

# Misrepresentations of the Tuskegee Study of Untreated Syphilis

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The Tuskegee Study of Untreated Syphilis (TSUS) is the subject of medical research, healthcare, ethics, race relations and fictitious media portrayals (e.g., movie, play). Unraveling misrepresentations about the TSUS is important because prevailing views continue to contribute to alleged mistrust of the medical system by the black community and compromised doctor-patient and researcher-participant relationships. A comparative analysis of standard TSUS information was conducted and included evidenced-based alternative information in an effort to: a) contextualize the TSUS with accurate medical, public health and historical information and b) balance claims of racism, nontreatment and denial of treatment.

An article in the Winter 2003 *Radcliffe Quarterly* misrepresented the images of two historical African-American health institutions, the John A. Andrew Memorial Hospital and the Tuskegee Veterans Administration Hospital. A critical analysis challenges these pictorial misrepresentations and documents, in part, a continuing and prevailing pattern of biased misrepresentations in discussions about the TSUS.

The National Medical Association (NMA) and the *Journal of the National Medical Association* have a history of advocacy for African-American health, a record of combating racial discrimination and a quest for truth about the status of the black community. As past NMA historical notables have performed through their advancement, service and leadership, health professionals now have the opportunity, obligation and information to educate the American community about the TSUS with evidenced-based information.

**Key words:** historical notables ■ National Medical Association ■ distortions ■ Tuskegee Study of Untreated Syphilis ■ women ■ evidence-based information

The National Medical Association (NMA) has a history of advocating for the health of African Americans and leading the charge against racial antagonism, exclusiveness and stereotypes relating to Americans of African descent in medicine.<sup>1-3</sup> The *Journal of the National Medical Association* (*JNMA*) has served as a vehicle for the NMA's advocacy. Within the pages of the journal, the voices of African-American health professionals, in black and white, communicated about the conditions endured by African Americans, such as denial of hospital staff privileges and discrimination against patients. Often, the *JNMA* was the only available outlet for correspondence, editorials, research, training and scholarship. It was the platform where NMA leaders and members could promote the health of African Americans through advocacy, protest and education, as well as advance the NMA's professional existence.<sup>1,4,5</sup>

Table 1 provides examples of historical notables' advocacy or expressions about rejection and alienation based on varying forms and levels of racial and socioeconomic discrimination in health, black and mainstream organized medicine, and civil rights.

As Table 1 illustrates, through its authority in medicine and authentic life experiences, the NMA and its journal demonstrated that main-street America, generally, and mainstream medicine, specifically, had little or no accurate concept of the African-American experience. Over the last hundred years, the NMA's individual member and group activities contributed to expanded opportunities and access, causing a fundamental shift in how medicine treated and viewed African Americans—namely, from objects to human beings. For example, their concerted efforts, in part, resulted in: a) doubling of African Americans' life expectancy,<sup>a</sup> b) reducing the black-white disparity in life expectancy by almost half, and c) dispelling the prediction and threat of extinction of African Americans.<sup>30-32,33(p.6,15),34</sup>

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<sup>a</sup> In 1900, the life expectancy at birth for blacks was 33 years compared to 47 years for whites. In 2000, the life expectancy at birth for blacks was 69 years compared to 77 years for whites—a 110% and 63% increase, respectively.

Considering the limitations on liberties imposed on African Americans in the early and mid-1900s, these results represented remarkable progress.

Clearly, this progress is the history of significant and long-standing achievements by the NMA leadership and its members. It is the backdrop and context for providing a reanalysis and, therefore, furthering a different understanding of a major medical event especially relevant to the African-American community—the Tuskegee Study of Untreated Syphilis (TSUS). TSUS is a continuously appearing topic in the scientific and popular literature. It warrants reanalysis because of its many representations in the literature. The purpose of this article is to: a) present an abbreviated comparative reanalysis of the TSUS and b) critique a recent article, focusing on the TSUS.<sup>35</sup> This article seeks to provide an evidenced-based description of the TSUS that is an alternative and contrast to the prevailing description of the TSUS as a medical experiment replete with myths, stereotypes and claims of government conspiracies and genocide. As others have provided critiques in the journal (Table 1), it is important to critique and correct erroneous information related to African-American history, generally, and African-American medical history, specifically.

