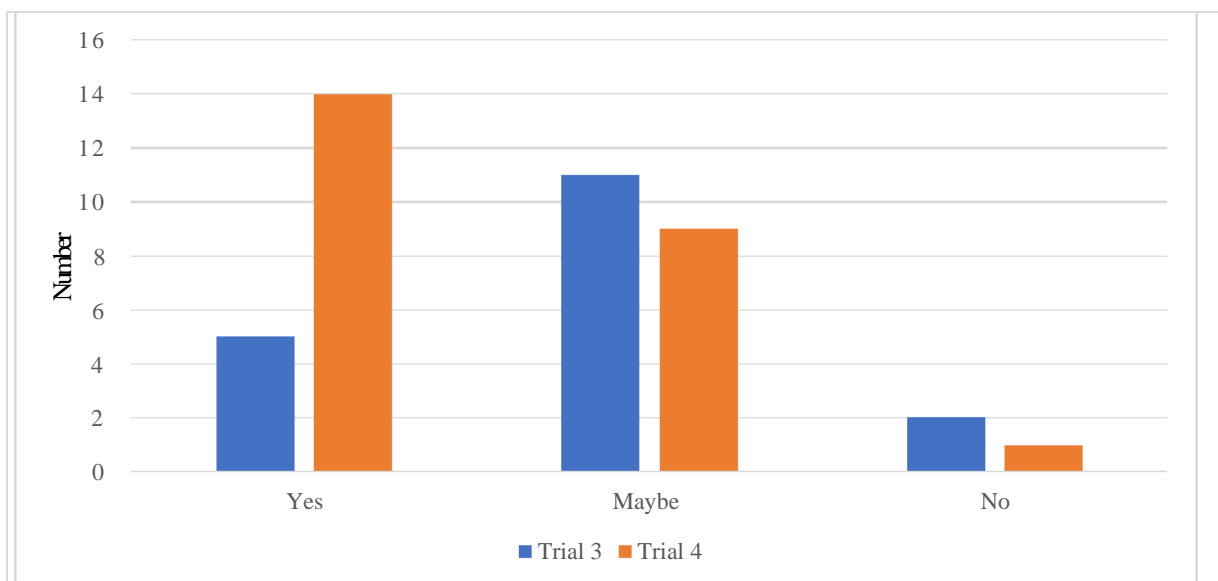
Chart five to show evaluations of whether trials three and four were fair to the defendant[xxii]

This data suggests that those surveyed were most confident about a fair trial for the defendant when the jury were able to assemble in one place and were supported by on-site technical assistance.

A number of respondents commented that they thought that the opportunities for the case to be heard were at least as good as in a courtroom, that it was just like a 'real' trial once technological problems were overcome, that jurors took the trial just as seriously, that it was not unduly intimidating and allowed for clear communication between the parties. In the words of one observer:

> Both the Prosecution and Defence were able to perform their examinations and cross-examinations in full in the presence of a jury. If a juror dropped out of the courtroom with technical difficulties the court would stop and wait for them to rejoin, where the Judge would confirm either what they missed, or that they had not missed anything. (T3r.6 observer)

Several noted that this was especially the case with a relatively short and straightforward trial of the kind piloted in the study. It was also notable that jurors in the fourth and final trial were particularly impressed by the initiative:

> It is a replica of the courtroom and the same legalities applied. If I was awaiting trial I would be much happier to proceed this way than to languish in custody. That makes it even fairer as this will allow the legal system to take its course. I think it's a fabulous initiative!! (T4r.6 juror)

> The main reason as to why I believe it would be fair is because the trial, from my perspective, gave the defendant the opportunity to have their case heard. I thought that the case was considered in a careful, meticulous way. The defendant, on multiple occasions, was asked by the judge whether he had heard what was going on. Save for the advocates a couple of times forgetting to switch themselves off mute, everything that was discussed was audible. I also thought it was very effective, from my position as a juror, to see the evidence on screen and larger than how it normally appears on

> paper. Frankly, I am much more used to seeing documents on a screen, so it was, somehow, easier to focus on the text of the documents which we were seen during the course of the trial. For these reasons, I am of the view that running the trial in this way would be fair to the defendant. (T4r.8 juror)

> In many ways it may be less daunting for some. Appearing in court for the first time can be an uncomfortable feeling. This way people may not feel quite so 'visible' and looked at. The experience may seem less threatening. (T4r.3 juror)

