CLINICAL TRIALS: Impact & Quality

CT:IQ

Clinical Trials:
Thinking Smarter

In association with **Chrysalis Advisory** presents

# eConsent in Clinical Trials

## Opportunities to enhance patient engagement

CHRYSALIS ADVISORY

Unlock Value. Manage Risk. Innovate.

# ACKNOWLEDGEMENTS


Chrysalis Advisory are pleased to have played a key role in the creation and writing of this report.

It is with pleasure that we present it with CT:IQ and MTP Connect.

**Nick Northcott**
Partner

Supported by MTPConnect
MedTech and Pharma Growth Centre

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# CONTENTS

# FOREWORD

Clinical Trials: Impact & Quality (CT:IQ) is funded by MTPConnect an Australian Government Industry Growth Centre initiative, which has received funding from the Federal Government's Medical Research Future Fund ('MRFF'). The MRFF has six strategic priorities which guide its funding allocations - one of which revolves around clinical trials, with the aim to 'support new and existing clinical trial networks to guide the development of new drugs and devices, new models of care, and improved clinical practice'[1].

The purpose of this CT:IQ project was to investigate barriers to uptake of eConsent within the Australian clinical trial context and create actionable insights to support increased adoption of the technology. In addition, gaining a greater understanding of the current use and adoption of eConsent across the Australian clinical trials landscape, including stakeholder opinions about the benefits, risks and critical success factors for eConsent implementation, provides information for those seeking to trial and ultimately implement eConsent.

Whilst this report provides a broad overview of Australian clinical trial stakeholders' perceptions of eConsent, there are limitations regarding sample size. Some feedback provided by survey respondents noted that eConsent was not defined specifically enough in the context of this project; this issue was managed during interviews, however, some survey results may be negatively skewed based on the breadth of respondent understanding regarding eConsent processes.

This report was funded through CT:IQ and a sector-informed grant allocated by the Commonwealth Department of Industry, Innovation and Science (DIIS). We are grateful to everyone who contributed to this report, including members of the CT:IQ Steering Committee, Bellberry Limited, AusBiotech and other key contributors from the medical and research sector, industry and government; all have dedicated significant time and provided invaluable insights.

**Leanne Weekes**
Programme Director

[1] Australian Government, Department of Health, 'MRFF strategy and priorities', <https://beta.health.gov.au/initiatives-and-programs/medical-research-future-fund/about-the-mrff/mrff-strategy-and-priorities>, 1 August 2018.

# EXECUTIVE SUMMARY

eConsent holds the promise of improving participant engagement in clinical trials both in terms of increased accessibility and opportunity for participation but also in enhancing their comprehension of the key information critical to giving their consent. Traditional paper based information sheets and consent forms have been used for many decades. However, it is recognised that they do not permit researchers to actively share further information with participants about the potential risks and benefits of participation, as is possible with eConsent. These benefits include:

- The ability to integrate multimedia learning tools (video, audio, interactive pictures, quizzes, diagrams and data visualisation methods etc.);
- Portability of information (without the risk of misplacing paper-based forms) and the ability to provide data and information access to monitors and participants;
- The ability to easily reach participants who reside in remote locations where paper-based documents can often take weeks to arrive and to be resent to the clinic;
- The ability to rapidly translate information for participants who speak English as a second or subsequent language; and
- Cost savings and efficiencies over the longer term.

Clinical trial sites could also benefit from the use of eConsent through increased capabilities to manage the administration of relevant information to potential participants, recording their consent and subsequently ensuring that any updated information is conveyed quickly to them. Those responsible for running trials may also be better able to manage their regulatory responsibilities through an increased ability to provide effective oversight and monitoring. Ultimately, if the proposed clinical trial is easier to understand and participants are more fully informed they are therefore able to consent. This might also reasonably lead to increased participant recruitment which will enable the studies to be completed more quickly bringing their learnings to the clinic more rapidly.

Notwithstanding these potential benefits, whilst the majority of stakeholders interviewed or surveyed stated that they are open and receptive to eConsent, they perceived that there were significant barriers to overcome before eConsent could be more easily and widely adopted.

Survey and interview respondents identified core IT infrastructure at sites as being an essential enabler to the use of eConsent. It was believed that participants would need reliable internet services, regardless of whether offline eConsent services were available. Moreover, continuing to have paper as an option was deemed necessary for older participants (defined as greater than 60 years of age) by the vast majority of those interviewed and surveyed, despite there being no evidence that this is in fact true.

## EXECUTIVE SUMMARY

In conjunction with the overall consenting process (e.g. ongoing consultation between physician and participant), there is widespread understanding of the tried and tested paper participant information and consent forms (PICFs) which makes it relatively easy for researchers to write them and for Human Research Ethics Committees (HRECs) to review them. Unfortunately, this appears to ingrain a view that these PICFs are the most important tool in delivering relevant information to a potential participant when it is well documented that it only forms one part of a process that includes discussion of the trial with a number of people including the clinical team and family and friends. Indeed, most people already use additional sources of information including the internet to find trials. Moreover, there is ample literature to support the notion that the current PICFs are a very poor method for communication with participants. Not simply being a replacement for the paper-based PICF, eConsent offers the opportunity to support researchers to engage better with potential participants through the use of various types of media during the consent process. Whilst these have been demonstrated as being robust and useful in other industries, HRECs are largely not familiar with these methods and are reported as taking a conservative view on their usage, regarding their use as experimental itself rather than as a validated communication tool. HRECs would therefore benefit from clear guidance and support to understand the questions they should be asking and the factors to consider when making decisions in relation to eConsent. It would be particularly helpful if there was a clear and strong consumer involvement in the development of review guidelines for eConsent.

Leaders who understand, can articulate the business case for and have the capability to drive digital change and transformation in clinical trials, including eConsent, are crucial to successful adoption. An understanding of the benefits of investing in this process of digital transformation needs increased understanding by hospital administrators and sites.

Views amongst interviewees were inconsistent as to whether sites, sponsors or other stakeholders should lead or drive adoption of eConsent across the industry. One perspective is that sites should drive the process as they are closest to their participant population and will understand the nuances of their needs, leading to experimentation at the site level with new technologies, media and approaches which will lead to innovation (for example, the use of virtual or augmented reality). Another view is that sponsors have the resources and scale to effectively implement these technologies, so should take the lead when exploring eConsent options.

Recommendations for the adoption of eConsent include:

- Development of guidelines for sites to support implementation of eConsent
- Development of guidelines for HRECs to support ethical review of eConsent
- Adequate education and training for sites
- Development of a sector standard for site IT infrastructure requirements
- Proactively planning, leading and managing organisational change to eConsent

Practical demonstration cases of the development, delivery and use of eConsent in the Clinical Trial setting would be useful to support the wider adoption of eConsent more broadly.

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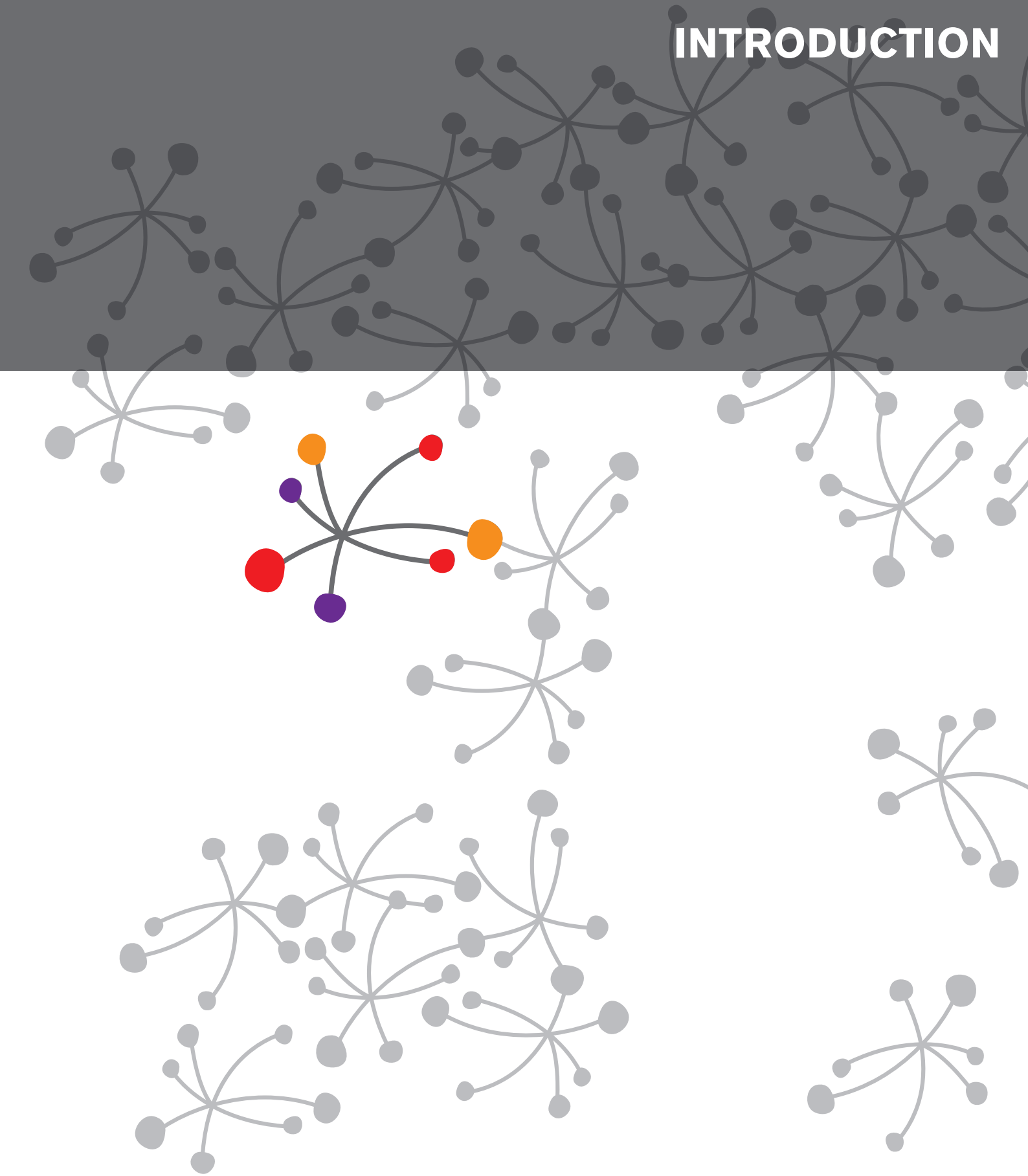
# INTRODUCTION



## METHODOLOGY

To obtain the stakeholder feedback required to produce this report, video interviews were conducted with key individuals involved across the Australian clinical trials workflow, and surveys were distributed through multiple channels to obtain responses from a wide number of stakeholders.

### Interviews

Chrysalis Advisory contacted 32 Australian clinical trial stakeholders from sponsors, Clinical Research Organisations (CRO), sites and research organisations, and requested their participation in a semi-structured interview regarding eConsent. Interviews were conducted with a total of 19 stakeholders via video-conference or phone, and lasted between 45 and 60 minutes.

A total of 18 questions were drafted in preparation for the interviews, although questions asked in each interview varied on a case-by-case basis, depending on information provided by participants and the general direction of the interview. For a list of questions that were consistently asked of all participants, please see the Appendix.

### Survey

Chrysalis Advisory developed a survey regarding eConsent uptake in clinical trials in a Google Form, which was sent via email to the following groups:

- CT:IQ Steering and Executive Committees;
- Bellberry Limited HREC panel members;
- Research and Development Taskforce (Medicines AU, Medical Technology Association of Australia and AusBiotech);
- AusBiotech Clinical Trials Advisory Group Committee; and
- Academic and Commercial Groups at The George Institute.

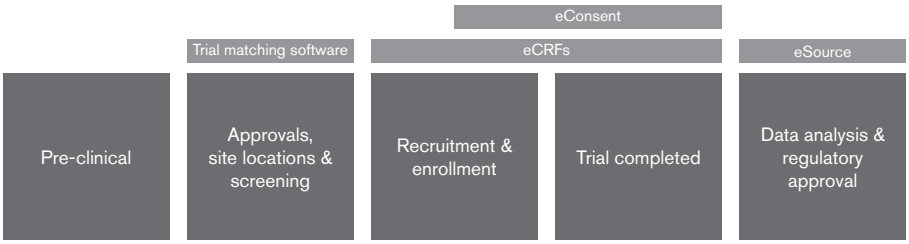
In the distribution email, participants were encouraged to circulate the survey to their colleagues and other relevant stakeholders. At survey close on Thursday, 21 March 2019 at 5:00pm, 179 participants had completed the survey.

Survey questions and responses can be found in the Appendix of this report.

# BACKGROUND AND CONTEXT

## eInformation in the Clinical Trials Context

We can think of eInformation in its broadest definition as simply information that is stored on an electronic system as opposed to on paper or in audible formats even if those are digital. The key advantage of converting traditional information systems to electronic ones is that it enables organisations to use information more efficiently and effectively. In the context of clinical trials, eInformation refers to any electronic data collected throughout the trial process, from pre-clinical activities through to regulatory approval. This data is already collected in paper and electronic format and is subject to relevant regulations and safeguards related to privacy of personal information. The following diagram highlights major areas of eInformation uptake within the standard clinical trial workflow:




## eConsent

Traditionally presented in paper form, the Participant Information Sheet provides the background information upon which patients will subsequently give their consent for participation in a trial. Participant consent based upon receiving sufficient information to make an informed decision is the cornerstone of participant-centered care[2] and without it, neither clinical trials nor routine clinical care would go ahead. The National Health and Medical Research Council (NHMRC) National Statement on Ethical Conduct in Human Research does not use the term "informed consent" but instead speaks of a person having sufficient information to make an informed decision as stated above, reflecting that it is a process rather than a single point in time incident, and this is a convention adopted in this report. The process of obtaining informed consent involves consultation, discussion and ongoing communication between a physician or investigator and participants, which culminates in the participant signing a paper consent form to indicate their understanding of risks associated with the trial. The purpose of the consent form is to document a patient's acceptance and understanding of trial risks and provide a reference for participants to revisit throughout the duration of the trial. It is recognised here that eConsent refers to the same process of consent as is currently in place, but with the potential benefit of maximising comprehension and enhancing patient understanding through the use of novel technologies.



