

# Update on ClinicalTrials.gov

Deborah A. Zarin, M.D., Director  
ClinicalTrials.gov  
April 2017

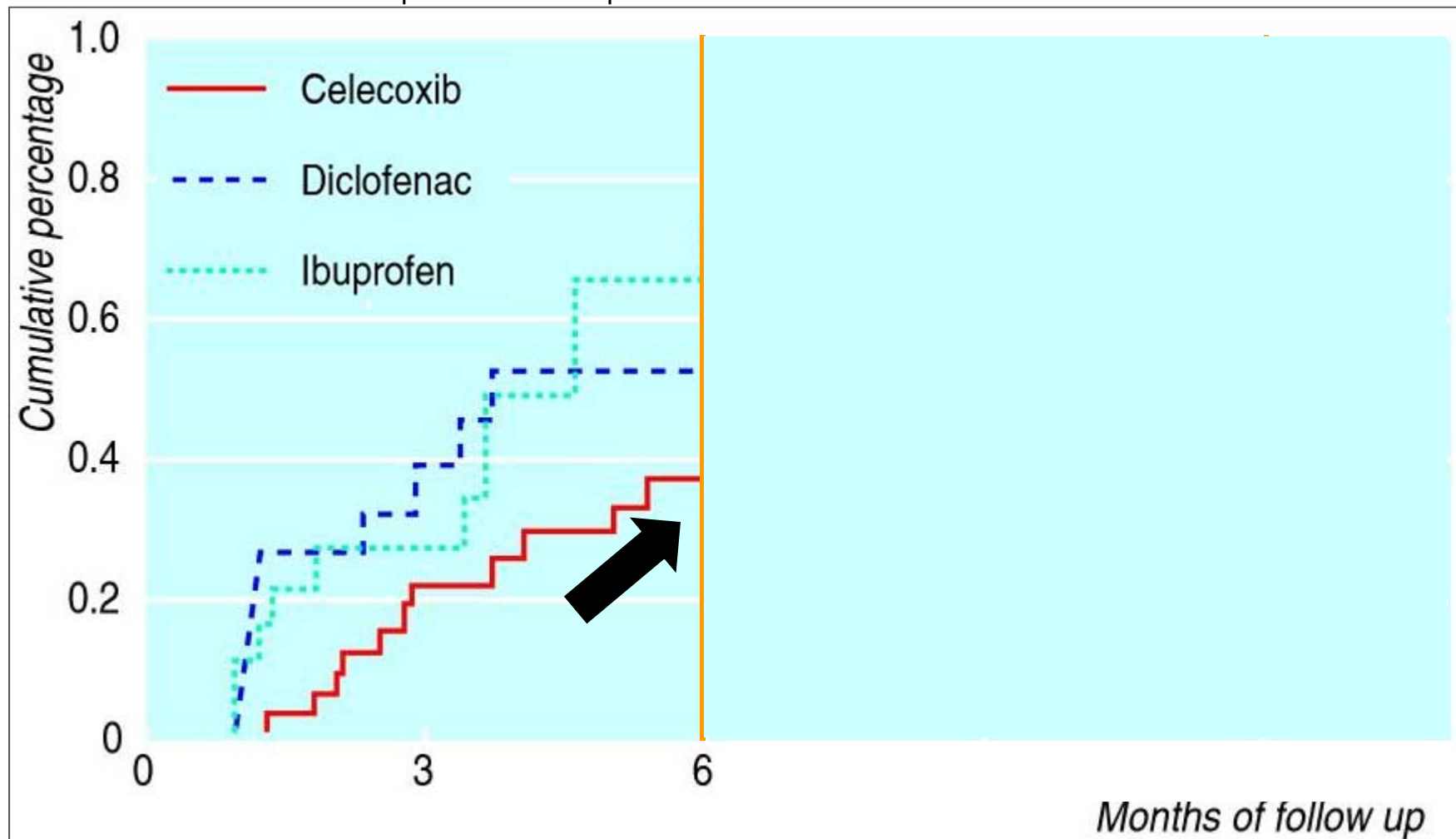


<http://ClinicalTrials.gov>

# Traditional System

- Design and conduct of clinical trials was left to individual investigators
  - No specific training required
  - Not much oversight of analytic methods
    - E.g., absence of scientific review of protocols at institutional level
- Individual investigators decided whether, when and how to disseminate results of clinical trials
  - Institutions assumed that fundamental academic incentives would ensure that this would happen;
  - But widespread appreciation that not all results would be reported

Kaplan-Meier estimates for ulcer complications according to traditional definition. Results are truncated after 12 months, no ulcer complications occurred after this period. Adapted from Lu 2001.



