

Integrating Quality into Clinical Trials

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Disclaimer

The views and opinions presented here represent those of the speaker and should not be considered to represent advice or guidance on behalf of the U.S. Food and Drug Administration

Learning Objectives



- Understand the regulatory perspective on clinical trial quality
- Identify the federal regulations covering clinical research and clinical investigator obligations
- Discuss common issues seen during FDA inspections
- Discuss methods that can be used to ensure compliance with federal regulations and study protocol requirements



Clinical Trial Quality

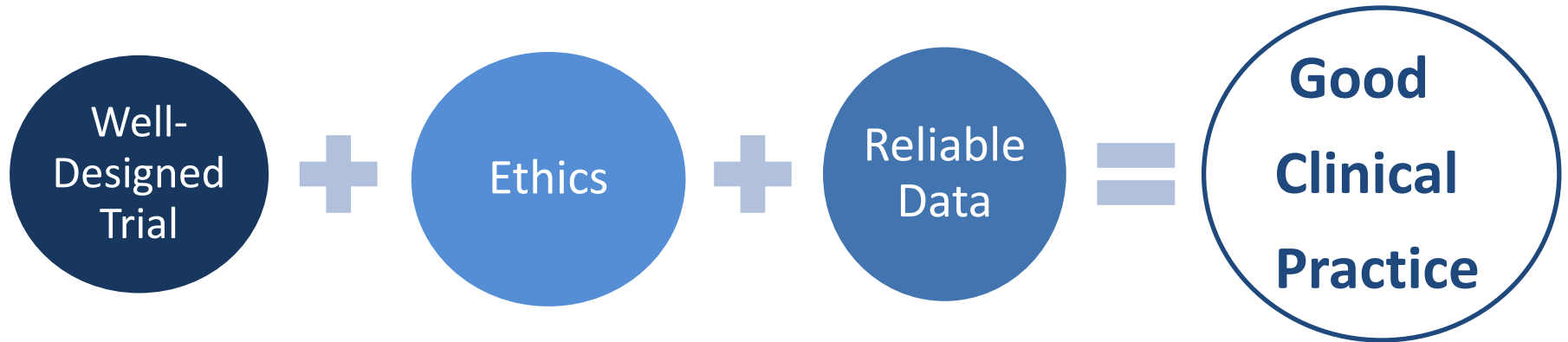
- Quality as fitness for purpose.
- The purpose of a clinical trial
 - to generate reliable information to answer the research questions and support decision-making
 - while protecting study participants.
- **The quality of the information** generated should therefore be sufficient **to support good decision-making**.

Source: ICH E8 (R1), General Principles for Clinical Trials

Good Clinical Practice, Simplified



FDA oversees clinical trials to ensure they are designed, conducted, analyzed and reported according to federal law and good clinical practice (GCP) regulations.



Trial Quality



Multiple parties have responsibility for trial quality and participant protection, including:

- Sponsors
- Contract Research Organizations (CROs)
- Institutional Review Boards
- **Clinical Investigators**