[2] Transcelerate Biopharma, 'eConsent: Emerging Trends and Future Considerations', <http://www.transceleratebiopharmainc.com/wp-content/uploads/2017/11/eConsent-Emerging-Trends-and-Future-State.pdf>, 2017, page 5.

# INTRODUCTION

Feedback from Australian and global stakeholders indicates that paper consent forms have become lengthy – often 30+ pages – and contain legal and technical jargon which most lay people cannot easily understand. There is guidance regarding the appropriate reading level of language used in PICFs, and general agreement that a Flesch-Kincaid reading ease score of between a 6th and 8th grade is appropriate. Many stakeholders interviewed during this project stated that these guidelines were clearly not followed.

eConsent, or electronic consent, is a process by which the consent of a person may be obtained using eInformation technology. The United States Food and Drug Administration (FDA) has defined eConsent as 'the use of electronic systems and processes that may employ multiple electronic media, including text, graphics, audio, video, podcasts, passive and interactive websites, biological recognition devices, and card readers, to convey information related to the study and to obtain and document informed consent' [3].

There are many potential benefits of eConsent technology, including the ability to integrate multimedia learning tools (video, audio, interactive pictures, quizzes, diagrams and data visualisation methods etc.), accessibility of consent information away from the trial site (without the risk of misplacing paper-based forms), ability to easily reach participants who reside in remote locations, and the ability to rapidly translate information for participants who speak English as a second or subsequent language.

As a digital process, eConsent is constantly evolving and can be adapted for multiple different therapeutic trial areas. Some eConsent use cases include:

1. Obtaining consent:
    a. Digital consent form with hand-signed consent;
    b. Digital consent form on sponsor or CRO-provided devices;
    c. Digital consent form using cloud-based or online software;
    d. Digital consent form using biometric consent (e.g. rather than signing the form, enabling the giving of consent using fingerprint ID or face recognition technology).
2. Presenting participant information:
    a. Integration of multimedia;
    b. Efficient language translations.

Given the immaturity of eConsent adoption within the Australian clinical trials framework the full benefits of the technology have not been realised. Over time, it is expected that broader adoption of digital technologies including eConsent will produce greater realisation of benefits.

[3] US Food and Drug Administration, 'Use of Electronic Informed Consent: Questions and Answers', <https://www.fda.gov/downloads/drugs/guidances/ucm436811.pdf>, December 2016, page 2.

# CURRENT INDUSTRY TRENDS

## eConsent Globally

In developed nations, there is a growing push for clinical trial initiatives to adopt digital and eInformation technologies. Deloitte UK has highlighted the significant reach of mobile devices within the population, and how this can be successfully used within clinical trials[4]. In terms of eConsent adoption, there is growing awareness within many countries, including the United States and Western European economies, as to the benefits eConsent technology can provide. In the United States, there has been a gradual move to investigate the potential implementation of eConsent within clinical trials, with the FDA providing guidance regarding eConsent systems in 2015 and 2016. It has been noted that whilst eConsent 'may not yet be the standard, the possible advantages of electronic solutions have been demonstrated and found acceptable'[5]. A survey[6] conducted by TransCelerate Biopharma Inc. (Transcelerate), in 2016 and 2018 showed that across the globe, there had been a number of countries who submitted applications for use of eConsent to Ethics and Governance Committees, and a proportion of these countries went on to obtain consent from participants for clinical trial participation using electronic forms.

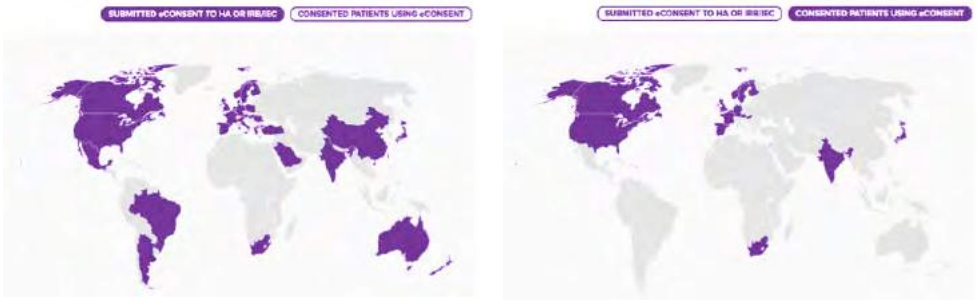



Image Source: TransCelerate Landscape Assessment © 2017

TransCelerate's data shows that whilst there is significant interest in implementing eConsent across many countries, actual uptake of eConsent technology is far lower, with only a handful of countries - including the United States, India, Japan, the United Kingdom, Spain, France and Germany - proceeding to use eConsent processes from start to finish. As per TransCelerate's 2018 data, Australia had not yet completed a clinical trial where participants had used eConsent throughout the duration of the study. However, TransCelerate's data is over 18 months old, and may not include information from the entirety of Australia's clinical trials landscape – data collected during this project indicates that just over 30% of surveyed stakeholders have been involved in clinical trials using eConsent.

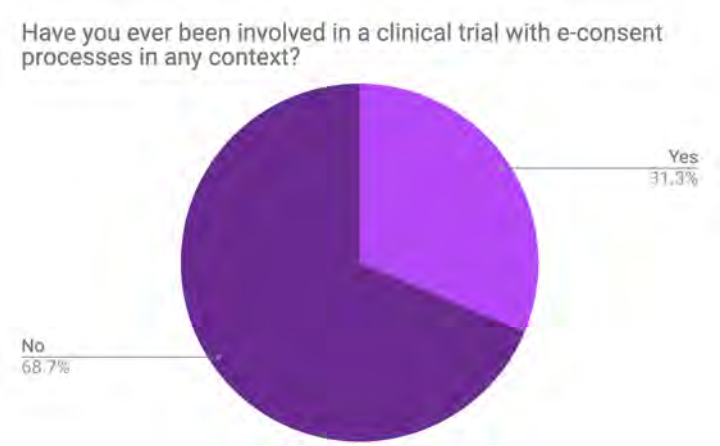


[4] Deloitte UK, 'Connected Health: how digital technology is transforming health and social care', 2015, page 2.
[5] American Pharmaceutical Review, 'Advancing Clinical Trial Efficiency With Electronic Informed Consent', Emilie Branch, <https://www.americanpharmaceuticalreview.com/Featured-Articles/335413-Advancing-Clinical-Trial-Efficiency-With-Electronic-Informed-Consent/>, 16 March 2017.
[6] Transcelerate Biopharma Inc., 'eConsent Landscape Assessment', 2016, <http://www.transceleratebiopharmainc.com/wp-content/uploads/2017/08/2016-eConsent-Landscape_FINAL.pdf.>

## eConsent in Australia

At present, eConsent use is not widespread in Australian clinical trials, although some trialling of eConsent software is occurring in an ad-hoc manner. Whilst a number of sponsors, CROs and a handful of sites have investigated eConsent feasibility in Australia, approximately two thirds of participants surveyed during this project had not been involved in a clinical trial with eConsent processes.

Australia itself has unique geographical barriers which may inhibit access to appropriate healthcare. With populations spread over vast distances and many people in regional or remote areas, it has been recognised through the teletrials initiatives recently funded by State and the Federal Government that potential participants for clinical trials face significant barriers to accessing clinical trials[7]. This was also supported by Robert Kent at the Kinghorn Cancer Centre, who is currently trialling eConsent processes for rural and remote participants. Adoption of eConsent technology in Australian trials may further enable greater reach and enhanced access to clinical trial information by participants located in geographically remote areas in ways that are impossible with paper-based approaches.




## Interview Feedback

When asked about the current status of the use of eInformation technology in the Australian clinical trials sector, a majority of stakeholders indicated that whilst there has been some uptake in digital technologies, most of this acceptance has occurred within the data collection and analysis area of the trial workflow, such as the use of electronic Case Report Forms (eCRFs). Otherwise, interviewees generally stated that technology uptake within clinical trials has been relatively slow, especially when compared with the vast advancement of digital technology in other sectors.

[7] MTPConnect, 'Pilot Implementation of the Australasian Tele-Trial Model', <https://www.mtpconnect.org.au/Category?Action=View&Category_id=130>.


Given the feedback regarding slow adoption of eInformation technology, it was expected that stakeholders would also indicate a lack of receptiveness to technological change within the industry. However, interviewees suggested that a large portion of stakeholders were receptive to adopting eInformation technologies, and believed they would assist in managing, administering and analysing the progress of a clinical trial.

The only stakeholder groups perceived by interviewees as demonstrating a lack of receptiveness to eConsent were administrators, Governance Offices and HRECs. Those interviewed identified risk aversion by these stakeholders as a factor which may influence general eConsent receptiveness in the industry. However, HREC chairs and other administrators who were also interviewed during the project expressed openness to eConsent applications. Better communication between all stakeholder groups involved in the clinical trial workflow may alter these perceptions.

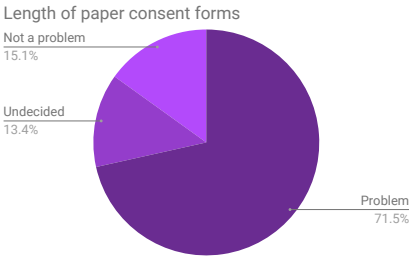
## A Paper-based Process

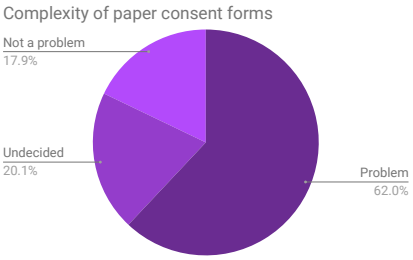
Obtaining consent to participate in clinical trials has predominantly been a paper-based system, with physicians and trial investigators conducting face-to-face consultations with participants to ensure they have an accurate understanding of the study process and risks involved. The PICF is the basis from which conversations between the physician and participant arise, and on which the participant gives their signature for their consent to participate.

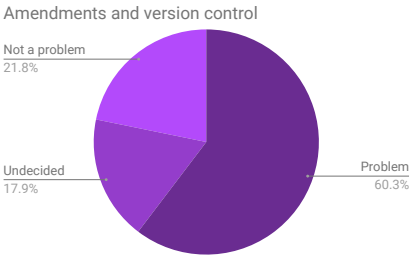
Once the participant has signed the paper form, they are given a copy and, upon trial completion, the original consent form is placed in storage. Storage differs across organisations; some groups store completed consent forms in warehouses off-site, whilst other groups house historic forms at the premises. The volume of paper consent forms usually does not pose an issue in terms of storage, however, ease of access to historic forms can be difficult.

## Survey Responses

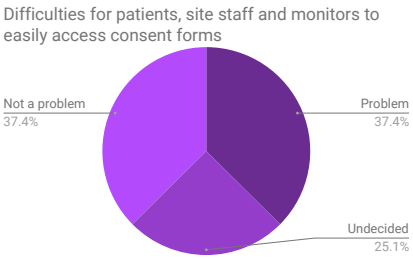
When asked about problems with the current paper-based consent process, survey participants identified the length, complexity (both of which may impact participant understanding) and issues with amendments and version control as the largest problem areas with the traditional paper process.

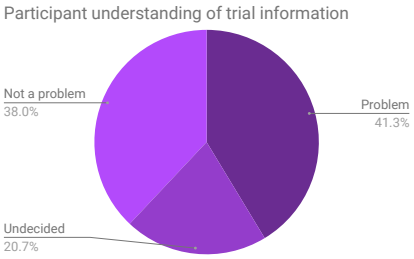


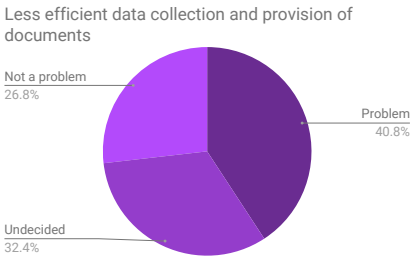



Difficulties with easily accessing consent forms, participant understanding of trial-related information, and less efficient data collection/provision of documents were seen as less problematic aspects of the current paper-based PICFs. This feedback is unsurprising given the current framework in which trials are conducted; over 68% of surveyed stakeholders had not participated in a trial with eConsent, so there may be a narrow perception about limitations with the current system, particularly if stakeholders are unaware about the benefits of eConsent.




All responses to this question are included in the Appendix.