Some respondents had reservations about the experiment but concluded that increased use of remote participation was nonetheless an acceptable compromise during a pandemic:

> I think that virtual trials are a substitute because of extreme challenges to the system but do not successfully replace the need for live court hearings which provide the collective experience of doing justice together. It is a community exercise. It is one of the few ways the public participate in an important element of society - the administering of justice. It is part of our particular democratic way of creating a participative process. There are too few left in society. I am a very experienced advocate and public speaker as well as a broadcaster. . I know that connecting with a live audience is more successful. (T3r.3 observer)

There were also some reservations about whether a completely virtual trial would be suitable for more complex trials that were document heavy or required longer periods in court, vulnerable participants or interpreters were involved

Jury Deliberations

Jurors in the first three trials were asked whether the jury deliberations conducted remotely were a success. As can be seen from chart six a large majority of respondents in both the third and fourth trial felt that they were. These results have to be interpreted carefully because the jurors only had a set time of 40 minutes to deliberate but they are indicative of a positive view of virtual jury deliberations.
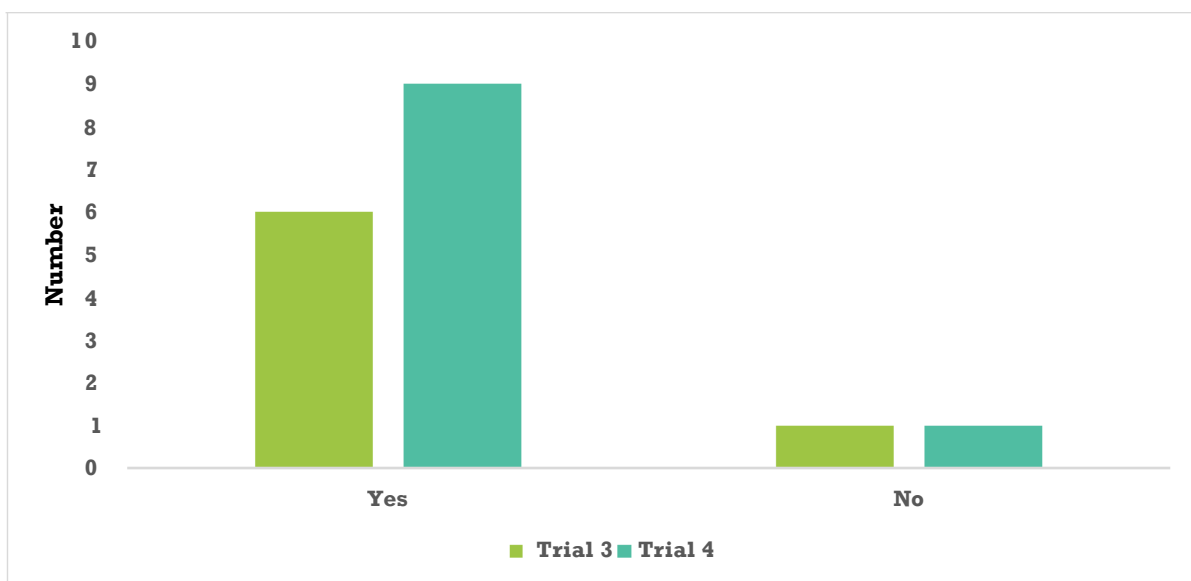
Chart six to show whether jury deliberations conducted remotely were considered a success?[xxiii]

Although most jurors felt that they could deliberate there were some problems with time delays. Comments from jurors about trial three indicated that they felt that the role of the jury foreman in ensuring that people do not speak over ever each other and that everyone was heard are amplified in virtual proceedings. It was suggested that it would be a good idea to agree clear protocols about behaviour and signals in advance.

The Press

The designers of the four experiments admitted viewers into the public gallery but focused much less on their needs in their efforts to get the system working as well as possible for the judge, jury, lawyers and witnesses. However, a series of comments were offered up by members of the press who watched the experiments from the virtual public gallery that raise important issues that would have to be addressed if the virtual jury trial initiative were to be rolled out. Several were worried about the loss of contact with court staff who often provided them with important information about trials. In the words of one:

> I believe it is a mistake for the media to be only allowed to follow proceedings through the virtual public gallery. Important parts of our job are done in court itself, we need to be able to interact with participants in the case and on regular occasions need to be able to address the judge. The latter would be impossible under the current format. In the list of participants, the one presumably intended for journalists was 'observer'. We are not just observers, we have to interact with the court process at times. (T3r.7 other)

The importance of the press as a special category of observers is an important one to acknowledge. Another member of the press suggested that it might be appropriate to give the press some ability to interact with parties other than via email. Another mentioned that by asking for the contact details for the clerk in advance, they were able to obtain details from the file and raise technical issues.