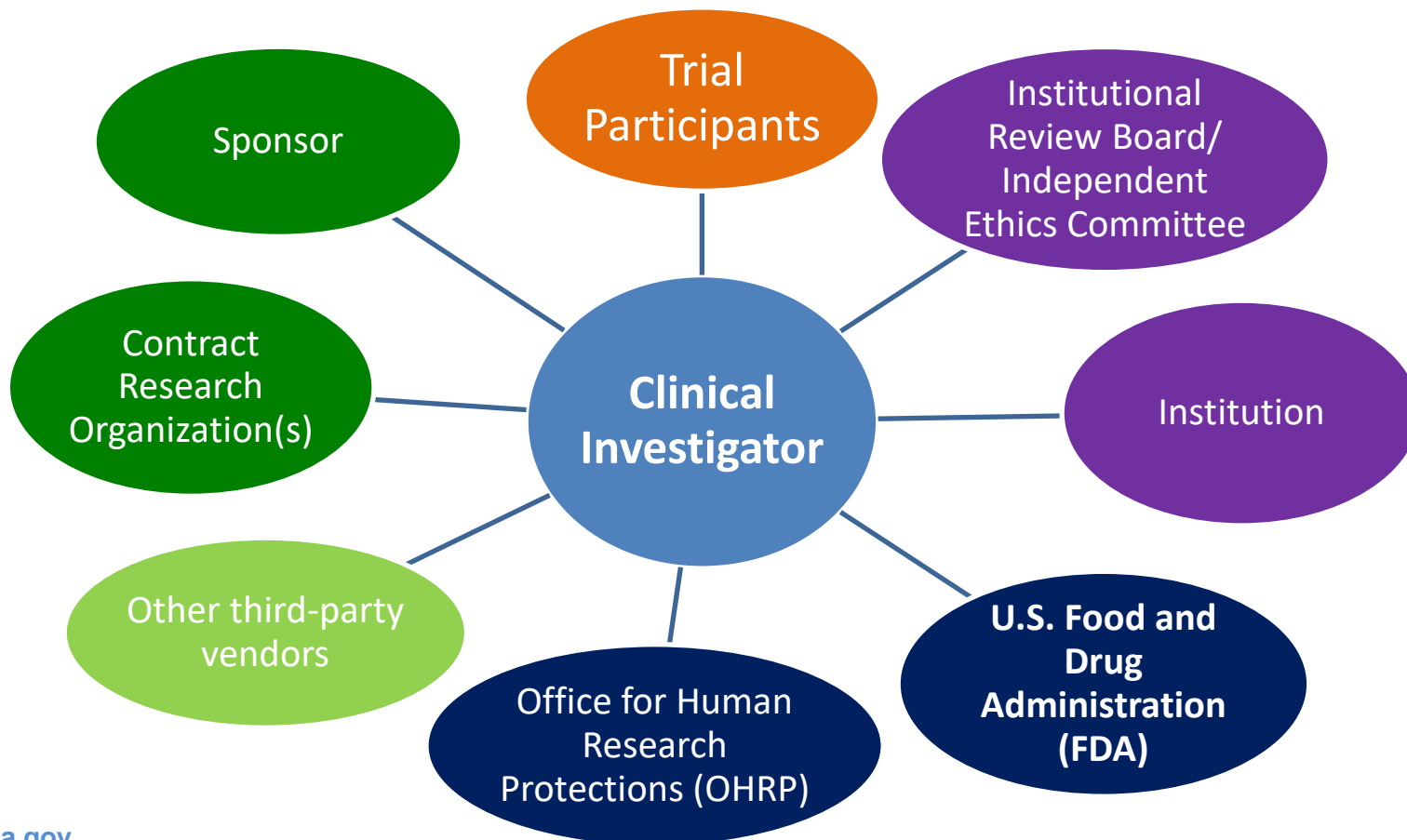
Who is an Investigator?

- An individual **who actually conducts a clinical investigation** (i.e., under whose immediate direction the drug is dispensed to a subject.)
- In the event an investigation is conducted by a team of individuals, the investigator is **the responsible leader** of the team.

21 CFR 312.3

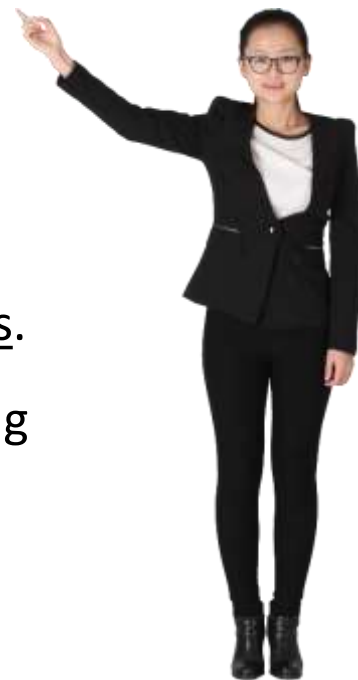


Clinical Trial Environment



Question

Can there be co-investigators?



- ***ANSWER: Yes and No.***
- Yes, for your needs but No for regulatory purposes.
- Each co-investigator is fully responsible for fulfilling all obligations of an investigator; each must sign a separate Form FDA- 1572.

Question

Does the investigator have to be a medical doctor?

ANSWER: No.

A physician can be a sub-investigator to perform those study functions requiring the appropriate level of medical expertise.

[21 CFR 312.53].



Who is a “Sponsor-Investigator”?

- An individual who **both initiates and conducts an investigation**, and under whose immediate direction the investigational drug is administered or dispensed. The term does not include any person other than an individual
- The requirements applicable to a sponsor-investigator include both those applicable to an investigator and those applicable to a sponsor.

[21 CFR 312.3]

Sponsor-Investigators: Know the ClinicalTrials.gov Requirements



42 CFR Part 11

- Clarifies and expands requirements for the submission of clinical trial registration and results information
- Issued September 21, 2016
- Effective Date: January 18, 2017
- Compliance Date: April 18, 2017

Responsible Party

- ❑ The **sponsor** of the clinical trial unless and until a principal investigator (PI) has been designated the responsible party
 - ❑ For trials conducted under an investigational new drug application (IND) or investigational device exemption (IDE), the IND or IDE holder = the sponsor
 - ❑ For trials not conducted under an IND or IDE, the single person or entity who initiates the trial and who has authority and control over the trial = sponsor

Applicable Clinical Trial [42 CFR 11.10]



Applicable drug clinical trial

1. Controlled clinical investigation
 - other than a phase I
 - drug subject to section 505 of the FD&C Act or section 351 of the PHS Act or
2. Clinical trial of combination product with a drug primary mechanism of action (PMOA) and meeting all other requirements in item 1. above