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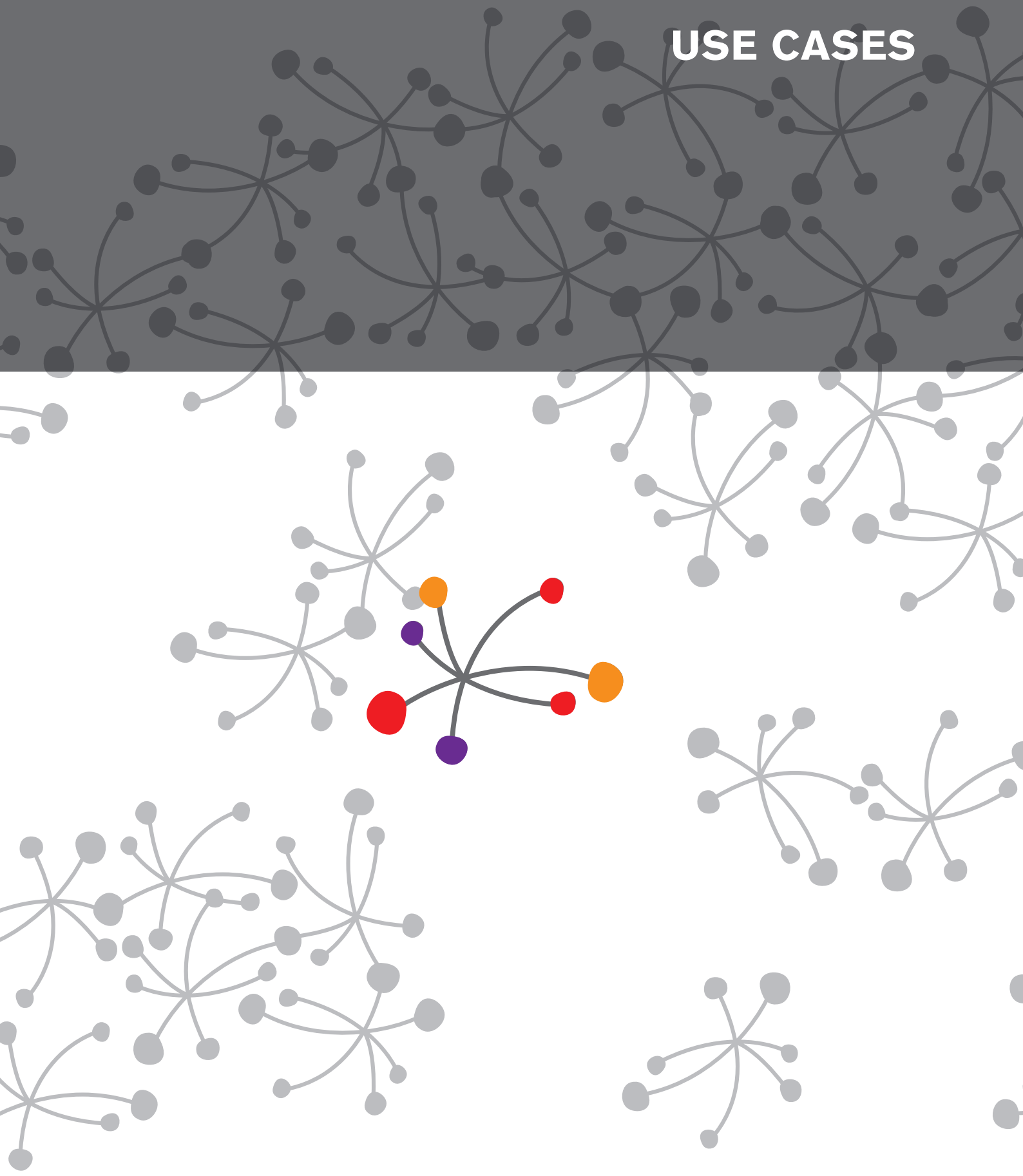
# USE CASES



## USE CASES

## OBTAINING CONSENT

There are multiple types of eConsent use cases which may be applied within a clinical trial framework. This allows for significant flexibility and tailoring of the eConsent process, depending on trial size, participant demographics and resources.

The following tables demonstrate a number of different eConsent use cases which may be implemented within a clinical trial.

| eConsent form with physical signature | | | | | | |
|---|---|---|---|---|---|---|
| **Process Flow** |  |  |  |  |  |  |
| | **Enrolment** | **Login** | **Complete Form** | **Print** | **Sign** | **Storage** |
| | Participant enrolled in trial based on relevant eligibility criteria | Participant prompted to login to trial's software to complete consent process | Participant works through PICF on device supplied at site | Once the participant has completed the consent form, it is printed on-site | Participant physically signs printed consent form | Physical paper versions of consent forms are stored as per relevant policies |
| **Benefits** | • Participants are able to learn about the trial through the use of multimedia, quizzes and other tools unique to eConsent (as opposed to the traditional format of paper PICFs).<br>• Changes to the PICF can be easily updated digitally, allowing for better version control.<br>• Useful when sites are trialling eConsent technology.<br>• Useful for certain participants who may not be comfortable providing digital consent. | | | | | |
| **Drawbacks** | • Paper versions of the eConsent form must be stored traditionally (on-site or off-site, depending on usual site practices). | | | | | |
| **Actions** | • Sites to assess infrastructure and resource limitations before deciding whether to implement eConsent with physical signature.<br>• Sites to assess trial demographics (e.g. predominant age of participants) when deciding whether to use physical signatures. | | | | | |

| eConsent form on supplied device | | | | | | |
|---|---|---|---|---|---|---|
| **Process Flow** |  |  |  |  |  |  |
| | **Enrolment** | **Receive Device** | **Login** | **Complete Form** | **Sign** | **Storage** |
| | Participant enrolled in trial based on relevant eligibility criteria | Participant is allocated a device on which the digital consent form is stored | Participant is prompted to login to their consent form using specific details | Participant works through PICF on device supplied at site | Participant signs their consent form on the device using electronic signature or other form of authorised consent | Signed eConsent forms are saved by the CRO, sponsor, eConsent vendor or site's internal servers |
| **Benefits** | • Devices can be programmed to specifically incorporate the eConsent form, and automatically send any relevant information to the data centre/monitors for processing.<br>• Participants are able to learn about the trial through the use of multimedia, quizzes and other tools unique to eConsent (as opposed to the traditional format of paper PICFs).<br>• Changes to the PICF can be easily updated digitally, allowing for better version control[8].<br>• More comprehensive monitoring by site staff as participants can only give consent on-site. | | | | | |
| **Drawbacks** | • Sites must rely on the efficacy of devices provided for participant use. Any defects must be repaired by the device's provider and may slow the trial process down without sufficient backup systems.<br>• Participants can only access their eConsent form on-site.<br>• Initial setup and purchase of devices may be more expensive than other eConsent options currently available.<br>• Less convenient for participants as they are still required to attend the site to give consent and access the PICF, whereas other eConsent software provides the ability for participants to login to their form remotely. | | | | | |
| **Actions** | • Sites to assess infrastructure and resource limitations before deciding whether to use pre-supplied devices. | | | | | |

[8] TransCelerate Biopharma Inc., 'eConsent: Implementation Guidance', 2017, page 9.

| eConsent using cloud-based software | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Process Flow** |  |  |  |  |  |  |  |  |
| | **Enrol-ment** | **Receive Device** | **Infor-mation** | **Login** | **Complete Form** | **Sign** | **Storage** | **Access** |
| | Participant enrolled in trial based on relevant eligibility criteria | Participant is allocated with login details for the eConsent software | Participant is provided with infor-mation from clinicians and investiga-tors about the software and accessi-bility | Participant is prompted to login to their consent form on their device | Participant works through PICF | Participant signs their consent form on the device using electronic signature or other form of authorised consent | Digital consent forms are saved on the cloud platform and backup servers as per policies | Participants are able to revisit their consent form at any time via their chosen device using their secure login details |
| **Benefits** | • Provides greater ability for participants to access their consent form.<br>• Participants are able to learn about the trial through the use of multimedia, quizzes and other tools unique to eConsent (as opposed to the traditional format of paper consent forms).<br>• Participants still have regular contact with physicians and site staff to discuss any questions they may have.<br>• Changes to the consent form can be easily updated digitally, allowing for better version control[9].<br>• Participants are able to keep informed about the trial and be alerted to any updates to the form as they are made. | | | | | | | |
| **Draw-backs** | • Security management is highly important to ensure participant privacy. | | | | | | | |
| **Actions** | • Adequate security protocols must be negotiated and established between all stakeholders.<br>• Sponsors and CROs to investigate the benefits of eConsent using cloud-based software or participants' own devices with the view to implement this use case rather than pre-supplying devices. | | | | | | | |

[9] TransCelerate Biopharma Inc., 'eConsent: Implementation Guidance', 2017, page 9.

| eConsent using biometric information | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Process Flow** |  |  |  |  |  |  |  |  |
| | **Enrol-ment** | **Receive Device** | **Infor-mation** | **Login** | **Complete Form** | **Consent** | **Storage** | **Access** |
| | Participant enrolled in trial based on relevant eligibility criteria | Participant is allocated a device on which the digital consent form is stored | Participant is provided with infor-mation from clinicians and investiga-tors about the software and accessi-bility | Participant is prompted to login to their consent form using specific details | Participant works through PICF | Participant may give consent using their fingerprint, eye or face recognition technology which is stored and verified in their device | Digital consent forms are saved on the cloud platform and backup servers as per policies | Participants are able to revisit their consent form at any time via their chosen device using their secure login details |
| **Benefits** | • Biometric authentication technologies are more secure than using written signatures. Biometric data is often already stored on a user's mobile device which verifies their identity. This creates less risk regarding participant identity management if participants are providing consent off-site.<br>• Provides greater ability for participants to access their consent form.<br>• Participants are able to learn about the trial through the use of multimedia, quizzes and other tools unique to eConsent (as opposed to the traditional format of paper PICFs).<br>• Participants still have regular contact with physicians and site staff to discuss any questions they may have.<br>• Changes to the consent form can be easily updated digitally, allowing for better version control[10].<br>• Participants are able to keep informed about the trial and be alerted to any updates to the form as they are made. | | | | | | | |
| **Draw-backs** | • Security management is highly important to ensure participant privacy.<br>• Greater policy changes may be required to allow for the use of biometric consent, including educating administrators and HRECs for assessment of biometric consent applications. | | | | | | | |
| **Actions** | • Adequate security protocols must be negotiated and established between all stakeholders.<br>• Stakeholders must assess specific trial demographics prior to exploring biometric consent technology; this type of consent may not be appropriate for some participant age groups. | | | | | | | |

[10] TransCelerate Biopharma Inc., 'eConsent: Implementation Guidance', 2017, page 9.

## USE CASES

## PRESENTATION OF PARTICIPANT INFORMATION

Various options exist for the presentation of trial information within the eConsent framework. The following tables demonstrate types of novel presentation methods which may be incorporated.

| Integration of multimedia | | | | | |
|---|---|---|---|---|---|
| **Process Flow** |  |  |  |  |  |
| | **Login** | **Video** | **Visual Aids** | **Audio** | **Quiz** |
| | Participant prompted to login to trial's software to complete consent process | Participant watches information videos about the trial process and potential risks | Information related to Trial specific side-effects and relevant information are graphed and interactive | Audio options are available for vision-impaired participants | Participant understanding can be tested by novel methods, including interactive quizzes |
| **Benefits** | • Participants are able to learn about the trial through the use of multimedia, quizzes and other tools unique to eConsent (as opposed to the traditional format of paper PICFs) which can enhance participant comprehension by portraying information in an accessible format. This is because humans perceive and understand visual data more easily than written or numerical data[11].<br>• Changes to the consent form can be easily updated digitally and re-printed for participant signature, allowing for better version control.<br>• Some tools, such as quizzes, can allow investigators to gain better insight into how well participants understand the consent information. | | | | |
| **Drawbacks** | • Initial higher cost due to multimedia development.<br>• Limitations for participants with disabilities, including hearing or vision impaired participants.<br>• May only be beneficial for some types of trial, e.g. oncology trials, where there are vast amounts of specialised information. | | | | |
| **Actions** | • Sites to assess infrastructure and resource limitations before deciding whether to develop multimedia for individual trials.<br>• Sites to assess trial demographics (e.g. predominant age of participants, participant disabilities etc.) when deciding whether to use data visualisation or other multimedia. | | | | |

[11] Stephen Few, 'Data Visualization for Human Perception', in Mads Soegaard & Rikke Friis Dam (Eds.) The Encyclopedia of Human-Computer Interaction, 2nd Edition (s. 35.3), The Interaction Design Foundation.

| Language translation | | | | |
|---|---|---|---|---|
| **Process Flow** |  |  |  |  |
| | **Login** | **Language** | **Translation** | **Audio** |
| | Participant prompted to login to trial's software to complete consent process | Participant is able to select their preferred language from a set of pre-existing options | Content within the eConsent form is translated, including subtitles on videos/multimedia | Audio within the consent form is available in different language options |
| **Benefits** | • Increases access to healthcare for participants who speak English as a second language.<br>• Changes to the PICF can be easily updated digitally and re-printed for participant signature, allowing for better version control.<br>• Multimedia tools are still able to be included with different language options. | | | |
| **Drawbacks** | • Initial higher cost due to translation requirements. | | | |
| **Actions** | • Sites to assess infrastructure and resource limitations before deciding whether to include language translation options in a specific trial.<br>• Sites to assess trial demographics (e.g. predominant expected languages spoken) to determine which language options to include in a specific trial. | | | |

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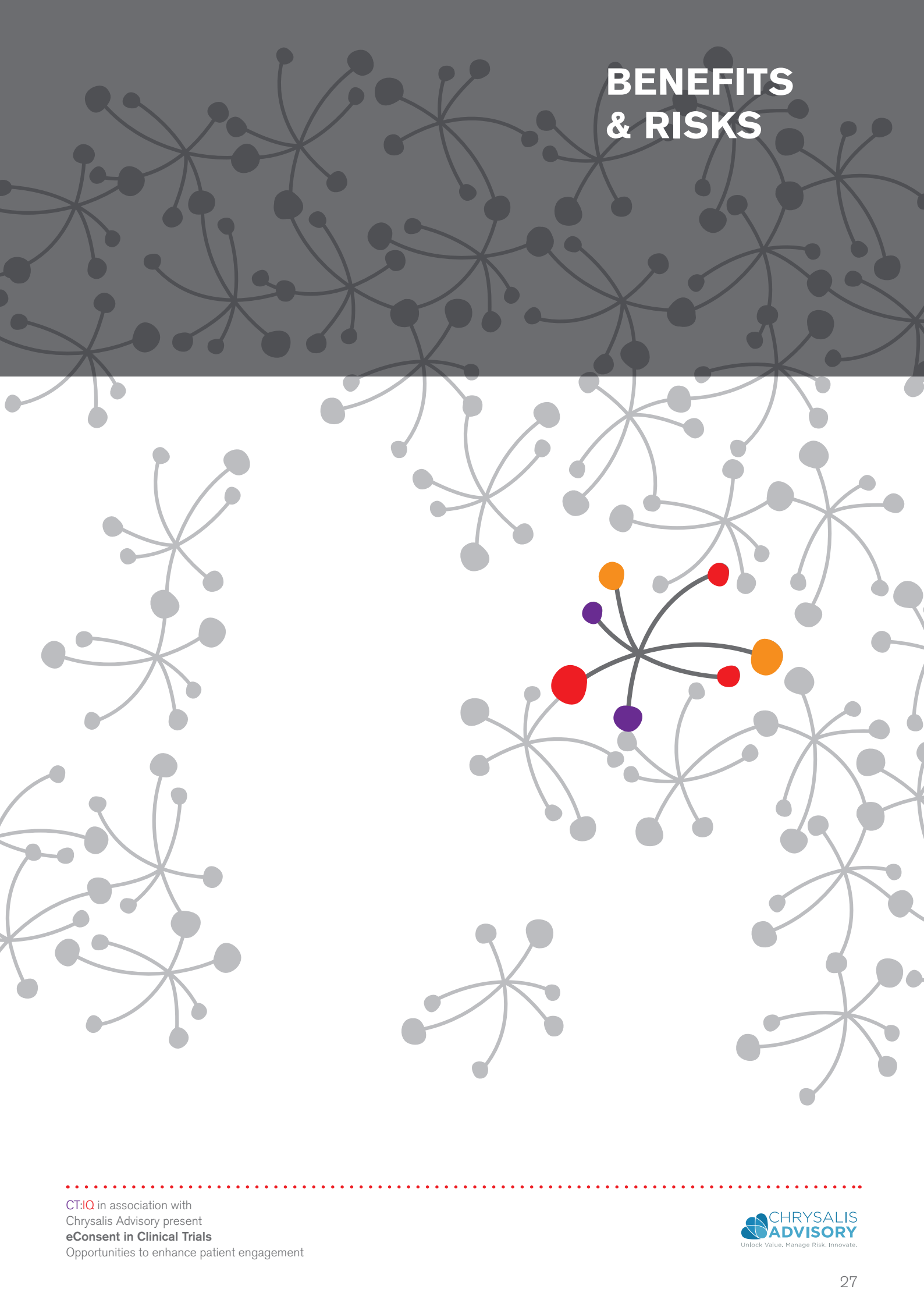
# BENEFITS & RISKS