## TOWARD BALANCE IN THE TSUS

The TSUS was the 1932–1972 U.S. Public Health Service (USPHS) study, involving approximately 400 syphilitic black men who were found untreated in rural Alabama and followed to autopsy. As a control, there was also a comparable group of 200 black men who were presumably nonsyphilitic and followed to autopsy.<sup>36</sup> While the TSUS was prospectively and positively acknowledged for contributing to a national venereal disease control program during its 40-year duration,<sup>37,38</sup> it was retrospectively and negatively critiqued for contributing to ethical and racial issues and quandaries in medicine and research since its abrupt cessation over 30 years ago.<sup>39–42</sup> In other words, contemporary perspectives of racism in medicine and ethics and their application to the TSUS have shifted discussions about the study from deference to objective science, medicine and public health to more subjective moral, emotional and political issues—generally geared to a more lay audience. Thus, not only has the TSUS been the subject of refereed journal articles and academic books, it has also been the subject of continuous and sundry activities, such as a play, a movie, media reports and a presidential apology.

The extant analyses of the TSUS have substantial challenges in many areas, such as medical and public health history, black history and women's studies. These challenges have occurred because only a few

perspectives and voices have selected issues, framed the debate and dominated the discussion.<sup>40,43–47</sup> These limitations in the discussions about the TSUS, in part, helped to fuel the mistrust in the healthcare system claimed to be prevalent among African Americans. The concern is that if or when the TSUS is cited during patient–doctor interactions, discussions, academic presentations or even general health-related conversations, critical health-related decisions may be made based on a flawed database and analysis. A balanced discussion of the TSUS is warranted. Alternative information added to or substituted for the standard and widespread information is shown in Tables 2–7 and Figures 1 and 2. In the tables, the left columns represent selected examples from the prevailing analyses; the right columns represent alternative and evidenced-based information—which, in many cases, appeared contemporary with the TSUS. This information is for researchers, epidemiologists, medical professionals, ethicists and medical historians to discuss with their respective constituent and clientele of students, colleagues, patients and patients' families.

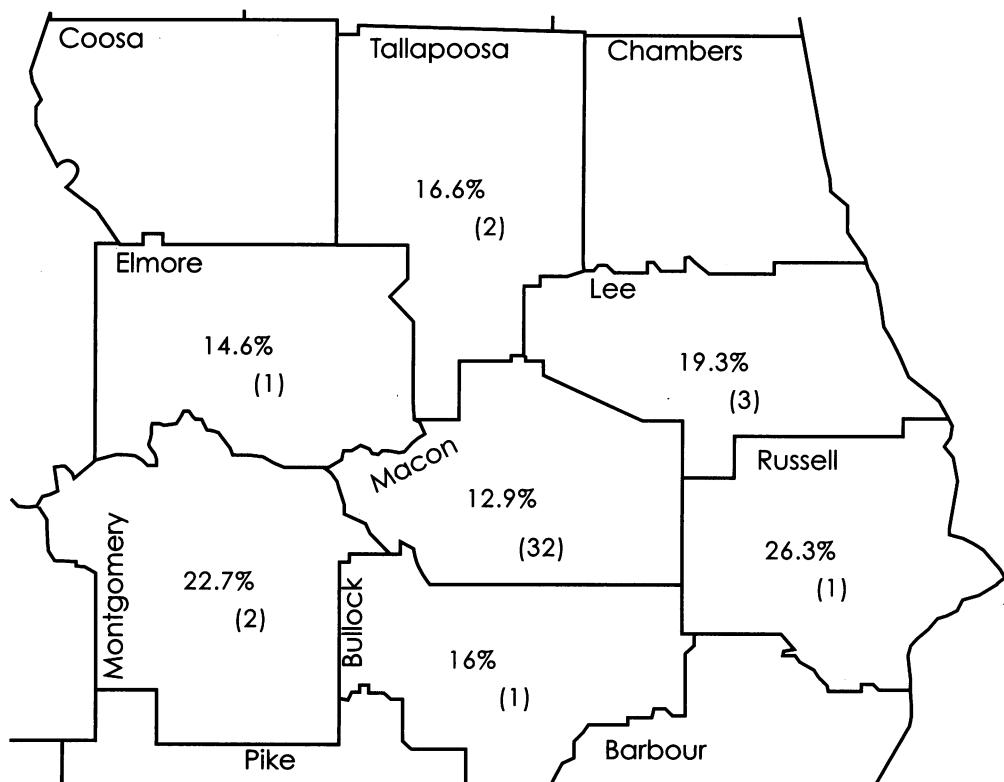
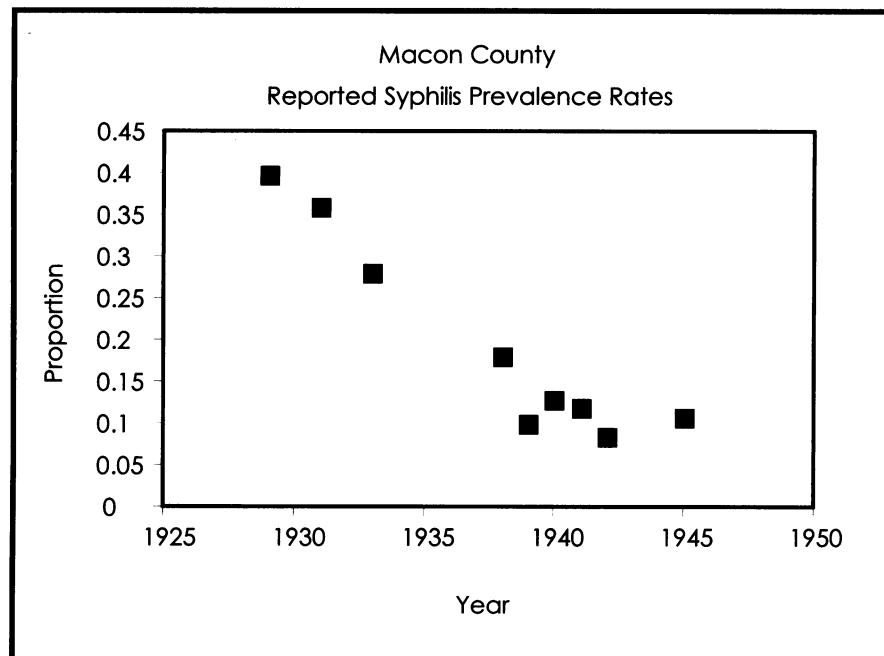
In general, the comparisons in Tables 2–7 and the illustrations in Figures 1 and 2 suggest that the distrust of medical researchers, doctors and the healthcare system, based on the TSUS, may not be appropriate. Tables 2–7 offer a rational strategy to begin a dialogue that may decrease the myths, stereotypes and claims of government conspiracies and genocide. Perhaps, evidenced-based information can counter misinformation that may be influencing health-related behaviors and decisions in the African-American community.