Note: The final rule considers all interventional clinical trials with one or more arms and with one or more pre-specified outcome measures to be controlled clinical trials for purposes of 42 CFR Part 11

Applicable device clinical trial

1. Prospective clinical study of health outcomes
 - comparing an intervention with a device product subject to section 510(k), 515, or 520(m) of the FD&C Act, against a control in human subjects
 - other than a small clinical trial to determine the feasibility of a device product, or a clinical trial to test prototype device products where the primary outcome measure relates to feasibility and not to health outcomes; or
2. Clinical trial of combination product with a device PMOA and meeting all other requirements in item 1. above; or
3. Pediatric postmarket surveillance of a device product required under section 522.

Responsible parties for ACTs subject to the final rule are required to submit clinical trial registration information [42 CFR 11.20]

Must register within 21 days of first human subject enrolled [42 CFR 11.24]

Submissions are subject to quality control [42 CFR 11.64(b)]

- Correct or address issues **within 15 days** of electronic notification

Responsible parties for ACTs subject to the final rule are required to submit clinical trial results information
[42 CFR 11.40]

Standard submission deadline for clinical trial results information is no later than 1 year after the ACT's primary completion date
[42 CFR 11.44(a)]

Submissions are subject to quality control [42 CFR 11.64(b)]

- Correct or address issues **within 25 days** of electronic notification



Challenge Question #1

Which of the following statements is NOT true?

- A. A phase 4, interventional trial in the U.S. studying an FDA-approved drug generally does not require submission of results to CT.gov
- B. Applicable clinical trials must be registered on CT.gov within 21 days of the first participant being enrolled .
- C. Not all clinical trials are applicable clinical trials subject to the CT.gov registration and results information submission requirements.
- D. Submission of both trial registration and results information to CT.gov is subject to quality control



FDA Requirements for Clinical Research and Clinical Investigators

Legal Framework



Federal Food, Drug, and Cosmetic Act (FD&C Act)

Section 505(i) is the statutory authority for FDA's oversight of clinical investigations to test safety and effectiveness

Code of Federal Regulations (CFR)

Regulations promulgated under Section 505(i) describing FDA's authority over the conduct of clinical investigations

Guidances

Advisory only, to assist regulated entities in complying with the regulations

FDA Expectations of Clinical Trial Investigators

Adherence to the Code of Federal Regulations (CFR)

- Knowledge of Clinical Investigator regulations
- Understanding of Clinical Investigator responsibilities

Electronic Code of Federal Regulations

e-CFR™



FDA Regulations Relating to Good Clinical Practice and Clinical Trials

These regulations are intended to ensure the integrity of clinical data on which product approvals are based and to help protect the rights, safety, and welfare of human subjects.

- 21 CFR 11 – Electronic Records & Signatures
- 21 CFR 50 – Informed Consent
- 21 CFR 54 – Financial Disclosure
- 21 CFR 56 – Institutional Review Boards
- 21 CFR 312 – Investigational New Drug Applications
- 21 CFR 314 – New Drug Applications
- 21 CFR 320 – Bioavailability & Bioequivalence
- 21 CFR 601 – Biologic License Applications
- 21 CFR 812 – Investigational Device Exemptions
- 21 CFR 814 – Premarket Approval of Medical Devices

Statement of Investigator, Form FDA 1572



- No investigator may participate in an investigation until he/she provides the sponsor with a completed, signed Statement of Investigator, Form FDA 1572 [21 CFR 312.53(c)]

DEPARTMENT OF HEALTH AND HUMAN SERVICES FOOD AND DRUG ADMINISTRATION		Form Approved: OMB No. 0910-0014 Expiration Date: March 31, 2025 See OMB Statement on Reverse.	
STATEMENT OF INVESTIGATOR <i>(TITLE 21, CODE OF FEDERAL REGULATIONS (CFR) PART 312)</i> (See instructions on reverse side.)		NOTE: No investigator may participate in an investigation until he/she provides the sponsor with a completed, signed Statement of Investigator, Form FDA 1572 (21 CFR 312.53(c)).	
1. NAME AND ADDRESS OF INVESTIGATOR			
Name of Clinical Investigator			
Address 1		Address 2	
<small>Please enter the name of the clinical investigator. Make the investigator is the sponsor (applicant/submitter) or other.</small>			
City	State/Province/Region	Country	ZIP or Postal Code
2. EDUCATION, TRAINING, AND EXPERIENCE THAT QUALIFY THE INVESTIGATOR AS AN EXPERT IN THE CLINICAL INVESTIGATION OF THE DRUG FOR THE USE UNDER INVESTIGATION. ONE OF THE FOLLOWING IS PROVIDED (Select one of the following.)			
<input type="checkbox"/> Curriculum Vitae		<input type="checkbox"/> Other Statement of Qualifications	
3. NAME AND ADDRESS OF ANY MEDICAL SCHOOL, HOSPITAL, OR OTHER RESEARCH FACILITY WHERE THE CLINICAL INVESTIGATION(S) WILL BE CONDUCTED			CONTINUATION PAGE for Item 3
Name of Medical School, Hospital, or Other Research Facility			
Address 1		Address 2	
City	State/Province/Region	Country	ZIP or Postal Code

