Foreword

This document is intended for sponsors and other interested stakeholders to introduce and facilitate the implementation of eConsent. Every company is free to decide and must decide for itself whether, to what extent, and in what manner to implement eConsent and to rely on the guidance set forth herein. This Guidance merely is intended to help those companies that decide to adopt eConsent to do so in an efficient and effective manner. It is not intended to provide specific standards or specific guidance directed to sites or vendors, or specific regulatory references. It does not provide specific guidance to the content of informed consent or the process of administering informed consent.

Disclaimer: Nothing in this document constitutes legal advice. Users are responsible for ensuring their own compliance with all applicable laws and regulations in the jurisdiction in which they are conducting the research, associated with the informed consent process. Any party using this document bears sole and complete responsibility for ensuring that any materials or programs developed or any actions undertaken as the result of its use complies with all applicable laws and regulations.
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## 2 Abbreviations

<table>
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<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>CAPA</td>
<td>corrective action preventive action</td>
</tr>
<tr>
<td>CRA</td>
<td>clinical research associate</td>
</tr>
<tr>
<td>CRO</td>
<td>contract research organization</td>
</tr>
<tr>
<td>CRF</td>
<td>case report form</td>
</tr>
<tr>
<td>CSF</td>
<td>critical success factor</td>
</tr>
<tr>
<td>CTMS</td>
<td>clinical trial management system</td>
</tr>
<tr>
<td>CTTI</td>
<td>Clinical Trials Transformation Initiative</td>
</tr>
<tr>
<td>eCOA</td>
<td>electronic clinical outcome assessment</td>
</tr>
<tr>
<td>eCRF</td>
<td>electronic case report form</td>
</tr>
<tr>
<td>EDC</td>
<td>electronic data capture</td>
</tr>
<tr>
<td>EHR</td>
<td>electronic health record</td>
</tr>
<tr>
<td>eICF</td>
<td>electronic informed consent form</td>
</tr>
<tr>
<td>ePRO</td>
<td>electronic patient-reported outcome</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>GCP</td>
<td>Good Clinical Practice</td>
</tr>
<tr>
<td>GxP</td>
<td>good practice (guidelines)</td>
</tr>
<tr>
<td>HA</td>
<td>health authority</td>
</tr>
<tr>
<td>ICF</td>
<td>informed consent form</td>
</tr>
<tr>
<td>ICH</td>
<td>International Council on Harmonization</td>
</tr>
<tr>
<td>IEC</td>
<td>independent ethics committee</td>
</tr>
<tr>
<td>IRB</td>
<td>institutional review board</td>
</tr>
<tr>
<td>IT</td>
<td>information technology</td>
</tr>
<tr>
<td>IVRS</td>
<td>interactive voice response system</td>
</tr>
<tr>
<td>KRI</td>
<td>key risk indicator</td>
</tr>
<tr>
<td>LAR</td>
<td>legally acceptable representative</td>
</tr>
<tr>
<td>NPRM</td>
<td>Notice of Proposed Rule-Making</td>
</tr>
<tr>
<td>QA</td>
<td>quality assurance</td>
</tr>
<tr>
<td>QRM</td>
<td>quality risk management</td>
</tr>
<tr>
<td>SAE</td>
<td>serious adverse event</td>
</tr>
<tr>
<td>SOP</td>
<td>standard operating procedure</td>
</tr>
<tr>
<td>UAT</td>
<td>user acceptance testing</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
3 Introduction

3.1 Purpose of This Document

This document provides both insight on eConsent and practical guidance for sponsors and other interested stakeholders to facilitate more efficient and effective implementation of eConsent.

This guidance provides information on the use of electronic systems and processes that might use electronic media to obtain informed consent. eConsent includes multimedia components (see Section 4), which can be used to develop an interactive and engaging informed consent experience, offering flexibility for diverse learning styles (e.g., auditory, visual).\(^1\) This document does not provide sample consent language, standards, or requirements, but rather provides information about various considerations and alternatives that sponsors may encounter in determining whether eConsent is a feasible approach and/or which eConsent multimedia components are a reasonably good fit for a specific study.

The language herein is purposefully generic so that sponsors may apply the information to their individual organizational structures and practices. Furthermore, unless otherwise stated, the order that information is presented does not indicate or prescribe a linear process or suggest any order of priority. Company standard operating procedures (SOPs) and other considerations may require activities to be performed in a specific order. In addition, vendor selection is not covered in this document; sponsors should follow their internal processes for vendor selection.

As eConsent becomes more widely used, the guidance may evolve. Industry adoption practices, information technology (IT) considerations and advancements, and any new regulatory requirements may require changes. Users of this guidance should defer to their internal subject matter experts in considering future changes.

3.2 Methodology

This document was developed by the TransCelerate eConsent workstream over a 2-year period during which the workstream team compiled information about better practices for implementation.

The eConsent workstream also engaged with patient and site advocacy groups, CRO forum, and selected health authorities (HAs) and ethic committees to obtain insight on eConsent. Based on those interactions, some features considered important to sites and participants are highlighted in this document:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>🏠</td>
<td>Important to sites</td>
</tr>
<tr>
<td>⚪</td>
<td>Important to participants</td>
</tr>
</tbody>
</table>
After the document was drafted, it was made available for public review and comment. TransCelerate received and incorporated feedback into this document, as appropriate, from the following stakeholder groups: sites, CROs, independent ethics committees (ECs) and institutional review boards (IRBs), eConsent vendors, and patients.

3.3 Introduction to eConsent

The foundation of an effective informed consent process for clinical research studies is to provide study participants with the information that they need to make an informed decision on whether to participate in the study. This includes an open discussion between the investigative site staff and potential clinical research study participant, with the informed consent form (ICF) serving as a tool for enhancing that dialogue and documenting that the participant provided consent. As rooted in the Declaration of Helsinki² and International Council on Harmonization (ICH) Good Clinical Practice (GCP)³, consent is therefore not a simple yes or no response to a question, but a process by which potential research participants can decide if it is appropriate for them to participate in the clinical study.

ICF documents have become increasingly complex, technical, and more difficult for study participants to understand.⁴ Complicated study designs and specialized study participant populations make clearly conveying the research objectives to the study participants more challenging. Variable literacy levels and cultural diversity also complicate the development of ICFs. Study sponsors must find new ways to ensure that potential study participants are fully informed, despite the complex information provided.

In current practice, the ICF is generally presented on paper. **Electronic informed consent (eConsent) provides the same information, but in an electronic format that may include multimedia components, as shown in Figure 1 (below).**⁵ It is important to note that eConsent is not meant to replace the important discussion between the participant and site staff. As with traditional consenting, the site will continue to own the consenting process.

Ultimately eConsent meets 2 objectives:

- Empowers participants to make informed decisions through the use of interactive multimedia components⁶
- Enables the improved quality and efficiency of clinical studies through insight to the participant experience, improved data quality, and a fully electronic system

The sponsor must ensure that the eConsent is compliant with all (local) regulatory requirements (see implementation guidance section). In addition to the benefits for potential study participants, eConsent may be advantageous for sponsors, sites, IRBs/IECs, and HAs as described in the section below (Section 3.4).⁷
3.4 Benefits and Considerations for eConsent

3.4.1 eConsent Benefits

Research has shown that paper-based ICFs do not promote consistent quality dialogue and informed decision-making. eConsent has the potential to improve the consent experience, increase quality, and reduce regulatory inspection findings. eConsent also complements risk-based monitoring of studies by enabling risk assessment through central and remote monitoring of consent activities.

An overview of the benefits of eConsent to different stakeholders is shown in Figure 2.
These potential benefits are shown in greater detail below (Table 1), some of which apply to more than one stakeholder (e.g., sponsor, site). These benefits as well as those listed below for individual eConsent components are based on member company experience, stakeholder input, and hypothesized advantages from using more technologically sophisticated processes. While experience or logic suggests that eConsent can deliver these particular benefits, attaining these specific benefits may vary across companies and across studies and, depending on the circumstances, some or even all of the specified benefits might not be realized. The degree of benefit will be directly related to the components selected and their fit within a specific context.

Table 1  eConsent Potential Benefits

<table>
<thead>
<tr>
<th>Potential Benefit</th>
<th>Stakeholders Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases comprehension and retention of information compared to a lengthy and complex paper document (e.g., complex procedures or study treatments can be shown visually and/or explained out loud) (^{10})</td>
<td>Study participants</td>
</tr>
<tr>
<td>Allows study participants to choose their preferred method of learning</td>
<td>Study participants</td>
</tr>
<tr>
<td>Better informed participants are more likely to make an informed decision whether to participate, can better manage their study expectations, and can become active partners</td>
<td>Study participants</td>
</tr>
<tr>
<td>Increased understanding leads to better discussions on ICF content with site staff and increased compliance</td>
<td>Study participants</td>
</tr>
<tr>
<td>Certain functionalities can be included to help vulnerable populations (e.g., visually impaired, pediatrics)</td>
<td>Study participants</td>
</tr>
<tr>
<td>Uses technology that is already regularly used in daily life</td>
<td>Study participants</td>
</tr>
<tr>
<td>Potential Benefit</td>
<td>Stakeholders Affected</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>More engagement with consenting process: empowerment, ownership, autonomy</td>
<td>Study participants</td>
</tr>
<tr>
<td>Reduces audit and inspection findings such as those related to incorrect versions and missing signatures</td>
<td>Sites, IRBs/IECs, HAs, sponsors</td>
</tr>
<tr>
<td>Provides information about study participants’ level of understanding during the consent process</td>
<td>Sites</td>
</tr>
<tr>
<td>Provides information about study participants’ perspectives of the quality of the informed consent process</td>
<td>Sites</td>
</tr>
<tr>
<td>Reduces the need for complex and time-consuming explanations and supplementary study explanation tools</td>
<td>Sites</td>
</tr>
<tr>
<td>Reduces paperwork and quality risks</td>
<td>Sites</td>
</tr>
<tr>
<td>Lowers burden on site staff, allowing a focus on high-value activities, including specific study participant questions and concerns</td>
<td>Sites</td>
</tr>
<tr>
<td>Complements risk-based monitoring by providing more information within eConsent (e.g., glossary) to the study participant and enabling some activities to occur remotely</td>
<td>Sites, sponsors</td>
</tr>
<tr>
<td>Ensures a consistent and complete explanation is given to all study participants</td>
<td>Sites</td>
</tr>
<tr>
<td>Less administration time (e.g., automated reminders for consent amendments, potential for paperless systems, and potential links with other systems)</td>
<td>Sites</td>
</tr>
<tr>
<td>Improves management of overall consent tracking (e.g., re-consenting, consent withdrawal)</td>
<td>Sites, sponsors</td>
</tr>
<tr>
<td>Easier to check understanding of study (more time to go into more detail of the sections that are not well understood, easier to help study participant’s understanding by answering the right questions)</td>
<td>Sites</td>
</tr>
<tr>
<td>Alert messages to site in case of eConsent errors or re-consenting need</td>
<td>Sites</td>
</tr>
<tr>
<td>May improve study participant compliance and recruitment, depending on study design/therapeutic area [11]</td>
<td>Sites, sponsors</td>
</tr>
<tr>
<td>Improves the review/approval process</td>
<td>IRBs/IECs, HAs</td>
</tr>
<tr>
<td>Increases confidence in the informed consent process</td>
<td>IRBs/IECs, HAs</td>
</tr>
<tr>
<td>Improves development of a regulatory perspective on informed consent</td>
<td>IRBs/IECs, HAs</td>
</tr>
<tr>
<td>Increases retention due to better understanding (reduced dropout rate)</td>
<td>Sponsors</td>
</tr>
<tr>
<td>Enables continued improvement of consent content based on information about what is not understood by study participants and concerns that prevent potential participants from enrolling</td>
<td>Sponsors</td>
</tr>
<tr>
<td>Improves timely/immediate identification of consenting issues by the monitor (rather than discovery after the fact)</td>
<td>Sponsors</td>
</tr>
<tr>
<td>Increases quality and consistency: Data validity and protection (e.g., access controls and passwords) Quick, easy, remote follow-up on errors Identification and prevention of recurring errors (e.g., version control) Timely re-consent notification linked to protocol amendments and safety updates Fewer transcription errors (e.g., ICF date copied automatically into the electronic data capture [EDC] system)</td>
<td>Sponsors</td>
</tr>
<tr>
<td>Improves productivity:</td>
<td>Sponsors</td>
</tr>
</tbody>
</table>
### Potential Benefit

<table>
<thead>
<tr>
<th>Stakeholders Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>May reduce site visit time monitoring ICFs so that clinical research associates (CRAs) can concentrate on other site duties (e.g., safety monitoring) CRAs can check data remotely without visiting the site to check details Central team can review data in core systems/case report form (CRFs) for all sites</td>
</tr>
<tr>
<td>Enables possible automated reporting of data in sponsor systems: Partial pre-population of monitoring visit reports prior to the site visit Automated edit checks on completeness of ICF Interdependency with core systems, e.g., interactive voice response system (IVRS), CRF, clinical trial management system (CTMS) Alert messages to sponsor in case of eConsent errors</td>
</tr>
<tr>
<td>Sponsors</td>
</tr>
</tbody>
</table>

### 3.4.2 eConsent Potential Barriers to Implementation

Some potential barriers to eConsent implementation are related to the fact that eConsent is a novel technology, and minimal guidance to use this technology currently exists. These may result in both internal and external potential barriers to implementation as shown in Table 2.

#### Table 2 eConsent Potential Barriers to Implementation

<table>
<thead>
<tr>
<th>Barriers Related to a New Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some components may not be acceptable in all countries (e.g., eSignature)</td>
</tr>
<tr>
<td>Significant initial investment cost and resource needs</td>
</tr>
<tr>
<td>Study participants’ limited experience and discomfort with the technology</td>
</tr>
<tr>
<td>Longer setup time relative to paper</td>
</tr>
<tr>
<td>Increased upfront work to tailor eConsent to special subject groups (e.g., pediatric or other vulnerable populations)</td>
</tr>
<tr>
<td>Participants opting for paper may limit return on investment</td>
</tr>
<tr>
<td>Need for backup system in case of failure and during maintenance periods</td>
</tr>
<tr>
<td>Additional cost and time needed for translations</td>
</tr>
<tr>
<td>Technical/format limitations, e.g., need to use a particular operating system or device type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Barriers Related to Insufficient Existing Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inexperience and lack of processes for HAs, IRBs/IECs, sponsors, and investigators in many countries/institutions</td>
</tr>
<tr>
<td>Temporarily longer IRB/IEC approval times</td>
</tr>
<tr>
<td>Electronic distribution of signed consent form (compliance/IT security/data privacy)</td>
</tr>
<tr>
<td>Reluctance of other stakeholders (e.g., IRBs/IECs, HAs) to use the technology</td>
</tr>
</tbody>
</table>

### 3.5 Quick Reference Guide for This Document

The topics discussed herein are shown in the table below and can be accessed via the hyperlinks.