The flawed analyses, distortions and misrepresentations were not limited to the issues illustrated in Tables 2–7. Recently, for example, an article in the *Radcliffe Quarterly*,<sup>35</sup> in part about the TSUS, had major misrepresentations relative to two historical African-American health institutions—the John A. Andrew Memorial Hospital (JAAMH) and the Tuskegee Veterans Administration Hospital (TVAH). During their rise to prominence, these hospitals were important to African Americans because of opportunities offered, services rendered and professional validation achieved.<sup>114,115</sup> Although an objective, critical analysis is acceptable, intentional distortion of their reputations and transformation of the hospitals with false images is inappropriate. These false images may raise questions that cannot be suitably answered and may lead to questionable conclusions.

## PICTORIAL MISREPRESENTATIONS

In this section, pictorial misrepresentations of the TSUS are described and critically analyzed. Madeline Drexler published an article, “Testifying on Tuskegee.”<sup>35</sup> The article, with its photographs, raises

**Figure 1. Top graph.** A Medical Miracle. Macon County syphilis prevalence rates declined in blacks. Data points were derived from: (a) 1929 and 1939, specific population not indicated; (b) 1930–1931, Rosenwald Study, general population; (c) 1932–1933, adults, age >25 years; (d) 1938, general population; (e) 1940, selective service, men, age 21–35 years; (f) 1941, general population; (g) 1942, John A. Andrew Hospital population; (h) ~1944–1945, population age 14–50 years.<sup>94,96–101</sup> **Bottom map.** Syphilis rates in Macon County and the surrounding counties plus the number of VD clinics. Selective service syphilis prevalence rates in black men in Macon County were lower than in black men in the surrounding counties: 1940, age 21–35 years. In parentheses are the number of venereal disease clinic sites in Macon County and the surrounding counties in 1941.<sup>95</sup>



several problematic content and contextual issues about the TSUS. Two major problematic areas are described in this analysis.<sup>b</sup>

