

Review

Adherence to Federal Guidelines for Reporting of Sex and Race/Ethnicity in Clinical Trials

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ABSTRACT

Background: The National Institutes of Health Revitalization Act of 1993 requires that NIH-funded clinical trials include women and minorities as subjects; other federal agencies have adopted similar guidelines. The objective of this study was to determine the current level of compliance with these guidelines in federally funded randomized controlled trials.

Methods: Randomized controlled trials published in nine influential medical journals in 2004 were identified by PubMed search. Studies where individuals were not the unit of analysis, those begun before 1994, and those not receiving federal funding were excluded. Included studies were examined to determine sample characteristics and presence of subgroup reporting.

Results: PubMed located 589 published papers. After exclusion of ineligible papers, 69 remained for analysis. Among 46 clinical studies enrolling both men and women, women were generally underrepresented, comprising on average 37% of the sample and only 24% of the sample when analysis was restricted to drug trials. Eighty-seven percent of the studies did not report any outcomes by sex or include sex as a covariate in modeling. Among all 69 studies, 18% did not break down sample sizes by racial and ethnic groups, and 87% did not provide any analysis by racial or ethnic groups. Only 5 studies indicated that the generalizability of their results may be limited by lack of diversity among those studied.

Conclusions: These findings illustrate inadequate compliance with the NIH guidelines. Researchers, editors, and journal audiences share the responsibility of ensuring compliance with our country's policies regarding federally funded research to effect healthcare improvements for all.

INTRODUCTION

THE NATIONAL INSTITUTES OF HEALTH (NIH) Revitalization Act of 1993 (effective March 9, 1994) requires that NIH-supported clinical re-

search include women and minorities as subjects "in approximately equal numbers of both sexes. . . . unless different proportions are appropriate because of the known prevalence, incidence, morbidity, mortality rates, or expected intervention

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effect.”¹ The guidelines for implementation further state that phase III clinical trials must be designed to allow separate planning, conducting, and reporting of analyses for these groups when prior research has indicated that it may be important and that preliminary trials must provide enough information to inform the design of subsequent phase III trials. Women of childbearing potential cannot be routinely excluded, and cost may not be used as an excuse to avoid adherence to these guidelines. The Agency for Health Research and Quality (AHRQ) adopted the NIH guidelines, and the Centers for Disease Control and Prevention (CDC) developed a similar set of guidelines that became effective October 1, 1995.

Previous analyses indicate that federally funded clinical trials have not consistently adhered to these standards. Female subjects generally were underrepresented and sometimes absent, and sex-specific and race/ethnicity-specific analyses were frequently not performed or not reported.²⁻⁴ Given the multiple years involved in planning and executing clinical trials, it is possible that previous evaluations failed to find compliance with federal policies because the clinical trials were designed or initiated prior to the 1993 Act. Therefore, the current analysis evaluates adherence to these guidelines for reporting of sex and race/ethnicity in clinical trials by evaluating federally funded studies initiated after 1993 in the areas of general internal medicine, oncology, cardiology, infectious disease, and obstetrics and gynecology (race/ethnicity only). This analysis also examines whether obstetrics and gynecology journals, given that they are sex specific, are more likely to publish results by race and ethnicity than other journals, a topic that has not previously been explored. To the extent that the course of disease and effectiveness of treatment differ by sex and by race/ethnicity, compliance with these guidelines is critically important to ensure appropriate, evidence-based medicine.

MATERIALS AND METHODS

Randomized controlled trials (RCTs) published in 2004 were located by computerized search of PubMed, focusing on the areas of general internal medicine, oncology, cardiology, infectious disease, and obstetrics and gynecology. Journals were chosen based on both their impact factor in 2003, as determined by Journal Citation

Reports retrieved from the ISI Web of Knowledge, and by the number of RCTs published in 2004. The impact factor reflects the frequency with which papers in a specific journal are cited in a given year. For general medicine, the four journals with the highest impact scores published in the United States were selected; each had at least 20 RCTs. In the subspecialty areas of oncology, cardiology, and infectious disease, journals were selected that were not limited to a single disease, had the highest impact score, and contained at least 50 RCTs. For obstetrics and gynecology, two journals were chosen using the same criteria.