<table>
<thead>
<tr>
<th>Question/Topic</th>
<th>Section</th>
<th>Link (Section No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What multimedia components are potentially available for use in an eConsent solution?</td>
<td>eConsent Multimedia Components</td>
<td>4</td>
</tr>
<tr>
<td>What issues might I expect to face regarding adoption of eConsent?</td>
<td>eConsent Pre-Implementation Considerations</td>
<td>5.1</td>
</tr>
<tr>
<td>What are feasibility considerations for eConsent?</td>
<td>eConsent Feasibility Considerations</td>
<td>5.2</td>
</tr>
<tr>
<td>What operational considerations need to be addressed?</td>
<td>Operational Considerations</td>
<td>5.2.3</td>
</tr>
</tbody>
</table>
4 eConsent Multimedia Components

Various multimedia components that potentially could be used in eConsent are described below along with a non-exhaustive list of possible benefits and considerations for each.

Note: While experience or logic suggests that the multi-media components can deliver the listed benefits, attaining these specific benefits may vary across companies and across studies and, depending on the circumstances, some or even all of the specified benefits might not be realized.

Sample text or content is provided for illustration only and is not meant to propose or suggest model language. Further, the components included here represent those currently available and mainstream at the time of publication. As technology evolves and matures, the depth and breadth of these multimedia components will also grow. The sponsor must decide whether and how to implement each component during eConsent design.

The choice of a component or format does not automatically exclude others. Any number of components may be used based on the decisions made during implementation. This may also change as eConsent experience grows.

Where possible, it makes sense to develop the components to minimize the need for non-value-added changes. For example, variability around topics such as birth control and genetic risks may create complexity and increase cost by requiring multiple versions of multimedia components (e.g., video) to meet local requirements.

Refer to Section 7.1 to view some publicly available ICF templates developed by the World Health Organization (WHO) and the Clinical Trials Transformation Initiative (CTTI) with examples of how eConsent multimedia components could be incorporated. These will demonstrate some practical application tips that may be considered.

The table below (Table 3) includes a summary of the multimedia components included in the section, as well as a brief definition/purpose.

<table>
<thead>
<tr>
<th>Multimedia Component</th>
<th>Definition/Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multimedia Tiered Approach</td>
<td>Includes essential elements in a concise main section and more detailed information in later subsections</td>
</tr>
<tr>
<td>Video</td>
<td>Provides a visual and potentially auditory overview of the study and promotes participants’ better understanding of the selected content</td>
</tr>
</tbody>
</table>

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### Multimedia Component | Definition/Purpose
--- | ---
Audio | Voiceover of consent document or other components, voice response elements
Pictures and Diagrams | Visual aids to help explain and reinforce key study components or complex topics
Callout Boxes | Key idea reinforcement highlighted in 1-2 sentences
Knowledge Review | Short set of questions participant asked to answer to highlight key info
Dictionary/Glossary | Glossary is a list of selected terms defined by the sponsor
Content Flags | Allows participant to select words/sections to come back to for questions
Comment Boxes, Free Text Fields, and Study Participant Note Logs | Allows sites or participants to record notes or questions
Chapter/Section or Continuous Content Views | Allows content to be broken into sections or viewed as a single document
Section-based Participant Attestation | Allows participants to acknowledge understanding of specific sections
Electronic Signature | Electronic method of authentication, including fingerprint scan, etc.

### 4.1 Multimedia Tiered Approach

#### 4.1.1 Description of Multimedia Tiered Approach
Tiered consent includes essential elements in a concise main section and more detailed information in later subsections (which are optional for the study participant).

Tiered consent has recently been endorsed in the Notice of Proposed Rule-Making (NPRM) regarding the Common Rule in the U.S. It is also a CTTI official recommendation and is already being used in the paper format in several countries including Belgium, the Netherlands, and Sweden.

A multimedia format for tiered consent, like eConsent, is particularly useful, because it allows study participants to navigate between different sections to learn more about specific items as needed. Enhancements such as hyperlinks can facilitate this and make it easy for the study participant to navigate back to the section of the main consent from anywhere within the tiered part. The tiered consent is structured to ensure all required sections (i.e., main section) are viewed, and the eConsent tool can potentially record time spent in each section.

Tiered content can present information that is more relevant when the study participant approaches a certain study milestone. Just as with paper consent, the eConsent is available throughout the study, the investigator can refer participants to a particular section within their eConsent to have the option to re-review when it is more relevant.
4.1.2 Potential Benefits and Considerations for Tiered Consent

Potential benefits and considerations for tiered consent are described in Table 4.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Tiered Consent Potential Benefits and Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td></td>
</tr>
<tr>
<td>Increases readability, comprehension, and ease of use, and allows embedding of other multimedia components</td>
<td></td>
</tr>
<tr>
<td>Flexible method of learning that allows participants to choose how they want to use the material</td>
<td></td>
</tr>
<tr>
<td>Supports progressive, incremental disclosure</td>
<td></td>
</tr>
<tr>
<td>Mitigates against overloading on less relevant information that may mask or fail to convey the importance of more important information</td>
<td></td>
</tr>
<tr>
<td><strong>Considerations</strong></td>
<td></td>
</tr>
<tr>
<td>Limited regulatory guidance and experience with the concept in some countries</td>
<td></td>
</tr>
<tr>
<td>Participants may not choose to view all information, which may limit understanding of the protocol requirements or willingness to participate.</td>
<td></td>
</tr>
</tbody>
</table>
4.1.3 Guidance for Implementation

The informed consent must still contain the required elements of informed consent as per local law/regulation.\(^\text{12}\)

Refer to local practices to determine the amount of information that must be included in each tier.

Discussion of informed consent content placement (e.g., main versus sub-sections) should include all relevant sponsor stakeholders (e.g., medical, legal, and the study team).

4.2 Video

4.2.1 Description of Video

Videos can be used for different purposes, with an overall aim to provide a visual and potentially auditory overview of the study and promote participants' better understanding of the selected content.

Several video clips can be prepared independently, and then displayed separately or linked. Some general videos would be reusable across studies. Examples of videos are provided below in the sample “What is a Clinical Trial” and “How to Use eConsent” videos. Other video types may include complex procedures and disease-specific videos.

**What is a Clinical Study Video**

- Understanding of clinical research
- General concept of risks and benefits to clinical research
- Participation is voluntary
- You can withdraw from the study at any time
- Data are kept confidential

**How to Use eConsent Video**

The eConsent video should explain how to use eConsent and may include:

- What to expect from the eConsent process
- How to use the eConsent device (if applicable) and navigate through the content
- How to use the different eConsent components, e.g.:
  - How to play and replay the video
  - How to obtain glossary definitions
  - How to access hypertext links for additional information
  - How to tag content for later discussions with staff

Additionally, a video briefly providing a high-level summary of the study may be prepared to introduce participants to the study design.

**Study Summary Video**

The study video should include a high-level overview of the study and explain key study participant rights. Consider that later changes during the study may be time consuming and design the video to reduce the need for changes. Key topics may include:
- Purpose of the study
- Study design (duration, type of control [e.g., placebo], procedures)
- Reminder that the study has risks (perhaps include a high-level summary)
- Reminder that participation is voluntary and that data are kept confidential

Example of a video that explains certain study aspects:

![Example Video](https://www.healthit.gov/providers-professionals/video/can-i-change-my-mind)

Source: [https://www.healthit.gov/providers-professionals/video/can-i-change-my-mind](https://www.healthit.gov/providers-professionals/video/can-i-change-my-mind)

### 4.2.2 Potential Benefits and Considerations for Video Components

Potential benefits and considerations for video components are described in Table 5.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Video Components Potential Benefits and Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td>May provide more detailed information on general clinical research and study-related topics without increasing the length of the informed consent document</td>
</tr>
<tr>
<td></td>
<td>Study participants may better understand the study and could have more effective and tailored discussions of their questions and concerns with the site staff.</td>
</tr>
<tr>
<td></td>
<td>Consistent approach to key concepts essential to making an informed decision</td>
</tr>
<tr>
<td></td>
<td>Improved understanding on how to use the eConsent device</td>
</tr>
<tr>
<td></td>
<td>Standardized content that an organization can use across studies/sites can decrease costs and improve efficiencies.</td>
</tr>
<tr>
<td><strong>Considerations</strong></td>
<td>Some participants may only pay attention to visual aids and fail to read the full informed consent.</td>
</tr>
<tr>
<td></td>
<td>Considerable cost/time impact due to site/country variability, protocol amendments, and translations</td>
</tr>
<tr>
<td></td>
<td>Visually impaired participants might not be able to use videos.</td>
</tr>
<tr>
<td></td>
<td>Some study participants might prefer one video type over another (e.g., animation vs videos of people), or for example find animated videos too juvenile</td>
</tr>
<tr>
<td></td>
<td>Some populations may not be technologically confident and need more direction, or the technology may become more distracting.</td>
</tr>
<tr>
<td></td>
<td>Consider cultural or ethnic background for videos or visuals; there may be risks for unintended meaning or context.</td>
</tr>
</tbody>
</table>

### 4.2.3 Guidance for Implementation

- Introductory videos such as how to use the device may be included up front to ensure understanding of general concepts before starting the consent process.
• When determining which video types to use, consider the study participant population (age, gender, disease state, clinical study knowledge level, legally authorized representative involvement, caregiver involvement, and other factors).
• Videos should be clear, simple, and engaging and provide relevant information.
• Ensure, if required, that video text can be made available as a transcript.
• Specific segments of video could be used to reinforce key messages/information on an ongoing basis.
• Additional videos could be used to describe the disease state or other concepts (e.g., DNA, PET scan). These could be optional and accessible from the main part of the consent.
• Total video time should follow standard user engagement limits for the video medium to maintain engagement. For example, an Indiana University study found that average adults listen effectively for only about 15 to 20 minutes before their minds begins to wander.¹³
• Use diagrams and pictures more than text and language.
• Voiceovers and animation may be easier to edit and thus less expensive than live action videos.
  Use regionally acceptable practices and tools; for example, a study in Africa might benefit from a song format.
  This example in a different context reflects this: http://www.takeandtell.org/#video
• Consider if previously created video clips such as standard company videos on what is a clinical study, disease, or compound-specific video clips from previous applicable eConsents may be reused.
• There is variability in how IRB/IECs review video. Work with the IRB/IECs early to plan for submissions. For example, some IRB/IECs want the scripts of the videos and may want screenshots instead of or in addition to the viewing of the video.

4.3 Audio

4.3.1 Description of Audio
Audio components could serve the following main purposes:
• Voiceover of consent document: provides an alternative for the participant to reading a long document; the study participant can opt to have the consent document read to them
• Voiceover of video content: supports comprehension of visual information
• Voiceover of other eConsent components: instructions and callout boxes may include voiceover

4.3.2 Potential Benefits and Considerations for Audio Components
Potential benefits and considerations for audio components are described in Table 6.

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Audio Components Potential Benefits and Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td>Provides alternative access to consent information and increased autonomy for visually impaired, blind, and low literacy study participants</td>
</tr>
<tr>
<td></td>
<td>Allows study participants to choose how to receive the information (independent from actual literacy level)</td>
</tr>
<tr>
<td></td>
<td>Potentially reduces time spent to ensure comprehension</td>
</tr>
<tr>
<td><strong>Considerations</strong></td>
<td>Literate participants who can read quickly may be frustrated by the slow audio pace</td>
</tr>
<tr>
<td></td>
<td>Participants may be too embarrassed to use the functionality</td>
</tr>
</tbody>
</table>
4.3.3 Guidance for Implementation

- Consider complete voiceover as an option for visually impaired, blind, and low literacy study participants.
- The study participant should be able to turn the audio on or off.
- Consider accent, pace, and gender of voiceover.
- The study participant should be able to adjust the volume and repeat/replay content.
- Assess upfront with sites whether a separate area is available for consents and/or if headphones may be used. If needed, consider who is providing headphones.

4.4 Pictures and Diagrams

4.4.1 Description of Pictures and Diagrams

Studies have shown that visual aids can help explain and reinforce key study components or complex topics. Example topics include risk percentages, explanation of a serious adverse event (SAE), specific study procedures, and the study schedule.

Example Picture
4.4.2 Potential Benefits and Considerations for Pictures and Diagrams

Potential benefits and considerations for pictures and diagrams are described in Table 7.

**Table 7  Pictures and Diagrams Potential Benefits and Considerations**

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases understanding of complex information and simplifies ICF information</td>
<td>Some information (e.g., risk percentages &lt; 10%) is difficult to show graphically and pictures could be misleading.</td>
</tr>
<tr>
<td>May support processing of information through different modes</td>
<td>Some participants might be intimidated or not feel comfortable looking at graphics/schedules.</td>
</tr>
<tr>
<td>Might facilitate discussion of relevant topics</td>
<td>For studies with a wide age range, graphics that are acceptable for all age groups may be difficult to achieve.</td>
</tr>
<tr>
<td></td>
<td>Some study participants may feel this is too juvenile or not beneficial.</td>
</tr>
</tbody>
</table>

4.4.3 Guidance for Implementation

- Ensure graphics are acceptable for the target population and are emotionally neutral.
- Ensure graphics are clear and not misleading.
- Ensure consistent format of visuals/graphics in eConsent and paper consent.
- Limit graphics to places of maximum benefit.
- For multinational studies, ensure graphics are inter-culturally acceptable.

4.5 Callout Boxes

4.5.1 Description of Callout Boxes

Callout boxes can be highlighted text within the consent document (e.g., color highlights, framed text) or textboxes within the document or margin that summarize key information in 1 or 2 simple sentences to highlight and reinforce key ideas. Example topics include:

- The study is voluntary.
- Duration of the study
- There are risks to the study.
- Data are accessed and shared.
- Explain complex required language

**Example Callout Boxes**

This study has risks. The most common and severe risks are A, B, and C. Talk to your study doctor if you have questions.
4.5.2 Potential Benefits and Considerations for Callout Boxes

Potential benefits and considerations for callout boxes are described in Table 8.

<table>
<thead>
<tr>
<th>Benefits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>May increase awareness of key concepts essential to making an informed decision</td>
<td></td>
</tr>
<tr>
<td>May facilitate finding key information without having to reread whole sections</td>
<td></td>
</tr>
<tr>
<td>Supportive tool to drive the discussion with a potential study participant</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Considerations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Study participants may not read the other material or access the detailed reference sections.</td>
<td></td>
</tr>
<tr>
<td>Discussions with the participant might focus only on the highlighted topics.</td>
<td></td>
</tr>
<tr>
<td>Simplified or interpretive text may require additional review and/or time.</td>
<td></td>
</tr>
<tr>
<td>Highlighted elements might be regarded as biased.</td>
<td></td>
</tr>
<tr>
<td>Additional effort required within the study team to identify areas to be highlighted</td>
<td></td>
</tr>
</tbody>
</table>

4.5.3 Guidance for Implementation

- Ensure appropriate balance between regular text and callout boxes.
- Ensure language is simple.
- Should be limited to a few words or phrases (1-2 sentences)
- Only key information should be flagged.
- Recommend using one type of callout box rather than a mix of styles within one document.

4.6 Knowledge Review

4.6.1 Description of Knowledge Review

The knowledge review is a short set of questions that the potential study participant is asked to answer to highlight key information and concepts. While questions can be provided on paper, multimedia components allow for reinforcing the relevant content (e.g., by linking back to key content). Multimedia components may be useful for the knowledge review for several reasons:

- May promote active engagement and learning
- Incorrect answers direct the study participant to the relevant source information.
- Inform the site staff of information that could be discussed directly with the study participant
The knowledge assessment is intended to assess comprehension and guide the potential study participant to areas that may be worthwhile to re-review and/or discuss further with their study doctor.