## ADVANTAGES AND RISKS OF ECONSENT

eConsent has numerous advantages and can greatly enhance the participant, site and sponsor/CRO experience during a clinical trial. These advantages include:

- Providing opportunities for staff to collect, analyse and store participant related trial data, and ensure participants are actively engaged in the consent process;
- Allowing for additional functionality that cannot be achieved through the use of paper-based forms, including interactive audio/visual explanations, appropriate highlighting of important information, and integrated quizzes or questionnaires [12];
- Participants may be able to keep an electronic copy of the PICF, so it enables easy access to return and check the information throughout the duration of the trial;
- Participants have the flexibility to opt out of using electronic consent alone if they are not comfortable with the process (this was identified as a necessary option by interviewees and survey participants); and
- Storage of eConsent forms within a database simplifies form retrieval for staff and monitors, and can be better integrated with a participant's electronic health records and trial data.

As with any new technology, risks associated with eConsent must be mitigated to ensure implementation is effective. In assessing risks, stakeholders should address:

- The digital literacy of participants in particular trials; some trials will have a far greater volume of elderly participants who may have trouble using eConsent software. Discretion should be used depending on the type and location of the trial;
- Infrastructure capabilities at the site-level to avoid premature implementation of eConsent at locations with dated IT systems;
- Whether appropriate guidance has been provided to sites and HRECs regarding the purpose, implementation pathway and benefits of eConsent;
- Data security concerns. The Clinical Trials Transformation Initiative (CTTI) has noted that, as part of the consent process, trial organisers must ensure participants have a full understanding of where their data will be stored and how it will be used. In the context of eConsent and broader digitisation of clinical trials, greater emphasis on data distribution is necessary to achieve sufficiently informed participant consent, particularly where multiple regulatory bodies and/or policies must be factored in to the eConsent adoption process [13]; and
- Participant identity if participants are able to consent remotely. There are a number of ways stakeholders can manage this risk, including biometric technologies and video conferencing.

[12] Kym Short, 'eConsent Clinical Trial Workshop Presentation', Janssen, May 2015.
[13] Quorum Review, Inc., 'eConsent', <https://www.quorumreview.com/econsent-research-everything-need-know/>, 2019.

Overall, eConsent has the ability to 'improve participant engagement, reduce consent documentation errors, and ensure compliance and security'[14]. However, organisations exploring eConsent should undertake a comprehensive risk analysis before commencing any transition process.

## Advantages of eConsent

eConsent has potential to greatly improve clinical trials. Benefits flow to the participant and stakeholders; promoting the likelihood that participants give their consent based upon a sufficient understanding of the risks and benefits, providing better version control, and enhancing the ability for sponsors to track of participant consent and emergent issues.

### Advantages: Interview Feedback

In general, those working within CROs, sponsors and academia/research institutions were much more likely to identify advantages to eConsent, and were more positive about the benefits of eConsent versus potential negative side-effects. Investigators and site staff, on average, were more sceptical about the net benefits of eConsent technology, with many stating that perceived benefits did not definitively outweigh potential negative consequences of the technology, or that it was an add-on to the trial workflow which wouldn't produce any tangible advantages.

Almost all stakeholders identified the superior potential of eConsent software to provide language translation for participants with limited or no understanding of English. This possibility was overwhelmingly noted as a major benefit of eConsent technology; opening up access to trials for people from non-English speaking backgrounds when, as mentioned by one stakeholder, they are often turned away from trials under current practice due to an inability to provide consent.

In addition to language translation benefits, stakeholders also pinpointed access for participants in regional/remote areas as an advantage of eConsent. eConsent has the capacity to enable individuals, who would otherwise be unable to participate in a clinical trial (whether that be due to logistics, cost or other impediments), the ability to speak with clinicians and give consent using software, rather than having to attend the trial site more often than absolutely necessary.



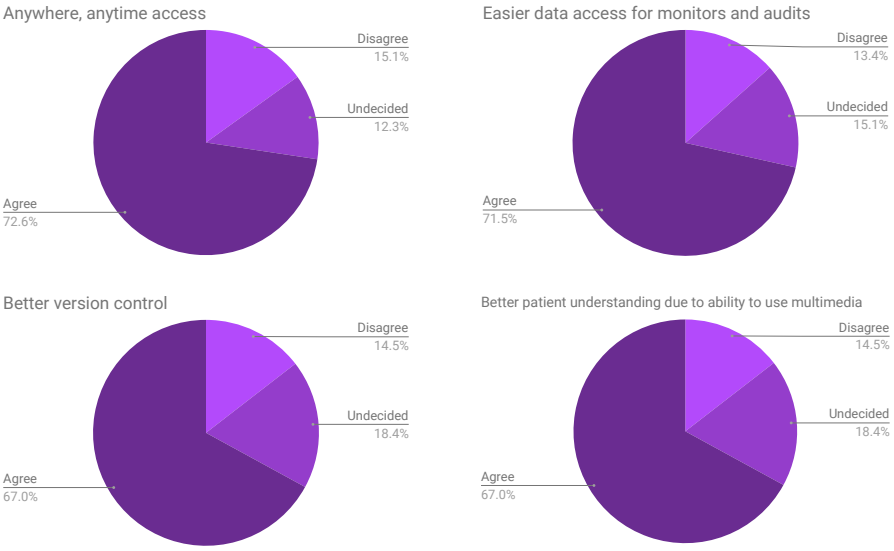
[14] Quorum Review, Inc., 'eConsent', <https://www.quorumreview.com/econsent-research-everything-need-know/>, 2019.

Enhanced participant engagement with the consent process - more informed patient consent
Easier recruitment and retention of participants
Allows access for participants in remote and regional areas
Better access for people of different demographics and cultures
Easier for participants to withdraw consent if necessary
Video conferencing reduces participant travel time
Accessibility off-site for all participants - enhancing convenience and engagement
Allows better access for low of non-English speaking participants
Interactive features cater for participants with different learning styles

## Advantages: Survey Responses

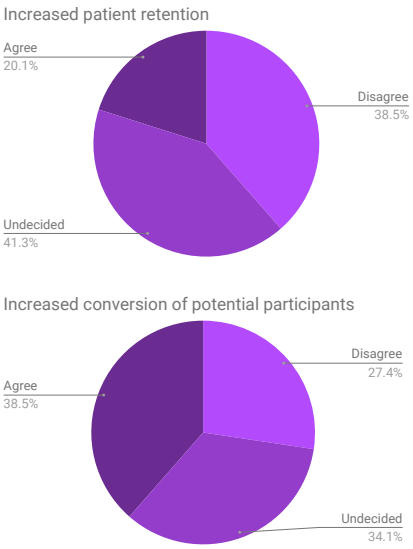
Survey participants were asked for feedback regarding potential eConsent benefits. Survey results indicated that the biggest advantages to eConsent are:

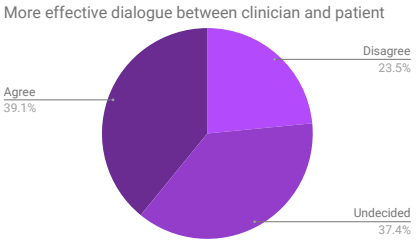
1. Ability to access the consent form and related information anywhere, anytime;
2. Easier data access for monitors and during audits;
3. Better version control; and
4. Better participant understanding due to the ability to use multimedia (e.g. video, interactive diagrams, audio recordings) in eConsent forms.



Benefits which were not seen as significant by survey participants were:

1. Increased retention of participants during the study;
2. Possibility of creating a more effective dialogue between the clinician and their participants; and
3. Increased conversion of potential participants into trial participants.







## Summary of Advantages

| Advantage | Description |
|---|---|
| **Simple tracking of participant consent** | ▪ In larger trials, sponsors and/or CROs are usually in charge of tracking the status of participant consent. This has traditionally involved significant back-and-forth communication between sponsors/CROs and sites, which is time consuming and prone to inaccuracy. A number of CRO and sponsor interviewees noted that they had recorded incorrect participant consent statuses during trials due to miscommunication with sites, which resulted in associated breaches of protocol.<br>▪ eConsent enables automatic notification of when participants consent, allowing sponsors/CROs to better monitor and easily identify emergent issues within the trial. This is particularly beneficial where ongoing or staged consent is required, or when participants must be re-contacted during the trial to provide them updated information. |

## BENEFITS & RISKS

| Advantage | Description |
|---|---|
| **Off-site accessibility** | ▪ Traditional practice usually involves participants leaving the site with a paper copy of their signed PICF. Some interviewees stated that, in their experience, participants either dispose of their PICF at or soon after leaving the facility, or lose the form once they arrive home – making it difficult for participants to revisit specific information as the trial progresses.<br>▪ eConsent technology enables participants to access their form at any time from their own device – removing the possibility for participants to misplace their PICF, and enhancing more active engagement with the consent process. Better insight into participant understanding of consent information |
| **Better insight into participant understanding of consent information** | ▪ When using paper-based PICFs, doctors and other investigators gain insight into participant understanding and experience of the consent process by direct communication. This is positive and reflects how the consent process was designed, however, without formal notation of participant feedback, most insights into the participant's consenting experience are anecdotal.<br>▪ eConsent can bridge this gap between anecdotal evidence and accurate data capture by enabling participants to interact with the consent form and provide feedback as they go.<br>▪ This feedback does not need to be a formal process – some technologies can be used to analyse parts of the form where participants generally highlight a lack of understanding, and consolidate this information for review by stakeholders.<br>▪ The participant-doctor/investigator relationship is not eliminated, but eConsent can assist in accurate data capture and, thus, better analysis of the participant's consenting experience. |

| Advantage | Description |
|---|---|
| **Better version control** | ▪ A common observation made by interviewees was that amending paper PICFs is laborious and increases the size of already-lengthy documents. This was also reflected in the survey data, with over 60% of respondents noting that amendments and version control were problems with the current paper-based process.<br>▪ The literature and stakeholder feedback indicates that eConsent provides the ability to easily amend PICFs and control different versions of the form without adding detailed addendums or complicated updates to the existing paper document.<br>▪ Using eConsent, versions of the form can be updated and superseded, and the form can be stored for easy access by sponsors, CROs, site staff and participants alike. participants are quickly notified of any amendments to the eConsent form during a trial, and are able to log in to the platform and reConsent if necessary. |
| **More interactive, enhancing participant understanding** | ▪ Most interviewees and survey participants expressed an aversion to simply uploading a PDF version of the paper consent form to an online platform. They indicated that where eConsent is applied, it should have additional functions that are not available in a paper format, including multimedia (video, audio, animated diagrams) and the ability for participants to engage directly with the consent information by use of rollover word definitions and visual aids. Stakeholders thought that these functionalities would help to improve informed participant consent, with many stating that participants do not gain a comprehensive understanding of the trial by reading long, paper consent forms.<br>▪ These benefits are only achieved if the chosen eConsent software has the ability to integrate high-quality, interactive features to the consent form, rather than providing a PDF version of the existing paper PICF. |

## BENEFITS & RISKS

| Advantage | Description |
|---|---|
| **Increase access to trials for participants in remote locations** | ▪ Advances in technology over the past 20 years have greatly enhanced the ability for people living in remote areas to access clinical trials.<br>▪ eConsent may enable participants who cannot regularly visit the site to fully participate in the trial process. Some stakeholders expressed hope that the consent process could be conducted through mediums such as video conferencing, which could greatly increase access to healthcare for people living in regional or remote areas.<br>▪ Sites which are currently engaged in eConsent experimentation expressed preference for eConsent using participants' own devices to increase flexibility and convenience for end-users. |

| Advantage | Description |
|---|---|
| **Increase access to trials for non-English speaking participants** | ▪ There was wide stakeholder agreement that eConsent has the capacity to improve access to trials for participants who have limited English language capability. Interviewees indicated that in some trials, people who do not have a strong grasp of English are turned away due to their inability to meet consent protocols.<br>▪ Stakeholders indicated that where participants who spoke English as a second/subsequent language were included in a trial, it was difficult to find and retain good translators to assist these participants throughout the entire duration of the trial<br>▪ eConsent can solve this problem by enabling fast and accurate translation of consent information. This information could be written, audio and/or visual, and could be tailored to major languages spoken in Australia.<br>▪ This particular opportunity was seen as a net positive of eConsent. |

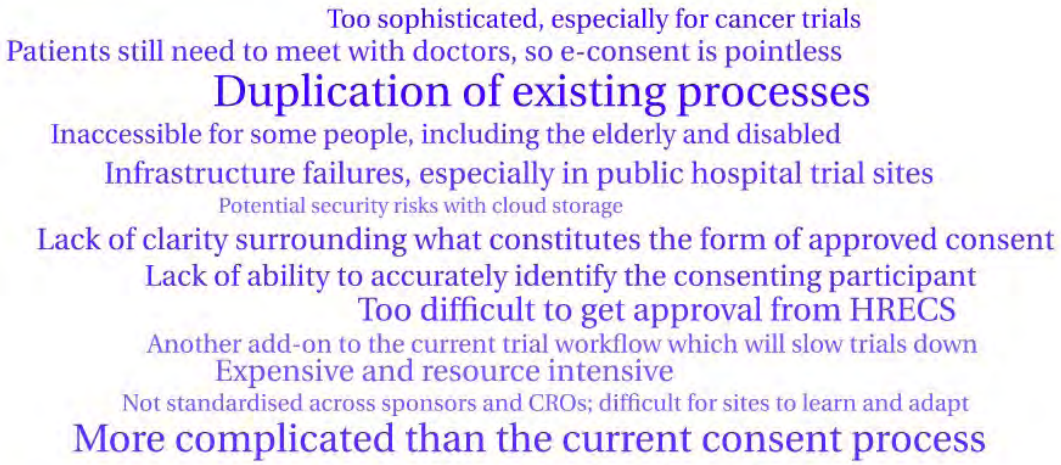
## RISKS OF eCONSENT

Risks are associated with every significant change in an organisation's processes or technology. Managing risks in the clinical trial context is especially critical given the potential serious negative consequences that could occur if new technology is implemented without adequate planning, testing and guidance.