The following nine journals met our criteria: *New England Journal of Medicine*, *Journal of the American Medical Association*, *Annals of Internal Medicine*, *American Journal of Medicine*, *Journal of Clinical Oncology*, *Circulation*, the *Journal of Infectious Diseases*, *Obstetrics and Gynecology*, and the *American Journal of Obstetrics and Gynecology*. A PubMed search in each journal used limits as indexed by the National Library of Medicine to select all papers described as “Randomized Controlled Trial” that were in English, based on data from humans, and published during 2004. In cases where a paper was published online and also in print, the date of publication used for selection refers to the earlier of the two dates.

Each paper was examined by a single reviewer, in collaboration with the coauthors, to determine the source of funding and the date when study recruitment began. Studies identifying no federal support were excluded. Letters and Brief Communications and clinical trials begun before 1994 were also excluded. Studies were excluded where an individual was not the unit of randomization or analysis, where only a portion of a trial’s subjects (such as only enrolled subjects with severe disease) was analyzed, where data were combined from several trials, or where no subjects resided in the United States. All information was captured using a data collection form and entered into Microsoft Excel for analysis.

For the analysis of sex-based reporting, studies that were specific to only males or females were excluded. Conditions that are not exclusive to one sex but may disproportionately affect members of one sex (e.g., autoimmune diseases) were not excluded. Studies based in veteran’s hospitals or treatment facilities were also not excluded unless they addressed a condition found only in men (e.g., prostate cancer).

Papers were evaluated to determine if sex-specific and race/ethnicity-specific results were reported. Obstetrics and gynecology papers were evaluated for the reporting of race/ethnicity-specific results only. It was also noted whether race/ethnicity and sex were taken into account during the analysis of outcomes and if the authors acknowledged the impact that sex, race, or ethnicity might have on either the results or their generalizability to broader populations. The sample distribution across sex and race/ethnicity was recorded in terms of both percent distribution and absolute numbers (because sample size drives the ability to find statistical significance). Comparisons between subsets of the papers were made using Fisher exact test. Each paper was examined in its entirety, including abstract, text, and tables. In addition to the papers themselves, any published follow-up papers or comments by either the author(s) or another researcher were examined for information relating to sex, race, and ethnicity. The race/ethnicity portion of the analysis is limited to black and Hispanic, as other racial/ethnic minorities were rarely reported.

RESULTS

The search resulted in 484 publications in the areas of general and internal medicine, oncology, cardiac and cardiology, and infectious disease, all meeting the search criteria as of June 15, 2005. Of these, 423 were eliminated for one or more of the following reasons: no federal funding, no support described, funding prior to 1994 or unknown date

of funding, no subjects residing in the United States, full sample of subjects not described, or subjects pooled across several trials reported elsewhere. The remaining 61 studies were included in the gender analyses. Among these, 29 were funded solely by federal agencies, and 32 were supported using federal support in combination with other funds (private, state, university endowment, or other sources). Fifty-one studies received some or all funding from the NIH. For use in analysis of race/ethnicity only, an additional 105 obstetrics and gynecology papers were found; after eliminating papers for the above-mentioned reasons, 8 remained for analysis. Thus, 69 papers were included for analysis of race/ethnicity.

Gender

Of the 61 studies, 15 were sex specific and 46 were not. Table 1 provides the distribution of these studies by journal type. Of the 15 sex-specific studies, 7 studies focused on diseases that are specific to women (e.g., menopause, breast cancer, cancers of the female reproductive organs), 5 were specific to men (e.g., prostate cancer, hernia repair), 3 studies chose to include only one sex, even though the condition may affect both men and women (e.g., treatment of lipodystrophy in HIV-infected men, smoking cessation among women with cardiovascular disease, and HIV prevention in African American girls). These 15 sex-specific studies are excluded from the following analysis.

Among the 46 studies that were not sex specific, the majority of studies ($n = 32$, 70%) en-

TABLE 1. FEDERALLY FUNDED RANDOMIZED CONTROLLED TRIALS IN SELECTED MEDICAL JOURNALS, n (%)

	<i>General medicine^a</i>	<i>Oncology^b</i>	<i>Cardiovascular^c</i>	<i>Infectious disease^d</i>	<i>Total</i>
Sex-specific studies	9 (20)	4 (36)	2 (67)	0	15 (25)
Male only	4 (9)	2 (18)	0	0	6 (10)
Female only	5 (11)	2 (18)	2 (67)	0	9 (15)
Studies of conditions in both sexes	36 (80)	7 (64)	1 (33)	2 (100)	46 (75)
Total	45 (100)	11 (100)	3 (100)	2 (100)	61 (100)

^a*New England Journal of Medicine* (impact factor [IF] = 34.8), *JAMA* (IF = 21.5), *Annals of Internal Medicine* (IF = 12.4), *American Journal of Medicine* (IF = 4.4).