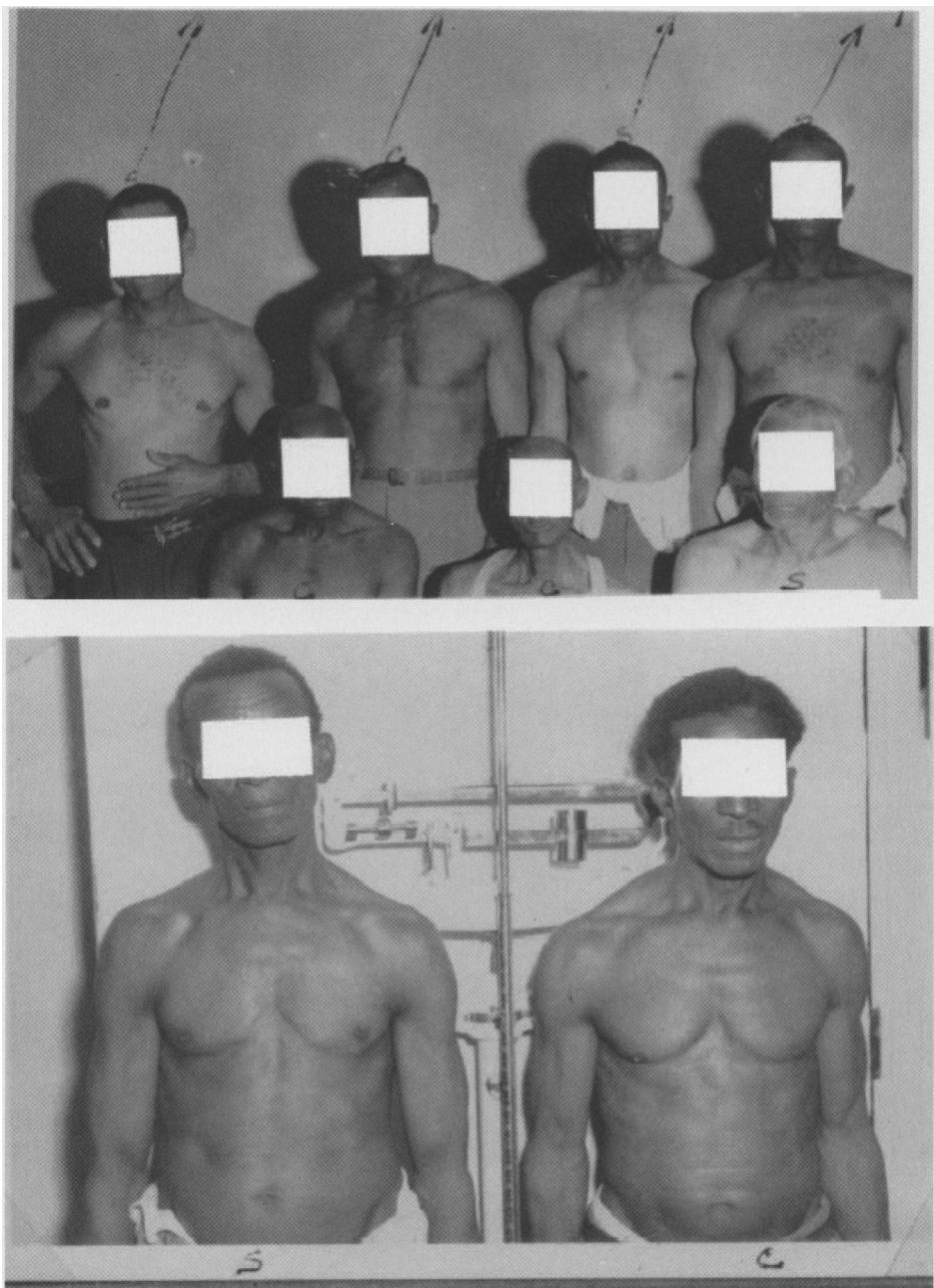
The first problematic area relates to photographs being altered and therefore distorted. The photographs from the TSUS were superimposed with 1999 interior photographs of the long-closed JAAMH. Although the readers are informed that the photographs are computer composites, they may not be aware of the original 1950s photographs and how facilities looked at the time of the study. Now, the superimposed, and therefore distorted, photographs leave readers to their own conjectures. When combined with the text of the article, these photographs may conjure confusion, misun-

derstandings and erroneous beliefs. For example, the photographs show TSUS evaluations and the health professional–research participant interactions occurring in dilapidated facilities (e.g., peeling paint, dingy-looking). As depicted in the composites, this is in contrast to the cafeteria of the modern TVAH, where hot meals were served to men in the study.<sup>58</sup>

As historical background, the JAAMH was used for evaluations, procedures and x-rays in the beginning of the TSUS.<sup>57</sup> About 20 years earlier, Elizabeth A. Mason, a prominent Bostonian, agreed to provide Booker T. Washington with the money for a modern hospital. She knew about the healthcare needs in Tuskegee, AL, because her husband, Charles E.