Example of Knowledge Review

### Question 1 of 4
Once I decide to participate in this research study, I can stop my participation...
- Only when the study is over
- After visit #5
- At any time/whenever I choose
- Between week #5 and week #10

4.6.2 Potential Benefits and Considerations for Knowledge Review

Potential benefits and considerations for knowledge review are described in Table 9.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Continuous improvement of consent language is easily possible based on real study participant experience and feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Helps to reinforce critical information and concepts and encourages the participant to go back to sections that are not clear. Reviewing the questions and answers before signing further reinforces the information.</td>
</tr>
<tr>
<td>Considerations</td>
<td>May create anxiety or cause study participants to have negative opinions/embarrassment</td>
</tr>
<tr>
<td></td>
<td>May fear exclusion from the study or judgment by the study staff or third parties</td>
</tr>
<tr>
<td></td>
<td>Expectations might arise regarding how to document the rationale to enroll participants who failed the knowledge review</td>
</tr>
<tr>
<td></td>
<td>May prevent a detailed discussion with a participant who answered all questions correctly</td>
</tr>
<tr>
<td></td>
<td>Increased burden/approval delays due to change requests from individual IRBs</td>
</tr>
</tbody>
</table>

4.6.3 Guidance for Implementation

- Communicate the purpose of knowledge review (to ensure key elements of the consent have been effectively provided and reinforced) to both the site and study participant and reassure potential participants that knowledge review results do not impact study participation.
- Limit the number of questions to approximately 4-5.
- Ensure that the language used to describe the knowledge review does not imply that this is a test or an assessment, for example “Let’s Recap.”
- Questions should focus on key concepts to reinforce, which may include the study purpose, that the study has risks, voluntary nature of the study, and confidentiality. If applicable, consider reinforcing that invasive and/or high-risk procedures/drugs are part of the study.
• Use true/false or multiple-choice question formats; provide aids if the study participant answers incorrectly. Provide the answer after a certain number of tries, and retain this information within the metadata.

• If a study participant answers incorrectly, display the relevant source information (e.g., screenshot popup, hyperlink) and allow the study participant to try again, if appropriate.

• Use the knowledge check topics to review before signing. Provide instant feedback on the answer to the question with an explanation. Do not quiz study participants as a criterion for study entry.

• Site staff should review metadata to identify any gaps in study participant understanding. The site staff should document in their site files or within the eConsent system (such as via a site comment section or checkbox) how they ensured the study participant understood key concepts.

• Example questions:
  o Does this study have risks? Yes or No
  o Very common side effects that may be experienced while taking this compound might be a) increased urination b) dizziness c) constipation d) all of the above
  o Can I stop the study at any time? Yes or No
  o Once I decide to participate in the study, I can stop a) only when the study is over b) after being in the study for at least 2 months c) whenever I choose d) only if I’m having a side effect
  o Will my data be kept confidential? Yes or No
  o How long will the study take place? a) 10 weeks b) 20 weeks c) 30 weeks

4.7 Dictionary/Glossary

4.7.1 Description of Dictionary/Glossary

While these terms are often used interchangeably, for the purposes of this document:

• A dictionary provides definitions of words that are maintained independently of the clinical study.
• The glossary is a custom set of words/phrases defined by the sponsor and/or vendor.

Both dictionary and glossary terms can be made available through standard user interface cues, including hover-over and highlight. The study participant does not navigate away from the primary content; definitions are provided in a pop-up box that may be dismissed by the user.

While explanations of complex words and phrases can be provided on paper, this is not as easy to use and lengthens the document.

Consider tracking how often dictionaries or glossaries are used as a measure of health literacy and/or the readability of the consent.
Example Dictionary Component

Example Glossary Component

4.7.2 Potential Benefits and Considerations for Dictionaries and Glossaries

Potential benefits and considerations for dictionaries and glossaries are described in Table 10.

Table 10  Dictionary and Glossary Potential Benefits and Considerations

<table>
<thead>
<tr>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glossary provides definitions for unfamiliar words or phrases.</td>
</tr>
<tr>
<td>Glossary terms can be tailored to the protocol/population needs.</td>
</tr>
<tr>
<td>Glossary terms can be defined with graphics, color, video, etc., to provide optimal descriptions</td>
</tr>
<tr>
<td>Metadata created from use of the dictionary/glossary may help to improve overall language for future ICFs.</td>
</tr>
<tr>
<td>Facilitates document understanding and focus on content questions during the face-to-face discussion</td>
</tr>
<tr>
<td>Dictionary provides definitions through the operating system</td>
</tr>
<tr>
<td>Participants can review words at their own pace, without fear of judgment or intervention from site staff.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Words or phrases in a dictionary may have a study-inappropriate or no definition</td>
</tr>
<tr>
<td>Dictionaries are not available in all languages.</td>
</tr>
<tr>
<td>Some words or phrases the participant does not understand may not be defined in the glossary.</td>
</tr>
</tbody>
</table>
Creating a glossary is a time- and cost-intensive activity and might require internal discussion to arrive at the right definition.

### 4.7.3 Guidance for Implementation

- Define key words/phrases for clinical studies in the glossary for all studies (e.g., placebo, research study, sponsor, genetics/DNA, study treatment).
- Define key words/phrases for the specific study in the glossary (e.g., disease state, study procedures, drug name).
- Track review of the glossary words, and when possible, dictionary words that are reviewed to look for opportunities to simplify text.
- Use videos, icons, or animation in glossaries.
- When selecting vendors be mindful of the difference between dictionaries and glossaries and review sources for each.
- Keep in mind that dictionary definitions are not always appropriate and may not translate well into other languages.

### 4.8 Content Flags

#### 4.8.1 Description of Content Flags

Content flags are used to mark or flag content or words/sentences where a study participant would like to ask a question to ensure his/her comprehension on the specific text. The participant could place an icon or highlight the content. Thus, the participant does not have to recall questions and the flags provide a focus for follow-up conversation with the consent coordinator. Study staff should address each content flag prior to signatures. Sponsors should review the trends for flagged items to improve consent content and presentation for future consent activities.

#### 4.8.2 Potential Benefits and Considerations for Content Flags

Potential benefits and considerations for content flags are described in Table 11.

<table>
<thead>
<tr>
<th>Content Flags</th>
<th>Potential Benefits and Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td>Creates metadata indicating where questions arose</td>
</tr>
<tr>
<td></td>
<td>Allows identification of areas to be covered in depth with the study participant</td>
</tr>
<tr>
<td></td>
<td>Some study participants may prefer to flag content as it is easier and less embarrassing for them.</td>
</tr>
<tr>
<td></td>
<td>Direct feedback from study participants allows areas of focus for continuous improvement of consent.</td>
</tr>
<tr>
<td><strong>Considerations</strong></td>
<td>Other study participants may not use content flags because they did not understand/remember OR they are embarrassed to flag content that they did not understand.</td>
</tr>
</tbody>
</table>

#### 4.8.3 Guidance for Implementation

The site should develop a process for how they will perform the consent process and ensure that all participant questions are answered. Some eConsent systems facilitate this process and documentation;
however, if not documented by the system, the site must document this in their files to adhere to regulatory requirements.

If not provided by the vendor, the sponsor may work with the site to identify when content is regularly flagged so that the consent may be improved to increase readability.

4.9 Comment Boxes, Free Text Fields, and Study Participant Note Logs

4.9.1 Description of Comment Boxes, Free Text Fields, and Study Participant Note Logs

Comment boxes, free text fields, or logs may be added, allowing the eConsent to become the source document for all elements of the informed consent process. Comment boxes may be implemented for use by the site and/or study participant.

- Site comment box: free text fields for the site to record informed consent documentation
- Study participant comment box: free text fields or a contiguous note space to record notes/clarification about the informed consent or write down any questions.

Content flags (Section 4.8) may be combined with a comment box in which the study participant can document a specific question.

Example Comment Box

4.9.2 Potential Benefits and Considerations for Comment Boxes

Potential benefits and considerations for comment boxes are described in Table 12.

<table>
<thead>
<tr>
<th>Benefits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Study participant comment box allows study participants to note specific questions within the eConsent content.</td>
<td></td>
</tr>
<tr>
<td>Site comment box linked to a participant's consenting process can help support remote monitoring.</td>
<td></td>
</tr>
<tr>
<td>Comments to be readdressed during face-to-face discussion can be directly entered when and where these arise, facilitating the discussion.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Considerations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive personal information may be inadvertently shared or information provided that could identify the recipient, e.g. name or adverse events.</td>
<td></td>
</tr>
<tr>
<td>Participants with low computer literacy might not be able or willing to use this feature.</td>
<td></td>
</tr>
</tbody>
</table>
4.9.3 Guidance for Implementation

- Comment boxes can be used to allow free-form text annotation to aspects of the consent that are of interest or points of the consent requiring additional clarification. This in-line notation of specific feedback by the participant can be printed to support the participant’s recall of the answers provided or to reinforce specific content.
- Comment boxes can also be used by the study site staff to annotate anything for reference. It may be useful to ask site staff to acknowledge study participant comment boxes to ensure follow-up was documented.
- Consider whether you want to retain the study participant’s comments. Study participants may not be comfortable with their personal notes becoming part of the study record. This may be more acceptable if the comments are not retained after the study participant signs the consent and only exist as a temporary record.

4.10 Chapter/Section or Continuous Content Views

4.10.1 Description of Chapter/Section or Continuous Content Views

Some vendors divide content into discrete sections, with scrolling available within the section, while others allow scrolling through the entire content.

4.10.2 Potential Benefits and Considerations for Chapter/Section or Continuous Content Views

Potential benefits and considerations for chapter/section or continuous content views are described in Table 13.

<table>
<thead>
<tr>
<th>Table 13</th>
<th>Chapter/Section or Continuous Content Views Potential Benefits and Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefits</strong></td>
<td></td>
</tr>
<tr>
<td>Shorter sections may facilitate navigation within the document and lessen intimidation due to complex content (chapter/section view)</td>
<td></td>
</tr>
<tr>
<td>Supports easier comprehension of material, allows for continuous improvement using metadata, and enables remote monitoring (chapter/section view)</td>
<td></td>
</tr>
<tr>
<td>May require less pre-production editing (very useful for amendments), which may affect the cost of changes (continuous content view)</td>
<td></td>
</tr>
<tr>
<td><strong>Considerations</strong></td>
<td></td>
</tr>
<tr>
<td>Continuous scrolling may not support tiered consent (continuous content view)</td>
<td></td>
</tr>
<tr>
<td>May be little value in forcing section breaks and may be more distracting than a continuous flow (chapter/section view)</td>
<td></td>
</tr>
</tbody>
</table>

4.10.3 Guidance for Implementation

- If the sponsor prefers the user acknowledge that each page was read and understood, it may be preferable to use a section-based approach.
- Sites can use metadata to better frame informed consent discussion when segmented. Sites should be able to demonstrate that they have ensured that study participants understood the content when circumstances might suggest otherwise, for example, the participants only spent 1 minute on the risk section. However, time spent should not be used out of context. For example, some people may speed through certain elements of the consent because they had a copy to review prior to initiating the eConsent.
• If sites intend to use metadata as noted above, considerations should be noted in the data protection segment of the consent language.

4.11 Section-based Participant Attestation

4.11.1 Description of Section-based Participant Attestation

Some vendors have developed a sliding tool for the participant to indicate “yes, I understand” or “no, I have a question” at the end of each section. This requires that the informed consent content be split into separate sections and is different from a blanket attestation, essentially a signature at the end of the document. Section-based attestations do not replace a signature.

4.11.2 Potential Benefits and Considerations for Section-based Participant Attestation

Potential benefits and considerations for section-based participant attestation are described in Table 14.

Table 14 Section-based Participant Attestation Potential Benefits and Considerations

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decouples information from consent; enables application development,</td>
<td>Requires ongoing interaction from a study participant</td>
</tr>
<tr>
<td>improved education, and a movement toward progressive consent</td>
<td>that may feel redundant or time-consuming</td>
</tr>
<tr>
<td>Metadata indicate which sections raised the most concerns and enables</td>
<td>Edits to consent language may be challenging to</td>
</tr>
<tr>
<td>remote monitoring of how long each participant spent per section,</td>
<td>incorporate, increasing time and cost</td>
</tr>
<tr>
<td>allowing queries</td>
<td></td>
</tr>
<tr>
<td>Helps to ensure no segment of the consent is missed</td>
<td></td>
</tr>
</tbody>
</table>

4.11.3 Guidance for Implementation

Development and reuse of modular sections supports efficient consent development and reduces redundancy and inconsistencies. Consider using knowledge review as a way of ensuring that the section-based attestation means that the participant has understood the language.

4.12 eSignature

4.12.1 Description of eSignature

Authentication/confirmation of study participant identity by the site is unchanged when using eConsent. However, the number of signature types that are available in eConsent increase. Each sponsor will need to evaluate the use of the different signature options with local requirements, which includes evaluation of data hosting and remote viewing requirements. Current FDA regulatory guidance on eSignature can be found in 21 CFR Part 11 Subpart C. The following are European Union (EU) signature categories (EU Regulation 910/2014): 16

- **Electronic signature**: data in electronic form which is attached to or logically associated with other data in electronic form and which is used by the signatory to sign.
- **Advanced electronic signature**: meets the following requirements: uniquely linked to the signatory, capable of identifying the signatory, created using means that signatories can maintain under their sole control, linked to the electronic document to be authenticated. This ensured that any subsequent change in that document is detectable.
• **Qualified electronic signature**: an advanced electronic signature that is created by a qualified electronic creation device, and which is based on a qualified certificate for electronic signatures.

Example eSignature

4.12.2 Potential Benefits and Considerations for eSignature

Potential benefits and considerations for eSignature are described in Table 15.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date and time of consent are automatically recorded, reducing the risk of human error and number of audit/inspection findings.</td>
<td>Electronic signatures are not universally accepted for signing ICFs though often accepted for other legal matters.</td>
</tr>
<tr>
<td>The signature is embedded in the eConsent process on the device and therefore the consent signature cannot be forgotten.</td>
<td>Countries/states/provinces/IRBs/IECs may have varying requirements.</td>
</tr>
<tr>
<td>Populations with motor skill issues or certain physical impairments can sign electronically more easily.</td>
<td>Participants may have objections to eSignature (lack of trust, privacy concerns).</td>
</tr>
<tr>
<td>The site monitor can remotely monitor the consent process and ensure more quickly that the consents are appropriately signed.</td>
<td>Use of eConsent with remote consent may present a risk for fraudulent use of eSignatures.</td>
</tr>
<tr>
<td>No need for a pen</td>
<td></td>
</tr>
<tr>
<td>Potential for remote eSignatures if there are measures in place to prevent fraudulent use of eSignatures.</td>
<td></td>
</tr>
<tr>
<td>eConsent systems ensure the site-based countersignature.</td>
<td></td>
</tr>
</tbody>
</table>

4.12.3 Guidance for Implementation

- When considering the implementation of electronic signature, it is important to consider if any patient-identifying information would be stored or accessible outside the site.
- Review local regulations, consult with health authorities and/or local privacy offices, and include appropriate references in submission materials (e.g., protocols).
• Potential signature types include handwritten signature on paper, handwritten signature on paper uploaded into the eConsent system, handwritten signature on an electronic device, and eSignature.