^b*Journal of Clinical Oncology* (IF = 10.9).

^c*Circulation* (IF = 11.2).

^d*Journal of Infectious Diseases* (IF = 4.5).

rolled 30% or more women. The percentage of women in each sample ranged from 1% to 79% (median 43%). The number of women enrolled ranged from 2 to 1964 (median 91). Twelve studies had more than 300 female subjects. Of the studies that reported on a drug as an intervention (as opposed to a device or other nonmedical intervention), 13 of 23 (56%) had 30% or more women enrolled. In contrast, among the nondrug studies, 20 of 23 (87%) had 30% or more women ($p = 0.02$).

NIH-funded studies did not fare any better than the group as a whole. Among the 38 nonsex-specific studies that were supported by NIH, 74% had more than 30% women. Among NIH-funded drug studies, 57% had 30% or more women, whereas among nondrug studies, 94% had more than 30% women.

Among the 46 studies that were not sex specific, 40 (87%) did not report any outcomes by sex or include sex as a covariate in modeling. Only 9 (20%) discussed reasons why sex-specific data were not provided, the most common reason being that differences by sex were found not to be statistically significant. These 9 studies all received NIH funding. Table 2 provides a breakdown by journal type. The 31 studies that did not report by sex, did not include it in modeling, and did not provide a rationale for disregarding it were predominantly focused on the topics of cancer ($n = 7$), cardiovascular disease ($n = 5$), HIV ($n = 3$), and psychological disorders ($n = 4$). Thirteen of these 31 studies had more than 200 women enrolled.

No study acknowledged the limits of generalizability related to the study's findings to a particular sex. This includes the 7 studies with less than 20% women subjects. In fact, 1 study in which only 19% of the subjects were women

stated that results were generalizable to the general population because of "diverse representation from women." Twenty-four of the 31 studies that did not report results by sex or provide a rationale for this exclusion had a follow-up letter or comment referenced in PubMed. Of these, 1 questioned the lack of reporting related to sex, stating that analyses should have taken women's menopausal status into account. The author replied that sample size was insufficient to perform such an analysis.

Of the 4 studies reporting on a Veterans Administration study population, the representation by women subjects ranged from 2% to 20%, with fewer than 72 female subjects in each. One study included sex in a model; the other 3 did not acknowledge how the sample distribution might influence generalizability.

Race/ethnicity

Examining the 69 studies in all nine journals with respect to race/ethnicity, none addressed a disease or condition that might be considered race specific (e.g., sickle cell disease in African Americans). About half of all studies reported the percent of subjects that were black ($n = 46$, 67%) or Hispanic ($n = 33$, 48%). Twelve (18%) studies did not report the number of subjects in any racial/ethnic categories; none of these gave any indication that recruitment was limited to a single race.

Just over three quarters of studies ($n = 54$, 78%) reported including both white and nonwhite subjects, with the proportion of white subjects ranging from 30% to 94%. In 8 (12%) of the studies, at least 90% of subjects were white, but only 1 study had only white subjects. Similarly, only 1 study recruited only subjects who were black, and 1 in-

TABLE 2. ANALYSIS BY SEX IN FEDERALLY FUNDED CLINICAL TRIALS, n (%)

	<i>General medicine</i>	<i>Oncology</i>	<i>Cardiovascular</i>	<i>Infectious disease</i>	<i>Total</i>
Analysis by sex provided or sex included in model	5 (14)	0	0	1 (50)	6 (13)
Did not analyze by sex but provided an explanation	8 (22)	1 (14)	0	0	9 (20)
Did not include sex in analysis or did not provide an explanation or both	23 (64)	6 (86)	1 (100)	1 (50)	31 (67)
Total	36 (100)	7 (100)	1 (100)	2 (100)	46 (100)

cluded only black or Hispanic subjects. Among 56 studies funded by NIH, 79% reported enrolling both white and nonwhite subjects compared with 78% overall. Table 3 provides information on the extent to which sample sizes for racial and ethnic groups are reported.

Two studies that provided sample counts by race subgroups treated Hispanic as an ethnic category, separate from racial description, in accordance with the Office of Management and Budget census categories. The remaining studies considered Hispanic to be a mutually exclusive race category (i.e., no subject could be classified as both black and Hispanic).