Form FDA 1572 Commitments

9. COMMITMENTS

I agree to conduct the study(ies) in accordance with the relevant, current protocol(s) and will only make changes in a protocol after notifying the sponsor, except when necessary to protect the safety, rights, or welfare of subjects.

I agree to personally conduct or supervise the described investigation(s).

I agree to inform any patients, or any persons used as controls, that the drugs are being used for investigational purposes and I will ensure that the requirements relating to obtaining informed consent in 21 CFR Part 50 and institutional review board (IRB) review and approval in 21 CFR Part 56 are met.

I agree to report to the sponsor adverse experiences that occur in the course of the investigation(s) in accordance with 21 CFR 312.64. I have read and understand the information in the investigator's brochure, including the potential risks and side effects of the drug.

I agree to ensure that all associates, colleagues, and employees assisting in the conduct of the study(ies) are informed about their obligations in meeting the above commitments.

I agree to maintain adequate and accurate records in accordance with 21 CFR 312.62 and to make those records available for inspection in accordance with 21 CFR 312.68.

I will ensure that an IRB that complies with the requirements of 21 CFR Part 56 will be responsible for the initial and continuing review and approval of the clinical investigation. I also agree to promptly report to the IRB all changes in the research activity and all unanticipated problems involving risks to human subjects or others. Additionally, I will not make any changes in the research without IRB approval, except where necessary to eliminate apparent immediate hazards to human subjects.

I agree to comply with all other requirements regarding the obligations of clinical investigators and all other pertinent requirements in 21 CFR Part 312.

Who's in Charge at the Study Site?



- The clinical investigator is in charge and held accountable for study conduct, including for delegated activities
- FDA regulations permit sponsors to transfer their responsibilities to contract research organizations (CROs) but do not permit clinical investigators to transfer their general responsibilities to CROs or site management organizations, sub-investigators, or study staff

Investigator Responsibilities: Oversight



Guidance for Industry Investigator Responsibilities — Protecting the Rights, Safety, and Welfare of Study Subjects

Additional copies are available from:
Office of Training and Communication
Division of Drug Information, HFD-240
Center for Drug Evaluation and Research
Food and Drug Administration
(Tel) 301-827-4573
<http://www.fda.gov/cder/guidance/index.htm>
or
Office of Communication, Training and
Manufacturers Assistance, HFMA-40
Center for Biologics Evaluation and Research
Food and Drug Administration
<http://www.fda.gov/cber/guidelines.htm>
(Tel) 800-835-4709 or 301-827-1800
or
Office of Health and Industry Programs
Division of Small Manufacturers, International, and Consumer Assistance, HFZ-200
Center for Devices and Radiological Health
Food and Drug Administration
Tel: 1-800-638-2041
www.fda.gov/cdrh

U.S. Department of Health and Human Services
Food and Drug Administration
Center for Drug Evaluation and Research (CDER)
Center for Biologics Evaluation and Research (CBER)
Center for Devices and Radiological Health (CDRH)

FDA focuses on four major areas:

- (1) whether individuals who were delegated tasks were qualified to perform such tasks
- (2) whether study staff received adequate training on how to conduct the delegated tasks and were provided with an adequate understanding of the study,
- (3) whether there was adequate supervision and involvement in the ongoing conduct of the study, and
- (4) whether there was adequate supervision or oversight of any third parties involved in the conduct of a study to the extent such supervision or oversight was reasonably possible.

IND Safety Reporting: Investigator Key Responsibilities

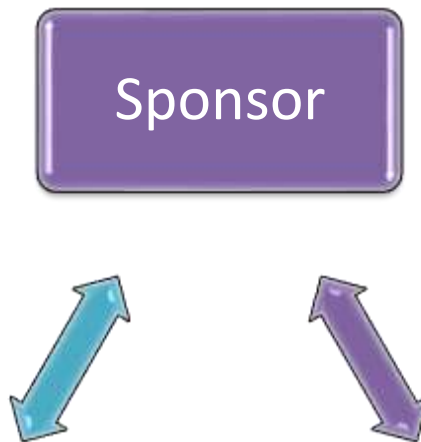


- Determine if adverse event (AE) is serious
- Report SAEs to the sponsor immediately (21 CFR 312.64)
- Record non-serious adverse events and report them to the sponsor as specified in the protocol
- Review IND safety reports and report any changes in activity and all unanticipated problems involving risk to human subjects or others to the IRB (21 CFR 312.66)
- FDA generally considers a serious and unexpected adverse event that meets the criteria for an IND safety report to be an unanticipated problem involving risk to human subjects or others that therefore must be reported to the IRB by the investigator