• Allowing study participants to sign via eSignature in all countries would create significant efficiencies, but given differing views around the world on the acceptability of eSignatures, initially workarounds will be needed in several countries based on local requirements. If not using eSignature, it is more difficult to enable risk-based monitoring; a dual system (paper and electronic) must be maintained, and there may be increased risk for audit findings.

• eConsent can be printed by the site and the study participant can be asked to sign/date with a wet signature as a potential workaround for eSignature. The signed consent would be either uploaded into the system OR the study site would have to document in the system that the study participant signed the consent form.

• Evaluate the regulatory and legal requirements within each country and its impact to operations.

• Some countries require 24 hours between receiving and signing/countersigning the ICF for participants to have sufficient time to consider the implications (e.g., EU will require that adequate time be given to the study participant) or require a second confirmation (e.g., inclusion of an extra “are you sure” question prior to finalizing the signature).

• Ensure that eConsent will allow for capturing this information or that there is built-in functionality to ensure lag-time requirements are met before signatures are allowed.

• Other methods for documenting consent can also include fingerprinting, voice recording (maybe in addition to other documentation; consider whether this would be used for the full consenting process or just the actual consent), and a health ID card (e.g., pin code/passcode/ username/user ID card). For additional information, please see Operational Considerations in Section 5.2.3 and Privacy, Legal, and Other Processes in Section 5.2.4.

5 Planning and Executing eConsent

eConsent considerations over the course of a study are described in the sections below.

5.1 eConsent Pre-Implementation Considerations

eConsent pre-implementation considerations should be assessed at different study phases (i.e., start-up, execution, and closeout), as these phase-level considerations may have an impact on the overall success of implementation. These include but are not limited to organizational and study team objectives and the scope of vendor services required.

5.1.1 eConsent Objectives Planning

When considering piloting/implementing eConsent, document in detail what the organization requires, what it wants to achieve, and any associated impacts. Ideally, this should align with an organization’s overarching objectives (if not, this may warrant further high-level discussions), and these objectives should be included in the business case (Section Error! Reference source not found.). Companies with no internal eConsent experience may consider working with a vendor to develop these objectives.
Review and assess eConsent objectives against the needs of the organization and study team to ensure short- and long-term alignment. Study-specific considerations for planning are covered in Section 5.2.1, eConsent Study Considerations.

5.1.2 eConsent Impact Analysis

By dividing the eConsent operationalization process into a defined sequence of steps such as planning, development, monitoring, and closeout, it may be easier to identify required tasks, timing, roles, and responsibilities and to ensure all impacts are assessed.

**Illustrative Process for Operationalization of eConsent**

- Planning
  - Scope & Objectives
  - Team Resourcing
  - Budget
  - Timelines
  - Roles & Responsibilities
  - Local Requirements
  - eICF Suppliers

- Development
  - eConsent Documents
  - Translations
  - UAT
  - Approval
  - Final Release
  - Supply of Equipment
  - Training

- Monitoring
  - User Access
  - Implementation
  - Monitoring
  - Escalation
  - Support

- Close-Out
  - Filing/Archiving
  - Device Reconciliation
  - Surveys
  - Analysis
  - Lessons Learned

Detailed implementation considerations for assessing impact are provided below:

1. eConsent Start-Up Timeline Considerations
2. Privacy/Data Considerations
3. Information Technology Diligence Activities
4. Organizational Impact Analysis
5. Stakeholder Impact Analysis
6. Critical Success Factors (see Section 5.3.3.3)

5.1.2.1 eConsent Start-Up Timeline Considerations

For initial studies using eConsent, it can take several months to set up eConsent from vendor selection to first participant enrollment, so it is important to determine if eConsent is appropriate as early as possible. Consider the following:

- Vendor selection and final contract execution, training, and the impact on study milestones
- Any changes to the design that would have an impact on timelines to develop the system
- Any translations that need to be made for the study
• IRB/IEC submission documentation and approval process
• Shipment and importation requirements for eConsent devices (country-specific regulations)

Assess potential vendors to determine if they meet the sponsor’s policies and requirements. Ensure that the appropriate department is involved so that this assessment is completed during vendor selection.

The time needed to develop eConsent tools before a study must be considered in the overall study timeline. Figure 4 shows a sample timeline, including time for translations if needed.

Figure 4  Example eConsent Start-up Timeline

5.1.2.2 Privacy and Legal Considerations

Plan for a conversation with internal legal and/or data privacy contacts to ensure the following is being considered:

• Review country-specific regulations or requirements to provide the ICF in electronic or paper format.
• When considering the implementation of electronic signature and collection of any other patient-identifying information (e.g., patient name, patient signature), it is important to consider if that information would be stored or accessible outside the site. Review local regulations, consult with health authorities and/or local privacy offices, and include appropriate references in submission materials (e.g., protocols).
• Ensure a process for availability of local legal and/or data privacy review, if needed, is in place for the duration of the study.
• Check any company-specific requirements or policies (e.g., SOPs).
• Considerations for eConsent components:
  o Evaluate the multimedia components (Section 4) for privacy, legal, and other processes.
  o Knowledge review: eConsent can provide documentation of knowledge review. Therefore:
    ▪ When including a knowledge assessment, discuss the process and confirm the importance of ensuring that the knowledge assessment is taken prior to the participant signing consent. This information can be shared with the study participant within the eConsent module (Section 4.6). This will help to ensure that the study participant fully understands the objectives of the research study and is fully informed.

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V1.0
Are there additional responsibilities for the sponsor to track assessments?

- Ensure that any video or other supplemental information does not include any unintentional branding/promotion.
- Be aware of the diversity of the study participants and the impact of the choice of media.
- Ensure the eSignature method (e.g., ID card, on iPad, thumbprint, secure code, handwritten signature on an electronic device) aligns with local regulations and the study participant demographics (Section 4.12).

- Location of the database and IT administrators: consider any applicable regulations (e.g., EU data protection (EU) 2016/679 regulations).

- Security of the eConsent device and participant-provided/site-provided device: Is there appropriate access control? How does the eConsent technology protect the study participant’s sensitive personal information?

- Security of the database: Is there adequate access control and an audit trail? How does the eConsent protect the study participant’s sensitive personal information (such as name)?

- For remote monitoring with access to the portal from off site: What type of information (e.g., study participant identifiers) can be viewed remotely through the eConsent process? How will confidentiality be ensured?

- The monitor should only access the system in a secure/private environment.

- Are there additional responsibilities for the sponsor to provide additional tools or guidance for sites, such as requiring a teach-back method, additional review of ICFs prior to signing, or ensuring provision of the paper ICF to study participants prior to signing the consent?

Consult with legal/regulatory experts at your company to determine applicable legal requirements in the relevant jurisdiction and to keep up to date on changes in relevant laws and regulations.

5.1.2.3 Information Technology Diligence Activities

Depending on the company SOPs or guidelines, different departments may need to be involved in discussions on system and data security (data protection, data sciences/data management, IT, quality assurance [QA], legal, procurement, operations, etc.). These due diligence activities may need to be reviewed regularly to meet evolving regulatory and legal requirements. Some topics to consider include:

- Information classification (i.e., is there identifiable personal information or sponsor confidential information)

- Architecture review:
  - Regulatory risk (whether full validation is required)
  - Project security (includes review of access controls)
  - Mobility standards
  - Plan for application support (including lifecycle management)

- Operational security (security audit logs, software assurance, host architecture, infrastructure, and platform security)

- Identity and access management (authorization, identity provisioning, authentication, key management, encryption, credential compromise or theft, identity and access management)

- Business and continuity management (disaster recovery, backup, incident management, vulnerability testing/malicious software, hardware and software prerequisites, data and service portability)

- Legal requirements

- Privacy review
• Good practice (GxP) compliance

5.1.2.4 Organizational Impact Analysis

Because the use of eConsent may bring about new activities or the need for specific skills, an organization’s management may need to redefine roles or consider impacts to the organization and across internal stakeholders. Ensure appropriate awareness and communication to those involved stakeholders as a part of the change management plan. Highlighted below are some potential approaches an organization may consider:

• Creating a new role or group that is responsible for eConsent
  o Potential benefits:
    ▪ Focused understanding of eConsent
    ▪ Potentially skilled on the use of multimedia technologies
    ▪ May reduce timelines
    ▪ May serve as subject matter experts and consultants for additional eConsent studies going forward
    ▪ Increased consistency in implementation of eConsent
  o Considerations:
    ▪ Cost (may increase staff/resources)
    ▪ More coordination to add an additional member to the study team
• Adding additional activities to existing study team
  o Potential benefits:
    ▪ Likely no impact to head count
    ▪ Growth opportunity
    ▪ Consistent with industry trends
  o Considerations:
    ▪ Bandwidth of resources considering existing responsibilities
    ▪ May limit the consistency in the approach to eConsent at the company level

5.2 eConsent Feasibility Considerations

Implementation of eConsent in small-scale studies is encouraged as a preliminary step before implementation in large-scale clinical trials and overall organizational implementation. Results from pilot studies will help identify strengths and limitations of eConsent use and operational application within the specific organization, and potential modifications needed before eConsent is fully implemented. Demonstrating an overall ease of implementation, use, and stakeholder satisfaction will enhance the probability of successful adoption in subsequent large-scale application. The following considerations are suggested when assessing study-specific feasibility:

1. Review study considerations (Section 5.2.1)
2. Define desired multimedia components (Section 5.2.2, Section 4)
3. Review Operational Considerations (Section 5.2.3)
   a. Device management and technology availability/capability
   b. Additional consent considerations (e.g., re-consent, optional consent)
4. Consider data privacy and legal considerations (Section 5.2.4)
5. Define stakeholder roles and responsibilities (Section 5.2.5)

5.2.1 Study Considerations

Study considerations provided for each of the topic areas are primarily for pilot studies but can be adapted for larger studies:

1. Study design, duration, and complexity
2. Region(s)/country(s)
3. Clinical sites
4. Study size and study participant population
5. Language

These considerations are provided for informational purposes and should be reviewed against company policies, preferences, etc.

5.2.1.1 Study Design, Duration, and Complexity

Consider a pilot study with relatively few variables. Some considerations include:

- Can potentially begin with a small-scale study with few countries/sites
- Can potentially begin with a late-phase study with a simple, straightforward study design
- Consider a short-term study unlikely to be amended.
- Consider the feasibility and complexity of the study population (age, awareness of technology, and cognitive ability of study participants), study design (study site location, interventional versus observational, use of other technology), and therapeutic area (e.g., oncology, pediatrics, emergency situations may require additional considerations)
- Limit the number of different types of consents to be used in the pilot (e.g., assents, biomarker analysis, bio-banking).
- Consider that sites with low recruitment rates may have less experience with eConsent.

Consider the pilot design for eConsent, which should be linked to the objectives and metrics for an organization’s pilot. These objectives/metrics may be included in the organization’s business case (Section Error! Reference source not found.).

Several illustrative examples of pilot designs are provided below:

- Pilot design example 1: All study participants receive eConsent
- Pilot design example 2: A percentage of the study participants receive eConsent, and the rest receive paper. This enables comparison of DIFFERENT participant experiences with eConsent versus paper.
- Pilot design example 3: All study participants start with eConsent and later receive a paper-based consent after the first amendment. This enables direct comparison of the SAME participant experiences with eConsent versus paper.

5.2.1.2 Regions/Countries

- Choose a small number of countries, bearing in mind the requirements needed (may be different for pilot or full-scale implementation), which include:
  - Good technological capabilities, availability, and access to the internet (can be assessed through a feasibility questionnaire)
5.2.1.3 Clinical Sites

- Assess whether sites are open to innovation and a change in routine procedures, including a general interest in shaping the future of clinical studies.
  - Can be assessed through feasibility questionnaire
  - Staff willing to use eConsent and assist with troubleshooting as needed.
  - Experience with similar clinical technologies (e.g., electronic patient-reported outcome [ePRO] or electronic clinical outcome assessment [eCOA]) could be an advantage.
  - Open to provide feedback to improve the technology

- Assess the following capabilities. If certain capabilities are not available, consider possible alternatives to support the site (e.g., if no internet access, provide the site with a modem).
  - Internet access
  - Internet bandwidth
  - Institutional approvals (e.g., firewall access)
  - Availability of device use such as phone, computer, tablet, 3G card, etc.
  - Ability to connect with a printer

- Varying levels of review may be needed for processes and procedures.

5.2.1.4 Study Size and Demographics

- The size of the study is an important factor that should be considered when choosing a pilot study.
  - If a larger study is chosen, consider limiting the number of sites that will use eConsent.

- Determine whether specific eConsent multimedia components would be of benefit to study participants with vulnerabilities or limitations (see Section 7.2).
  - Age (e.g., video, audio, pictures and diagrams)
  - Education level (e.g., dictionary/glossary, video, audio, pictures and diagrams)
  - Culture
  - Economics
  - Disease considerations (e.g., audio, video, signature)
  - Family, spousal support, and caregiver considerations
  - Family and spousal willingness to use technology if signing on behalf of study participant
5.2.1.5 Language

- If multiple languages are being considered, ensure additional time is allotted if needed for translations of eConsent-specific screens/features and voiceovers.
  - Determine if translations will be done locally or outsourced as per the sponsor's SOPs.

5.2.2 Considerations for Identifying eConsent Multimedia Components

Consider the following:

- Number and type of multimedia components, particularly if this is the first time this technology is being used within the company
- Study considerations (Section 5.2.1) will help determine which multimedia components (Section 4) are needed versus nice to have.
- Involve team members from different functional areas who will have different ideas about functionalities, uses, etc. (reference stakeholder impact assessment [Section Error! Reference source not found.])
- Check with colleagues who have experience with eConsent to seek advice and to determine if any details have been missed.
- Consider input from sites.
- Create clear criteria that a potential vendor may use to customize their product demonstration.

5.2.3 Operational Considerations

Consider lessons learned from similar technology implementations. Some examples are provided below.

5.2.3.1 Device Management (On-Site Consenting Option)

For on-site eConsent, devices can be vendor/sponsor-provided or site-owned (bring your own device is mentioned in Future State [Section 6]).

When deciding how to provide the device, consider potential issues with importing information from the device. Some vendors load software onto a single device, while others allow eConsent to be accessed through a secure website from any device.

Vendor- or sponsor-provided device:

**Potential Benefits**

- Ensures that the device has the appropriate operating system to perform eConsent with adequate security management and facilitates helping the site with device management and issues

**Considerations**

- How many devices should be provided to the site and the impact on recruitment and other site activities (potential for eConsent activities to interfere with or limit access to eCOA/ePRO activities).
- A limited number of available devices may impede adoption of eConsent, especially for high enrolling sites or sites with many satellites, and will necessitate careful planning of study visits to ensure that a device is available.
  - Sites working on multiple studies with different vendors may have many different devices that they need to store securely.
Technology, privacy, and/or system considerations: evaluate the impact of sites using 1-2 devices per study, including connectivity issues due to the sites’ firewalls.

Site-owned device or site-owned computer with signature pad/consenting option:

**Potential Benefits**

- Limits the number of required devices

**Considerations**

- Need to ascertain whether multiple operating systems could be used, how system upgrades would be handled, and whether device availability would be a requirement
- Evaluate whether a single signature pad may be used for all studies or whether each sponsor would have to provision a signature pad.