# ClinicalTrials.gov – Milestones

- 1997 – FDA Modernization Act (FDAMA)
- 2000 - ClinicalTrials.gov launched
- 2005 - International Committee of Medical Journal Editors (ICMJE) trial registration policy
- 2007 - FDAAA 801\* (Title VIII of Public Law 110-85)
  - Expanded clinical trial registration requirement and imposed new results submission requirements
  - Added enforcement provisions including up to \$10,000/day in civil monetary penalties and withholding remaining or future grant funds
- 2016 – FDAAA 801 Final Rule (42 CFR Part 11) & NIH Clinical Trials Disclosure Policy

# Evidence of Problems

- One practical problem:
  - Potential participants had trouble finding trials.
- Three scientific problems:
  - Not all trials are published
  - Not all outcome measures (or adverse events) are published
  - Changes to protocols are not always acknowledged

## RESEARCH

## Publication of NIH funded trials registered in ClinicalTrials.gov: cross sectional analysis



OPEN ACCESS

Joseph S Ross *assistant professor of medicine*<sup>1,2</sup>, Tony Tse *program analyst at ClinicalTrials.gov*<sup>3</sup>, Deborah A Zarin *director of ClinicalTrials.gov*<sup>3</sup>, Hui Xu *postgraduate house staff trainee*<sup>4</sup>, Lei Zhou *postgraduate house staff trainee*<sup>4</sup>, Harlan M Krumholz *Harold H Hines Jr professor of medicine and professor of investigative medicine and of public health*<sup>2,5,6</sup>

<sup>1</sup>Section of General Internal Medicine, Department of Medicine, Yale University School of Medicine, New Haven, CT, USA; <sup>2</sup>Center for Outcomes Research and Evaluation, Yale-New Haven Hospital, New Haven, CT; <sup>3</sup>Lister Hill National Center for Biomedical Communications, National Library of Medicine, National Institutes of Health, Bethesda, MD, USA; <sup>4</sup>Fuwai Hospital and Cardiovascular Institute, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China; <sup>5</sup>Robert Wood Johnson Clinical Scholars Program and Section of Cardiovascular Medicine, Department of Medicine, Yale University School of Medicine, New Haven, CT; <sup>6</sup>Section of Health Policy and Administration, Yale University School of Epidemiology and Public Health, New Haven, CT

# Reasons to Register Clinical Trials and Report Results

- Human Subject Protections
  - Allows potential participants to find studies
  - Assists ethical review boards and others to determine appropriateness of studies being reviewed (e.g., harms, benefits, redundancy)
  - Promote fulfillment of ethical responsibility to human volunteers – research contributes to medical knowledge
- Research Integrity
  - Facilitates tracking of protocol changes
  - Increases transparency of research enterprise
- Evidence Based Medicine
  - Facilitates tracking of studies and outcome measures
  - Allows for more complete identification of relevant studies
- Allocation of Resources
  - Promotes more efficient allocation of resources

# Key Clinical Trial Reporting Requirements

Reporting Requirement	ICMJE Policy (Effective in 2005)	FDAAA Final Rule (Issued in 2016)	Final NIH Policy (Issued in 2016)
Scope	Registration	Registration & Results Reporting	Registration & Results Reporting
Phase	All	Not Phase 1	All
Intervention Type	All	Drugs, Biologics, & Devices regulated by the FDA	All (e.g., including behavioral interventions)
Funding Source	Any	Any	NIH
Enforcement	Refusal to publish	Criminal proceedings and civil penalties (up to \$10,000/day); Loss of HHS funding	Loss of NIH funding