Others raised issues about aspects of the proceedings being more hidden when conducted remotely:

> It would have been helpful to have a system or protocol to tell press/observers what was going on with regards to the delay. Delays are inevitable, but when there is an issue in physical court this is easily communicated by the clerk whereas I felt a little 'shut out' virtually. Physical courts where the public are kept in a separate gallery which is opened when proceedings begin are rare. Before proceedings begin in physical court the press and the public can see and hear the courtroom, should this not be the same virtually? Should the judge and counsel have a private room before the proceedings begin? This seems a little less open. (T3r.15 other)

And again:

> As a journalist, we are entitled to be in court before proceedings begin as part of doing [our] job. In the current format, we were sitting on the waiting screen for 80 minutes, with no idea how long the problem was going to persist. Reporters often have to cover different cases at different times, so we need to be able to interact with the court to find

out what's going on, how long it might last. We can't usually afford to sit and wait for things to start, in the dark. (T3r.7 other)

To address this aspect, technicians in the fourth trial were asked to leave the courtroom 'open' the whole time, as it would be in a normal case, rather than turning off the link. It also avoided the inadvertent problem of the sound going off, which happened for return of verdict in trial 3. The need for a line of communication between the court and observers, and especially the press, is important and would need to be considered by HMCTS in any future designs.

Conclusions

JUSTICE has argued that HMCTS should be open to the possibility that the virtual jury trial model they have developed can help combat the growing backlog of criminal cases during the COVID-19 pandemic. If unaddressed, the backlog could cause serious problems with wide-ranging impacts felt throughout the justice system. These include defendants on remand being incarcerated for longer periods; increased waiting times for both victims and defendants to have cases resolved; an increased risk of prosecutions being abandoned; and increased stress for families of the defendant.

The findings of the survey results analysed in this report would support the contention that the partial virtual trial model piloted in the fourth JUSTICE experiment has the most potential to contribute to ameliorating the backlog. This is largely due to the stabilising factor that reducing 12 different internet speeds, software and hardware configurations to a single system managed on-site had.

Levels of satisfaction across the sample in relation to a large number of measures suggests that the model developed by the fourth trial is worthy of serious consideration. With identification of appropriate jury hubs that serve local communities and are of adequate quality to perform the role as piloted here, there is scope for widespread implementation during pandemic conditions. The study team would also suggest adopting an ongoing evaluation of any similar pilot rolled out to a wider testing scale in order to ensure that improvements to the model can be made and adjusted before a broader implementation across England and Wales.

If adopted on a larger scale, the concerns raised in this report about the jury hub model and previous iterations as documented here and in our previous reports (see Bibliography) would need to be addressed by HMCTS in the next iteration of the virtual jury trial tests. These were the suggested need for further:

- Measures to ensure the safety and anonymity of jurors through measures to protect their identity and prevent jury nobbling;

- Measures to ensure that there are no other persons present with witnesses appearing from a remote location that could be intimidating them without the court's knowledge;
- Measures to ensure that all participants know what to do when the videolink connection is not working optimally, and that there is sufficient technical staff available to remedy problems as they arise for all participants, including members of the public; and
- Measures to ensure that the press and the public have adequate access to the trial, and that the press additionally have other means to contact the court.

Potential areas of concern in terms of a larger-scale roll-out of the technology include sufficient training of court support staff to ensure a consistent high quality of technical support provided to all participants; high-quality equipment and sufficient bandwidth throughout the system and the need for tight monitoring of the experience of all participants during the early roll-out phase.

Bibliography

Mulcahy, L., Rowden, E., and Teeder, W., (2020a) Testing the case for a virtual courtroom with a physical jury hub: Second evaluation of a virtual trial pilot study conducted by JUSTICE https://justice.org.uk/our-work/justice-covid-19-response/

Mulcahy, L., Rowden, E., and Teeder, W., (2020) Exploring the case for virtual jury trials during the COVID-19 pandemic, https://justice.org.uk/wp-content/uploads/2020/04/Mulcahy-Rowden-Virtual-trials-final.pdf