**Other Considerations**

- Establish a device shipment plan that considers impact to importation, import license requirements, potential shipping and custom delays, and other regional differences (such as power requirements). Refer to Study Considerations in Section 5.2.1 for region/country-specific considerations.
- Consider a plan in case of system failure and the availability of a paper backup process.
- Consider whether other technologies are in use for other studies (e.g., ePRO/eCOA, eDiary).
  - Consider the appropriateness of using the same device as used for other assessments in that study (e.g., add eConsent tools to a tablet used for capturing quality of life questionnaires).
  - Evaluate whether eConsent can be incorporated with other devices. However, some systems may have features that make it difficult to include eConsent and an eCOA or ePRO on the same device. Data plans and the possible impact on cost would also need to be evaluated.
  - Consider other new technologies that the site is implementing to avoid overwhelming the site with yet another new technology.

### 5.2.3.2 Re-consent

eConsent may be especially useful when re-consent is required.

**Potential Benefits**

- eConsent offers different options for re-consenting to new versions of an ICF and can facilitate this process. Sponsors must evaluate which option is feasible based on their SOPs and what is deemed acceptable by the IRB/IEC.
- Easier to operationally track when participants have been re-consented or need to be re-consented.

**Considerations**

Re-consent can occur remotely, i.e., outside the study site (see Section 5.2.3.5) or on site. For on-site re-consent, consider the following review options:

- Review the entire new consent, including sections that were not amended, which currently is the most commonly used method for paper consents.
- Review summary of changes from the previous signed eConsent: shortens the review time and can increase understanding of the relevant changes.
Some IRBs/IECs may object to presenting only a summary of changes. The following approaches may both facilitate study participant understanding of changes and comply with IRB/IEC expectations:

- Review summary of changes with a link back to the entire consent: targeted review of the changes while allowing review of other sections that are not impacted
- Direct the study participant to specific changes only within the full updated eConsent.

In addition to consent text, other components (e.g., video, glossary terms) may require updating for consistency. Re-consent guidance will need to be established for eConsent because of the need to update the system.

5.2.3.3 Optional Consent

Some studies include additional optional activities (e.g., optional procedures, notification of primary physician, biobanks) that are not required for study participation. The additional consent may be part of the main consent or a separate addendum. eConsent can facilitate incorporating the optional consent into the main consent.

**Potential Benefits**

- Ensures that the sections are appropriately completed (e.g., only 1 answer can be selected, yes or no)
- Allows for consent choices to be easily tracked at individual, site, or study level
- Potential to link to other systems such as labs and biobanks (see Future State, Section 6)

**Considerations**

- Ensure the additional activities are appropriately linked to the main consent, e.g., lack of consent to a required additional activity may flag the main consent.

5.2.3.4 Withdrawal of Consent

Regardless of the method of consent, study participants have the right to discontinue participation at any time, and the reasons for withdrawal, if available, must be properly documented by the site staff. eConsent facilitates documentation and collection of information consistent with the requirements of electronic data capture (EDC). This information includes the following:

- Reason for withdrawal
- Date and time of withdrawal
- Provision of instructions to the study participant (e.g., follow-up visits, handling of data, withdrawal from certain activities)

A separate consent option may be used to document withdrawal of consent within eConsent. The site may also track withdrawal of consent for specific participants within the system.

**Potential Benefits**

eConsent can facilitate clearer documentation of the withdrawal status for a study participant and allows for planning and handling of possible participant withdrawals by providing the following:

- Easy, expeditious collection of participant withdrawal information
- Better documentation, depending on components acquired in the system
- Management of data and samples collected and tracking of rationale for withdrawal
• Country- or region-dependent differences (i.e., ensuring regulatory compliance for choices other than withdrawing through site visits)

If a study participant withdraws consent, eConsent may facilitate data reconciliation with other systems (e.g., EDC, lab results).

5.2.3.5 At Home or Remote Consenting

Although consenting is usually done at the site, some country regulations may allow methods other than a face-to-face interview to obtain informed consent if basic informed consent principles are followed.

A meaningful exchange between investigator and participant is critical rather than the method of information exchange. eConsent could provide a first key solution for obtaining consent in:

• Remote studies (observational, pre-screening, or interventional studies); consider increased risk levels in interventional studies where a legal, privacy, or medical assessment may be needed
• Consent and re-consent process in ongoing studies

There are different degrees or levels of at-home or remote consenting:

• Participants are introduced to the study at the site but can review all documentation at home with their families and make an informed decision to participate or not at home (partially remote).
• Participants become aware of the study via another channel (e.g., social media, pharma company website) and can be fully remotely consented. Full remote consenting might also be a first step towards full virtual studies, where all assessments are occurring at the participant’s home.

Potential Benefits

• Most important: allows for convenient consent (e.g., comfort level, time) at the study participant’s home or elsewhere
• May improve the study participant’s quality of life
• Allows for full remote consenting, without dependence on site-staff. Participants are becoming much more active, want to be involved in deciding the best treatment, and may look for this information on the internet.
• Allows easy sharing of information
• Reduced shipping costs

Considerations

• Because informed consent requires information exchange, consider augmenting remote consent or re-consent with telemedicine (e.g., video chat, instant message, phone call, email) with the study site, providing initial consent only after an initial study site visit (e.g., after medical records are provided), or remote consent only for re-consent, with another on-site visit to re-confirm participation in person. This is especially important for fully remote consenting.
• Telemedicine documentation may need to be retained, depending on applicable requirements.

Overall, remote re-consent allows for quicker provision of new information to the study participant, reducing the risk of missing important safety information and allowing easier access to gain consent, e.g., for follow-up samples or additional study procedures. Remote consenting might kick off a digital pathway for communicating with the participant, with benefits such as the ability to re-send parts of information or video as preparation for a new visit and digital support.
5.2.3.6 Other Methods of Documenting Informed Consent (other than a signature)

eSignature is discussed in Section 4.12. Other methods may be used for documenting consent, depending on the local jurisdiction’s requirements. Below are a few examples:

- Digital fingerprinting
- Voice recording (maybe in addition to other documentation): consider whether this would be used for the full consenting process or just the actual consent
- Pincode/passcode/username/user ID card such as health ID card

**Potential Benefits**

Other methods of documenting consent may be options for typical study participants, those with disabilities (such as missing limbs), or those who cannot write. They may also be used when the signature cannot be witnessed, perhaps during remote consent. These alternate methods may streamline compliance with the additional country-specific mandates.

**Considerations**

Alternative methods of documenting consent may not be allowed in all countries. Determine how evidence of consent would be recorded and stored, and consider whether these other methods would be used for the initial consent or limited to re-consent. Evaluate the impact to timelines and IRB/IEC approvals.

5.2.4 Privacy, Legal, and Other Processes

- Other considerations, including privacy, remote monitoring, and fraud are briefly described here. See Section 5.1.2 for more information on privacy, legal, and IT considerations.

5.2.4.1 Data Privacy/Confidentiality

- Consult with the privacy experts/legal department at your company.
- Consider IT security.
- Consider the capabilities/logistics of the vendor with regard to server location, administrator location, access to data, and data storage.

5.2.4.2 Remote Monitoring Considerations

- Build protections against potential issues with breach of confidentiality associated with remote monitoring.
- Identify areas of training for remote monitoring and best security practices.
- Consider restricting certain data fields that identify study participants per local and legal requirements.

5.2.4.3 Considerations for Different eConsent Components

- Consider the impact of access to a knowledge assessment, time spent for the informed consent process, and the potential for inspection findings.
- Consider requirements/restrictions for components by the regulatory and data privacy agencies.
- Consider the need for supplemental information (e.g., additional text including glossary).
5.2.4.4 Fraud Considerations

- These may include considerations about verification of identity, potential workarounds, and guidance to influence IRBs/HAs.
- Fraud concerns may be more important for at-home use.
- Consider technology that controls user access and ensures patient/participant identity.

5.2.5 Stakeholder Roles and Responsibilities

Provide clear governance to all internal stakeholders. Below are examples of possible topics to include:

- Review SOPs related to informed consent form to ensure there are no barriers for eConsent use.
- Assess company-specific stakeholders and obtain their endorsements.
- Clear goals, objectives, roles, responsibilities, guidance, and instructions
- Forum to drive/lead innovation
- Leadership involvement/sponsorship to set a culture for change
- Financial considerations such as initial cost, return on investment, resource impact
- eConsent enterprise-wide/study strategy
- Champion change management
  - Communication planning to minimize internal stakeholder adoption barriers
  - Internal satisfaction surveys (see Process for Identifying Critical Success Factors in Section 5.3.3.3)

5.3 eConsent Design and Readiness Considerations

5.3.1 Kickoff Meetings with the Vendor

Establishing a good working relationship with the eConsent vendor is important in ensuring a successful eConsent process. A kickoff meeting or meetings between the sponsor and the eConsent vendor should be scheduled as early in the process as possible, to ensure both parties are working toward the same objectives and timelines and to clarify the roles and responsibilities of the team members. Kickoff meeting topics could include general eConsent awareness and study-specific items, such as:

- eConsent components and their IT specifications
  - Creating an interpretation document showing the differences between the paper consent and the electronic version
  - Defining a user access model (what type/level of access for different users)
- User acceptance testing (UAT) plan
  - UAT should occur after validation of the configured eConsent system.
  - UAT scripts can be created.
  - Include people with different (clinical) perspectives for the UAT (e.g., study team, clinical research associate [CRA], local team, eCOA/innovation team) for feedback and buy-in.
  - Keep the end users’ experience in mind when testing the system (including use of multimedia components).
- Adapting the main consent into country-specific ICFs and/or site-specific ICFs
- Translation process/considerations, including:
Which elements would need translation (e.g., videos, glossary terms, other components, application screens)

Who is responsible for translations (of the main content and other components)

- Training strategy (see Training Strategy for Sites in Section 5.3.4)
- Required material for submission to the IRB/IEC; include discussions regarding storage/archival
- Document control (e.g., versioning)

5.3.2 Collaboration and Communication between Sponsor and Vendor

Consider the following throughout the study to ensure a good working relationship between sponsor and vendor:

- Governance planning:
  - Communication plan
    - Ensure communication lines are set up; define working relationships
    - Identify the main contact person assigned at the vendor
  - Create an issue escalation plan
  - Create a risk identification and contingency plan

- Changing regulatory environment
  - Work collaboratively between the sponsor and vendor to ensure the project remains on track

5.3.3 eConsent Data Access and Archiving

5.3.3.1 Sponsor Considerations

All versions of the eConsent should be available during the study and following archiving. Exact requirements for archiving should be decided by the sponsor and the vendor based on local/regulatory requirements.

The sponsor will need to decide where they want to house the documents and who will have access. During the study the sponsor may have access to participant data, but after archival the data is de-identified for the sponsor.

Vendor Considerations:

- Discuss the vendor’s policies for storing and archiving approved documents.
- Discuss who will have access to which files (e.g., only the site should have access to signed consent forms)
- Discuss where files are kept as certain countries have restrictions on where data can be stored
- If the vendor will be the main storage location, ensure all sponsor approvals of the electronic ICF and its components are still being filed/archived on the sponsor side. The vendor will also need to keep all versions of the approved consents and be able to readily provide copies when requested.

Sponsor Considerations:

- Sponsors may also house the approved unsigned documents within their own paper or electronic filing system.

Vendor and Sponsor Considerations:

- Consider storing the electronic ICFs with both parties. The vendor can house the actual electronic version of the document, while the sponsor keeps the content of the document filed along with the
content of the components. The sponsor should ensure that all sponsor-level approvals for the
document and components are filed.

IRB Considerations

- Some IRBs may require paper-based versions of the eConsent documents for IRB/IEC archival
  purposes.

Some additional considerations:

- Ensure the system has the capability for an audit trail. The audit trail will be able to capture any
  revisions, the person making the changes, the reason for the changes, and the date the changes
  were made.
- If data are stored on a remote computer, in a data storage center, or on a cloud network, consider
  any obligations imposed by data privacy laws or regulations.

5.3.3.2 Site Considerations

During and after the study the site will have access to eConsent data, although the format of that data
may change after archival (e.g., CD-ROM).

Country requirements:

- Some countries permit filing in an electronic system, while others require printed copies of all
documents to be available.

Site SOPs:

- Some site SOPs might specify whether documents need to be physically printed and stored or
  can be maintained in an electronic database.

5.3.3.3 Process for Identifying and Analyzing Critical Success Factors

Critical success factors (CSFs) allow an organization to define and measure the outcomes of an initiative
(e.g., what does success look like). Analysis of CSFs should also provide guidance on how to better
manage broader eConsent organizational implementation and assist with more efficient and effective
ways of executing work, optimizing resources, and increasing quality. CSFs for an eConsent pilot and/or
scale-up should demonstrate improved study participant-centric efforts and enhanced integration of the
study participant in the overall consent process.

There are generally 3 types of metrics to consider when evaluating eConsent: operational (internal),
quality (internal and external), and usage (external), along with any sponsor- or study-specific metrics.
The type of metrics that can be collected and tracked should be established prior to organizational
implementation of eConsent.

Sponsor companies should keep in mind that novel technologies and new processes often entail a
learning curve before value is realized.

**Potential operational metrics:**

- Examples:
  - Study start-up and recruitment duration metrics (timelines)
  - Implementation burden (e.g., additional time and resource requirements)
  - IRB/IEC approval timelines
  - Time to implement requested changes
Amendment processing duration  
Version control issues  
Number of consent-related monitoring findings  
Study team subjective feedback

- Guidance: establish baseline operational measures using comparable past studies (i.e., similar scope and disease area)

**Potential quality metrics:**

- Examples:
  - Monitoring report findings  
  - Deviations and corrective action plans (CAPAs)
  - HA and other formal audit findings related to consent  
  - Compliance with the protocol

- Guidance: establish baseline quality measures using comparable past studies (i.e., similar scope, study demographics and complexity, and geography)

**Potential usage metrics:**

- Examples:
  - Number and percentage of study participants to fully consent electronically  
  - Study dropout rate  
  - Section read time  
  - Knowledge check (if appropriate) results  
  - Number and percentage of video views (if applicable)  
  - Observational feedback from site personnel who administered consent (surveys)

- Guidance: engage colleagues who focus on optimizing recruitment review success measures; proactively identify potential inspection findings that might occur with collection of usage metrics

Surveys and/or interviews may be used to collect data (see Table 16). Consider using the following TransCelerate Assets:

- [eConsent Patient Survey Template](#)  
- [eConsent Site Survey Template](#)
## Table 16  Possible Survey Topics to Assess Critical Success Factors

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Survey Topics</th>
</tr>
</thead>
</table>
| Study participant, family, legally authorized representative               | • Demographics, education  
• Better understanding of consent  
• Ease of use of technology  
• Overall satisfaction with process, willingness to participate in a clinical research study  
• Better/more engagement with process and study staff  
• Ease of asking more informed questions  
• Preferred components, retention, perception (can change over time)  
• Re-consenting process                                                                                                    |
| Site (e.g., study coordinators, principal investigators, sub-investigators) | • Ease of technology use  
• Overall satisfaction with process  
• Re-consenting process  
• Administrative burden  
• Workload impact  
• Better/more engagement with study participant and process  
• Changes to study participant retention, training, support  
• Audit/inspection findings, perception (can change over time)  
• Satisfaction with training                                                                                               |
| Internal stakeholder (e.g., study team, site monitors, management)         | • Ease of technology use  
• Overall satisfaction with process  
• Re-consenting process, version control  
• Workload  
• Time spent on monitoring ICF activities  
• Better/more engagement with study site  
• Metrics, summary data  
• Improvement in study participant retention, training, support  
• Budget, return of investment  
• Audit/inspection findings  
• Process/complexity/time for submission, approval, and implementation (can change over time); consider that these may be different for original and amendments |
### Stakeholder Survey Topics

| External stakeholder (e.g., IEC/IRB, HA, contract research organization [CRO]) | Ease of technology use  
| | Overall satisfaction with process  
| | Ease of submission  
| | Approval and implementation  
| | Perception (can change over time) |

---

#### 5.3.4 Study Oversight

Develop processes to ensure the sponsor has up-to-date access to information from the vendor and can direct or participate in problem solving if issues arise. Consider the following:

- Type of reports required
- Identification of risks and how to resolve them
- Solution-based problem solving
- Sharing best practice

##### 5.3.4.1 Provide Guidance for Monitors

- Additional training (train-the-trainer) for CRAs (virtual training or at the investigator meeting)
- Add eConsent-specific elements to the monitoring plan (e.g., reports, portal access, source data verification)

##### 5.3.4.2 Definition of Analytic Data Fields

- See Section 5.4.2 for possible reports that may be generated from these data fields.
- Identify what analytical data from the eConsent (e.g., date of signature, version signed, summary of unfamiliar terms, time spent on a specific portion of the ICF) should be tracked.
- Develop a data transfer specification document (with names of variables, timelines, instructions to send files, etc.).
- Establish a data transfer schedule throughout life of study.
- If tracking analytical data from the eConsent system, develop a plan for data analysis.