# Content of a Study Record

## (Minimum Information Requirements)

- **Registration section**

- Submitted at trial initiation
- Summarizes information from trial protocol: e.g.,
  - Condition
  - Interventions
  - Study Design
- Includes recruitment information (e.g., eligibility, locations)

- **Results section**

- Submitted after trial completion
- Summarizes trial results
  - Participant flow
  - Baseline characteristics
  - Outcome measures (including statistical analyses)
  - Adverse events

[Full Text View](#)
[Tabular View](#)
[Study Results](#)
[Related Studies](#)

### Brief Descriptive Title of Clinical Trial

**Study Recruitment Status**  
Information provided by Organization

Study Type:	Interventional
Study Design:	Randomized, Double Masked, Placebo Control, Parallel Assignment
Interventions:	Drug: Drug A; Drug: Drug B

► **Participant Flow**  
**Recruitment Details** – Key information relevant to the recruitment process for the overall study, such as dates of the recruitment.  
**Pre-Assignment Detail** – Significant events and approaches for the overall study following participant enrollment, but prior to assignment.

**Overall Study**

	Drug A	Drug B	Placebo
STARTED			
COMPLETED			
Not Completed			
Lost to Follow-up			
Adverse Event			

► **Baseline Characteristics**

	Drug A	Drug B	Placebo	Total
Number of Participants				
Age				
Gender				
Female				
Male				

► **Outcome Measures**  
**Primary Outcome Measure**

Measure Name	
Measure Description	
Time Frame	

**Population Description** – Explanation of how the number of participants for analysis was determined.

**Measured Values**

	Drug A	Drug B	Placebo
Number of Subjects			
Primary Outcome Measure			

**Statistical Analysis for Primary Outcome Measure**

Groups	
Method	
P-Value	
Mean Difference	
95% Confidence Interval	

**Additional Details About the Analysis** – e.g., null hypothesis, power calculation, and whether the p-value is adjusted for multiple comparisons

► **More Information**  
**Certain Agreements** – Information about restrictions on the ability of the principal investigator to disseminate trial data after trial completion  
**Limitations and Caveats** – Limitations of the study, such as early termination leading to small numbers of subjects analyzed  
**Results Point of Contact** – Phone and/or email for additional information about the results

## 4 Scientific Modules

- Participant Flow
- Baseline Characteristics
- Outcome Measures
- Adverse Events

Administrative Information  
e.g., “Certain Agreements”

# ClinicalTrials.gov Reporting Volume

(as of 19 Apr 2017)

- Registration
  - 242,000 study records
  - 600 submissions/week
  - 16,500 data providers (sponsors and investigators)
- Summary Results Reporting
  - 26,000 records with results posted
  - **About 50% have associated publications**
  - 140 submissions/week
  - 2,800 data providers
- Usage Stats
  - 199+ million page views/month
  - 1.1M+ unique visitors/month

# Potential Consequences of Non-Compliance with FDAAA

- NIH (or other HHS agency) must verify submission of information before releasing any remaining funds for a grant or funds for a future grant and provide opportunity to remedy
- FDA may provide responsible parties with a Notice of Noncompliance and allow 30 days to remedy
  - Compliance with registration and results reporting requirements listed in FDA BIMO inspection SOPs
- FDA authorized to assess civil monetary penalties up to \$10,000/day (amounts adjusted going forward)
- FDA may initiate civil or criminal proceedings
- Notices of non-compliance to be included in the public record
  - 21st Century Cures Act (P.L. 114-255) Section 2052 requires NIH and FDA to issue of Compliance Activities Reports to Congressional committees

SPECIAL REPORT

## Trial Reporting in ClinicalTrials.gov — The Final Rule

Deborah A. Zarin, M.D., Tony Tse, Ph.D., Rebecca J. Williams, Pharm.D., M.P.H.,  
and Sarah Carr, B.A.