### Risks: Interview Feedback

Stakeholders working within clinical trial sites were more doubtful about the benefits of eConsent than stakeholders from CROs, sponsors and academic research institutions. Sites may be better placed to identify possible eConsent risks as they are able to witness tangible impacts on participants during a trial; appealing to site-driven eConsent in some circumstances. In addition, site staff referenced the significant pressure at a site level to deliver clinical trials at the required quality, cost and time. It may be that eConsent is presently seen as *'one more thing'* that sites will have to deal until the benefits are more clearly articulated and demonstrated via pilot studies. A number of stakeholders from sponsors and CROs indicated that site-driven eConsent was likely infeasible and would be impractical for sponsors conducting global multi-site studies. The view was that at scale, having universal eConsent software is a more efficient and pragmatic approach.

Major risks highlighted by stakeholders were site infrastructure issues (including connectivity and network problems), regulatory risks, duplication of existing processes (creating more burden on site staff), and inaccessibility for certain groups of people. Interestingly, eConsent security was not identified as a serious risk by stakeholders, with most stating that it bore no additional risks than existing digital platforms used to monitor and store medical data. Data governance was still viewed as a risk factor, but one that could be managed appropriately with the correct processes.



## Summary of Risks

| Risk | Description |
|---|---|
| **Inability of participants to understand or use eConsent** | eConsent accessibility for elderly participants was a serious concern for many stakeholders. Some interviewees noted that eConsent would be well-received by younger generations, but elderly trial participants (identified by one interviewee as participants over the age of 60) would be reluctant or unable to use eConsent software.<br><br>Stakeholders observed that where audiovisual multimedia was used within eConsent forms, trial participants with hearing or visual impairment may struggle to complete the form without staff assistance - potentially negating the benefits of eConsent technology. Audio read versions of eConsent forms may provide greater options for people with visual impairments than existing paper forms.<br><br>To alleviate these risks, stakeholders suggested there be more than one consent option available (e.g. paper consent) to cater for different age demographics and technical ability; retaining the option to include paper-based consent for participants who may be unable to use eConsent. |
| **Insufficient supporting infrastructure** | eConsent design will determine whether sites use cloud-based software or devices supplied by sponsors/CROs. A number of interviewees had worked on trials with eConsent where sponsors had provided devices for participant use. These interviewees noted that the devices were clunky and prone to malfunction, which increased overall study time and burdened trial staff; having to ensure that participants whose devices had failed were informed and gave consent via paper-based methods. With inadequate cloud-based storage and backup, or outdated device technologies, use of eConsent may not provide optimal benefits.<br><br>Several interviewees indicated that physical infrastructure, particularly in some public hospitals, could not adequately support eConsent uptake. Wifi blind spots within hospitals were cited as a major reason for this, as well as difficulties achieving infrastructure updates within the public health system.<br><br>Major updates to hospital infrastructure may be required in some circumstances to achieve effective eConsent implementation. |

## BENEFITS & RISKS

| Risk | Description |
|---|---|
| **Lack of standardised industry guidance** | ▪ Interviewees and survey participants noted there was a lack of industry guidance and standardisation from CROs and sponsors when requesting implementation of eConsent by sites.<br>▪ A number of investigators and other site staff noted that each CRO and/or sponsor uses different technology and adheres to different standards regarding what type of notification constitutes informed eConsent (e.g. whether logging in to a platform with user-specific identification and selecting a checkbox is sufficient to indicate consent, or whether digital signature/other personalised identification is required). This results in frustration for sites as they spend a significant amount of time and resources learning how to use new software applications at the commencement of each trial.<br>▪ Standardised industry guidelines should be produced to support CROs and sponsors when introducing eConsent at each site, and to provide education and training frameworks for site staff when using novel eConsent platforms.<br>▪ This problem presents an opportunity for sites to drive eConsent implementation, which would enable greater autonomy to decide what type of technology to use. |
| **Duplication of existing processes** | ▪ A number of clinicians interviewed expressed doubt as to whether eConsent would actually speed up existing clinical trial workflows. From the perspective of investigators (whether they were oncologists or other site staff), eConsent may interfere with and/or duplicate one-on-one consent discussions currently had with participants during the study process.<br>▪ These discussions are a necessary component of giving consent, as investigators can ensure participants truly understand the trial procedure and possible side-effects while also building necessary relationships with physicians.<br>▪ eConsent will not remove doctor-participant conversations from the clinical trials context; it will simply promote better quality and more targeted dialogue. |

| Risk | Description |
|---|---|
| **Inability to gain approval from Ethics & Governance Committees** | ▪ There were mixed responses from survey participants regarding whether HRECs were receptive to the adoption of eConsent. Some stakeholders suggested that if appropriate supporting evidence was provided to HRECs, they may be more receptive towards applications for eConsent use.<br>▪ In order to manage the expectations of HRECs regarding eConsent proposals, comprehensive information, project plans and supporting evidence should be provided by stakeholders from the outset. |
| **Data security and privacy concerns** | ▪ Key stakeholders identified data security as a potential risk associated with eConsent, although it was not a major determining factor when deciding whether or not to implement eConsent.<br>▪ Most stakeholders didn't believe security threats regarding eConsent were any greater than similar threats to existing digital technologies in use throughout clinical trials and the medical field more broadly.<br>▪ When appropriate security systems are in place and data governance risks are managed, stakeholders were not likely to be concerned about data governance risks for eConsent. |
| **Participant identity management** | ▪ Identification of participants when signing remotely is a risk unique to eConsent. The main concern regarding identity management is that participants will be able to ask an associate to sign on their behalf when they are not under direct supervision at a trial site, violating the process of informed consent.<br>▪ Stakeholders from sponsors indicated their current method to minimising participant identity risks was to use vendor-supplied tablets rather than allowing participants to consent off-site using cloud-based software.<br>▪ There are a multitude of ways that this type of risk can be minimised, and using eConsent within a clinical trial does not automatically mean that participants will have the ability to provide consent off-site (e.g. conditions of that particular trial may require participants to provide eConsent whilst they are on the trial premises, but have access to the consent information off-site). However, where participants are given the ability to consent from their own home, this risk must be managed. |

## BARRIERS TO UPTAKE

There are numerous barriers to eConsent uptake due, in part, to the complexity of a clinical trial workflow and the number diverse stakeholders involved. The literature suggests that most barriers to eConsent uptake surround lack of formal guidelines, and technological risks such as infrastructure issues and initial setup costs. Specific barriers include:

- Perception of higher costs, particularly at the outset of eConsent implementation[15];
- Desire for 'more evidence and education to prove the true value of eConsent before making the switch'[16];
- Uncertain and/or non-standardised state of worldwide eConsent guidelines[17];
- Inexperience, lack of guidance or disinclination to proceed from CROs, sponsors and site regulators[18]; and
- Technological illiteracy of study participants and/or administrators[19].

Some barriers to eConsent uptake are broader than simply the technology itself, and relate to change management and flexibility of organisations, insufficient or outdated IT infrastructure, and/or the ability to build a defensible business case for funding. These issues require strong leadership and a commitment to drive change from within the organisation, and can be major impediments to innovation or progress for any venture that the organisation attempts to undertake.



[15] Sandra Sather, 'Surveying the State of eConsent: Are There Still Barriers to be Broken Down?', Applied Clinical Trials Online, <http://www.appliedclinicaltrialsonline.com/surveying-state-econsent-are-there-still-barriers-be-broken-down>, 17 March 2017.
[16] Sandra Sather, 'Surveying the State of eConsent: Are There Still Barriers to be Broken Down?', Applied Clinical Trials Online, <http://www.appliedclinicaltrialsonline.com/surveying-state-econsent-are-there-still-barriers-be-broken-down>, 17 March 2017.
[17] Karyn Korieth, 'Is eConsent adoption poised to grow?', CenterWatch Online, <https://www.centerwatch.com/news-online/2017/09/01/econsent-adoption-poised-grow/>, 1 September 2017.
[18] TransCelerate Biopharma Inc., 'eConsent: Implementation Guidance', 2017, page 11.
[19] TransCelerate Biopharma Inc., 'eConsent: Implementation Guidance', 2017, page 11.

## Barriers to Uptake: Interview Feedback

Stakeholders involved in this project identified a significant number of barriers to eConsent uptake. Site staff, including administrators, clinicians and investigators, noted that lack of guidance and formal training from sponsors and/or CROs prevented effective implementation of eConsent. Site staff stated that they were required to manage a myriad of systems implemented by different sponsors; the complexity of which was identified as particularly overwhelming for smaller sites. Sites were also concerned about digital literacy of participants, particularly the elderly, individuals in minority/disadvantaged groups, or individuals involved in oncology trials due to their psychological vulnerability.

Sponsors and CROs were generally positive about the application of eConsent, and recognised far fewer barriers than their site counterparts. However, interviewees from this group noted eConsent innovation is only useful if sites are receptive and adopt the technology properly.

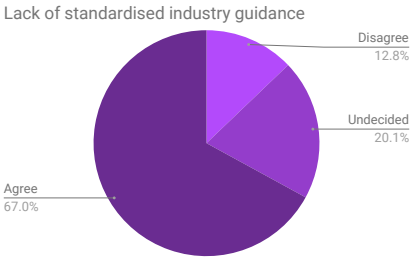

Where sites and sponsors/CROs disagree about how to implement eConsent, better communication, leadership and education are required to ensure a smooth process. Additionally, sites may consider implementing their own eConsent systems which will allow for greater autonomy and site-level decision-making, rather than having to adjust to each sponsor/CRO a site may work with.

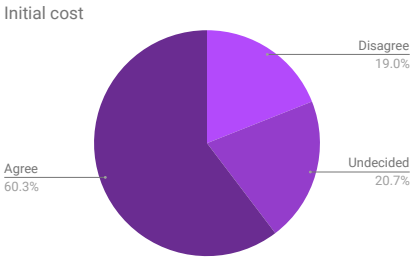
## Barriers to Uptake: Survey Responses

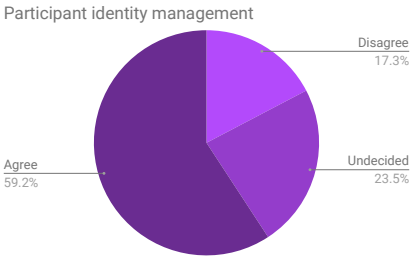
Survey participants largely agreed with the sentiments of interviewees regarding barriers to uptake of eConsent.

Survey responses indicated that the largest barriers within the Australian context were:

1. Lack of standardised industry guidance;
2. Initial cost of establishing eConsent infrastructure and processes; and
3. Participant identity management if participants are providing consent off-site and/or using an electronic method of consent.

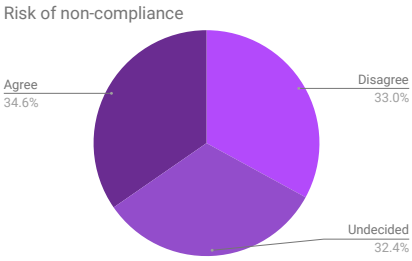


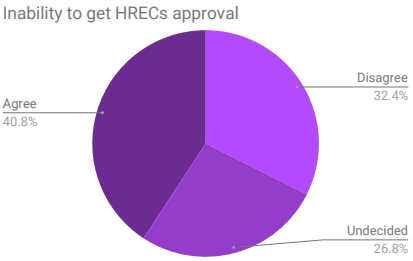



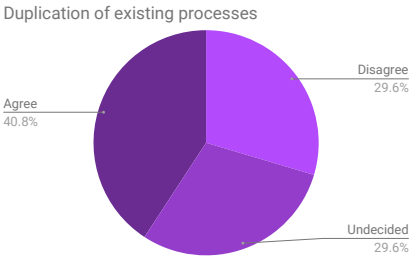




The survey showed that the following issues were less significant barriers to uptake:

1. Risk of non-compliance;
2. Inability to gain approval from HRECs; and
3. Duplication of existing processes.




All responses to this question are included in the Appendix.