##### 5.3.4.3 eConsent Go-Live Plan

IRB approval:

- Develop a go-live plan early.
- Develop an appropriate package for IRB/IEC submission (see Section 5.3.5.2).
- Disseminate packet to IRBs and vendor for questions.
- Once approved, activate the site in the system.
- Site access/tablet distribution
  - Ensure timely access to solution ahead of training/go-live
  - Ship to selected sites to meet any agreed timelines
  - Contingency plan for import issues
5.3.4.4 Contingency Planning

It is important to prepare for the possibility of technical disruptions/failures. Some considerations should include:

- If the site experiences issues with the device (or other electrical means of using eConsent), ensure a replacement device can be provided in a timely manner. Consider the timelines for this replacement and the process for returning the site’s malfunctioning device.
- Using a site-provided device can assist in times where a sponsor-provided device has a malfunction. The site could use a computer, cell phone, or another previously identified electronic device to consent the participant.
- Ensure sites have a paper backup option for instances where an electronic backup device is not available or possible. When discussing contingency planning with sites make sure to stress the importance of keeping site visits even if participants need to consent on paper. Sites should never reschedule participants because of technical eConsent issues.
- Ensure a plan is in place to capture data in the system (e.g., date of consent) if the paper backup system is used.

5.3.4.5 Training for Sites

Training for sites can take place in a variety of formats, usually one or both of the following: (1) virtual, (2) electronic training upon initial system access or (3) live training on site or during the investigator meeting. The format can be decided at the kickoff meeting.

- Training may include a live demo using (at minimum) the site’s level of access.
- Consider a training version of the eConsent prior to go-live to give site staff the opportunity to test the eConsent offline prior to consenting actual participants. Ensure that the training version cannot be confused with the live eConsent that is used to consent study participants. For instance, create a training eConsent where sites can practice using the device in a fictitious, nonclinical related study.
- If training DOES NOT occur at the investigator meeting, a method of training should be identified.
- Include guidance or "best practices" to incorporate eConsent into the consenting process.

After training is delivered, ensure the help desk is available at all times and in appropriate languages prior to go-live.

Training for participants may need to be addressed (may be part of the eConsent tools).

5.3.5 External Processes

There are fundamental similarities in the objectives of the core activities between paper ICF and eConsent. The key changes per activity noted below are comparable to the types of changes for other eTechnologies (e.g., ePRO). Keep these in mind when developing processes, defining communication/training, and addressing any implementation impacts.

- **Design**
  - Key change: development and translation of multimedia components
- **Readiness**
  - Key change: submission and review of multimedia components
- **Execution**
Key change: participant interacts with multimedia components and might not receive a paper copy of the eConsent but a link to the eConsent or a copy emailed to them; Site/sponsor receives metadata insight

- **Closeout/Archival**
  - Key change: archive eConsent data

### 5.3.5.1 Site Processes

Work with sites to determine the site’s capabilities to use eConsent. Create guidelines on how eConsent can be aligned with the normal site procedures:

Site feasibility must be assessed using company SOPs.

Engagement with sites should occur early and often throughout the process. Engage sites in the benefits and ease of eConsent and be prepared to discuss perceived barriers.

- Consider using the TransCelerate Asset: [Introduction to eConsent for sites](#)
- It is a good idea to include a link to a sample eConsent when asking for sites’ participation.
- Analyze areas of site resistance (e.g., lack of resources to execute, overburdened by other initiatives, technological constraints, previous bad experience, limited knowledge of study participant/site benefit, institutional restrictions) and try to overcome them.
- Analyze impacts to the site (e.g., change to SOPs, change to processes) with the site.
- Prepare appropriate materials and communication approaches to address (e.g., generic demonstration or mock study-specific application).
  - TransCelerate tools (Introduction to eConsent for Sites, Site FAQ) may be used to support site engagement.
- If resistance remains, consider using paper consent at that site.

Managing mixed consent formats (paper and electronic) at the site:

- Will be necessary if eConsent cannot be used for all study participants or at all sites
- Define processes and create instructions for sites (using site SOPs)
- Assess the timing of paper versus electronic ICF approvals and whether SOPs would allow for submission of both paper and electronic or only one ICF type. Determine how sites should proceed if there is a delay between paper and electronic update approval.
  - How will sites file and archive eConsents? What country and site filing regulations or SOPs apply? Is filing of the electronic form sufficient or is a paper printout necessary (might be country-specific)?

Site system setup and readiness considerations:

- Import licenses may be needed for some countries, and customs clearance may lead to delays.
- Define who will be conducting activities (e.g., vendor or sponsor) and the format (e.g., setup call or on site).
- Site equipment is shipped and access granted by the vendor before readiness assessment begins.
- Will participants use their own devices, and how will this be set up and activated?
- Potential items to consider during setup and readiness are highlighted below (this is not an exhaustive list):
  - Does the internet connection work?
  - Is user access confirmed in the system and test environment (e.g., user names, password)?
Will a separate printer be provided to print directly from the device? Does the site have space and is it willing to use it?

If the site needs or prefers to use their own printer, can it be connected to the device used for the eConsent or will the site need to access the eConsent from their own computer to print? Instructions need to be provided for both options (possibly in an eConsent manual, see below).

Ensure all site personnel are trained and have the appropriate documentation:

- A training plan must be in place (e.g., online learning courses with certificate at the end, mandatory before system allows access if possible; can be described in an eConsent manual, see below).
- Training may include best practices to integrate eConsent into the consenting process (e.g., eConsent does not replace the important conversation between the site and study participant).
- Training may be conducted via live, online, or device training or at the investigator meeting (which may be virtual).
- Consider using The TransCelerate Asset: eConsent FAQ Template for Sites. This FAQ can be tailored based on the vendor and eConsent design.
- Consider using quick reference cards (simplified reference guide with key features).
- Consider how the training will be documented (certification via online learning or face-to-face with certification).

Outline the process for providing the study participant with the copy of the ICF using the following considerations:

- Mechanism by which the study participant will receive the signed copy (e.g., email, paper copy)
- According to the SOPs and local regulations:
  - A signed copy must be provided, or
  - The ICF can be provided to the study participant electronically (e.g., via email or internet link to platform; both password protected)

In case of issues with the device, the site should use their backup process. The following points should be considered:

- The backup process would be the paper consent form.
- Consider how sites will access the paper form in case of system failure (e.g. blank printout available at site).
- The system should have an option to enter/mark study participants as consented in cases where the participant was consented on paper due to system failure
- An eConsent manual for sites may include:
  - Process for user training and certification
  - Process for consent printing
  - Process for archival
  - Helpdesk contact information
  - Backup process in case of system failure or if a study participant chooses not to use eConsent

5.3.5.2 IRB/IEC Processes

Timing of IRB/IEC submissions must be considered to ensure a smooth eConsent process. Before submissions, consider the timing of approvals, particularly if multiple countries are selected, and the impact this may have on the study timelines.
• Identify the IRB/IEC point of contact and ensure the appropriate sponsor subject matter expert is involved in communication.
• If guidance for submission requirements exists, review and understand the requirements.
• If guidance does not exist or if there are questions about existing guidance, set up a meeting with the IRB/IEC to introduce eConsent, discuss submission requirements including multimedia tools, and determine if sponsor assistance is needed.
• Consider that each IRB/IEC may have differing expectations/requirements on what needs to be reviewed/approved.
• Consider providing training to the IRB/IEC to facilitate rapid approval.
• In discussions about or with IRBs, consider the mechanism for negotiating with the IRB/IEC and methods to improve efficiency of IRB/IEC feedback (e.g., integrated authoring tool). Ensure that the submission package allows the specific IRB/IEC to edit/comment on the eConsent using a format that is readily available. Discuss submission package options which provided IRBs/IECs with sufficient information, considering the examples below (Table 17).

Table 17 Potential IRB/IEC Submission Package Types

<table>
<thead>
<tr>
<th>Type of Package</th>
<th>Possible Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>Storyboard and/or screenshots, glossary terms, knowledge assessment, eSignature verification form from vendor, and data privacy statement from vendor, attestation letter or interpretation document</td>
</tr>
<tr>
<td>Electronic</td>
<td>Link to portal or digitized consent, eSignature verification form from vendor (this document provides verification that the eSignature is compliant with local regulations; will be used as appropriate), and data privacy statement from vendor, attestation letter or interpretation document</td>
</tr>
<tr>
<td>Paper and electronic</td>
<td>Combination of the elements above</td>
</tr>
<tr>
<td>Initial (one-time only)</td>
<td>Demonstration in addition to one of the package options above</td>
</tr>
</tbody>
</table>

• Work with the vendor to ensure site-specific requirements are included in the submission (e.g., logos, template features).
• Study teams should be aware of the additional time needed to address specific requirements from local IRBs/IECs (especially in pediatric studies).
• Submit the package to the IRB/IEC and respond to any questions received.
• If significant feedback is received about a specific supplemental eConsent component (e.g., audio, video), consider using a phased release where the supplemental components are included in a later version.
• Notify vendor of all IRB/IEC approvals.

5.3.5.3 Health Authority Processes

Potential interactions with health authorities should be considered in planning.

• Involve internal regulatory compliance and legal groups early in the process.
• Reference internal guidance/reaction on existing eConsent regulations.
• Evaluate current regulations to determine if they have any impact.
• Evaluate eSignature requirements and acceptability.
• Where possible, provide proactive comments on draft guidance to align with the company position.
• In countries where there is no established precedent for eConsent, consider a discussion with HAs to define the submission package. The elements of the submission will likely depend on whether the country has IRB/IEC review processes in place and the extent of the health authorities current consent review process. Potential submission scenarios and *illustrative packages* are described below:

  o **HA Submission and IRB Submission:** In cases of IRB review, documents that might be submitted to the HAs include:
    - Paper ICF content
    - Comment on application form on consent process
  
  o **No HA Submission; IRB Submission Only:** In cases where only the IRBs review the submission, the following principles may apply for health authorities
    - No ICF submissions
    - Note that data privacy laws still apply to all data storage and processing entities containing information surrounding eConsent
  
  o **HA Submission Only; No IRB/IEC Submission (Only Informed):** In cases of NO IRB/IEC review or where HAs would require more comprehensive review, the package options shown in Table 17 may be considered.

5.3.5.4 CRO Processes

Consider the following when considering using CROs to implement eConsent for a study:

- Additional processes and provisions that must be in place
- Initial engagement is as important as continued oversight of and collaboration with the CROs. The initial engagement should precisely and clearly define the expectations for eConsent management and development for the study. Determine if the eConsent development process will be led by the CRO or sponsor. The following are possible areas to address during initial engagement:
  - CRO timelines, roles, responsibilities and planned deliverables of all parties, including expectations for monitoring activities, and any potential metric reporting
  - If the sponsor develops the eConsent, the impact on and expectations of CRO monitoring activities should be considered up front.
  - Risk mitigation and business continuity plans in case of system failure should be established with the CRO, including eConsent-specific considerations. These plans should cover all steps of the eConsent process (before, during and after development and implementation).
  - Quality checks should be put in place at all stages of development and implementation.

5.4 eConsent Execution and Closeout Considerations

The eConsent execution phase, when the proposal, tasks and activities that were created in the startup phase are put into action and where the anticipated outcome is delivery of the expected eConsent results, is critical to a project’s success and entails a significant amount of resource, budget, time and effort.
Several key factors need to be considered, evaluated, and reviewed against company policies, preferences, etc. to ensure suitability. These factors, discussed in more detail below, include:

- Monitoring methods (Section 5.4.1)
- Examples of oversight/compliance/management reports to support monitoring activities (Section 5.4.2)
- Issue management/resolution (escalation, help desk) (Section 5.4.3)
- Audit/inspection readiness (access to data in eConsent, review, adequacy of processes) (Section 5.4.4)
- Filing and archiving (Section 5.4.5)

### 5.4.1 Monitoring Methods

Monitoring is the act of overseeing a clinical study and ensuring that it is conducted, recorded, and reported in accordance with the protocol, SOPs, ICH GCP guidelines, and any applicable local regulatory requirement(s). This can be done on site, remotely, or via centralized monitoring activities as indicated in the monitoring plan.

- Remote monitoring: electronic case report form (eCRF) completion, SAE notification, ICF review, etc. conducted remotely through electronic systems
- Centralized monitoring: usually performed from the data collected in case report forms (CRFs) through EDC. It enables the identification of outliers or trends that may need attention by the sponsor or CRO to manage and mitigate concerns or issues.

As part of these regulatory requirements, sponsor companies are required to train their monitors to review ICFs to ensure that study participants have been consented in accordance with GCP and local regulatory requirements. eConsent allows for informed consent monitoring remotely, centrally, or on site.

Consider how the following ICF monitoring considerations (non-exhaustive list) would be taken into account when using eConsent:

**Key Takeaways:**
- **No patient data** is stored on the tablet
- **Secure transmission and storage** of patient data to appropriate server location
- The **paper document** can always be used when the patient does not want to use eConsent.
- Site staff **owns the consenting process**
- Easy-to-understand **training and instructions** for site staff and patient (e.g., quick reference cards)
• The amount of time participants had to consider participation in the study
• Were all treatment options discussed and clarified?
• Were procedures and responsibilities discussed and clarified?
• Were all participants' questions responded to prior to the decision to participate?
• Did participants sign and date the ICF before any of the study procedures were performed?
• Did participants receive a copy of the informed consent form?
• Re-consenting process

5.4.2 Oversight, Compliance, and Management Reports to Support Monitoring

Some reports to consider for use by monitors or in-house staff, depending on role, include but are not limited to:

• List of all approved ICF versions with dates of implementation
• List of participant numbers with approved ICF versions
• Lists of all study personnel:
  o Trained (with date of training) on eConsent
  o With access to eConsent data
  o With administration rights to the eConsent
• List of comments by the investigator by subject number
• List of participants who agree to have the study site contact their primary physician
• List of consented participants
• List of participants not yet consented
• List of re-consented participants
• List of participants not yet re-consented
• List of participants who consented through a legally acceptable representative (LAR)
• List of participants’ signature date and time
• List of ICF sections that required clarification
• Withdrawal of consent for use of samples or data
• Time participants spent with each ICF section
• Total time participants spent consenting
• Result of the knowledge review, if used
• Automated alert reports to investigator/sponsor

Reports should be appropriate to the individual's role (e.g., in house staff, laboratories, or training staff would see coded aggregate data) and contain specific restrictions/protections to prevent sharing data inappropriately or unnecessarily.