Continuous Process Safety Reporting



- Evaluates SAEs and submits IND safety reports
- Evaluate aggregate safety signals
- Modifies IB, Protocol, ICF where necessary



- Follow written procedures
- Review and approve amended protocol and/or ICF

- Review research and unanticipated problems

- Determine if AE is serious and report SAEs to sponsor
- Review IND safety reports
- Modify ICF, where necessary

- Report unanticipated problems to the IRB
- Obtain IRB approval of any amended IC and protocol amendment



Challenge Question #2

Who has responsibility for reporting unanticipated problem involving risk to human subjects or others to the IRB :

- A. Sponsor
- B. Investigator
- C. Contract Research Organization
- D. All of the above

Informed Consent Requirements

- 21 CFR 312.60: Investigator must obtain the informed consent of each human subject to whom the drug is administered, except as provided in [§§ 50.23](#) or [50.24 of this chapter](#).
- Required content as per [21 CFR part 50.25](#)
- Opportunity for study participants to ask questions and receive answers to those questions as per [21 CFR 50.20](#)

What is Informed Consent?



- **Not** just a signature or a document
- An **ongoing process** that must occur before any study-related procedures/tests are conducted

QUESTION



Does the investigator have to sign the informed consent?

ANSWER: **NO**

Signing/dating by person conducting the informed consent discussion is part of ICH E6, but not FDA regulations

Informed Consent Information Sheet

Guidance for IRBs, Clinical Investigators, and Sponsors

Informed Consent Information Sheet

Guidance for IRBs, Clinical Investigators, and Sponsors

DRAFT GUIDANCE

This guidance document is being distributed for comment purposes only.

Comments and suggestions regarding this draft document should be submitted within 60 days of publication in the *Federal Register* of the notice announcing the availability of the draft guidance. Submit comments to the Division of Dockets Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852. All comments should be identified with the docket number listed in the notice of availability that publishes in the *Federal Register*.

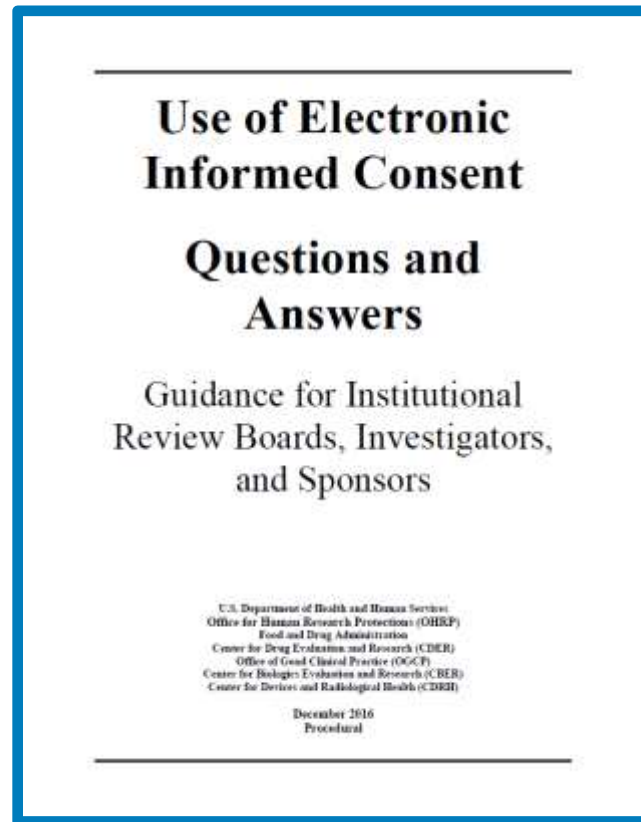
For questions regarding this draft document contact (OGCP) Marsha Melvin at marsha.melvin@fda.hhs.gov, (CDER) Kristen Miller at 301-796-0762, (CBER) Office of Communication, Outreach and Development at 800-835-4709 or 240-402-7800, or (CDRH) Sheila Brown at 301-796-6563 (CDRH).

