



# U.S. FDA Title 21 CFR Part 11 Guidance Manual



THE UNIVERSITY OF  
CHICAGO MEDICINE &  
BIOLOGICAL SCIENCES



CENTER FOR  
**RESEARCH**  
INFORMATICS

## Approvals

Prepared By:			
Function	Printed Name	Signature	Date
Author	Julissa Acevedo		

Approvers:			
Function	Printed Name	Signature	Date
IT Technical Operations	Brian Furner		

## Document History

Document Revision	Revision Date	Revision Author	Summary of Changes
cri_redcap_21cfrpart11_guidance_manual_122016_001_d	12/20/16	Julissa Acevedo	Initial Document
cri_redcap_21cfrpart11_guidance_manual_122016_002_d	11/7/17	Julissa Acevedo	Revised OCR Address (last page)

## TABLE OF CONTENTS

21 CFR Part 11 Overview.....	4
When do I need to be 21 CFR Part 11 Complaint? .....	4
What are clinical trials?.....	4
What are the different types of clinical trials? .....	4
What are the phases of clinical trials? .....	5
21 CFR Part 11 Electronic Signature .....	5
What are the electronic signature requirements? .....	6
How do I enable REDCap’s record locking and e-signature feature? .....	6
How it works .....	6
User Rights Steps .....	6
Record Locking Customization Steps .....	7
Lock Record Custom Text Example.....	7
How do I e-sign, lock, and unlock records? .....	8
How do I manage e-signed and locked records? .....	8
Where can I obtain further help? .....	8

## 21 CFR Part 11 Overview

- Title 21 Code of Federal Regulations governs Food and Drugs.
- Part 11 is the Food and Drug Administration (FDA) guidelines on electronic records and electronic signatures in the United States.
- Part 11 requires procedural controls (i.e. notification, training, SOPs, administration) and administrative controls in addition to the technical controls.
- REDCap is a compliant application containing the required technical requirements of a compliant system, namely e-signatures and record locking.

### When do I need to be 21 CFR Part 11 Compliant?

According to FDA's 2007 Guidance for Industry Computerized Systems Used in Clinical Investigations, if you are conducting a clinical trial and using computerized systems that contain any data that are relied on by an applicant in support of a marketing application, including computerized laboratory information management systems that capture analytical results of tests conducted during a clinical trial.

- Applies to computerized systems that create source documents (electronic records) that satisfy the requirements in 21 CFR 312.62(b) and 812.140(b), such as case histories.
- Applies to recorded source data transmitted from automated instruments directly to a computerized system (e.g., data from a chemistry autoanalyser or a Holter monitor to a laboratory information system).
- Applies to when source documentation is created in hardcopy and later entered into a computerized system, recorded by direct entry into a computerized system, or automatically recorded by a computerized system (e.g., an ECG reading).
- Does not apply paper records submitted electronically scanned 2 -not to (scanned, faxed copies).

### What are clinical trials?

Biomedical or health-related research studies in human beings that follow a pre-defined protocol.

Register trials at: [www.ClinicalTrials.Gov](http://www.ClinicalTrials.Gov)

### What are the different types of clinical trials?

- Treatment trials test experimental treatments, new combinations of drugs, or new approaches to surgery or radiation therapy.
- Prevention trials look for better ways to prevent disease in people who have never had the disease or to prevent a disease from returning. These approaches may include medicines, vaccines, vitamins, minerals, or lifestyle changes.
- Diagnostic trials are conducted to find better tests or procedures for diagnosing a particular disease or condition.
- Screening trials test the best way to detect certain diseases or health conditions.
- Quality of Life trials (or Supportive Care trials) explore ways to improve comfort and the quality of life for individuals with a chronic illness.

## What are the phases of clinical trials?

The trials at each phase have a different purpose and help scientists answer different questions:

- In Phase I trials, researchers test an experimental drug or treatment in a small group of people (20-80) for the first time to evaluate its safety, determine a safe dosage range, and identify side effects.
- In Phase II trials, the experimental study drug or treatment is given to a larger group of people (100-300) to see if it is effective and to further evaluate its safety.
- In Phase III trials, the experimental study drug or treatment is given to large groups of people (1,000-3,000) to confirm its effectiveness, monitor side effects, compare it to commonly used treatments, and collect information that will allow the experimental drug or treatment to be used safely.
- In Phase IV trials, post marketing studies delineate additional information including the drug's risks, benefits, and optimal use.

## 21 CFR Part 11 Electronic Signature

Part 11, as it is commonly called, defines the criteria under which electronic records and electronic signatures are considered trustworthy, reliable, and equivalent to paper records. Below are the specific criteria, and the associated REDCap feature that meets said criteria.

Electronic Signature Part 11.3: A computer data compilation of any symbol or series of symbols executed, adopted, or authorized by an individual to be the legally binding equivalent of the individual's handwritten signature.

REDCap: Defined by e-signature action

Electronic Record Part 11.3: Any combination of text, graphics, data, audio, pictorial, or other information representation in digital form that is created, modified, maintained, archived, retrieved, or distributed by a computer system.