5.4.3 Issue Management and Resolution

eConsent provides the capability of accessing data remotely and centrally, allowing for real-time eConsent review and analysis and thus quicker identification, resolution, and prevention of issues/concerns. Ensure that no participant identifiers can be accessed/viewed remotely.

• Check the correct version of signed eConsent (i.e., if different from the global version)
• Check if appropriate study participants signed the correct eConsent/ re-consent (e.g., if only a subset of study participants is affected by re-consent)
• Check the date and time of eConsent signature
• Opportunity to block subject screening/ randomization in real time through an automated system-based process

5.4.4 Audit/Inspection Readiness

The sponsor’s procedures/policies should be followed to ensure proper audit/inspection readiness, including:

• Inspector/auditor access to eConsent (system, document, and reports)
• Contingency plan in case of eConsent system failure (business continuity)

5.4.5 Filing/Archiving

The sponsor’s procedures/policies should be followed to ensure proper management of filing and archiving. For details on filing/archiving at the site please see Section 5.3.5.1.

6 Emerging Trends and Future Considerations

Technological innovation is ongoing and may impact all aspects of clinical studies. eConsent is one of many innovations that are part of the participant experience, and importantly is often the first interaction the participant has with the clinical trial process. Beginning with eConsent, sponsors can engage participants through personalized portals where information may be individually tailored. eConsent may serve to support a rich study participant experience throughout the clinical study and beyond.

“There are two areas of focus regarding patient centricity in research: patient centeredness and patient engagement. Patient centeredness is defined as research that is based on outcomes that are important to patients. Patient engagement in research is the active participation of patients throughout the entire research process – the planning, the conduct and the dissemination. Patient engagement is the means to the patient centeredness.”

– Sue Sheridan, Director of Patient Engagement, Patient-Centered Outcomes Research Institute (PCORI).

Informed consent is fundamental to patient-centered care. Involving study participants in their care requires that they are fully informed, and electronic, patient-guided technologies will have a significant effect on evidence-based medicine. eConsent is a basic building block in a growing technology environment focused on providing individuals with control over the robust exchange of their health information with health-literate content. Some consumers use portals, including electronic health records (EHRs) supported by medical practitioners and commercial sites provided by insurers, advocacy groups, and patient communities. The future offers an opportunity to create an electronic environment that integrates patient-related information from disparate healthcare providers, thus enhancing the participant’s connection to clinical studies, optimizing information sharing during the consent process, and enhancing participant engagement throughout the study. Ensuring robust security and controlling access allows the sponsor and the site to gain significant efficiencies and reduce effort and cost associated with current consent processes.
6.1 Emerging Trends

The ever-increasing complexity of partners participating in healthcare, combined with a growing globalization and mobility of our population, is driving the need for an economical and efficient means of bringing information together to facilitate decision-making. Increasing sophistication of data analytics in health information management will enable information mining from consent tools to improve the participant’s experience and save money. Data sharing, which currently entails consents with multiple partners, high cost, and time-consuming efforts, may be simplified, granting increased autonomy to the patient. Some emerging technological trends relevant to eConsent are summarized in Table 18.

**Table 18** Emerging Trends Related to eConsent

<table>
<thead>
<tr>
<th>Trend</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration with study operational systems</td>
<td>Fewer technology interfaces would simplify working across systems; currently multiple different systems may be a disincentive.</td>
</tr>
<tr>
<td>Flexible device approach</td>
<td>Allowing participants to bring their own devices can improve access and autonomy.</td>
</tr>
<tr>
<td>Mutual training recognition</td>
<td>Consistent tool-based training would reduce redundant work for sites and sponsors.</td>
</tr>
<tr>
<td>Efficient authoring and approval</td>
<td>New software could allow collaboration between the sponsor and IRBs/IECs during consent authoring and approval.</td>
</tr>
<tr>
<td>Improved data sharing</td>
<td>Connecting eConsent with IVRS and clinical laboratory databases would reduce data transcription errors.</td>
</tr>
</tbody>
</table>

6.2 Supporting the Participant Throughout the Study

This integrated health information exchange of the future may also support participants’ ability to make real-time choices about their participation and to modify those choices both during and after the study. Participants could also be connected to advocacy and patient groups to allow sharing with other individuals undergoing the same or similar treatment and challenges. Applicable privacy laws must be considered, including the assurance that the participant has appropriately consented to have their information shared/stored.

Participation in a clinical study through a centralized database would greatly simplify participant engagement. Industry, academic, and government resources could co-sponsor and fund this centralized database to match studies and consents, which would eliminate much redundant infrastructure, reduce noncompliance due to multiple study participation, build broader transparency into research, and expose participants and their healthcare practitioners to the best options across research sponsors in industry, academia, and government.

Advantages to a study participant portal could include, if the participant consents:

- Access study information, receive payments, be notified of visits, and access their own study data
- Receive more information about their condition and treatment alternatives based on study data from related private or commercial sources
- Maintain contact, outcomes research, and follow-up questions in a structured format designed for analysis
- Receive standard clinical laboratory results, and possibly aggregated data to support exploratory or future research with samples or data collected in clinical studies
- Receive information about new proposed research
In the future, eConsent and clinical study offerings could be centralized in an externally hosted location for prospective and active study participants. This could result in a global standard for clinical study information allowing the creation of a master list of all approved clinical studies. Use of this master list with eConsent would support programmatic matching of participants and studies based on information in their EHR or a series of online questions answered by a prospective participant or healthcare provider.

6.3 Combining Healthcare with Clinical Studies

Future studies could involve online prescreening. Once an individual has participated in an eConsented study, study enrollment criteria could be assessed against a prospective participant’s record, if appropriate under applicable privacy laws. This would increase autonomy for the participant, allowing proactive seeking out of studies better suited to the individual and/or the choice to share EHRs to see if they may be eligible to participate in studies. This could eventually be automated within a shared health IT environment. Integration of health records together with eConsent would also make it easier for investigators to decide whether a specific study is appropriate for a specific patient, and eventually provide an option for study participants to consent on their own, outside of the regular clinical study process. This could be especially beneficial in supporting future-use sample testing where re-consent can often be rate limiting.

Once a prospective participant is linked to one or more clinical studies, prospective participants could review and select the study and the participating clinical site that would be best suited for them. The potential participant could then review the critical elements of the specific informed consent for the study, including the risks, benefits, time commitments, and costs. Such upfront engagement could be at the participant's convenience and would promote a more robust conversation with the clinician during the formal consent for the study, improving the participant experience overall.

6.4 Optimizing Information Sharing During the Consent Process

Integration of eConsent with the EHR would also be valuable because a site or sponsor could programmatically confirm that a potential participant is not already enrolled in another concurrent study. Concurrent study participation can easily be missed in today's siloed technology environment, and when found can be very costly, particularly when procedures and sample analysis have already begun. Integration of eConsent with the EHR could also reduce redundant testing by coordinating standard-of-care testing with planned research testing. Integration of insurer information would better inform potential study participants about the costs of participating in a study. Both the principles of informed consent and of patient-centric healthcare would be well served by such a user-centric application to provide more information about the requirements of participation. Improved transparency of clinical trial participation with the patient’s EHR would be another important benefit, leading to a more seamless and coordinated health response involving the primary care physician, a clinical study investigator, and other healthcare practitioners.

6.5 Closing Thoughts

Some of these future considerations may be realized soon, and may require significant advancement in both technology and change readiness across all participants in the healthcare IT infrastructure. These future potential changes may provide opportunities that include but extend beyond eConsent. Industry can expedite and lay the necessary foundation for an environment that facilitates increased use of
patient-centric technologies in clinical trials, such as eConsent, by supporting technological advancements such as the following:

- Patient portals connecting eConsent, study information, training, results, study information, and other interactive participant engagement technologies
- Harmonized metadata for studies and consents that would promote global access to treatment options
- Common clinical study research result portal to deliver aggregate results of exploratory research, clinical study outcomes, and future research consented through both traditional and electronic means

Imagining a future for eConsent inspires a broader array of digital engagement that demands a more holistic adoption of health literacy approaches and alignment across platforms, and suggests an opportunity for an integrated approach to participant engagement.

7 Appendices

7.1 Example Templates

Two publicly available templates were selected to demonstrate how ICF content might be incorporated into eConsent multimedia components. These examples are intended to demonstrate what could be done and should not be interpreted as a requirement or endorsement to use these templates. The concepts can be applied to any ICF.

TransCelerate Asset: Operational Examples of eConsent
7.2 Vulnerable Populations

Findings from numerous studies\textsuperscript{17} confirm that interactive, multimedia-assisted informed consent with vulnerable populations may:

- Improve participant understanding
- Reduce some health literacy-related barriers
- Increase participant and researcher satisfaction with the consent process
- Result in longer recall times of comprehension-related items
- Simplify the process of declining to continue, both at the beginning and during the study

Vulnerable populations may have additional considerations impacting their ability to make a voluntary and informed decision, and thus require extra care and special considerations for their protection in clinical research.

Vulnerable populations considered here include:

- Pediatric
- Economically and educationally disadvantaged
- Physically and intellectually challenged individuals
- Pregnant women
- Vision or hearing impaired

Other vulnerable populations (e.g., prisoners, fetuses, active military) are not specifically addressed here, as benefits with eConsent are unknown or unlikely. Other vulnerable populations may have other considerations that the sponsor should evaluate.

eConsent may help improve understanding compared to paper consent for some vulnerable populations, e.g., by:

- Making it easier to ask questions
- Embedding links to pictures/videos of procedures, medical equipment, or explanations of key terms

A set of simple questions may be added at the end of the eConsent to assess study participant comprehension, which may provide more autonomy to these populations.

The sponsor should assess how eConsent and use of multimedia components may enhance the consent experience for the targeted vulnerable populations.

7.2.1 Better Practices

Some suggested better practices for using eConsent with vulnerable populations include:

- Weigh benefits of multimedia components against population characteristics, including age, education, health literacy, the health problem, cultural values, and health beliefs.
- Ensure people involved (e.g., site staff) understand how to use metadata to address possible challenges with vulnerable populations, such as how to encourage participant questions.
7.2.2 Considerations for Specific Vulnerable Populations

7.2.2.1 Pediatric Populations

Pediatric populations (birth to the age of majority) are vulnerable for multiple reasons, including parental pressure, low literacy, brain development, and incomplete physical development. Pediatric populations may also be more susceptible than adults to advertising, and multimedia tools may mislead a child into thinking the consent process is a game. Pediatric participants must be made aware as much as possible of what it means to be in a clinical study and what to expect. Their assent to the procedures and risks of participation should be obtained in the most appropriate manner for their cognitive ability. Specific benefits to the use of eConsent in pediatric populations include:

- The legally acceptable representative (LAR) consents to the study on the child’s behalf, but the child’s assent must be independent of the LAR’s desire for the child to participate. Pediatric participants who strongly resist participation should be respected by clinical trial staff, overriding the LAR’s wishes when necessary. eConsent enables easy tracking of signatures and linking the assent to the consent.
- Many children are very accustomed to multimedia content, for both entertainment and educational purposes. Multimedia content may include interactive and game-like content, including game-style rewards such as points, progress bars, and comparative statistics to encourage interaction and continued participation. These features, when added to eConsent, may help children understand and retain information more easily and completely. eConsent can be a useful tool to help pediatric participants understand clinical study information and provide their full assent to participation.

Considerations when using eConsent with pediatric populations:

- The attractiveness of the content might lead to concerns of overselling the study’s possible benefits, making the study appear to be a game, or over-rewarding the child’s participation through game-like or storytelling elements.
- Research on eLearning vs traditional learning is mixed; there is some suggestion that paper-based materials may be superior to electronic materials for complex information. However, some research shows the opposite, and suggests that eLearning is superior for those with conditions like dyslexia.
- Coercion is a key concern with pediatric participants; content cannot appear to suggest that the pediatric participant will make others happy (parents, other patients, the study staff) through participation, or will be punished or disliked for non-participation.

Better practices:

Include:

- Simple, direct sentence structure using age-appropriate language
- Video content that clarifies key concepts visually
- Interactive or game-like elements that encourage a child to learn the information and reward correct answers during the consent process

Do not include:

- Video content that uses coercive language or images when explaining concepts (e.g., must, should, punished), oversells possible benefits, or makes the study appear to be a game
- Interactive or game-like elements that imply rewards for study participation
7.2.2.2 Language Access and Cultural Competency

Cultural differences and language barriers may also make a study population vulnerable. Considering the study participant point of view is important to delivering equitable care throughout the research study experience. Both paper consent and eConsent should be health literate, culturally competent, and in an appropriate language for study participants and their families. The sponsor must obtain necessary translations for either paper consent or eConsent.

- **Cultural competence**: the ability of an organization and/or individual within the health care delivery system to provide effective, equitable, understandable, and respectful quality care and services that are responsive to diverse cultural health beliefs and practices, preferred languages, health literacy, and other communication needs of the patient.

Professional interpreters and certified translators become key in implementing eConsent in global studies, especially because multiple eConsent components may need translation. Poor translations may cause the failure of the study participant to act as instructed, disparities in prescription and administration of the study treatment, and reduced likelihood for appropriate follow-up and treatment of the underlying conditions and/or of side effects of the study, plus physical or emotional damage, mistakes in conduct of the study, and wasted time and money.

7.2.2.2.1 Translation and Localization

Both translation and localization may be needed to ensure eConsent tools are appropriate for the intended study population.

Translation involves the written word and typically takes place long after the text is created, which gives the translator time to access resources (dictionaries, glossaries, subject matter experts, etc.) to produce an accurate and effective end document.

Localization involves cultural adaptation and addresses the norms and style that are familiar to the local population. Localization can account for changes in information (e.g., time/date format) and eConsent design and functionality, thereby helping to provide quality assurance and control. This is particularly true for studies in technologically emerging countries and countries culturally distant from the country where the study was planned.

Better practices:

- Use localization and globalization expert service providers that include content, cultural, and technical issues in addition to language translation, e.g., consider skin tones, clothing, and audio voiceover accent. Global videos and graphics may not always be appropriate.
- Multimedia components such as graphics may assist in non-verbal comprehension.
- Consider linking to live, certified interpreters within the eConsent system such as via video chat or direct link.

Considerations:

- eConsent may have increased translation needs (e.g., voiceovers or glossary terms).
- Particularly where the participant is not fluent or comfortable in the dominant language, eConsent does not replace the involvement of the study site staff and translator in the consent process.
- Study sites may have a study participant who speaks a language they were not expecting and are not prepared for, and the language may not be immediately available in eConsent.
  - Consider using paper ICFs for initial consent instead of delaying the participant’s entry to await translation of all eConsent components.
In the US (or other locations where allowed), consider using generic pre-translated paper short forms that could made available within eConsent. Multimedia components would need to be translated to be used.