Title VIII of the Food and Drug Administration (FDA) Amendments Act of 2007 (FDAAA) expanded the legal mandate for sponsors and others responsible for certain clinical trials of FDA-regulated drug, biologic, and device products to register their studies and report summary results information to ClinicalTrials.gov,<sup>1</sup> which is managed by the National Library of Medicine at the National Institutes of Health (NIH). The statute expanded registration requirements and provided a legally defined timeline with specific requirements for the systematic reporting of summary trial results. Although statutory components took effect before 2010, the FDAAA directed the Department of Health and Human Services (HHS) to issue regulations regarding certain statutory provisions and to consider possible expansion of the requirements through rule-making.

developed the final rule, which was made publicly available on September 16, 2016. Simultaneously, the NIH issued a complementary final policy, under which NIH-funded awardees and investigators will be expected to submit registration and results information for all NIH-funded clinical trials, whether or not the trials are covered by the FDAAA requirements.<sup>6</sup>

Here, we summarize and highlight key points about the final rule (see box).

### BACKGROUND

The FDAAA established legal requirements for sponsors and designated principal investigators (i.e., responsible parties) to report specified clinical trial information for certain applicable clinical trials to ClinicalTrials.gov. In addition to registration, the statute established a system and man-

# ClinicalTrials.gov Results Database versus Journal Publication

- ClinicalTrials.gov provides “minimum dataset”
  - Participant flow, baseline, all outcome measures, adverse events
  - Minimal narrative—no conclusions
- Journals provide background, data and discussion
  - Peer review focuses on interest and relevance of study, consistency of conclusions and data;
- ClinicalTrials.gov ensures
  - Complete reporting, whether or not publication occurs
  - Covers the gap between announcement of results and journal publication
  - Facilitates structured search
- About 50% of ClinicalTrials.gov entries have no associated publications

# Timing and Completeness of Trial Results Posted at ClinicalTrials.gov and Published in Journals

Carolina Riveros<sup>1,2,3</sup>, Agnes Dechartres<sup>1,2,3\*</sup>, Elodie Perrodeau<sup>1,3</sup>, Romana Haneef<sup>1,3</sup>,  
Isabelle Boutron<sup>1,2,3,4</sup>, Philippe Ravaud<sup>1,2,3,4,5</sup>

**1** INSERM U738, Paris, France, **2** Université Paris Descartes—Sorbonne Paris Cité, Paris, France, **3** Centre d'Épidémiologie Clinique, Hôpital Hôtel-Dieu, Assistance Publique-Hôpitaux de Paris, Paris, France, **4** French Cochrane Centre, Paris, France, **5** Mailman School of Public Health, Columbia University, New York, New York, United States of America

**Findings:** “Reporting was significantly more complete at ClinicalTrials.gov than in the published article for the flow of participants (64% versus 48% of trials,  $p=0.001$ ), efficacy results (79% versus 69%,  $p = 0.02$ ), adverse events (73% versus 45%,  $p=0.001$ ), and serious adverse events (99% versus 63%,  $p=0.001$ ).”

**Conclusions:** “Our results highlight the need to search ClinicalTrials.gov for both unpublished and published trials. Trial results, especially serious adverse events, are more completely reported at ClinicalTrials.gov than in the published article.”

# Which of These Would You Not Need?

- Baseline Characteristics
  - One table, for each arm and overall
  - Age (continuous or categorical)
  - Gender
- Participant Flow
  - # Started and # completed each arm
- Outcome Measures
  - Summary data for each prespecified Primary and Secondary Outcome Measure (per arm)
- Adverse Events
  - Table of all Serious Adverse Events (per arm)
  - Table of “other” Adverse Events that occur in more than 5% of participants (per arm)



# FLAME Trial: Linking Published Article & ClinicalTrials.gov Results Database Entry

“The protocol includes a list of 27 secondary outcome measures; we report data for 19 of these outcomes here and in Sections 4 and 5 in the Supplementary Appendix. The outcomes for which data are not reported herein can be found at ClinicalTrials.gov (<https://clinicaltrials.gov/ct2/show/results/NCT01782326>).”