Looking at the types of analyses performed in these studies, of the 61 studies that did not report by race or include it in a model, 6 (9%) had more than 200 black subjects, 3 (4%) had greater than 200 Hispanic participants, and 1 had more than 200 subjects classified as "other." Examining reasons the authors gave for not including racial/ethnic results, 3 stated that inclusion of the variable in their model was not significant, and 3 stated that differences in bivariate comparisons were found to be not significant. No study mentioned results specific to any racial/ethnic group other than black or Hispanic. Table 4 provides the distribution by journal type for those that provided analysis by racial/ethnic group.

The discussion and conclusion sections of the papers were examined for statements limiting the

generalizability of results based on the race/ethnicity of subjects involved in the study. Five studies noted that the racial/ethnic distribution in their samples differed from that of the general population and that interpretation of results should take this into account. In 3 of these, the samples predominantly comprised minority subjects, and the other 2 studies had a preponderance of white subjects. In the other 64 papers, the findings were generalized without regard to race or ethnicity.

Examining the 8 eligible studies published in two obstetrics and gynecology journals separately, 7 reported the number of black women enrolled, which ranged from 14% to 81%, and 3 reported the number of Hispanic women, which ranged from 2% to 40%. There were no differences in reporting of sample size for race/ethnicity between these journals and the 7 medicine journals ($p = 0.15$ for blacks and $p = 0.24$ for Hispanics). None of these 8 obstetrics and gynecology studies reported results by race or ethnicity. Two studies reported testing race for possible inclusion in a multivariate model; 1 of these found the variable to be not significant and removed it from the final model reported. Similarly, the proportion of obstetrics and gynecology studies that did not report results by race/ethnicity, include it in a model, or provide an explanation did not differ from the other seven journals ($p = 0.19$).

TABLE 3. REPORTING OF SUBJECTS BY RACIAL/ETHNIC GROUPS

	<i>White</i>	<i>Black</i>	<i>Hispanic</i>
Studies with unknown number of subjects in given racial/ethnic group ^a	17 (25%)	23 (33%)	36 (52%)
Studies with no subjects enrolled in given racial/ethnic group ^a	1 (1%)	1 (1%)	2 (3%)
Studies with less than 10% of subjects in given racial/ethnic group ^a	0	9 (14%)	19 (28%)
Studies with all subjects in given racial/ethnic group ^a	1 (1%)	1 (1%)	0
Percent of sample among studies with more than one race reported	30%–94%	4%–81%	1%–57%

^aPercents based on 69 studies.

TABLE 4. ANALYSIS BY RACIAL/ETHNIC GROUPS IN FEDERALLY FUNDED CLINICAL TRIALS, *n* (%)^a

	<i>Internal medicine</i>	<i>Oncology</i>	<i>Cardiovascular</i>	<i>Infectious disease</i>	<i>Obstetrics and gynecology</i>	<i>Total</i>
Analysis by race/ethnicity provided or variable included in model	4 (9)	1 (9)	0	0	1 (13)	6 (9)
Did not analyze by race/ethnicity but provided explanation	5 (11)	0	0	0	1 (13)	6 (9)
Did not include race/ethnicity in analysis or did not provide an explanation or both	34 (76)	10 (91)	3 (100)	2 (100)	6 (75)	55 (80)
Sample not racially diverse	2 (4)	0	0	0	0	2 (3)
Total	45 (100)	11 (100)	3 (100)	2 (100)	8 (100)	69 (100)

^aPercentages may not total 100% because of rounding.

Phase III studies

Of the 69 studies described here, only 4 were described as phase III studies (none were in the obstetrics and gynecology journals). For these, we would expect compliance with the NIH requirements that the sample sizes be adequate to allow subgroup comparisons. No study provided sex-specific results or stated that there were no statistically significant sex differences, nor did any of these phase III studies provide race/ethnicity-specific results or state that differences were not significant by race. One phase III trial was female specific, and one was male specific. The other 2 had 58 (14%) and 305 (38%) female subjects, respectively. The percent of black subjects ranged from 7% to 29% in the 4 studies for which race was reported, and the percent Hispanic was 4% to 20% in the 3 for which it was reported.