Appendices

Appendix 1

Question	Response	Trial 3	Trial 4	Total
The information that you were given about how you should arrange the room you were sitting in during the trial	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	1	1	**2**
	Somewhat satisfied	3	4	**7**
	Extremely satisfied	6	7	**13**
	Total	**10**	**12**	**22**
The information that you were given about how to join the video link proceedings	Extremely dissatisfied	1	0	**1**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	2	0	**2**
	Somewhat satisfied	7	4	**11**
	Extremely satisfied	8	17	**25**
	Total	**18**	**21**	**39**
The information that you were given about the chatroom facility	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	1	0	**1**
	Neither satisfied nor dissatisfied	1	3	**4**
	Somewhat satisfied	7	4	**11**
	Extremely satisfied	2	6	**8**
	Total	**11**	**13**	**24**
The information that you were given about how you should behave when you 'arrived' in the court	Extremely dissatisfied	0	1	**1**
	Somewhat dissatisfied	0	1	**1**
	Neither satisfied nor dissatisfied	1	0	**1**
	Somewhat satisfied	4	6	**10**
	Extremely satisfied	6	9	**15**
	Total	**11**	**17**	**28**
The information that you were given about what to do if something went wrong such as what to do if the sound or vision cut out	Extremely dissatisfied	1	2	**3**
	Somewhat dissatisfied	2	0	**2**
	Neither satisfied nor dissatisfied	4	2	**6**
	Somewhat satisfied	2	5	**7**
	Extremely satisfied	5	7	**12**
	Total	**14**	**16**	**30**

Appendix 2

Question	Response	Trial 3	Trial 4	Total
The location of each person on the screen	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	3	1	**4**
	Neither satisfied nor dissatisfied	1	0	**1**
	Somewhat satisfied	4	2	**6**
	Extremely satisfied	10	21	**31**
	Total	**18**	**24**	**42**
The way that you appeared on screen	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	2	0	**2**
	Neither satisfied nor dissatisfied	3	0	**3**
	Somewhat satisfied	1	2	**3**
	Extremely satisfied	4	12	**16**
	Total	**10**	**14**	**24**
Your view of the judge	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	1	2	**3**
	Neither satisfied nor dissatisfied	0	0	**0**
	Somewhat satisfied	6	3	**9**
	Extremely satisfied	11	19	**30**
	Total	**18**	**24**	**42**
Your view of the witnesses	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	3	1	**4**
	Neither satisfied nor dissatisfied	1	0	**1**
	Somewhat satisfied	4	2	**6**
	Extremely satisfied	9	20	**29**
	Total	**17**	**23**	**40**
Your view of the prosecution barrister	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	1	2	**3**
	Neither satisfied nor dissatisfied	1	0	**1**
	Somewhat satisfied	6	1	**7**
	Extremely satisfied	10	21	**31**
	Total	**18**	**24**	**42**
Your view of the defence barrister	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	1	2	**3**
	Neither satisfied nor dissatisfied	2	0	**2**
	Somewhat satisfied	5	1	**6**
	Extremely satisfied	10	21	**31**
	Total	**18**	**24**	**42**
Your view of members of the jury	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	1	2	**3**
	Neither satisfied nor dissatisfied	3	0	**3**
	Somewhat satisfied	6	5	**11**
	Extremely satisfied	8	17	**25**
	Total	**18**	**24**	**42**
Your view of documents	Extremely dissatisfied	0	1	**1**
	Somewhat dissatisfied	2	0	**2**

Question	Response	Trial 3	Trial 4	Total
	Neither satisfied nor dissatisfied	0	0	**0**
	Somewhat satisfied	5	3	**8**
	Extremely satisfied	9	16	**25**
	Total	**16**	**20**	**36**
Your ability to see all the relevant documents that you wished to see	Extremely dissatisfied	0	1	**1**
	Somewhat dissatisfied	2	0	**2**
	Neither satisfied nor dissatisfied	0	1	**1**
	Somewhat satisfied	6	3	**9**
	Extremely satisfied	8	13	**21**
	Total	**16**	**18**	**34**