## Indacaterol–Glycopyrronium COPD

Jadwiga A. Wedzicha, M.D., Donald Bannister, M.D.,  
Roche, M.D., R. Timothy Ayers, M.Sc., Christopher  
Vogelmeier, M.D., for the FLAME Investigators

N Engl J Med 2016; 374:2222-2234 | Jun 9, 2016

**This study has been completed.**

Sponsor:  
Novartis Pharmaceuticals

Information provided by (Responsible Party):  
Novartis ( Novartis Pharmaceuticals )

ClinicalTrials.gov Identifier:

NCT01782326

First received: January 30, 2013

Last updated: May 5, 2016

Last verified: May 2016

### History of Changes

[Full Text View](#)

### Tabular View

## Study Results

## Disclaimer

## How to Read a Study Record

Revised First Received: May 1, 2016

### Measured Values

	QVA149	Long Acting B2 Agonist (LABA) and Inhaled Corticosteroid (ICS)
Number of Participants Analyzed [units: participants]	1528	1556
Rate of COPD Exacerbations [units: COPD Exacerbations/year] Least Squares Mean (95% Confidence Interval)	3.59 (3.28 to 3.94)	4.03 (3.68 to 4.41)

### Statistical Analysis 1 for Rate of COPD Exacerbations

Groups <sup>[1]</sup>	All groups
Non-Inferiority/Equivalence Test <sup>[2]</sup>	Yes
Method <sup>[3]</sup>	Generalized linear model
Rate Ratio <sup>[4]</sup>	0.89
95% Confidence Interval	0.83 to 0.96

glycopyrronium would be superior for exacerbations.

The protocol includes a list of 27 outcomes here and in Sections 4. Data not reported herein can be found in the protocol ([/results/NCT01782326](#)). Secondary outcomes included the severity, the first moderate or severe exacerbation and the annual rate of moderate or severe exacerbations. We also assessed the time from 0 to 12 hours (in a subgroup of patients) using George's Respiratory Questionnaire with higher scores indicating worse symptoms. Patients with 4 or more points, as compared with the score

SPECIAL REPORT

## Update on Trial Registration 11 Years after the ICMJE Policy Was Established

Deborah A. Zarin, M.D., Tony Tse, Ph.D., Rebecca J. Williams, Pharm.D., M.P.H.,  
and Thiyagu Rajakannan, Ph.D.

Laws and policies to establish a global trial reporting system have greatly increased the transparency and accountability of the clinical research enterprise. The three components of the trial reporting system are trial registration, reporting of aggregate results, and sharing of individual participant data.<sup>1</sup> Trial registration is foundational to our understanding and interpretation of trial results, because it requires that information be provided about all relevant clinical trials (to put results in a broad context) and their prespecified protocol details (to ensure adherence to the scientific plan).

In this article, we describe the current trial registration landscape and summarize evidence of its effect on the clinical research enterprise to date. We then present the results of analyses that were performed with the use of ClinicalTrials.gov data to provide additional evidence regarding the degree to which current practices are fulfilling certain key goals initially envisioned for trial registration. Finally, we identify challenges and suggest potential responses for the next decade.

tion of clinical research findings into the medical evidence base. The second goal is to provide access to date-stamped protocol amendments that occur during the trial. Access to structured archival information allows the public to track the progress of individual studies and assess whether reported results are consistent with the prespecified protocol or statistical analysis plan.

### EVOLUTION OF THE GLOBAL TRIAL REPORTING SYSTEM

After the announcement of the International Committee of Medical Journal Editors (ICMJE) trial registration policy<sup>2</sup> in September 2004, a series of related laws and policies were implemented in the United States<sup>3</sup> and internationally<sup>4</sup> that increased the scope and content of mandatory prospective trial registration. The World Health Organization International Clinical Trials Registry Platform established the Trial Registration Data Set standard,<sup>5</sup> which is the minimum set of data to be provided during trial registration and submission of manuscripts for publication.

# Characteristics of Clinical Trials Registered in ClinicalTrials.gov, 2007-2010

Robert M. Califf, MD

Deborah A. Zarin, MD

Judith M. Kramer, MD, MS

Rachel E. Sherman, MD, MPH

Laura H. Aberle, BSPH

Asba Tasneem, PhD

**Context** Recent reports highlight gaps between guidelines-based treatment recommendations and evidence from clinical trials that supports those recommendations. Strengthened reporting requirements for studies registered with ClinicalTrials.gov enable a comprehensive evaluation of the national trials portfolio.