REDCap: E-Record is defined as the form metadata + data entered + e-signature

Signature/Record Linking Part 11.70: Electronic signatures and handwritten signatures executed to electronic records shall be linked to their respective electronic records to ensure that the signatures cannot be excised, copied, or otherwise transferred to falsify an electronic record by ordinary means.

REDCap: Defined by record locking process

Signature Manifestations Part 11.50: Signed e-records shall contain information associated with the signing that clearly indicates:

1. The printed name of the signer.
2. The date and time when the signature was executed;
3. The meaning (such as review, approval, responsibility, or authorship) associated with the signature.

REDCap: Defined by e-signature and locking management page

## What are the electronic signature requirements?

If your project is using e-signatures for 21 CFR Part 11 projects, the study personnel must adhere to the following requirements:

- Before an electronic signature can be established, the study site will verify the identity of the individual.
- Each electronic signature will be unique to one individual and will not be reused by, or reassigned to, anyone else.
- Persons using electronic signatures shall, prior to or at the time of use, certify to the agency that the electronic signatures in their system are intended to be the legally binding equivalent of traditional handwritten signatures.
- Persons using electronic signatures shall, upon agency request, provide additional certification or testimony that a specific electronic signature is the legally binding equivalent of the signer's handwritten signature.

## How do I enable REDCap's e-signature and record locking module?

REDCap e-signatures are an extension of the record locking/unlocking functionality. Once a data collection instrument has been locked for a given record in the project, a person with e-signature privileges may then apply an e-signature to that form. The e-signature option appears as a check box that says E-signature, which appears just above the Save buttons and immediately below the Locked check box.


*How it works:* Although locking a record prevents its data from being modified, the e-signature goes a step farther, and serves as the equivalent of a handwritten signature. If a record has been e-signed, then it denotes that its data has been both locked (to prevent further changes) and authorized (i.e. by a user with e-signature privileges). By default, any user with Lock/Unlock privileges will be able to see the Lock option at the bottom of the data collection instrument, although other users will not see this option. Once a form is locked for a record, the form will display (for all users) the time it was locked and the user who locked it, and all fields on the form will be disabled/read-only until someone with Lock/Unlock privileges unlocks the form. It is also important to note that anyone with locking privileges (even if lacking e-signature authority) will negate the e-signature on a form when unlocking the record, after which data changes can be made to the record. The e-signature can be re-applied after such data changes. For any given record, an e-signature can be saved and negated on a form an unlimited number of times. When saving an e-signature, a user will be asked to enter their username and password for verification. If the username/password verification fails three times in a row, the user will be automatically logged out of REDCap.

*To enable the module, follow the User Rights steps and Record Locking Customization steps below.*


### User Rights Steps:

1. Under the project's Applications left-hand menu, click on 'User Rights'.
2. Click on your username and click 'Edit User Privileges'.
3. Scroll to the section 'Settings pertaining to record locking and E-signatures:'.
4. Click the box for 'Record Locking Customization' and the circle for 'Locking / Unlocking with E-signature authority'.
5. Click 'Save Changes'.


Settings pertaining to record locking and E-signatures:

 Record Locking ☒

Customization

 Lock/Unlock Records ☐ Disabled

Users with locking privileges also have access to the E-signature and Locking Mgmt page on the left-hand Applications menu.

 [Watch video about locking](#)

☐ Locking / Unlocking



☒ Locking / Unlocking with E-signature authority

[What is an E-signature?](#)

Allow locking of all forms at once for a given record? ☐

### Record Locking Customization Steps:

1. Navigate to the project's Applications left-hand menu and click on 'Record Locking Customization'.
2. For all of the project's instruments (forms), click the box 'Display the Lock option for this instrument?'.
3. Enter text to be displayed when the record is locked in the box 'Lock Record Custom Text'.
4. Click 'Save'.

Display the Lock option for this instrument?	Data Collection Instrument	Also display E-signature option on instrument?	Lock Record Custom Text	Edit / Remove Custom Text
<input checked="" type="checkbox"/>	Demographics	<input checked="" type="checkbox"/>	<p>My dated signature confirms that I have personally examined all of the available data recorded for this electronic Case Report Form for completeness and accuracy.</p> <p>All information entered by me and/or by my colleagues is correct to the best of my knowledge.</p> <p>Pursuant to Section 11.100 of Title 21 of the Code of Federal Regulations, this is to certify that I, Principal Investigator of the "TrialName" under the auspices of the FDA, intend that this electronic signature is to be the legally binding equivalent of my handwritten signature.</p> <p>To this I do attest by supplying my username and password and clicking the button marked Save.</p>	 
<input checked="" type="checkbox"/>	Baseline Data	<input checked="" type="checkbox"/>	<div></div> <div>Save</div>	
<input checked="" type="checkbox"/>	Lab Data	<input checked="" type="checkbox"/>	<div></div> <div>Save</div>	

### Lock Record Custom Text Example:

*"My dated signature confirms that I have personally examined all of the available data recorded for this electronic Case Report Form for completeness and accuracy.*

*All information entered by me and/or by my colleagues is correct to the best of my knowledge.*


*Pursuant to Section 11.100 of Title 21 of the Code of Federal Regulations, this is to certify that I, Principal Investigator of the "TrialName" under the auspices of the FDA, intend that this electronic signature is to be the legally binding equivalent of my handwritten signature.*


*To this I do attest by supplying my username and password and clicking the button marked Save."*

## How do I e-sign, lock, and unlock records?



### To e-sign and lock a record:

1. Go to the Form Status section of the form.
2. Set record status (Incomplete, Unverified, or Complete).
3. Check the box 'Lock'.
4. Check the box 'E-Signature'.
5. Click 'Save Record'.
6. Enter username and password.
7. Click 'Save'.