DISCUSSION

The Institute of Medicine (IOM) has stressed the importance of research that acknowledges sex differences, describing sex categorization as a "basic human variable." It states that sex influences human health not only through biology but through gender-related differences in behaviors, perceptions, environmental exposures, socioeconomic status, and public policy.⁵ The IOM acknowledges that racial/ethnic disparities in

health status are similarly a complex interaction of socioeconomic, behavioral, and genetic factors.⁶ It is only through acknowledgment and critical examination of these multiple factors that the true picture of health differences and disparities between men and women and among different racial/ethnic populations in the United States will become clear.⁷ Rogers⁸ asserts that evidence-based medicine in general is only as good as the studies on which it is based and bears the risk of reinforcing the existing biases in the research supporting it. Research that excludes certain groups should not be blindly generalized to members of these groups; evidence-based medicine depends on appropriate representation of all race/ethnicity and sex groups in the research that is its foundation.

The importance of examining sex and gender differences in clinical research is underscored by recent findings that aspirin is effective in preventing stroke but not myocardial infarction (MI) or death from other cardiovascular causes in women, despite several studies showing it to be effective at preventing MI but not stroke in men.^{9,10} There are known differences in the way men and women experience symptoms, react to certain drugs, and respond to doses for maximal benefit with lowest risk of side effects.^{11,12} Failure to do sex-specific analyses in the original trial of digoxin in chronic congestive heart failure missed the significant harm of this treatment to women,

an important finding later discovered by researchers not involved in the original study.¹³

Although race may be primarily a socially rather than biologically constructed category, the recent FDA approval of BiDil (NitroMed, Inc., Lexington, MA) for treatment of heart failure among black patients resulted from a clinical trial among African American subjects after an initial study revealed potential differences by race in subgroup analysis.¹⁴ An example such as this justifies the need to analyze study results among subgroups and underscores the responsibility for authors and journal editors of studies unable to perform such analyses to acknowledge the limited generalizability of their results.

The goal of this study was to examine only federally funded clinical trials initiated after passage of the NIH Revitalization Act, yet our results are similar to those found in earlier studies.^{2,15} Results suggest that although most studies enrolled women, more than half of the studies enrolled more men than women. In an analysis of studies published from 1994 to 1999 where mortality was the end point, Ramasubbu et al.⁴ found that women comprised 26% of subjects in studies that began enrolling after 1993, with half of the studies in the area of cardiology. Congruent with our findings, they did not find a significant difference in the percent of women enrolled in trials that began enrolling before 1993 compared with those enrolling after 1993.

Our analysis found that two thirds of studies that included men and women did not acknowledge the consideration of differences by sex, and only 13% reported sex-specific results or included sex in analytical models. Among 5-year R01 grants, publications generally peak in year 5 and decrease steadily thereafter.¹⁶ Therefore, the studies we examined published in 2004 are likely to have first received funding in the late 1990s, well after implementation of the NIH Revitalization Act.

NIH reports that 50% of people enrolled during fiscal year 2004 in trials that were not sex-specific were women.¹⁷ This is in contrast to 37% that we found in the 46 such studies we reviewed and 36% in 38 NIH studies. Time period differences may account for some of the inconsistency. It is possible that studies published in less visible journals tend to enroll a greater proportion of women than those found in the high-impact journals included for this study. Despite the reasons for this discrepancy, the fact remains that published

research in the highest-impact journals continues to reflect inadequate attention to equitable enrollment. A recent report from the Office of Research of Women's Health¹⁸ indicates that in 2000, more than 94% of grant applications were compliant with the enrollment guidelines. This may be indicative of the discrepancies between investigator intention at the time a grant application is made and the realities of subject enrollment.

Reporting by race/ethnicity has also not shown much improvement. Corbie-Smith et al.³ found that 41% of RCTs in three general medical journals reported no sample sizes by race categories, compared with the 18% in nine journals in our analysis. However, they did not restrict studies in their analysis to those supported by federal funds, and 82% of the studies they examined began enrolling subjects before 1994.

There are several potential limitations to this study. Differences by race or gender may be reported in smaller or specialty journals not analyzed here. This may be the case, given that each R01 grant produces approximately 7.6 Medline-listed papers, with 1.61 in a core journal.¹⁶ However, the journals we selected have wider readership and impact than more targeted subspecialty journals and, thus, are more likely to influence future research and practice guidelines. Second, because we excluded studies where the funding source could not be identified, it is possible that some of these were in fact supported by federal dollars. However, citation of federal funding is required in resulting publications so incorrect exclusions in our analysis should be few.

