



DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA-2025-D-3217]

Use of Bayesian Methodology in Clinical Trials of Drug and Biological Products; Draft

Guidance for Industry; Availability

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of availability.

SUMMARY: The Food and Drug Administration (FDA or Agency) is announcing the availability of a draft guidance for industry entitled “Use of Bayesian Methodology in Clinical Trials of Drug and Biological Products.” This document provides guidance on the appropriate use of Bayesian methods in clinical trials. The primary focus is on the use of Bayesian methods to support primary inference in pivotal clinical trials designed to support the effectiveness and safety of drug and biological products.

DATES: Submit either electronic or written comments on the draft guidance by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*] to** ensure that the Agency considers your comment on this draft guidance before it begins work on the final version of the guidance.

ADDRESSES: You may submit comments on any guidance at any time as follows:

Electronic Submissions

Submit electronic comments in the following way:

- Federal eRulemaking Portal: <https://www.regulations.gov>. Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to <https://www.regulations.gov> will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be

posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on <https://www.regulations.gov>.

- If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see "Written/Paper Submissions" and "Instructions").

Written/Paper Submissions

Submit written/paper submissions as follows:

- Mail/Hand delivery/Courier (for written/paper submissions): Dockets Management Staff (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.
- For written/paper comments submitted to the Dockets Management Staff, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in "Instructions."

Instructions: All submissions received must include the Docket No. FDA-2025-D-3217 for "Use of Bayesian Methodology in Clinical Trials of Drug and Biological Products."

Received comments will be placed in the docket and, except for those submitted as "Confidential Submissions," publicly viewable at <https://www.regulations.gov> or at the Dockets Management Staff between 9 a.m. and 4 p.m., Monday through Friday, 240-402-7500.

- Confidential Submissions--To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states "THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION." The Agency will review this copy,

including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on <https://www.regulations.gov>. Submit both copies to the Dockets Management Staff. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as “confidential.” Any information marked as “confidential” will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For more information about FDA’s posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at:

<https://www.govinfo.gov/content/pkg/FR-2015-09-18/pdf/2015-23389.pdf>.

Docket: For access to the docket to read background documents or the electronic and written/paper comments received, go to <https://www.regulations.gov> and insert the docket number, found in brackets in the heading of this document, into the “Search” box and follow the prompts and/or go to the Dockets Management Staff, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852, 240-402-7500.

You may submit comments on any guidance at any time (see 21 CFR 10.115(g)(5)).

Submit written requests for single copies of the draft guidance to the Division of Drug Information, Center for Drug Evaluation and Research, Food and Drug Administration, 10001 New Hampshire Ave., Hillandale Building, 4th Floor, Silver Spring, MD 20993-0002. Send one self-addressed adhesive label to assist that office in processing your requests. See the SUPPLEMENTARY INFORMATION section for electronic access to the draft guidance document.

FOR FURTHER INFORMATION CONTACT: Scott N. Goldie, Center for Drug Evaluation and Research, 10903 New Hampshire Ave., Bldg. 21, Rm. 3557, Silver Spring, MD 20993-0002,

301-796-2055, Scott.Goldie@fda.hhs.gov, or Phillip Kurs, Center for Biologics Evaluation and Research, Food and Drug Administration, 240-402-7911.

SUPPLEMENTARY INFORMATION:

I. Background

FDA is announcing the availability of a draft guidance for industry entitled “Use of Bayesian Methodology in Clinical Trials of Drug and Biological Products.” This document provides guidance to sponsors and applicants submitting investigational new drug applications (INDs), new drug applications (NDAs), biologics licensing applications (BLAs) or supplemental applications on the appropriate use of Bayesian methods in clinical trials. The primary focus of this guidance is on the use of Bayesian methods to support primary inference in pivotal clinical trials designed to support the effectiveness and safety of drug and biological products. This draft guidance is being issued to satisfy a commitment under the sixth reauthorization of the Prescription Drug User Fee Act to publish draft guidance on the use of Bayesian methodology in clinical trials of drugs and biological products.

Bayesian statistics is an approach to estimation and inference based on the use of Bayes' theorem. In a Bayesian analysis, data collected in a study are combined with a prior distribution that expresses a pre-study position about a parameter of interest to form a posterior distribution that expresses the updated, post-study position about the parameter of interest. The prior distribution often represents a summary of data or information available before the study begins. The posterior distribution is used for inference and to draw conclusions about the study results.

The draft guidance addresses relevant considerations on how to appropriately design clinical trials using Bayesian approaches. The document describes settings where Bayesian methods have been used and provides recommendations related to the choice of success criteria, evaluation of trial operating characteristics, and determination of the prior distribution. It includes detailed considerations for use of an informative prior to borrow external information in the primary analysis of a prospective trial. The document also discusses estimands and missing

data, software and computation, and documentation and reporting considerations for trials that use Bayesian methods.

This draft guidance is being issued consistent with FDA's good guidance practices regulation (21 CFR 10.115). The draft guidance, when finalized, will represent the current thinking of FDA on "Use of Bayesian Methodology in Clinical Trials of Drug and Biological Products." It does not establish any rights for any person and is not binding on FDA or the public. You can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations.

As we develop final guidance on this topic, FDA will consider comments on costs or cost savings the guidance may generate, relevant for Executive Order 14192.

II. Paperwork Reduction Act of 1995

While this guidance contains no collection of information, it does refer to previously approved FDA collections of information. The previously approved collections of information are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501-3521). The collections of information in 21 CFR 312 pertaining to the submissions of investigational new drug applications have been approved under OMB control number 0910-0014. The collections of information in 21 CFR 314 and 21 CFR 601 pertaining to the submission of new drug applications and biologic licensing applications have been approved under OMB control numbers 0910-0001 and 0910-0338, respectively.

III. Electronic Access

Persons with access to the internet may obtain the draft guidance at
<https://www.fda.gov/drugs/guidance-compliance-regulatory-information/guidances-drugs>,
<https://www.fda.gov/regulatory-information/search-fda-guidance-documents>,
<https://www.fda.gov/vaccines-blood-biologics/guidance-compliance-regulatory-information-biologics-biologics-guidances>, or <https://www.regulations.gov>.

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Acting Deputy Commissioner for Policy, Legislation, and International Affairs.

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