**Figure 2.** Lean and hard-muscled. After 20 years on study (plus prior years of syphilis infection), using inspection alone and without a blood test, one cannot distinguish a man with syphilis and a man without syphilis in the control group. Some of the patients resented being told they were not as "healthy as they felt."<sup>75</sup>

**Top.** A group photograph. Standing (left to right): syphilis, control, syphilis, syphilis. Sitting: control, control, syphilis. **Bottom.** A close-up of two men. The man on the left has syphilis; the other man is a control. The photograph was taken in the TVAH in February 1952. (National Archives, CDC, East Point, GA)



**Table 1. Historical Notables' Advocacies and Challenges**

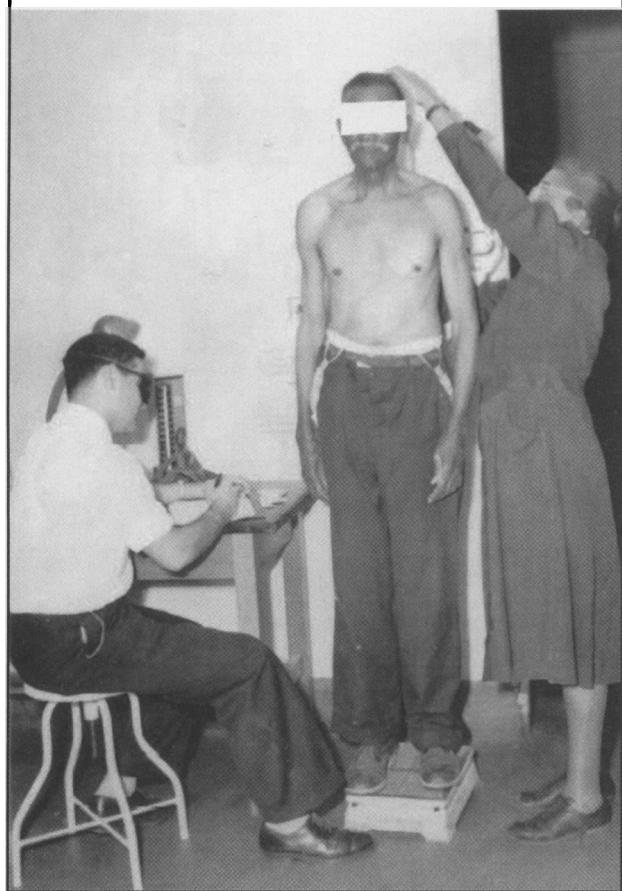
<b>Doctor/Date</b>	<b>Issue Advocated (a) or Challenged (c)</b>
CV Roman 1911	The Negro race in America will become extinct in a hundred years (c) <sup>6</sup>
JA Kenney 1924	The NMA saved the US Veterans Hospital at Tuskegee for the Negro race (a) <sup>1</sup>
AW Dumas 1926	All negroes have syphilis (c) <sup>7</sup>
WG Alexander 1926	The Dr. Sweet trial, housing integration, and the right of blacks to defend their person and property (a) <sup>8</sup>
CH Garvin 1930	To capitalize Negro in American Medical Association (AMA) publications would be "an act in recognition of racial self-respect for those who have been in the 'lower case' so long" (a) <sup>9</sup>
JH Lewis 1931	An unknown and obscure Negro slave made ether anesthesia possible (a) <sup>10</sup>
JA Kenney 1931	The AMA designated "colored" after the names of Negro physicians in their membership directory (c) <sup>11</sup>
NPG Adams 1934	The deficit of internships for blacks is not remedied by the surplus of internships for whites (a) & (c) <sup>12</sup>
CH Garvin 1935	Negro doctors...not one has ever discovered a new method or agent or contributed an essentially fundamental medical fact (c) <sup>13</sup>
GW Bowles 1939	Complaint against the use of the word "negress" in a pharmaceutical company advertisement (c) <sup>14</sup>
JA Kenney 1939	Negro physicians are not accepted as an integral part of the AMA (c) <sup>15</sup>
JA Kenney 1942	The blood of blacks is not accepted equally with that of whites in blood banks (c) <sup>16</sup>
FD Stubbs 1944	The need for wholly Negro institutions (a) <sup>17</sup>
TM Smith 1944	Syphilis in the United States is primarily a Negro problem (c) <sup>18</sup>
MO Bousfield 1946	Tuberculosis among Negroes is a major health problem only because race prejudice fastens upon the Negro certain social, economic, and environmental conditions which predispose to the disease (a) <sup>2</sup>
HA Callis 1947	Drs. William Hinton, Julian Lewis, and Hildrus Poindexter are not admitted to Fellowship in the American College of Physicians (a) <sup>19,g</sup>
JNMA editorial 1947	A lynch mob cannot be convicted in the civil courts of the South (a) & (c) <sup>20</sup>
CR Drew 1947	It is utterly impossible for a Negro physician to become a member of a county medical society in the South (a) & (c) <sup>21</sup>
CH Marshall, Jr. 1948	Educational facilities for Negroes to circumvent the possibility of Negro students gaining admission to white institutions (c) <sup>22</sup>
JNMA editorial 1948	Negro physicians should be the recognized authorities on those diseases that have a high rate of occurrence among Negroes (a) <sup>23</sup>
WM Cobb 1950	Medical schools should be open to all without discrimination (a) <sup>24</sup>
JNMA editorial 1960	Transfusions are safer for patients when the blood of their own race is used (c) <sup>25</sup>
JA Kenney, Jr. 1963	AMA inaction on denial of hospital staff privileges for Negro physicians and discrimination against Negro patients (c) <sup>26</sup>
WM Cobb 1965	The NMA's contribution to the Selma-Montgomery March (a) <sup>27</sup>
WM Cobb 1970	Dr. Alyce Gullattee appointed to Board of Trustees of Wesleyan University (a) <sup>28</sup>
CC Sampson 1984	The myth surrounding Dr. Charles Drew's death (c) <sup>29</sup>