### 7.2.2.2 Language Access vs Language Assistance

Vulnerable populations may need language assistance in addition to access. Language access is achieved when non-native speaking participants can communicate effectively with study staff and participate in consent. Language assistance includes all oral and written language services needed to assist non-native speaking participants in communicating effectively with study staff and gaining meaningful access and equal opportunity to participate in research studies. eConsent may be advantageous for vulnerable populations in facilitating language assistance.

### 7.2.2.3 Low-literacy Population in Typical Research

Several eConsent components might be considered for low-literacy populations, such as video, audio, glossaries, and dictionaries, which may create a more user-centered environment where the study participant has more control. The ability to flag content and ask questions may also increase control and reduce anxiety. Some researchers have also found that these approaches offer more consistency among individuals in the study.\(^{20}\)

- **Advantages:**
  - Audit trail
  - Consistency
  - Lowered anxiety
  - Perceived control
  - Reduced staff time and costs
  - User-centered

- **Considerations:**
  - Age dependent
  - Dependent on education level
  - Computer experience needed
  - Mixed findings

Multimedia components do not always improve effective communication, and adding components could increase the time needed to consent, which could be problematic for site personnel.

Research on low health literacy has not yet found solid evidence that alternative formats such as video and audio have been effective, as they depend on education level, age, and computer experience.\(^{21}\)

In the absence of consistent findings, the consent format could depend on the level of risk \(^{22}\). For example, observational studies may be better suited to using only multimedia components or other less well studied methods.

Consider:

- For those unable to write due to illiteracy, physical disability, or other reasons, evaluate if other documentation of consent options such as video or thumbprint methods may be used.
- Evaluate if the population is comfortable using electronic devices (understand how to move between sections, etc.).
• Multimedia components do benefit certain audiences. Consider and test alternative approaches for eConsent to increase chances of comprehension by the target population.
• Allow a shared electronic link to the eConsent so the study participant can review information about the study with friends and family, which may make some participants more comfortable.
• The use of a tiered consent may allow the participant to focus on the basic information without being overwhelmed.

Additional information can be found in the appendix on health literacy (Section 7.2).

7.2.2.4 Other Vulnerable Populations

Other vulnerable populations may include those with physical disabilities (such as blindness or hearing loss) or with cognitive impairments (such as Alzheimer’s, brain injury, or Trisomy 21). They may also include those with diminished decision-making capacity that may be temporary, permanent, or progressive due to cognitive impairment illness, injury, or stress. Some of these populations require the consent of a LAR on behalf of the study participant (who then may provide assent). These variances in vulnerable populations lead to difficulties in using a paper-based form to consent all participants. Paper consent may increase the vulnerability of these participants by not providing adequate resources.

eConsent could possibly reduce the vulnerability of these study participants. Multimedia components could increase autonomy, while alternative documentation options could decrease the likelihood of coercion.

Consider using certain multimedia components that may increase autonomy such as:

• Audio:
  o Listening to a recording of the consent instead of reading
  o Listening to and following along with a narrator reading the content
  o Advantageous for literate, blind populations
• eSignature (see Section 4.12):
  o Signature alternatives such as video recording or fingerprinting would improve the autonomy of certain study participants.
  o Some populations, such as those with multiple sclerosis or arthritis, may not be able to hold a stylus or use their own finger to sign their names.

eConsent would allow assents to be linked to the main consent signed by the LAR, improving tracking of consent completion. See Section 4 for more information on the multimedia components and Section 5.2.3 for operational considerations.

7.2.2.5 Pregnant Partners

There is a special risk during pregnancy of possible birth defects or other sequelae with an experimental intervention. Partners of potential participants may need to consent when there is a possible risk with pregnancy or lactation during the study. Partners must be informed of the possible risks for pregnancy, birth, and lactation, and of the need for follow-up on the outcome (requirements may vary based on local regulations). Partners may be involved at the beginning of the study or later if the partner becomes pregnant.

eConsent is particularly suited to obtaining remote consent when necessary. For example, if the consent of a partner cannot be obtained because the partner is not available, efforts must be made to notify the partner of the study participation and possible risks, through remote consent or other notification. If the
partner is concerned but the study participant still wishes to participate, the partner should be told how to protect herself during the study and any safety follow-up period. Both activities can be made easier through eConsent.

If the study staff becomes aware of a partner pregnancy, birth, or lactation during the study, an effort should be made to reach the partner and inform her of the possible risks, and to ensure appropriate medical and safety follow-up of the pregnancy, birth, or lactation, and of any affected children. In these cases, the partner consent can be electronically linked to the participant consent, aiding in the pursuit of follow-up safety information.

7.2.2.6 Legally Authorized Representatives

Some vulnerable population study participants may be unable to consent, such as pediatric participants (see Section 7.2). In these situations, a LAR, typically a parent, spouse, child, or legal guardian makes a decision for the study participant. The LAR has an important role, and information about the study must be easy for the LAR to understand. Multimedia components (described in Section 4) may increase the ease of obtaining and comprehending this information.

It may be possible to upload supporting documentation to the eConsent as evidence of the specific LAR relationship, e.g., adoption papers, birth certificate, or court decree. The added benefit is that the monitor can remotely monitor the documentation, if allowed within the specific country.

7.2.2.7 Study Partners (teachers, spouses, caregiver, etc.)

In some studies, additional people may be asked to provide insight and data about the research participant. Examples of study partners may include teachers providing educational and behavioral feedback on pediatric study participants in attention-deficit disorder studies, caregivers providing quality-of-life feedback on study participants in Alzheimer studies, or spouses providing feedback on physical interactions in erectile dysfunction studies. Study partner consent is key to ensuring that they have agreed to provide such important data.

A full, lengthy consent on paper may not be optimal, as study partners typically need only a reduced amount of information (e.g., no need to view original medical records, no need to provide drug or procedural risks). Study partners may be unable to attend the initial consent visit, or their presence may not be appropriate. Obtaining documentation of study partner consent may be challenging for sites, as they may have to rely on mail, email, fax, telephone, or the study participant.

Some suggested multimedia tools for use with study partners include:

- **Video:**
  - Because consent is simpler, a video can convey only the information needed for the study partner to decide to complete questionnaires, etc.

- **eSignature and remote consenting:**
  - Remote consent may be used with the study partner’s identity verified electronically, eliminating the need for a paper consent document to be sent home to the participant, have it signed and witnessed as required, returned by the participant, counter-signed by the site, and then a copy returned to the study partner. This reduces the burden on the study participant, the study partner, and the site, as well as the likelihood of issues with the consent documentation, as it is easily trackable and monitored.
See Section 4 for more information on multimedia components, Section 5.2.3 for operational considerations, and Section 7.2 for considerations related to vulnerable populations.

### 7.3 Health Literacy Considerations, Best Practices, and Tools

Understanding of informed consent depends on health literacy, and plain language and clear communication are important to ensuring informed consent. Both the complex nature of medical research and the limited literacy skills of many potential participants can make obtaining consent challenging, and study participants may not understand the information presented during the informed consent procedure.

Researchers have a responsibility to ensure that potential participants understand the information provided. Informed consent forms should be designed to inform potential study participants about the research, use, and sharing of their health information in terms that they can understand. eConsent and its multimedia components provides a unique opportunity to educate potential study participants in a health-literate way.

#### 7.3.1 Why Does Health Literacy Matter?

Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. Only a small percentage of adults globally have proficient health literacy skills (Figure 6, Figure 7). Sponsors should keep in mind that individuals with limited skills are less likely to understand terminology, risks, and benefits as described in traditional informed consent documents.

**Figure 6** Overall Health Literacy by Country and for the Total Sample

![Health Literacy Chart](chart.png)

Incorporating evidence-based health literacy best practices into eConsent can make the content readable, understandable, and actionable. The principles described here are not all inclusive, none are required, nor is any one recommended over the other.

Critical principles for presenting information effectively include using simple, short sentences, avoiding medical jargon, and presenting complex concepts in an understandable way.\textsuperscript{28}

**Figure 7**  US Health Literacy Map

Source: US Department of Education, Institute of Education Sciences, 2003 National Assessment of Adult Literacy

### 7.3.2 Health-literate Communication Principles

Incorporating evidence-based health literacy best practices into eConsent can make the content readable, understandable, and actionable. The principles described here are not all inclusive, none are required, nor is any one recommended over the other.

Critical principles for presenting information effectively include using simple, short sentences, avoiding medical jargon, and presenting complex concepts in an understandable way.\textsuperscript{28}
• Be clear and concise.
• Keep the objective of the consent in mind.
• Chunk content: break apart information into small sections using subheadings to provide context
• Clear hierarchy of header, subheading and body copy: use distinct type sizes and styles to distinguish headers, subheadings, and body copy
• Callouts: use to segment content, isolate and highlight numbers, or draw attention to key information. Keep these short and try to use an icon or infographic to support the information.
• Use large font sizes and different fonts for headings and body text
• Emphasize short text passages (e.g., headings, subheadings, important statistics) using bold rather than italic font, which is harder to read
• Avoid all capital letters; use title or sentence case for headings and subheadings
• Adequate contrast for all type, graphics, and icons: use dark type on a white background and white type on a dark background
• Use ample white space: keep layouts clean and simple
• Supporting images: photos, graphics, icons, and infographics to support the content

7.3.3 eConsent Content Considerations
The goal of the content is to help participants understand what to do with the information provided and find the confidence to make informed decisions about their clinical research options.29

7.3.3.1 Active Voice and You-Language
• Use active voice to clearly outline who is doing what.
• Use second person (you/your) when possible to make the content personal and friendly, depending on local cultural considerations. For example, in France, it is not polite to use the second person unless a friendship exists.

7.3.3.2 Length
• Keep content focused, relevant, meaningful and succinct, including need-to-know but not nice-to-know information.
• If content within a section becomes long, consider breaking it into smaller components.
• If the content is used online, consider including a hyperlink to a pop-up glossary for complex terms.

7.3.3.3 Headings
• Create headings that are relevant, meaningful, and engaging to the consumer audience.
• Keep headings short and free of industry terminology (such as disclosure).

7.3.3.4 Literacy Demand
• Ensure people with various degrees of health literacy can read and understand the content.
• Consider using a readability calculator but be sure to understand its limitations.
• Avoid using jargon, abstract words, technical terms, statistics, and abbreviations and acronyms that are not properly explained.
7.3.3.5 Use of Numbers

- Numbers should not require manipulation (e.g., addition) for understanding.
- Consider presenting numbers in graphs or images.
- Use whole numbers when possible (e.g., 1 in 1000 instead of 0.001).
- Express risks as frequencies (e.g., 1 out of 10 instead of 10%).

7.3.3.6 Cultural Sensitivity

- Recognize and address the unique cultures, languages, and health literacy needs of diverse target populations, which may affect the choice of eConsent components.

http://www.transceleratebiopharmainc.com/assets/clinical-trial-diversification-4/

7.3.3.7 Health Literacy Resources

Some available health literacy resources are provided below, including general guidance, tools, and readability assessments. Use of these guidelines is not required and none is recommended over others.

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<thead>
<tr>
<th>Site Title</th>
<th>Site Description and Link</th>
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<tr>
<td><strong>General Health Literacy Guidance</strong></td>
<td></td>
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<tr>
<td>WHO Health Literacy: The Solid Facts</td>
<td>Identifies practical and effective ways public health and other advocates can strengthen health literacy in educational settings, workplaces, marketplaces, health systems, new and traditional media, and political arenas <a href="http://www.euro.who.int/__data/assets/pdf_file/0008/190655/e96854.pdf">http://www.euro.who.int/__data/assets/pdf_file/0008/190655/e96854.pdf</a></td>
</tr>
<tr>
<td>Health Literacy Europe</td>
<td>Network for researchers and professionals involved in promoting health literacy in research, policy, and practice <a href="http://www.healthliteracyeurope.net/">http://www.healthliteracyeurope.net/</a></td>
</tr>
<tr>
<td>CDC Health Literacy Website</td>
<td>Informs about the CDC’s work to improve health literacy and highlights the work of others implementing the goals and strategies of the National Action Plan to Improve Health Literacy <a href="http://www.cdc.gov/healthliteracy/">www.cdc.gov/healthliteracy/</a></td>
</tr>
<tr>
<td>Health Literacy Principles Checklist</td>
<td>Provides guidance for making information understandable, useful, and navigable <a href="http://www.centerforhealthguidance.org/health-literacy-principles-checklist.pdf">www.centerforhealthguidance.org/health-literacy-principles-checklist.pdf</a></td>
</tr>
<tr>
<td>Health Literacy Lab</td>
<td>Easy and entertaining lessons and tips for clear and effective communication with a lay audience <a href="http://www.healthliteracylab.com">www.healthliteracylab.com</a></td>
</tr>
<tr>
<td><strong>Health Literacy Tools</strong></td>
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<tr>
<td>The Noun Project</td>
<td>Provides icons to use in visual communications <a href="http://thenounproject.com/about/">http://thenounproject.com/about/</a></td>
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<tr>
<td>The Plain Language Thesaurus</td>
<td>Suggests plain language equivalents to medical terms, phrases, and references</td>
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<tr>
<td>Visualizing Health</td>
<td>Provides examples of tested graphic displays of health information <a href="http://www.vizhealth.org">www.vizhealth.org</a></td>
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<tr>
<td>PRISM Readability Toolkit</td>
<td>Provides plain language training and tools <a href="https://www.grouphealthresearch.org/about-us/capabilities/research-communications/prism/">https://www.grouphealthresearch.org/about-us/capabilities/research-communications/prism/</a></td>
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<tr>
<td>Flaticon</td>
<td>Provides free icons for visual communications <a href="http://flaticon.com">http://flaticon.com</a></td>
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<td>Universal Patient Language (UPL)</td>
<td>Provides a set of resource that helps community with patients about complex topics. <a href="https://www.upl.org/">https://www.upl.org/</a></td>
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<tr>
<td><strong>Readability Assessments</strong></td>
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<tr>
<td>Readability Calculations Software</td>
<td>Provides software used to calculate readability scores based on widely used classic readability formulas <a href="http://www.micropowerandlight.com/rd.html">www.micropowerandlight.com/rd.html</a></td>
</tr>
</tbody>
</table>
8 Background Resources


Institute of Medicine and Healthy People 2020


Lorenzen B, Melby CE, Earles B. Using principles of health literacy to enhance the informed consent process.


http://www.wma.net/en/20activities/10ethics/10helsinki/
Revision History

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<th>Version Date</th>
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2 http://www.wma.net/en/30publications/10policies/fb3/
5 https://www.ncbi.nlm.nih.gov/pubmed/23879694
6 http://www.sciencedirect.com/science/article/pii/S1551714416300854

FINAL eConsent Implementation Guidance

V1.0

12 https://www.ctti-clinicaltrials.org/projects/informed-consent

13 Freifeld, Lorri. Secrets to Engaging a Audience.


16 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L._2014.257.01.0073.01.ENG


19 http://www.wired.com/2014/05/reading-on-screen-versus-paper/


21 Aldoory et al. 2014

22 Aldoory et al. 2014

23 http://jaoa.org/article.aspx?articleid=2094057


26 Aldoory L. Best practices and new models of health literacy for informed consent: review of the impact of informed consent regulations on health literate communications. commissioned paper for the Institute of Medicine; 2014.

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