**Objective** To examine fundamental characteristics of interventional clinical trials registered in the ClinicalTrials.gov database.

**Methods** A data set comprising 96 346 clinical studies from ClinicalTrials.gov was

**“Conclusion** Clinical trials registered in ClinicalTrials.gov are dominated by small trials and contain significant heterogeneity in methodological approaches, including reported use of randomization, blinding, and DMCs.”

US clinical trial market. Critical issues for researchers, however, are the prehospital and broad-based information assistance in the International Journal of Editors (IJE) announced a policy, which took effect in 2005, of requiring registration of clinical trials as a prerequisite for publication.<sup>6,7</sup> The Food and Drug Administration Amendment Act (FDAAA)<sup>8</sup> expanded the mandate of ClinicalTrials.gov to include most non-

randomization and blinding were less frequently reported in earlier phase, oncology, and device trials.

**Conclusion** Clinical trials registered in ClinicalTrials.gov are dominated by small trials and contain significant heterogeneity in methodological approaches, including reported use of randomization, blinding, and DMCs.

JAMA. 2012;307(17):1838-1847

www.jama.com

# Ongoing Work to Improve the Public Site



[Leave beta test site](#)

**IMPORTANT:** Listing of a study on this site does not reflect endorsement by the National Institutes of Health. Talk with a trusted healthcare professional before volunteering for a study. [Read more...](#)

[Find Studies](#) ▾ [About Studies](#) ▾ [Submit Studies](#) ▾ [Resources](#) ▾ [About Site](#) ▾

ClinicalTrials.gov is a registry and results database of publicly and privately supported clinical studies of human participants conducted around the world.

## Search

Condition / Disease:

Intervention / Treatment:

Other Terms:

Location: US State:

Country:

[Search Recruiting](#)

[Search All](#)

[Advanced Search](#)

The database currently lists **242,206 studies** with locations in all 50 States and in **198 countries**.

### Recruiting Study Locations



Non-U.S. only (56%)

U.S. only (38%)

Both U.S. and non-U.S. (5%)

42,039 recruiting studies (April 19, 2017)

[Final Rule Webinar Series](#)

[Help](#) | [Studies by Topic](#) | [Studies on Map](#) | [Glossary](#)

### Patients and Families

Search for actively recruiting studies that you may be able to participate in or learn about new treatments that are being considered.

[Learn more](#)

### Researchers

Search the database to stay up to date on developments in your field, find collaborators, and identify unmet needs.

[Learn more](#)

### Study Record Managers

Learn about registering studies and about submitting their results after study completion.

[Learn more](#)

[HOME](#) | [RSS FEEDS](#) | [SITE MAP](#) | [TERMS AND CONDITIONS](#) | [DISCLAIMER](#) | [CUSTOMER SUPPORT](#)



[Leave beta test site](#)

**IMPORTANT:** Listing of a study on this site does not reflect endorsement by the National Institutes of Health. Talk with a trusted healthcare professional before volunteering for a study. [Read more...](#)

[Find Studies](#) ▾ [About Studies](#) ▾ [Submit Studies](#) ▾ [Resources](#) ▾ [About Site](#) ▾

ClinicalTrials.gov is a registry and results database of publicly and privately supported clinical studies of human participants conducted around the world.

## Search

Condition / Disease:

Intervention / Treatment:

Other Terms:

Location: US State:

Country:

- Breast Cancer
- Breast Cancer Female
- Breast Cancer Stage IV
- Breast Cancer Stage
- Breast Cancer Stage IIB
- Breast Cancer Model
- Breast Cancer Stage II**
- Breast Cancer and Pregnancy
- Breast Cancer Invasive
- Breast Cancer Stage I

[Advanced Search](#)

[Studies on Map](#) | [Glossary](#)

The database currently lists **242,206 studies** with locations in all 50 States and in **198 countries**.