Appendix 3

Question	Response	Trial 3	Trial 4	Total
How well you could hear the judge	Extremely dissatisfied	1	0	**1**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	0	1	**1**
	Somewhat satisfied	3	5	**8**
	Extremely satisfied	14	17	**31**
	Total	**18**	**23**	**41**
How well you could hear the witnesses	Extremely dissatisfied	0	1	**1**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	0	0	**0**
	Somewhat satisfied	5	6	**11**
	Extremely satisfied	12	15	**27**
	Total	**17**	**22**	**39**
How well you could hear the prosecution barrister	Extremely dissatisfied	1	1	**2**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	0	0	**0**
	Somewhat satisfied	4	6	**10**
	Extremely satisfied	13	16	**29**
	Total	**18**	**23**	**41**
How well you could hear the defence barrister	Extremely dissatisfied	1	1	**2**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	1	0	**1**
	Somewhat satisfied	3	6	**9**
	Extremely satisfied	13	16	**29**
	Total	**18**	**23**	**41**
How well you could hear members of the jury	Extremely dissatisfied	1	0	**1**
	Somewhat dissatisfied	1	3	**4**
	Neither satisfied nor dissatisfied	3	3	**6**
	Somewhat satisfied	3	5	**8**
	Extremely satisfied	6	8	**14**
	Total	**14**	**19**	**33**

Appendix 4

Question	Response	Trial 3	Trial 4	Total
Your capacity to seek help if the setup at your end was not working	Extremely dissatisfied	2	0	**2**
	Somewhat dissatisfied	3	1	**4**
	Neither satisfied nor dissatisfied	3	2	**5**
	Somewhat satisfied	2	5	**7**
	Extremely satisfied	3	5	**8**
	Total	**13**	**13**	**26**

Appendix 5

Question	Response	Trial 3	Trial 4	Total
That you understood everything that was going on	Extremely dissatisfied	1	0	**1**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	1	0	**1**
	Somewhat satisfied	2	3	**5**
	Extremely satisfied	14	19	**33**
	Total	**18**	**22**	**40**
Opportunities to ask the judge or clerk a question if you wished to	Extremely dissatisfied	2	0	**2**
	Somewhat dissatisfied	1	2	**3**
	Neither satisfied nor dissatisfied	3	0	**3**
	Somewhat satisfied	2	3	**5**
	Extremely satisfied	3	9	**12**
	Total	**11**	**14**	**25**
The way that others listened to you	Extremely dissatisfied	2	0	**2**
	Somewhat dissatisfied	1	0	**1**
	Neither satisfied nor dissatisfied	2	0	**2**
	Somewhat satisfied	3	1	**4**
	Extremely satisfied	2	11	**13**
	Total	**10**	**12**	**22**
The way that others treated you	Extremely dissatisfied	1	0	**1**
	Somewhat dissatisfied	1	0	**1**
	Neither satisfied nor dissatisfied	2	0	**2**
	Somewhat satisfied	3	1	**4**
	Extremely satisfied	2	12	**14**
	Total	**9**	**13**	**22**
The way that others behaved while in court	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	2	1	**3**
	Somewhat satisfied	4	2	**6**
	Extremely satisfied	8	17	**25**
	Total	**14**	**20**	**34**

Appendix 6

Question	Response	Trial 3	Trial 4	Total
That the proceedings were conducted fairly	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	2	0	**2**
	Somewhat satisfied	5	3	**8**
	Extremely satisfied	10	18	**28**
	Total	**17**	**21**	**38**
That the judge was neutral	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	2	0	**2**
	Somewhat satisfied	4	4	**8**
	Extremely satisfied	11	18	**29**
	Total	**17**	**22**	**39**
That the process was not biased towards any party or participant	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	1	2	**3**
	Somewhat satisfied	3	3	**6**
	Extremely satisfied	12	16	**28**
	Total	**16**	**21**	**37**
That all participants were treated equally	Extremely dissatisfied	1	0	**1**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	0	1	**1**
	Somewhat satisfied	4	2	**6**
	Extremely satisfied	12	19	**31**
	Total	**17**	**22**	**39**
That all participants were treated with respect	Extremely dissatisfied	0	0	**0**
	Somewhat dissatisfied	0	0	**0**
	Neither satisfied nor dissatisfied	0	1	**1**
	Somewhat satisfied	3	3	**6**
	Extremely satisfied	13	18	**31**
	Total	**16**	**22**	**38**
With the way that the proceedings ended	Extremely dissatisfied	0	1	**1**
	Somewhat dissatisfied	2	1	**3**
	Neither satisfied nor dissatisfied	3	0	**3**
	Somewhat satisfied	5	4	**9**
	Extremely satisfied	5	12	**17**
	Total	**15**	**18**	**33**

Endnotes

[i] After the test trials were completed, AVMI merged with visual collaboration solutions firm Kinly, which provides the Cloud Video Platform to HMCTS See further: https://justice.org.uk/justice-pilots-first-ever-worldwide-virtual-mock-jury-trial/. The summary in this section uses materials originally published in the second report.