Third, we do not have a pre-1994 comparison group, but this was deliberate. Our interest was to describe the current state of clinical trials reporting with respect to the NIH Revitalization Act in a broad set of journals and subjects, regardless of what the situation was in past years. Fourth, although we initially reviewed almost 500 papers, only 69 met our inclusion criteria, and this limited our ability to compare journals. Last, because we were not always able to determine if a particular study was designed in accordance with the guidelines regarding subject enrollment, our analysis was limited to that which was reported; some studies may have been designed in accordance with the guidelines without giving enough information in the paper to inform the reader. We were also not able to take into consideration, per the guidelines, how the prevalence of a disease may vary by race/ethnicity or sex subgroups and

how this may affect sample characteristics. The guidelines for phase III trials do include reporting of subgroup analyses, and so our analysis of what was reported for these trials is appropriate.

It is important to consider the statistical appropriateness of subgroup reporting. It is true that, by definition, a study is designed to look at an outcome within the entire study population. Examination of particular subgroups may inadvertently introduce confounding factors that can bias the result. However, subgroup reporting should still be performed in order to inform future research. Recognition of significant findings within a particular subgroup is the precursor to designing subsequent studies to look specifically at that group and to make valid comparisons across subgroups. Freedman et al.¹⁹ describe an ideal progression in research, where potential differences among sex or race groups found as a result of subgroup analysis lead to studies where the primary question is asked separately for each group, and the resulting study is designed with separate groups in mind. It may be the case that many of the studies included in our analysis were not adequately powered to detect statistical significance, but if the data could be combined with results of other studies, the question could more definitively be answered.²⁰

Of the seven journals included here, only one (*Circulation*) requests subanalyses, asking in its Instructions to Authors to "please provide sex-specific and/or racial/ethnic-specific data when appropriate, or specifically state that no sex-based or racial/ethnic-based differences were present." However, this request was not heeded by the authors of the three papers reviewed here or reinforced by the editors. One journal (*JAMA*) specifically indicates that if race/ethnicity is discussed, justification for doing so must be provided. This is in accordance with the International Committee of Medical Journal Editors' Uniform Requirements for Manuscripts Submitted to Biomedical Journals statement: "When authors use variables such as race or ethnicity, they should define how they measured the variables and justify their relevance" and "Where scientifically appropriate, analyses of the data by variables such as age and sex should be included."²¹ There is much debate in the literature, however, about the value of race/ethnicity data. To the extent that race/ethnicity is a proxy for socioeconomic and other measures, differences found by race/eth-

nicity may reflect the effects of racism and classism as opposed to true differences.²²

CONCLUSIONS

We examined nine high-impact journals in the fields of general medicine, cardiology, oncology, infectious disease, and obstetrics and gynecology for publication of federally funded clinical trials begun after the congressionally mandated inclusion of women and minorities. We found continued evidence of underrepresentation of women based on published reports of federally funded studies. In studies of interventions for diseases that affect both men and women, nearly one third enrolled fewer than 30% women as subjects. We also found widespread inattention to federal mandates regarding inclusion of racial/ethnic minority subjects in clinical trials. Thirteen percent of clinical trials included 10% or fewer non-white subjects. Results in all but 5 studies were generalized to all populations despite the lack of diversity among those studied.

In some cases, funding agencies have a clearance process for manuscripts prior to submission. This could provide an opportunity for agencies to review compliance with their policies. Furthermore, the NIH Public Access Policy, effective May 2, 2005, requests the submission of papers accepted for publication in peer-reviewed journals to PubMed Central when the research is supported by NIH.²³ The intention is to make these taxpayer-supported results widely available. The notice indicates that the submitted publications will be monitored so that NIH can manage its research portfolio and ultimately set research priorities.

Our research suggests a loophole in the NIH Revitalization Act: although the Act mandates researchers to report results for phase III trials by sex and race, it has no power to require that it be done in any particular forum other than reports made to the funding agency. The responsibility, in part, falls to the journals, for they are a source of information on which healthcare providers base their treatment plans. We encourage journals to consider the importance of equitable enrollment and reporting and to revise their editorial requirements to reflect these goals. The continued lack of compliance with federal guidelines years after passage of the Act indicates the

need for greater scrutiny and accountability among investigators. We also encourage NIH and other funding agencies to use this as an opportunity to monitor the representation and analysis and publication of sex and race/ethnicity in all federally funded clinical research, for research that does not equally reflect men, women, and people of all races cannot adequately contribute to evidence-based models for care.

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