

SUPPLEMENTARY MATERIALS

Systematic Review and Meta-Analysis of the Magnitude of Structural, Clinical, and Physician/Patient Barriers to Cancer Clinical Trial Participation

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Supplementary Table 1: Literature search strategy

Specified Steps in Search Algorithm	Step Characteristics
Databases Searched	PubMed Google Scholar Web of Science Ovid-Medline
Search Keywords	("clinical trial accrual" OR "clinical trial enrollment" OR "clinical trial enrollment barriers" OR "enrollment in clinical trials" OR "patient participation in clinical trials") AND cancer
Date Range Used	PubMed: January 1, 1999 – December 31, 2017 Google Scholar: 1999 – 2017 Web of Science: 1999 – 2017 Ovid-Medline: 1999 – 2017
No. of Results Returned	Total (n = 9,675) <ul style="list-style-type: none"> ▪ PubMed (n = 1,920) ▪ Google Scholar (n = 6,060) ▪ Web of Science (n = 389) ▪ Ovid-Medline (n = 1,306; 1,648 results returned of which n = 342 duplicates)
Results Included in 2 or More Databases	n = 2,099
Titles and/or Abstracts Screened	n = 7,576
Non-relevant Results (Other Topics)	n = 7,538
Full Papers Reviewed (Including Published Abstracts)	n = 38
Articles and Abstracts Not Meeting Inclusion Criteria	n = 25
Included in Final Analysis	n = 13

Supplementary Table 2: List of articles assessed for inclusion in the analysis but excluded

Lead Author, Year	Article Title	Reason for Exclusion
Simon, et al., 1999 (1)	Accrual to breast cancer clinical trials at a university-affiliated hospital in metropolitan Detroit	Article has data inconsistencies.
Adams-Campbell, et al., 2004 (2)	Enrollment of African Americans onto clinical treatment trials: study design barriers	Article has data inconsistencies.
Simon, et al., 2004 (3)	Factors associated with breast cancer clinical trials participation and enrollment at a Large academic medical center	Study does not assess actual eligibility – it only examines perceived eligibility.
Avis, et al., 2006 (4)	Factors associated with participation in breast cancer treatment clinical trials	Study examines enrollment decisions only among patients with available trials.
Baggstrom, et al., 2006 (5)	Barriers for accrual to clinical trials in adult patients (pts) with thoracic malignancies	Data are not complete to examine the full decision process.
Du, et al., 2008 (6)	An educational video to increase clinical trials enrollment among lung cancer patients	Study examines only the enrollment rate.
Grubbs, et al., 2009 (7)	Tracking clinical trial accrual strategies and barriers via a Web-based screening tool	Study does not assess trial availability as it examines screening logs of specific trials.
Sorbye, et al., 2009 (8)	Clinical trial enrollment, patient characteristics, and survival differences in prospectively registered metastatic colorectal cancer patients	Study is conducted in a non-US setting.
Kuroki, et al., 2010 (9)	Addressing clinical trials: Can the Multidisciplinary Tumor Board improve participation? A study from an academic women's cancer program	Study does not provide data on trial availability.
Wujcik, et al., 2010 (10)	Recruitment of African Americans to national oncology clinical trials through a clinical trial shared resource	Article has data inconsistencies.
Biedrzycki, 2011 (11)	Factors and outcomes of decision making for cancer clinical trial participation	Study examines factors influencing enrollment and non-enrollment.
Dechartres, et al., 2011 (12)	Inclusion of patients with acute leukemia in clinical trials: a prospective multicenter survey of 1066 cases	Study is conducted in a non-US setting.
Proctor, et al., 2011 (13)	A screening tool to enhance clinical trial participation at a community center involved in a radiation oncology disparities program	Study is not representative since it focuses only on trials for external beam radiation therapy.
Virani, et al., 2011 (14)	Barriers to recruitment of rural patients in cancer clinical trials	Study examines trial awareness and willingness to participate.
Fouad, et al., 2012 (15)	Enrollment of patients with lung and colorectal cancers onto clinical trials	Study examines final enrollment decision only.
Holmes, et al., 2012 (16)	Increasing minority patient participation in cancer clinical trials using oncology nurse navigation	Study is not representative of the general population of cancer patients, including only African American patients.
Penberthy, et al., 2012 (17)	Barriers to therapeutic clinical trials enrollment: Differences between African-American and White cancer patients identified at the time of eligibility assessment	Study only examines patterns among patients with available trials
Anwuri, et al., 2013 (18)	An institutional strategy to increase minority recruitment to therapeutic trials	Study examines only the final accrual rate.