### Recruiting Study Locations



Non-U.S. only (56%)  
U.S. only (38%)  
Both U.S. and non-U.S. (5%)

42,039 recruiting studies (April 19, 2017)

[Final Rule Webinar Series](#)

### Patients and Families

Search for actively recruiting studies that you may be able to participate in or learn about new treatments that are being considered.

[Learn more](#)

### Researchers

Search the database to stay up to date on developments in your field, find collaborators, and identify unmet needs.

[Learn more](#)

### Study Record Managers

Learn about registering studies and about submitting their results after study completion.

[Learn more](#)

[HOME](#) [RSS FEEDS](#) [SITE MAP](#) [TERMS AND CONDITIONS](#) [DISCLAIMER](#) [CUSTOMER SUPPORT](#)

## Search

Condition / Disease: Breast Cancer Stage II

x

Intervention / Treatment: Carboplatin

x

Other Terms:

x

Location: US State:



x

Country:



x

Search

Advanced Search

[Help](#) | [How to Use Search Results](#) | [Glossary](#)

## 126 Studies found

List

By Topic

On Map

Search Details

Hide Filters

Download

Subscribe to RSS

Show/Hide Columns

Showing: 1-10 of 126 studies 10 studies per page

### Filters

Apply

Clear

#### Status

##### Studies:

- ☐ Not yet recruiting
- ☐ Recruiting
- ☐ Enrolling by invitation
- ☐ Active, not recruiting
- ☐ Suspended
- ☐ Terminated

Rank	Saved	Status	Study Title	Conditions	Interventions
1	<input type="checkbox"/>	Recruiting	Predictors of Response to Neoadjuvant Docetaxel- Carboplatin Chemotherapy for Patients With Stage II and III Triple Negative Breast Cancer	Breast Cancer; Breast Cancer Stage II-III	Drug: Docetaxel- Carboplatin



☒ Female

☐ Male

☐ Accepts Healthy Volunteers

Study Type

☐ All

☒ Interventional

☐ Observational

☐ Expanded Access

Study Results

Study Phase

☐ Phase 0

☐ Phase 1

☐ Phase 2

☒ Phase 3

☐ Phase 4

Funder Type

Apply

Clear

Rank	Saved	Status	Study Title	Conditions	Interventions
			Therapies Following Combination Chemotherapy and Bone Marrow or Peripheral Stem Cell Transplantation in Women With Stage II or Stage III Breast Cancer		Drug: carboplatin; Drug: cyclophosphamide; Drug: cyclosporine; Drug: thiotepa; Procedure: autologous bone marrow transplantation; Procedure: peripheral blood stem cell transplantation
5	<input type="checkbox"/>	Terminated	S9623, Combination Chemotherapy Plus Peripheral Stem Cell Transplantation in Treating Women With Breast Cancer	Breast Cancer	Biological: filgrastim; Drug: carboplatin; Drug: carmustine; Drug: cisplatin; Drug: cyclophosphamide; Drug: doxorubicin hydrochloride; Drug: paclitaxel; Drug: tamoxifen citrate; Drug: thiotepa; Procedure: autologous bone marrow transplantation; Procedure: peripheral blood stem cell transplantation; Radiation: radiation therapy
6	<input type="checkbox"/>	Completed	Bone Marrow or Peripheral Stem Cell Transplantation in Treating Patients With Breast Cancer	Breast Cancer	Procedure: autologous bone marrow transplantation; Procedure: peripheral blood stem cell transplantation