## Summary of Barriers to Uptake

| Barrier | Description |
|---|---|
| **Initial cost** | ▪ When budgeting for eConsent, sites should factor in costs of amending protocols, providing staff training for new trial procedures, and infrastructure improvements such as upgrading wifi systems, accessing and ensuring widespread availability of high-speed internet and/or mobile data.<br>▪ Given these additional costs, there may be some resistance to adopting eConsent, and an assessment of the overall benefits to the clinical trial must be explored. Such reservations were observed in the survey feedback, with just over 60% of respondents indicating that initial cost of eConsent implementation was a barrier to uptake of the technology .<br>▪ Longer-term use of eInformation technology will almost certainly result in cost savings; it reduces the number of hours of labour which currently go towards monitoring and auditing the consent status of participants. After technological amendments to the trial workflow, the overall process is expedited – meaning enhanced participant experiences and more efficient analysis of data. |
| **Lack of participant digital literacy** | ▪ Interviewees and survey respondents indicated interviewees believed that certain demographics of the population may struggle with using eConsent technology, particularly elderly participants.<br>▪ This can be mitigated by using a model that allows participants to drive the information seeking process in a way that best suits their needs. eInformation and eConsent provides a mechanism through which a variety of information formats (both hard and soft) can be presented. The participant should be given the freedom to select as many, or as few, of those formats as they wish. |
| **Lack of standardised industry guidance** | ▪ A lack of standardised guidance in the Australian clinical trial landscape has resulted in ad-hoc eConsent implementation and a general lack of understanding by stakeholders.<br>▪ Greater industry engagement and collaboration may mitigate this barrier by providing stakeholders with frameworks and support to implement eConsent. |
| **Lack of suitable infrastructure** | ▪ Many sites, especially those within hospitals, do not have appropriate infrastructure or utilise the level of technology required for eConsent.<br>▪ Sites may have a lack of high-speed internet, secure wifi access, and barriers to acquiring a large volume of devices (if the trial is supplying devices for participants).<br>▪ Infrastructure issues were mentioned often during interviews and in survey feedback. |

## BENEFITS & RISKS

| Barrier | Description |
|---|---|
| **Inability to gain Ethics approval** | ▪ Some interviewees stated that HRECs' scepticism of eConsent prevented rapid uptake of the technology. Other feedback indicated that HRECs are open to approving eConsent applications, but lack the required guidance to do so effectively.<br>▪ Individual HRECs should adopt a culture of innovation, whereby they proactively seek to approve eConsent applications and develop internal guidelines to improve decision-making. |
| **Lack of education and training for site staff** | ▪ Interviewees working at trial sites indicated that a lack of eConsent training prevented effective adoption of the technology.<br>▪ Site staff indicated that without sufficient education and training into use of designated software, further flow-on costs are felt by sites, particularly in the form of lower productivity and increased time spent on understanding the eConsent system.<br>▪ Where sponsors and CROs are driving eConsent adoption, adequate training on the requisite software should be provided to ensure sites use eConsent as intended.<br>▪ Alternatively , sites can increase their own independence by implementing internal eConsent processes, which will provide greater flexibility to operate within their own eConsent framework rather than having to adopt sponsor or CRO-specific software. |
| **Organisational change management** | ▪ All organisations face internal cultural barriers to change; historic practices and an inability to make change-based decisions can hamper overall efforts to innovate existing operating models.<br>▪ Each organisation attempting to implement eConsent must review their own unique circumstances in order to create an action plan which facilitate flexibility and openness to change. |

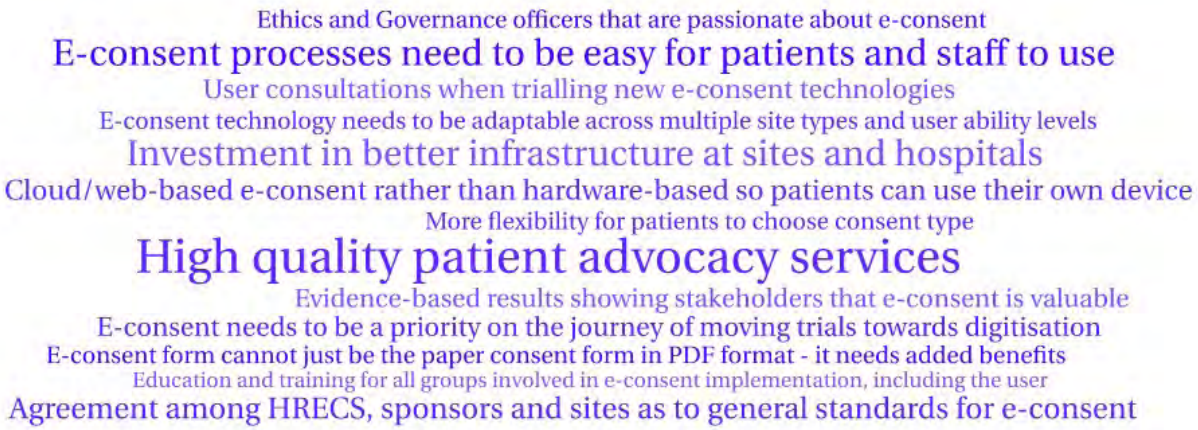
# PATHWAYS FORWARD

# DRIVING eCONSENT SUCCESS

In order to maximise the chance of eConsent success, all stakeholders in the clinical trial value chain must adopt specific practices and attitudes to drive change and minimise risk. Ideally, each stakeholder group should have their own critical success metrics to measure their performance when implementing eConsent.

## Critical Success Factors: Interview Feedback

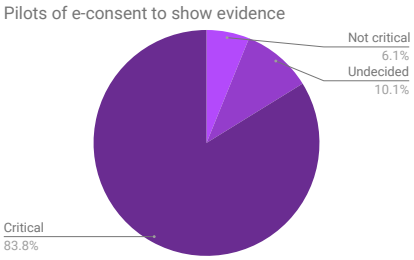
Interviewees provided a wide range of responses when asked about critical success factors for eConsent implementation. A number of interviewees mentioned the importance of robust participant advocacy services when trialling and implementing eConsent to ensure the participant experience is prioritised above all other factors.

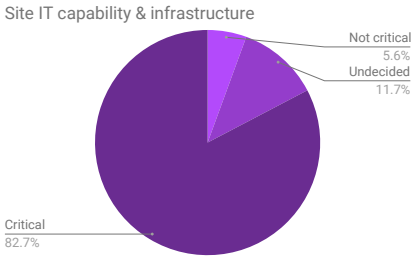


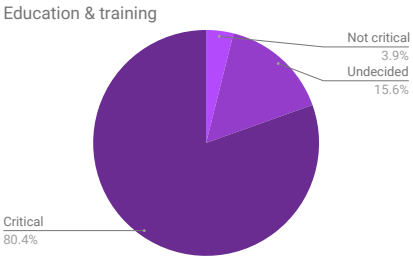

## Critical Success Factors: Survey Responses

The project survey results gave high-level insight into the general perception of industry stakeholders regarding critical success factors of eConsent implementation. The survey results reflected stakeholder interview feedback – indicating that the most critical success factors for effective eConsent implementation are:

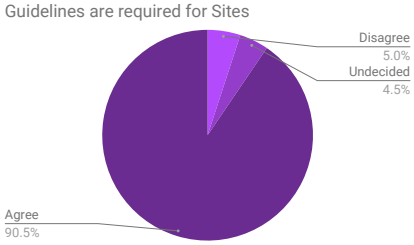
1. Pilot trials to prove efficacy of the technology;
2. Site IT capabilities and infrastructure; and
3. Education and training for all stakeholders involved to ensure understanding of eConsent processes.

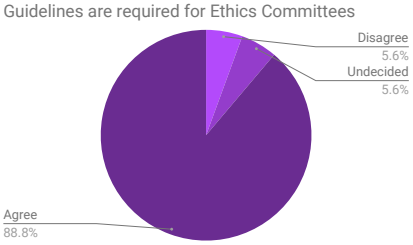



In addition to specific critical success factors, survey participants overwhelmingly inferred that guidelines were required for sites and HRECs in order to achieve effective implementation of eConsent.




In survey responses and during stakeholder interviews, most respondents indicated that standardised guidelines were required for certain parts of the clinical trials sector. Many respondents cited that differences in the use of eConsent platforms and inconsistencies between organisations regarding eConsent compliance (e.g. whether participants would be required to sign electronically, or would be able to consent by using technologies such as face recognition, fingerprint ID etc.) made it difficult to adjust to the use of eConsent. As such, a majority of respondents indicated that better industry standardisation was needed to enable sites to adopt eConsent processes more easily.

Within the current Australian sector, primary drivers of eConsent testing and implementation are sponsors and CROs; only a small number of sites indicated that they were investigating phasing in their own internal eConsent systems. To ensure autonomy, control and standardisation of the eConsent integration, sites should consider introducing their own eConsent systems to ensure their staff are well-trained and understand the system properly. Site-driven eConsent will solve concerns regarding the number of different platforms staff are required to learn when applying eConsent per sponsor or CRO instruction. It also increases security and control over participant data as sites have first preference regarding where and how the data is stored.

To resolve content-generation issues, the clinical trial sector may consider collaborating to produce generalised eConsent media and content. Generic information libraries on topics included in most trials should be undertaken by industry groups and government departments, whereby sites, sponsors and CROs can then purchase the content as needed.

## PATHWAYS FORWARD

Where trial-specific information or multimedia production is required, sponsors should lead this content generation to avoid placing significant burden on sites, who may not have the resources to fund ongoing content development.

A consistent theme emerged that respondents were looking to people other than themselves to influence the necessary transformative changes. That is, there was no consensus on who should do it other than it being someone else. Addressing this lack of ownership is key to successful implementation of any proposed solution.

### Practical Recommendations

Regardless of their position in the clinical trial workflow, there are a number of general recommendations that organisations can follow when seeking to implement eConsent. These include:

| Recommendation | Details | Actions |
|---|---|---|
| **Obtain executive sponsorship** | Securing executive sponsorship is essential to ensure appropriate internal advocacy and support.<br><br>Organisations seeking to implement eConsent should approach their executive early on to gain feedback and insight about how best to begin discussions.<br><br>Allocation of funds should be sought, where appropriate. | 1. Approach the organisation's executive regarding the eConsent proposal.<br>2. Ensure a detailed outline of the proposal is prepared before speaking with the executive.<br>3. Ask for allocation of funding based on data and research.<br>4. Request feedback and, if applicable, ask for advocacy within the broader clinical trials network. |

| Recommendation | Details | Actions |
|---|---|---|
| **Pilot trials** | Feedback gathered during this project demonstrated that one of the most valuable steps towards implementing eConsent was to conduct pilot trials and demonstrate the efficacy of the technology prior to large-scale implementation. Data access for both monitors and participants was seen as a very strong benefit.<br><br>Pilot studies enable stakeholders to gain a more accurate understanding of how eConsent may impact the clinical trial workflow and end-users; promoting informed decision-making when choosing whether or not to use eConsent within a particular trial. | 1. Conduct pilot trials to demonstrate the efficacy of eConsent.<br>2. Pilot trials should be small-scale and provide insight into the specific eConsent use case that the organisation is aiming to implement. |
| **Build a business case** | Building a defensible business case for eConsent use will improve likelihood of approval.<br><br>Stakeholders seeking to implement eConsent should seek advice regarding business case creation. | 1. Seek external advice to develop a succinct, defensible business case to assist with organisational funding and support. |
| **Be proactive in change management** | Organisations should ensure adequate change management systems are in place before introducing eConsent.<br><br>A culture of flexibility across the entire clinical trials sector is crucial to ensure flexible adoption of future technological changes, including eConsent. | 1. Seek external advice regarding change management within the organisation so that eConsent is adopted as smoothly as possible |

## PATHWAYS FORWARD

| Recommendation | Details | Actions |
|---|---|---|
| **Early engagement** | Organisations should engage with their IT Department or eConsent vendor well before commencement of a trial. IT will be required to build and adapt the eConsent form as it progresses through ethics approval processes, and the software will be required as soon as the site commences pre-screening and recruitment. Earlier engagement with IT will promote better system management and implementation. | 1. Approach IT or vendor well before lodging an eConsent application with ethics.<br>2. Ensure software is developed or tailored to the specific trial in advance of pre-screening and recruitment. |

In addition to these general recommendations, each type of organisation should focus on specific implementation actions based upon their involvement in the clinical trials value chain.