U.S. Department of Health and Human Services
Food and Drug Administration
Office of Good Clinical Practice
Center for Drug Evaluation and Research
Center for Biologics Evaluation and Research
Center for Devices and Radiological Health

July 2014

Electronic Informed Consent

- [Final Guidance](#) published in December 2016
- Promotes and permits the use of various electronic media (e.g., text, graphics, audio, video, podcasts and interactive Web sites) to obtain and document informed consent



Proposed Changes to FDA's Human Subject Protection Regulations



- 21st Century Cures Act Section 3023 directs the Secretary of HHS to harmonize, to the extent practicable and consistent with other statutory provisions, the differences between HHS's human subject regulations and FDA's human subject regulations

45 CFR Part 46

Subpart A (“Common Rule”)

Subpart B - Pregnant Women, Human Fetuses and Neonates

Subpart C - Prisoners as Participants

Subpart D - Children as Participants

21 CFR Part 50 “Protection of Human Subjects”

Subpart A – General Provisions

Subpart B – Informed Consent of Human Subjects

Subpart C – Reserved

Subpart D – Additional Safeguards for Children in Clinical Investigations

21 CFR Part 56 “Institutional Review Board”

Related FDA Proposed Rules

- Series of three rules prioritizing revised Common Rule provisions
- 2018 proposed rule that, when finalized, would permit IRBs to waive or alter informed consent for certain minimal risk clinical investigations
- Two additional proposed rules published September 28, 2022:
 - Institutional Review Boards; Cooperative Research
 - Protection of Human Subjects and Institutional Review Boards

Key Proposed Revisions to 21 CFR Part 50

The proposed rule would, if finalized as proposed, revise the content, organization, and presentation of information included in the informed consent form and process to facilitate a prospective subject's decision about whether to participate in the research



Key Information

- Proposed 50.20 (d) and (e)



Additional Basic Element of Informed Consent

- Proposed 50.25(a)(9)



Additional Elements of Informed Consent

- Proposed 50.25(b)(7)-(9)

Extension of Comment Period

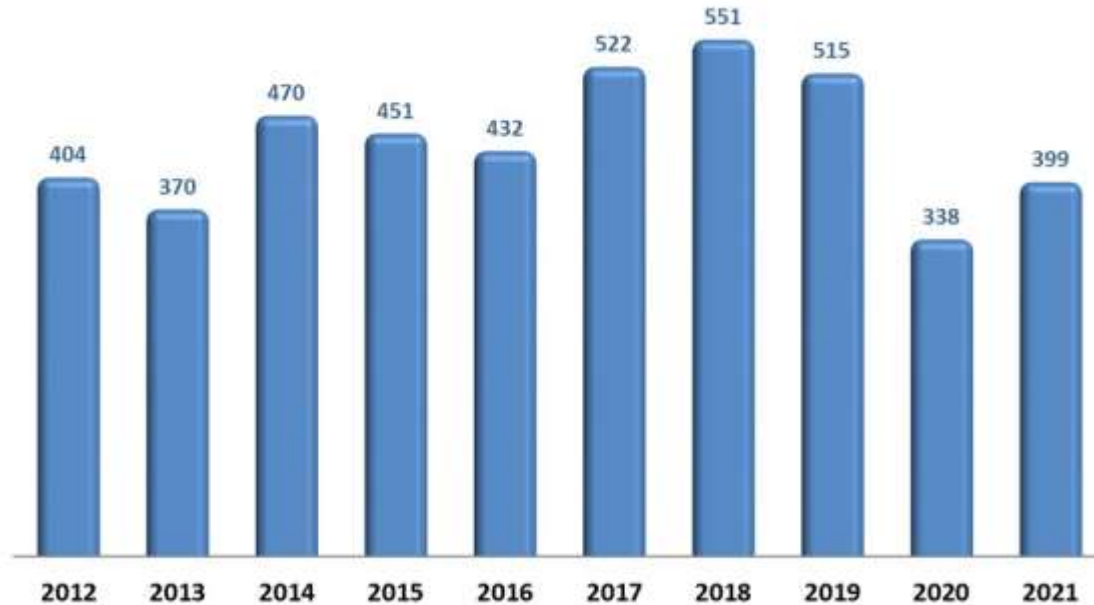
- Federal Register notice published 14 November 2022 extended the comment period on both proposed rules to December 28, 2022
 - Protection of Human Subjects and Institutional Review Boards (Docket No. FDA-2021-N-0286)
 - Institutional Review Boards; Cooperative Research (Docket No. FDA-2019-N-2175).