# Sample Uses of ClinicalTrials.gov Data

# Basic Uses of ClinicalTrials.gov

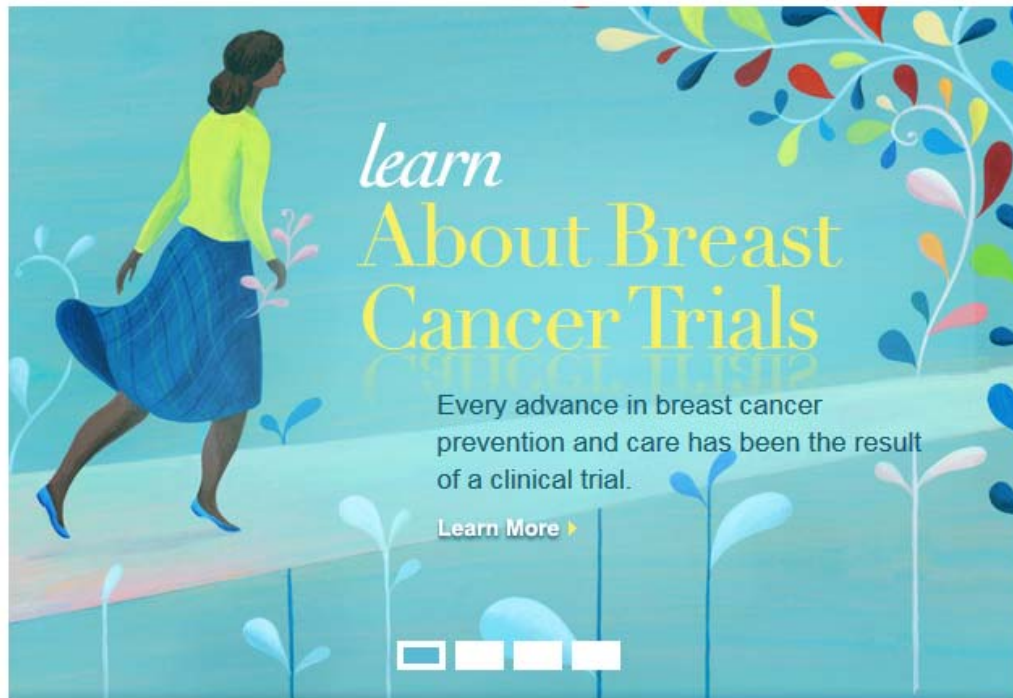
- Identify trials of potential interest for an individual
  - Including to specific user communities
- Track progress of a specific trial, including availability of summary results
- Identify all trials that are completed or ongoing for a specific set of conditions/interventions
  - Complement to literature review
  - Useful in planning stages of a new protocol
- Identify investigators and/or research centers of relevance to a specific set of conditions/interventions

## For those concerned with human subjects protections...

- Complete list of ongoing and completed trials of relevance
- Assurance that information about the trial of interest
  - is in the public domain
  - for some trials, results will become public

## For those with medical conditions...

- Finding a trial in which to participate
- Finding an expanded access drug
- Finding a center of research for a given condition/intervention



## Find A Trial That's Right For You

[Browse Trials](#)

or

[Match to Trials](#)

## Healthcare Professionals

Learn how BCT can work for you

[Researchers](#)[Care Providers](#)[Sponsors](#)[Navigators](#)

## New to BCT



An easy-to-use tool specifically for patients with metastatic breast cancer.

[Get Started](#)

## Join the BCT Trial Alert Service

Our Trial Alert Service is an easy way to learn about newly listed trials that match your situation. Create a BCT profile to subscribe.

[Start Now](#)

## BCT In the News!

### NEW TOOL PAIRS WOMEN WITH BREAST CANCER TRIALS

A powerful new tool is helping women access clinical trials that offer the latest treatments for breast cancer.

[ABC News](#)

## For those concerned with research integrity and methods...

- Relatively complete list of trials
- Description of protocol
- Tracking of changes to protocols
- Identifying all outcome measures
- Providing results, regardless of journal publication status
- Provides method of overseeing types of trial methods being used, e.g.
  - OM specification; non-inferiority designs; single-arm studies;

## For those seeking study results...

- Linkages to PubMed
- Summary Results in database
  - About 60% not available in PubMed
- Results for all prespecified outcome measures
- Standardized format facilitating comparisons



## For those seeking to use aggregate data...

- Search engine allows one to identify all trials that meet certain criteria
  - Search results are listed by relevance
- Must understand nuances of database
- May be best to call for help
- Alternative site to find ClinicalTrials.gov data; CTTI:
  - <http://www.ctti-clinicaltrials.org/what-we-do/analysis-dissemination/state-clinical-trials>

# Questions?

[register@clinicaltrials.gov](mailto:register@clinicaltrials.gov)