## Sponsors and CROs

Where sponsors and/or CROs are involved in driving a move towards eConsent, consideration should be given to:

| Recommendation | Details |
|---|---|
| **Development of guidelines** | ▪ A common concern raised by site staff was the lack of industry standardisation and guidance when they were implementing eConsent as stipulated by their sponsor, CRO or eConsent vendor.<br>▪ Due to the variance in eConsent software platforms and processes used throughout the sponsor network, sites are required to undergo constant, rapid learning with minimal instruction for each eConsent trial they conduct, in addition to the existing hours worked on the trial.<br>▪ To ensure sites can best implement eConsent, sponsors should collaborate and seek advice on or produce more uniform guidelines for sites so that future eConsent implementation is consistent. |
| **Adequate education and training for sites and HRECs** | ▪ Almost 41% of survey participants think that getting approval from an HREC is a barrier to eConsent uptake. Education and training should be provided for all involved in the process.<br>▪ Training should be conducted well in advance of the trial commencement, and should be iterative throughout the course of the trial.<br>▪ Sponsors and CROs should engage with site staff regarding use of eConsent technology regularly to gauge feedback regarding platform useability.<br>▪ When approaching HRECs for eConsent approval, dedicate time to discuss all aspects of the system and expected outcomes with officers to ensure adequate understanding. |
| **Providing up-to-date devices, where appropriate** | ▪ If distributing eConsent devices to sites, sponsors and CROs should ensure these devices are up-to-date and properly functioning.<br>▪ Feedback obtained during this project indicated that oftentimes, sponsor devices were unintuitive and prone to breakdown, with limited timely redress of technical issues.<br>▪ Sufficient troubleshooting and help should be readily available for site staff in the event of device or technology failure.<br>▪ A number of interviewees recommended that sponsors lean towards using cloud or web-based software rather than providing hardware devices, citing the ability for participants and family members to use their own device on which they are familiar, accessibility outside of the trial site, and easier troubleshooting/tech support if something goes wrong as their reasons for suggesting this option. |

## PATHWAYS FORWARD HRECs and Governance Offices

Where HRECs and Governance Offices are reviewing applications for eConsent, consideration should be given to:

| Recommendation | Details |
|---|---|
| **Development of guidelines** | ▪ Development of internal guidelines to guarantee uniformity of application assessment.<br>▪ Guidelines from organisations such as the Australian Health Ethics Committee (AHEC) will enable HRECs to review eConsent applications against a common framework, ensuring consistency and defensibility of final decisions. |
| **Advocacy of eConsent** | ▪ A focus on greater promotion and advocacy of eConsent and other innovative clinical trial processes within HRECs themselves.<br>▪ A number of participants stated that for HRECs to fully embrace eConsent and approach such technologies with the required background knowledge, more HREC members would need to be 'passionate advocates' for eConsent and other new clinical trial technologies. |

## Trial Sites

Where trial sites are driving implementation of eConsent technology or where their sponsors and/or CROs are looking to put greater focus on eConsent for future trials, consideration should be given to:

| Recommendation | Details |
|---|---|
| **Proactively implement eConsent** | ▪ Proactively explore site-driven eConsent rather than having CROs and sponsors lead eConsent implementation.<br>▪ Some sites in Australia, including the Kinghorn Cancer Centre, are successfully implementing eConsent within their trials, and experience greater autonomy as a result. |
| **Upgrade IT infrastructure** | ▪ Whilst upgrading physical infrastructure is a large project for any organisation, it may be particularly difficult in public hospitals for a variety of reasons, including expense, resource intensiveness and internal approval processes.<br>▪ Investment into IT infrastructure and training IT staff is essential for hospitals and sites to maintain competitiveness and to continue to deliver world-class healthcare services.<br>▪ This applies to all new technologies which may be implemented throughout the clinical trial workflow. |
| **Change management capabilities** | ▪ In order to maximise effective adoption of eConsent, site leaders should have the capability to successfully manage technological change within the organisation.<br>▪ Where sites are looking to phase eConsent into trials, or where eConsent has been imposed on sites by sponsors or CROs, leaders within the site must be able to support staff during the change journey. |

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# APPENDIX

# APPENDIX

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# APPENDIX

## INTERVIEW QUESTIONS

1. Could you please give a bit of background about yourself, your previous experience with clinical trials and your current involvement in ongoing or upcoming clinical trials?
2. Have you seen any recent, significant advancements in technology or eInformation uptake within the current clinical trials framework?
3. What is your opinion/sense of receptiveness by people in the field to these types of changes within the industry?
4. What do you see as the current major barriers to adoption for trials in terms of eInformation/technology processes generally?
5. Do you have any examples of success of eConsent within clinical trials?
6. What is your experience with using eConsent forms? Do you think the use of eConsent improves the overall trial process?
7. What barriers have you observed within the industry that would prevent implementation of eConsent processes?
8. From your experience, how would implementing eConsent processes affect the workflow of a clinical trial, both positively and negatively?
9. What problems can you identify with the current paper-based consent process?
10. In your experience, what do trial participants most have trouble understanding during the informed consent process? Do you think these issues could be resolved by implementing eConsent?
11. What is your experience of the current filing and storage of historic consent forms, and do you think this could be improved with technology?
12. How would you say Ethics Committees view eConsent processes within clinical trials?
13. Would you have concerns regarding privacy and data governance if you were to implement eConsent processes within a trial? If yes, are these concerns amplified when using cloud-based technologies as opposed to hardware devices for eConsent?
14. What are your main concerns regarding the future of eInformation and tech uptake within clinical trials?
15. What would you contend are major factors which may contribute towards the failure of success of eConsent uptake within clinical trials?
16. Do you have any other comments which you think may be relevant to this project?

## Interview questions consistently asked

1. What technological advancements have you seen during your time spent in clinical trials?
2. What is your sense of receptiveness by people in the field to technological changes to the clinical trial workflow?
3. What problems can you identify with the current paper-based consent process?
4. Have you participated in and/or do you have any examples of trials which have successfully used eConsent?
5. What do you see as the current major barriers to adoption of eConsent within clinical trials?
6. What do you think are the potential positive and negative effects of implementing eConsent within clinical trials?
7. How would you say Ethics Committees view eConsent processes within clinical trials?
8. Would you have concerns regarding privacy and data governance if you were to implement eConsent processes within a trial? Explain.
9. What would you content are the major factors which may contribute towards the success of eConsent implementation within a clinical trial?
10. Do you have any further comments which you think may be relevant to this project?

# APPENDIX

## INTERVIEWEES

| Interviewee | Position and Description |
|---|---|
| Kim Adler | Manager, Clinical Trials Unit – The Calvary Mater Hospital |
| Carrie Bloomfield | Associate Director, Clinical Research – GSK |
| Radhika Butala | Manager, Clinical Trials Unit – Macquarie University |
| Melanie Clarke | Study Start-Up Specialist – Roche Products |
| Trial Coordinator | Clinical Trial Coordinator – The Calvary Mater Hospital |
| Jennifer Han | Clinical Trials Start-Up & Sponsor Relations Manager – Cancer Trials Australia |
| Fiona Jonker | Executive Manager Research – Icon Group |
| Jane Kelly | CEO – CMAX Clinical Research |
| Robert Kent | Research Manager – The Kinghorn Cancer Centre |
| Ben Laverty | Director, Site Management ANZ - IQVIA |
| Dr. James Lynam | Medical Oncologist – The Calvary Mater Hospital |
| Vu Nguyen | Clinical Development Consultant – Eli Lilly |
| Tam Nguyen | Deputy Director of Research – St. Vincent's Hospital Melbourne |
| Dr. Dhanusha Sabanathan | Clinical Oncologist – Nepean Cancer Centre |
| Angela Scheppokat | Sponsor Operations Manager – Orygen |
| Kylie Sproston | CEO – Bellberry Limited |
| Adam Stoneley | Research Operations Manager – Icon Group |
| Dr Michael Winlo | CEO – Linear Clinical Research |
| Dr. John Zalcberg | Head, Cancer Research Program – Monash University |

# SURVEY QUESTIONS

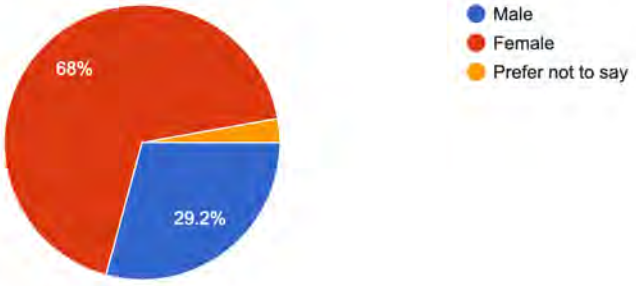
## Demographic Information

Question & Response

No 1 (optional) **Email address**

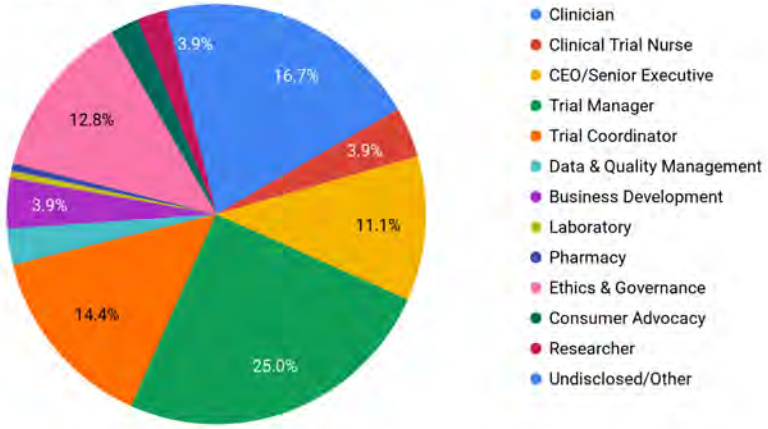
No 2 (optional) **Gender**

178 responses



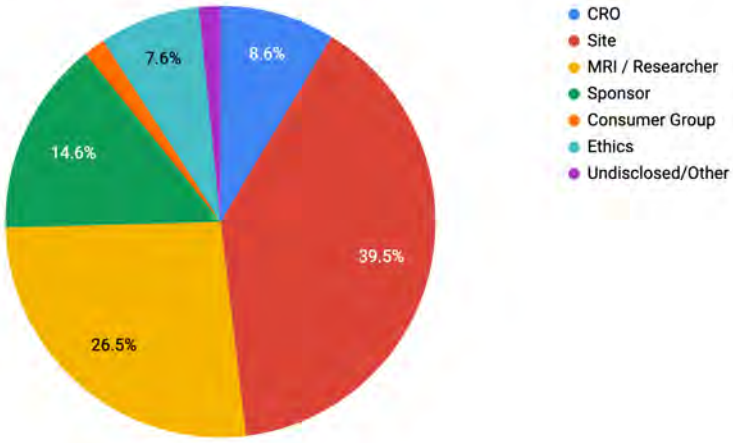

No 3 (optional) **Main involvment in the clinical trials sector**

175 responses



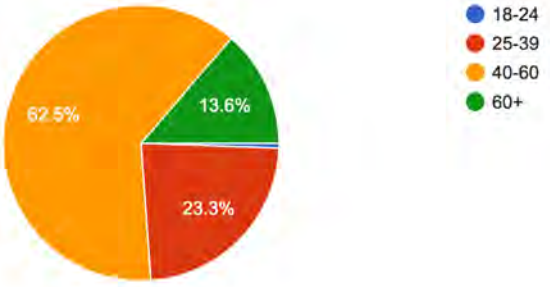

No 4 (optional) **Organisational type**

170 responses



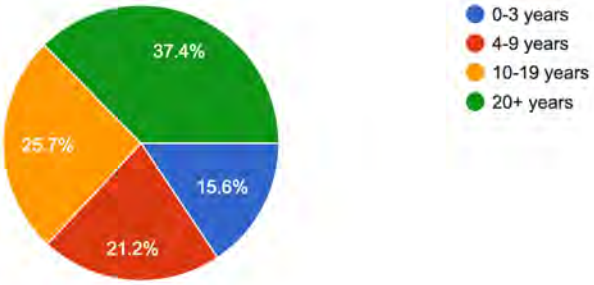
No 5 (optional) **Age bracket**

176 responses



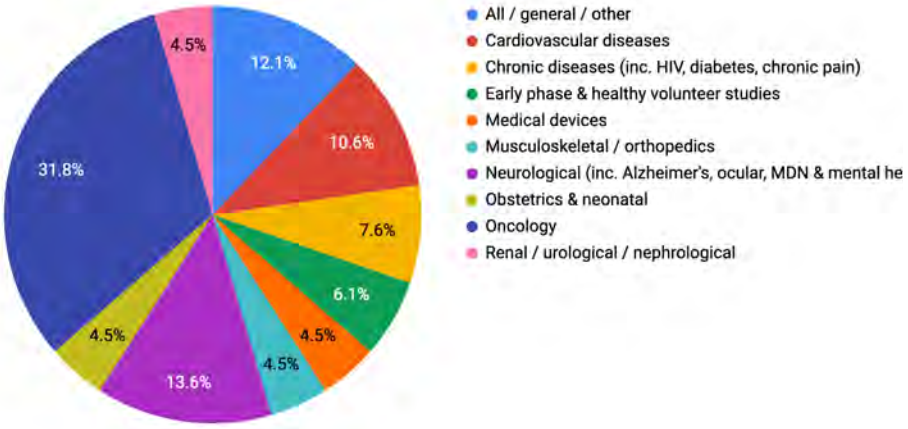

No 6 (optional) **Number of years' experience in clinical trials**

179 responses



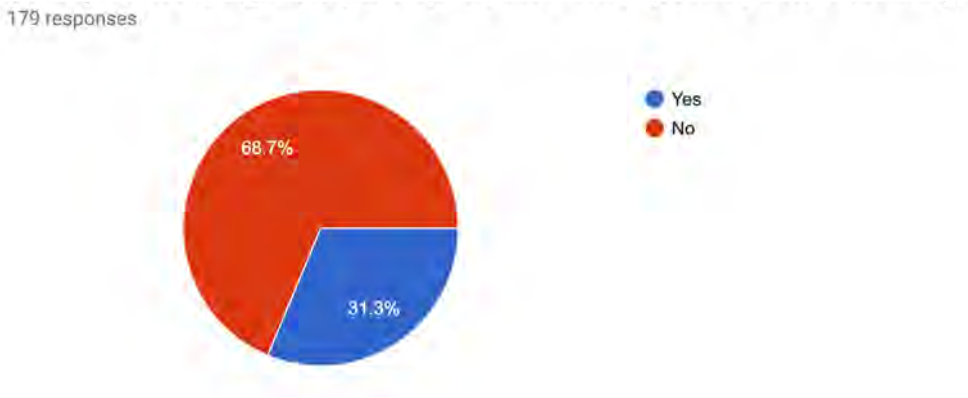

No 7 (optional) **Predominant therapeutic indication area**

99 responses

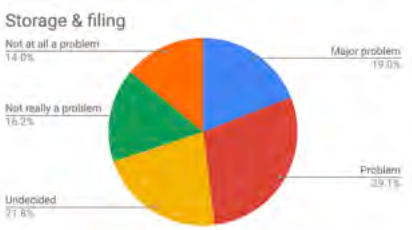


## eConsent Uptake in Clinical Trials
Question & Response

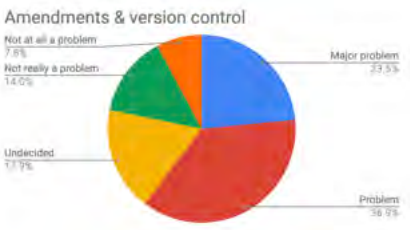
No 1 **Have you ever been involved in a clinical trial with eConsent processes (in any context, eg as participant, site staff, sponsor, CRO, clinician)?**