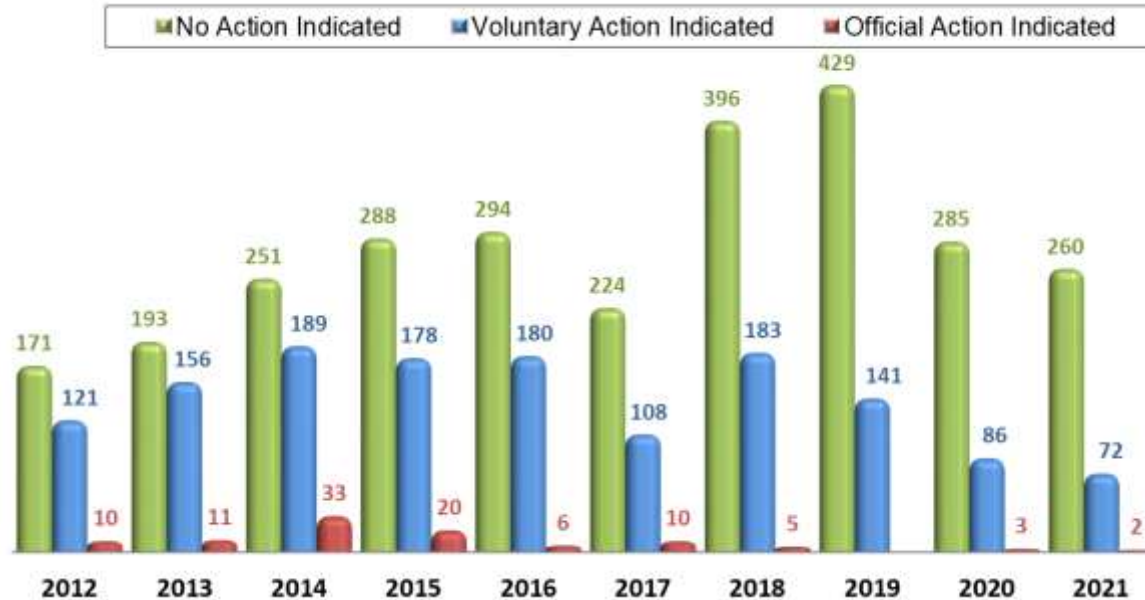
Insights from FDA Inspections

Clinical Investigator Inspection Activity*

(CDER, FY 2012 – FY 2021)



Clinical Investigator Inspection Activity Final Classification* Domestic & Foreign (CDER, FY 2012 - 2021)



Responding to a Form FDA 483



- Engage in verbal discussion at close-out
- Send written response within 15 business days
- What not to say:
 - You indicated that you delegated day-to-day research activities to an independent research company... that did not bring any of the above-mentioned violations to your attention. *It was your ultimate responsibility to ensure that clinical studies were conducted properly and in compliance with FDA regulations.*
 - The study coordinator miscalculated the WOMAC pain subscale. *Your response is inadequate because...you have submitted no documentation of the retraining.*

Clinical Investigator Regulatory Actions*

(CDER, FY 2012 - FY 2021)

Action	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
WL**	5	5	11	4	7	4	1	0	1	2
NIDPOE	2	0	5	3	0	0	1	0	1	0
NOOH	1	0	0	1	0	0	0	0	0	0
CA-Restricted	0	0	0	0	0	0	0	0	0	1
CA-Full DQ	0	0	2	2	0	0	1	0	0	0
DQ-Hearing/Commissioner	1	0	1	0	0	0	0	0	0	0

WL = Warning Letter

NIDPOE = Notice of Initiation of Disqualification Proceedings and Opportunity to Explain

NOOH = Notice of Opportunity for Hearing

CA-Restricted = Consent Agreements (Restricted Agreements)

CA-Full DQ = Consent Agreements (Full Disqualification)

DQ = Disqualification by Hearing or Commissioner

*Based on letter issue date [Complis database as of Dec 16, 2021].

**Warning Letters are informal and advisory in nature, not regulatory actions (FDA Regulatory Procedures Manual Chapter 4, Section 1-1).

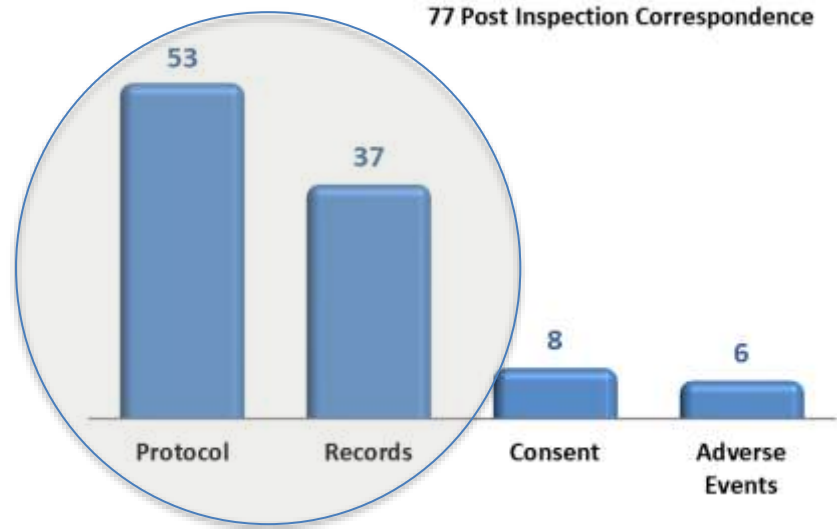
Submission of false information [21 CFR 312.70]



The inspection report indicates that the FDA investigator conducted a phone interview with a subject on 11/14/2006 and the subject stated that he was only at the site for two visits. Review of the CRFs revealed that there were entries for a total of six visits for this subject. The CRFs document a screening visit on 1/19/06 and a baseline visit conducted on 2/9/06. Additional entries were made in the electronic CRFs for the week one, week two, month one and month 2, none of which were attended by the subject.