 E-signed by t.cri.redcap1 (John Doe) on 12/19/2016 5:38pm

 Locked by t.cri.redcap1 (John Doe) on 12/19/2016 5:38pm  
A user has locked record "1" for the form "Demographics". If you have locking/unlocking privileges, you may unlock this record at the bottom of the page.

**Form Status**



**Complete?**  Complete 

My dated signature confirms that I have personally examined all of the available data recorded for this electronic Case Report Form for completeness and accuracy.


All information entered by me and/or by my colleagues is correct to the best of my knowledge.

Pursuant to Section 11.100 of Title 21 of the Code of Federal Regulations, this is to certify that I, Principal Investigator of the "TrialName" under the auspices of the FDA, intend that this electronic signature is to be the legally binding equivalent of my handwritten signature.

To this I do attest by supplying my username and password and clicking the button marked Save.

☒  Lock 

Locked by t.cri.redcap1 (John Doe) on 12/19/2016 5:38pm

☒  E-signature [\(What is this?\)](#)

E-signed by t.cri.redcap1 (John Doe) on 12/19/2016 5:38pm

### To unlock a record:

1. Click 'Unlock form'. **Note:** Previous e-signature is negated, and form will need to be resigned.
2. Click 'Unlock' to 'Unlock Form' confirmation message
3. Enter new data or make changes to record.
4. Click 'Save Record'.
5. Check the box 'Lock'.
5. Check the box 'E-Signature'.
6. Click 'Save Record'.
7. Enter username and password.
8. Click 'Save'.


## How do I manage my e-signed and locked records?

The table below displays all existing records in the project with their status as locked or e-signed for all data collection instruments. Forms that do not allow locking (if designated on the Record Locking Customization page) will not be displayed below. If a form has been designated not to display the e-signature option but still allows locking, then it will display 'N/A' for that form's e-signature status. You may use the 'Actions' links to filter the table in various ways to show or hide rows based on criteria related to its locking or e-signature status. You may click the 'View Record' link to view that record on the data collection instrument, which will open in a new window. If you would like to export the table as a file in CSV format, simply click the link below.







### Steps:

Navigate to the project's Applications left-hand menu, and click on 'E-signature and Locking Mgmt'.

 [Download the table below as Microsoft Excel \(CSV\)](#)

Actions: [SHOW ALL ROWS](#) | [Show timestamp / user](#) | [Hide timestamp / user](#) | [Show locked](#) | [Show not locked](#) | [Show e-signed](#) | [Show not e-signed \(excludes N/A\)](#) | [Show both locked and e-signed](#) | [Show neither locked nor e-signed \(excludes N/A\)](#) | [Show locked but not e-signed \(excludes N/A\)](#)

All Records				
Record	Form Name	Locked?	E-signed?	
001-001	Demographics			<a href="#">View record</a>
001-001	Baseline Data		N/A	<a href="#">View record</a>
001-001	Month 1 Data		N/A	<a href="#">View record</a>
001-001	Month 2 Data		N/A	<a href="#">View record</a>
001-001	Month 3 Data		N/A	<a href="#">View record</a>
001-001	Completion Data		N/A	<a href="#">View record</a>
001-001	Rand 36 Item SF Health Survey Instrument (Version 1.0)		N/A	<a href="#">View record</a>
117-102	Demographics			<a href="#">View record</a>
117-102	Baseline Data		N/A	<a href="#">View record</a>
117-102	Month 1 Data		N/A	<a href="#">View record</a>
117-102	Month 2 Data		N/A	<a href="#">View record</a>
117-102	Month 3 Data		N/A	<a href="#">View record</a>
117-102	Completion Data		N/A	<a href="#">View record</a>
117-102	Rand 36 Item SF Health Survey Instrument (Version 1.0)		N/A	<a href="#">View record</a>
123453	Demographics			<a href="#">View record</a>

### Where can I obtain further help?

#### REDCap Support

Center for Research Informatics  
The University of Chicago  
Division of Biological Sciences  
The Shoreland, Suite 1D  
5454 S. Shore Drive  
Chicago, IL 60615  
Phone: 773-834-8475  
[redcap@rt.cri.uchicago.edu](mailto:redcap@rt.cri.uchicago.edu)

#### Office of Clinical Research

The University of Chicago  
Division of Biological Sciences  
5841 S. Maryland Ave.  
I-625, MC 7132  
Chicago, IL 60637  
Phone: 773-834-1238  
Fax: 773-834-0659