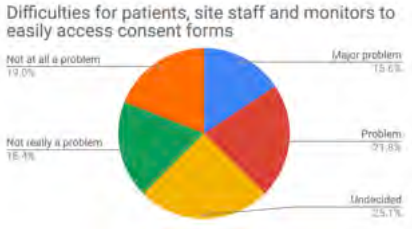


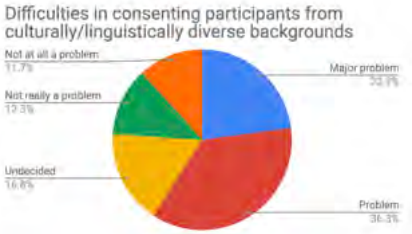

No 2 **To what extent do you see the following as probems with the current paper based consenting process?**

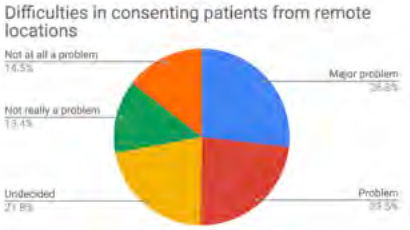


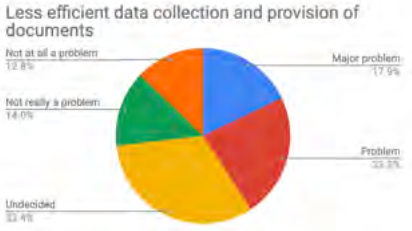


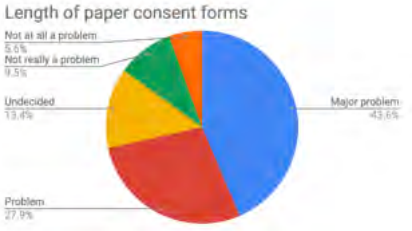


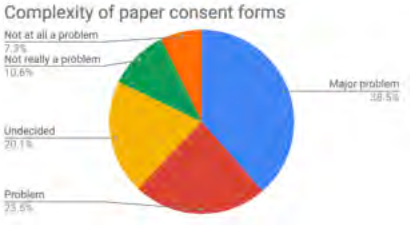



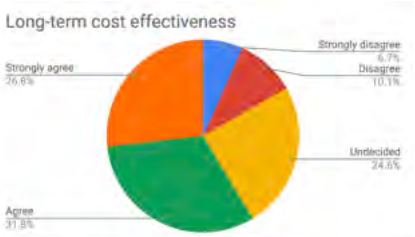



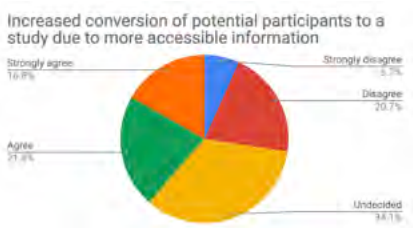



# eConsent Uptake in Clinical Trials

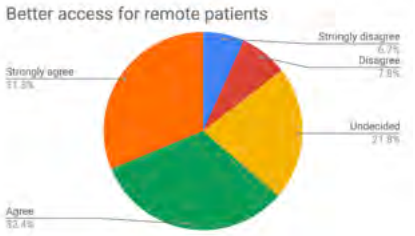
## Question & Response

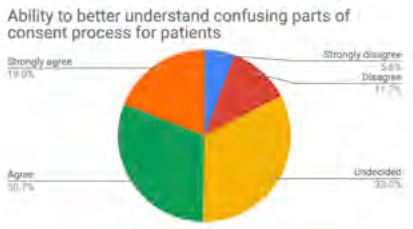
No 3 **Please rate the following potential benefits of eConsent technologies.**

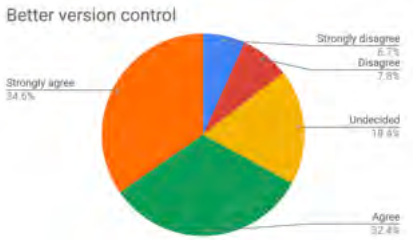


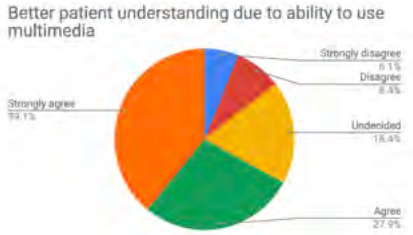



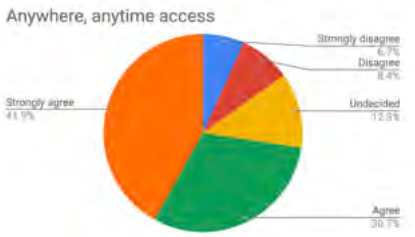


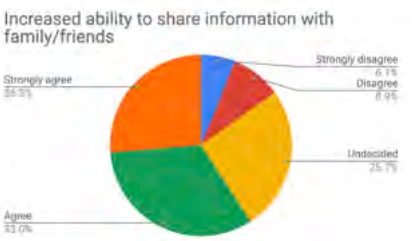



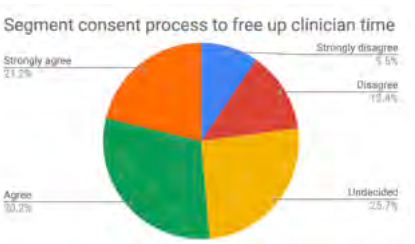



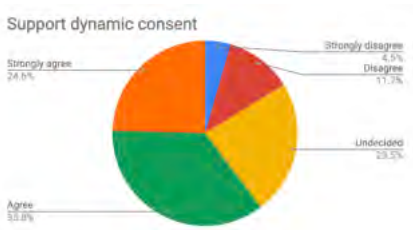











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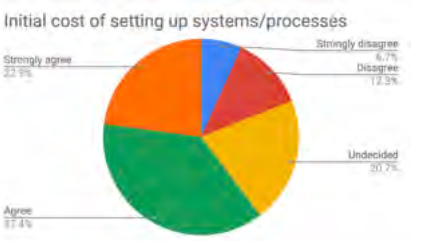
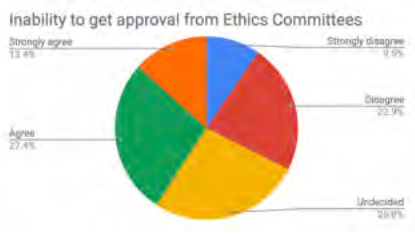
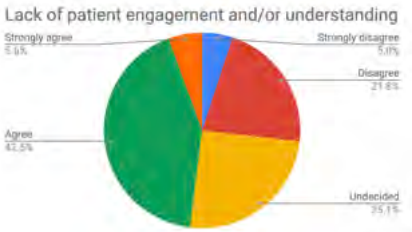
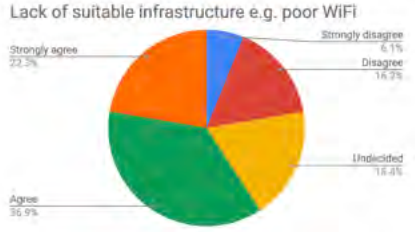
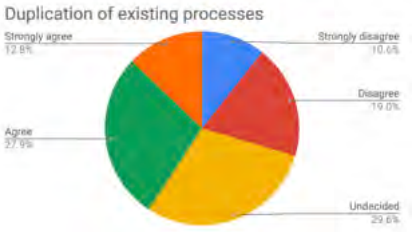


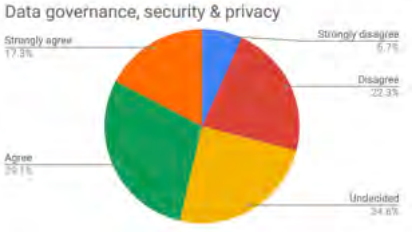



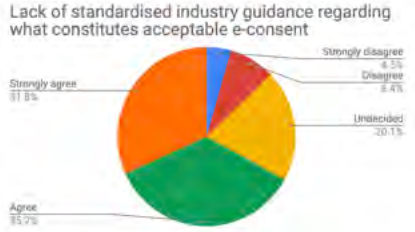



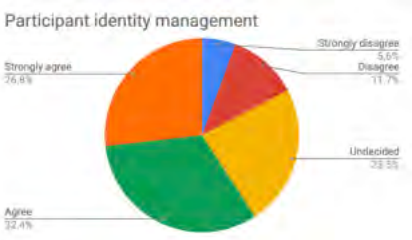







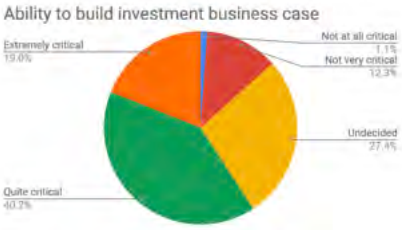



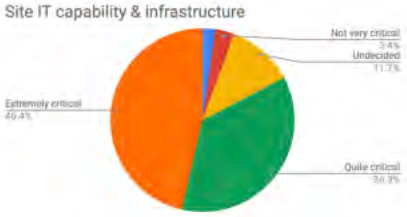


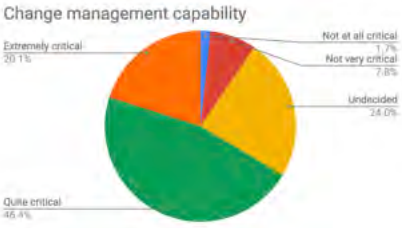




No 5

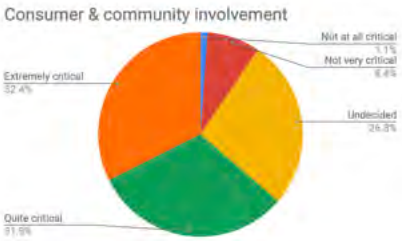
**Please rate your perspective on the following critical success factors for effective eConsent implementation.**

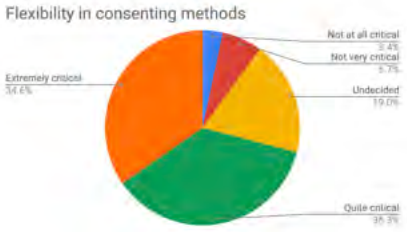


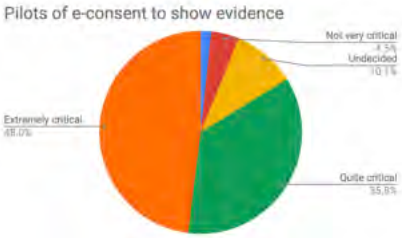



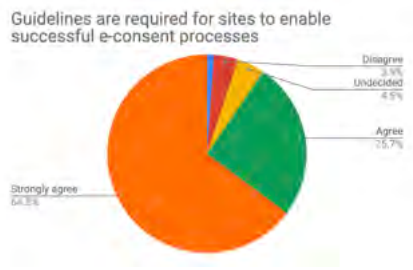


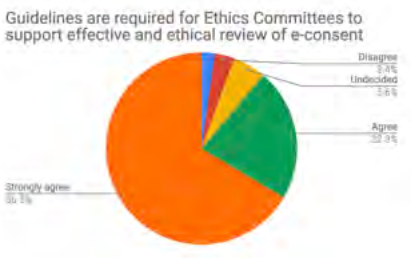


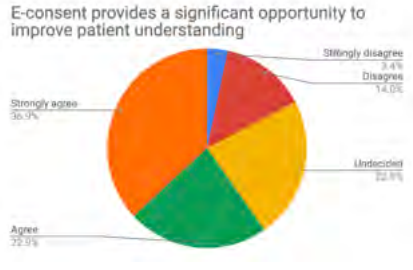



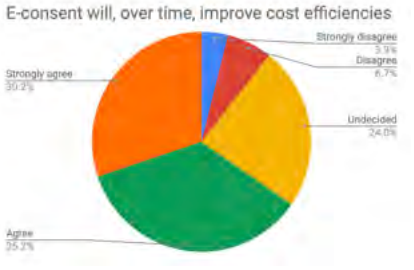



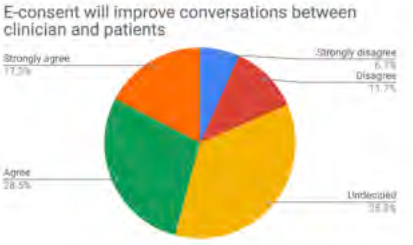
No 6 **Please rate your perspective on the following statements.**

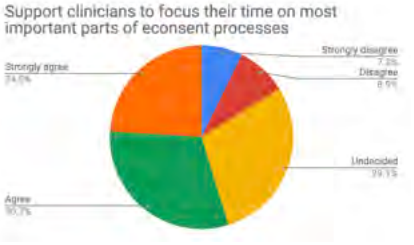


# APPENDIX

## GLOSSARY OF KEY TERMS

**Clinical Trials Transformation Initiative (CTTI)** is a collaboration of public and private organisations aimed at promoting the adoption of novel technologies and practices to improve the quality and efficiency of clinical trials.

**Human Research Ethics Committees (HRECs)** are bodies that are empowered in Australia through registration with the NHMRC to review and give ethical approval to research studies involving humans. As part of this role HRECs review participant information sheet and consent forms (PICFs) to ensure they are sufficiently explanatory regarding the study processes and risks and benefits. Depending on whether it is a single or multi-site trial and the trial's geographical location, there may be multiple HRECs involved in the approval process, although the National Mutual Acceptance scheme is intended to minimise duplication of unnecessary review as outlined in Section 5.3.1 of the National Statement.

**Governance authorisation** includes review of the trial's 'legal compliance, financial management, resource implications, researcher credentials, accountability and risk management' . Organisations engaged in research delegate responsibility to departments, roles and suitably qualified staff to ensure that these elements are appropriately managed. Many organisations require endorsement and approval of proposed technological changes to a trial (amendments) to also be approved through their governance processes.

**Transcelerate Biopharma Inc.** is a global not-for-profit organisation focused on collaboration across the medical and biopharmaceutical R&D sectors. Transelerate collaborates with global industry leaders to overcome challenges and inefficiencies in the global biopharmaceutical landscape.

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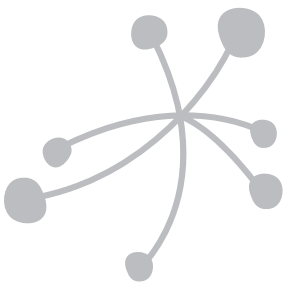

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