Byrne, et al., 2013 (19)	Participation in cancer clinical trials: why are patients not participating?	Study is a survey of willingness to participate in trials.
Behrendt, et al., 2014 (20)	Socioeconomic and clinical factors are key to uncovering disparity in accrual onto therapeutic trials for breast cancer	Study examines only enrollment rate and associated demographic factors.
St Germain, et al., 2014 (21)	Use of the National Cancer Institute Community Cancer Centers Program screening and accrual log to address cancer clinical trial accrual	Study does not assess trial availability as it examines patients screened for available trials.
Ko, et al., 2015 (22)	Cancer clinical trial enrollment of diverse and underserved patients within an urban safety net hospital	Analysis conducted on 'screening notes' where a patient may have multiple notes.
Fouad, et al., 2016 (23)	Patient navigation as a model to increase participation of African Americans in cancer clinical trials	Study examines enrollment patterns only among patients with available trials.
Greenwade, et al., 2017 (24)	Factors influencing clinical trial enrollment among ovarian cancer patients	Study examines enrollment patterns only among patients with available trials.
Ibrahim, et al., 2017 (25)	Representation of minorities and elderly in cancer clinical trials at a single institution -the William Beaumont Hospital experience	Study examines only the enrollment rate.

Supplementary Table 3: Definitions of trial availability for included studies.

Study	Definition	Clear specification that trial availability determined by cancer site and stage: Notes
Lara, et al., 2001 (26)	Site and stage	Yes: Noted in Abstract. "53% (91/171) had an appropriate protocol available for site and stage of disease."
Martel, et al., 2004 (27)	Site and stage	Yes: Noted in Methods: "The second question inquired about the availability of an appropriate protocol for the site and stage of the patient's disease."
Umutyan, et al., 2008 (28)	Site and stage	Yes: Noted in results: "Protocols appropriate for site and stage available at the time of the survey".
Baggstrom, et al., 2010 (29)	Histologic subtype and stage	Yes: Noted in Methods: "Appropriate studies at the time of initial consultation were noted ... based on the histologic subtype and staging before a formal individualized eligibility review was conducted."
Javid, et al., 2012 (30)	Disease site and stage	Yes: Noted in Methods: "a therapeutic clinical trial available for the patient's disease site and stage".
Kanarek, et al., 2012 (31)	Cancer site and stage or patient class	Indeterminate: Noted in Methods as, "appropriate to the patient's condition", which they further indicate can include either "cancer site and stage" or "patient class"
Horn, et al., 2013 (32)	Diagnosis and stage	Yes: Noted in Methods: "was a therapeutic protocol available given a patient's diagnosis and stage?"
Swain-Cabrales, et al., 2013 (33)	Histologic subtype and stage	Yes: Defined as: "Appropriate studies at the time of initial consultation were obtained ... based on the histologic subtype and staging."
Brooks, et al., 2015 (34)	Tumor type and stage	Yes: Noted in title to Table 3: "Trial availability percentage by stage of disease and by tumor type."
Klabunde, et al., 1999 (35)	Cancer site and stage	Yes: In Methods, notes whether a "protocol was available for the patients cancer type". The Discussion clarifies, "a protocol matching their cancer site and stage was not available"
Guarino, et al., 2005 (36)	Active, available trial	No: Indicated as: "no active trial" or "lack of available trial"... no clear definition
Go, et al., 2006 (37)	Diagnosis and stage of cancer	Yes: Noted in Abstract: "appropriate for the diagnosis and stage of disease were not available"
Guadagnolo, et al., 2009 (38)	Cancer site and stage	Yes: Methods notes that primary data collection included "cancer site with stage at presentation"

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