Clinical Investigator Deficiencies* In Post-Inspection Correspondence Issued** (CDER, FY 2021)

Domestic CI Deficiencies



*Based on LogOut Date and Classification. [Complis database as of Dec 16, 2021].

** Data includes deficiencies from post-inspection correspondence for inspections with VAI and OAI classification. One correspondence may include multiple deficiencies.

Pro-active Practices for Protocol Compliance



1. Assess how the protocol will translate to operations at your site:



- Participant flow through study visits
- Activities needed to carry out that protocol
- Data required to be collected
- Access to specialized expertise or equipment
- Study specific nuances (e.g., AE of special interest)

2. Do beta-testing/dry-runs – who will do what, how/where documented, et al
3. Do real-time review of visit records/data to identify and address issues early



ICH E6(R2) Good Clinical Practice

- Section 5.0 Quality Management
 - The sponsor should ensure that all aspects of the trial are operationally feasible and should avoid unnecessary complexity, procedures, and data collection.
 - Protocols, case report forms, and other operational documents should be clear, concise, and consistent.



ICH E8(R1)

General Considerations for Clinical Trials

Provides an:

- Overall guide to all the ICH Efficacy Guidelines
- Overview of types of clinical studies conducted during product lifecycle
- Quality considerations in the design and conduct of clinical studies – Quality by Design (QbD)

Protocol Development: A Crucial Component of Quality by Design



1. Identify critical aspects of trial design
2. Tailor design to avoid errors that matter
3. Streamline trial where feasible
4. Verify proposed design is consistent with important scientific question to be addressed
5. Highlight important risks not eliminated through study design that may be better addressed in operational plans

<https://ctti-clinicaltrials.org/our-work/quality/quality-by-design/>

Case Example

Marketing Submission

- Contained large randomized, blinded, placebo-controlled cardiovascular outcomes study
- Independent adjudication committee for primary endpoint (MACE - Major Adverse Cardiovascular Events)
- Study powered based on predicted number of primary endpoint events

Case Example

Site “A”

- During FDA review, site flagged for inspection based on:
 - Enrollment (approximately 5% subjects in study)
 - Data trends suggesting under reporting of events (primary efficacy and safety)
- Inspection:
 - On record review, multiple examples identified that appeared consistent with MACE event, but adjudicated negatively by independent adjudication committee
 - Per CI, when event occurred outside of the site’s network, it was almost impossible for site staff to obtain requested records needed by adjudication committee due to litigious climate of community

Case Example

Impact of “Site A” type findings:

- Predicted number of primary endpoint events not reached in enrolled population (study underpowered)
- Sponsor needed to re-estimate sample size substantially increasing enrollment
 - Gain regulatory authority agreement
 - Implement protocol amendment
 - Increased cost
 - Increased trial length

Case Example

Hindsight is 20 – 20, but might the issues encountered have been prevented had a well informed QbD process been used during the design and planning of this study?

Record Retention Requirements



An investigator is required to retain records for:

- 2 years following the date a marketing application is approved for the drug for the indication for which it is being investigated
- 2 years after the investigation is discontinued and FDA is notified if no application is to be filed or if the application has not been approved for such indication

Recordkeeping and Retention



- An investigator is responsible for:
 - Maintaining adequate records of the disposition of the drug,
 - Accurate case histories that record all observations, and
 - Other data pertinent to the investigation on each individual administered the investigational drug or employed as a control in the investigation



Good Documentation Practices



- ICH E6(R2) Addition: ALCOAC
- Source data should be **a**tttributable, **l**egible, **c**ontemporaneous, **o**riginal, **a**ccurate, and **c**omplete ...
- Changes to source data should be traceable, should not obscure the original entry and should be explained if necessary (e.g. via an audit trail).

Summary



- Clinical investigators play a critical role in ensuring trial quality
- Sponsor-investigators have additional responsibilities, including for transparent reporting of results of applicable clinical trials.
- Both must ensure that all staff have a clear understanding of the protocol and their responsibilities under FDA regulations
- At stake is public confidence and participation in clinical trials- and ultimately the availability of safe and effective products

"Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution; it represents the wise choice of many alternatives"

- William A. Foster

Questions?

Ann Meeker-O'Connell

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Resources

- [FDA Regulations \(and Preambles\) for Good Clinical Practice \(GCP\) and Clinical Trials](#)
- [Clinical-trial related guidance documents \(searchable\)](#)
- [Clinical Trials and Human Subject Protection](#)
- [CDER's Good Clinical Practice website](#)