[ii] CUREC approval reference R70307/RE001

[iii] Those who filled in the questionnaires did not always answer every question meaning that response rates are sometimes less than 100%.

[iv] See further:
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/overviewoftheukpopulation/july2017

[v] Mid-2019 figures for parliamentary constituency population estimates used:
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/parliamentaryconstituencymidyearpopulationestimates.

[vi] The Office for National Statistics recent labour market overview estimates that 76.4% of the population aged 16-64 are employed. The unemployment rate is 3.9%. In addition, the proportion of those aged 16-64 who are economically inactive is 20.4%. See further:
https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/august2020.

[vii] Mid-2019 figures for parliamentary constituency population estimates used, for people aged 18 and older:
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/parliamentaryconstituencymidyearpopulationestimates.

[viii] In the study, 84.3 per cent were white; 6.25 per cent were Asian; 3.1 per cent were Black; 3.1 per cent were mixed race. The most up-to-date official estimates of the population by ethnic group and religion are from the 2011 Census. Percentage estimates based on pooled APS data 2014-2016: White: 84.9%; mixed/multiple: 1.8%, Asian/Asian British: 8%, Black/African/Caribbean/Black British: 3.5%, other: 1.9%.
https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/researchreportonpopulationestimatesbyethnicgroupandreligion/2019-12-04.

[ix] In the first trial, one person ticked both juror and observer, indicating that technical issues meant they left jurors and instead followed the trial as an observer. Respondents who selected 'Other' were requested to provide details. In the first trial, the person was the Bar Council Remote Justice Working Group Chair. In the third trial, those who selected 'Other' wrote 'public gallery', 'journalist', 'initially meant to be a juror but connection failed so I was an observer', 'press/court reporter', 'usher' and 'observer but with business knowledge'. In the fourth trial, 'Other' respondents were 'public', 'journalist' and 'jury bailiff'.

[x] For each of these questions, they had the option to select one of six responses on a Likert scale – not applicable, extremely dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied, somewhat satisfied and extremely satisfied and were asked to pick the box that best responded to their answer. Data for 'not applicable' responses has been excluded and the results for each question have been provided as both numbers and proportions to allow standardisation between the trials. See JUSTICE surveys report – Appendices, Before the virtual proceedings started for numbers of each response to the questions for every trial, and overall; as well as charts showing the responses to all questions by trial.

[xi] The remaining person said they were neither satisfied or dissatisfied.

[xiii] However, observers were not able to see themselves.

[xiv] Judges n=77; witnesses n=70; prosecution barrister n=76; defence barrister n=77; jury n=77

[xv] Separate responses relating to participants' views of the judge, witnesses and barristers were extremely similar. Satisfaction with images of the jury was generally slightly lower than for other participants and this could be explained by the fact that images of the jurors were smaller than other participants.

[xvi] Judges n = 76; witnesses n=68; prosecution n=75; defence n=76; jury n=57

[xvii] In trial three 5 out of thirteen respondents were both satisfied and dissatisfied whereas in trial out 10 out of 13 were satisfied. For jurors in trial 3, one out of seven selected extremely dissatisfied. In trial 4, 0 out of 8 jurors were extremely dissatisfied.

[xviii] If anyone had answered 'no' to this question, there was a follow-up question asking what could have been improved. They were given five options to choose from, as well as the option to specify something else that they felt could be improved. The pre-coded options were: 'more space between jurors'; 'sturdier physical barriers between jurors'; 'segregated circulation routes within the building'; 'better hand washing facilities'; and 'provision of masks'.

[xix] For each of these questions, respondents were asked to tick the one box that best responded to their answer. They had the option to select one of six responses on a Likert scale – not applicable, extremely dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied, somewhat satisfied and extremely satisfied. In the

first survey, the wording of the Likert scale differed slightly, with respondents being provided the following information: 'N/A = not applicable, 1= Not at all satisfied, 5= Very satisfied'.

[xx] Conducted fairly n = 17; judge neutral n = 17; process not biased n =16; participants treated equally n =17 and participants treated with respect n=16.

[xxi] Conducted fairly n = 21, judge neutral n = 22; process not biased n =21; participants treated equally n =22 and participants treated with respect n=22.

[xxii] Trial 3 n = 18, trial 4 n = 24.

[xxiii] Trial 3 n=7, trial 4 n=10.