<sup>g</sup> At the time, there was only one African-American physician with FACP after his name—Dr. Algerdon Jackson.

Mason, was on the board of trustees of Tuskegee Institute, and she had visited Tuskegee with him. Mrs. Mason named the hospital in the memory of her grandfather, John A. Andrew, who was an abolitionist and governor of Massachusetts during the Civil War.<sup>116,117</sup> In view of the identities of the professionals shown in the photographs, at least two of these photographs were taken during the November 1951 to June 1952 survey of the TSUS. Photographs 1 and 3 were taken in the TVAH and not the JAAMH.<sup>58</sup> Photograph 2 was taken outdoors in a cotton field (note the sunglasses on the woman). Both photographs 1 and 2 have been published elsewhere without alteration and therefore without distortion<sup>44,46</sup> and are available for review. Undistorted photograph 3 is shown in Figure 3.

It is unclear what objectives are sought by superimposing TSUS photographs from the 1950s with

**Figure 3.** An unaltered view. Nurse Eunice Rivers measures a participant in the TSUS. Dr. Stanley Schuman records the data. The photograph was taken in the TVAH in February 1952. (National Archives, CDC, East Point, GA)



<sup>b</sup> Two letters were written to the *Radcliffe Quarterly*, requesting disclosure about the misrepresentations and a corresponding correction. Disclosure and corrections have not occurred. The commentary in this section, in part, communicates the content of the two letters. <sup>c</sup> In March of 1961 and 1962, the *Journal* dedicated a number to the John A. Andrew Memorial Hospital and Tuskegee V.A. Hospital, respectively. <sup>d</sup> The full names of these women were Geraldine A. Gleeson, Dorothy S. Rambo, Anne Roof Yobs, Martha C. Bruyere, Lida Usilton, and Eleanor V. Price.

images of a hospital closed for over 20 years. The composites misrepresent how black-run institutions in Tuskegee, AL managed their facilities for patient care and research.<sup>c</sup> These superimposed and distorted photographs may be perceived as insulting to Tuskegee Institute (now Tuskegee University), Elizabeth A. Mason, John A. Andrew, the JAAMH and the TVAH. This is not to say that facilities, like portrayed in the composites, did not exist in other places where blacks received health services. However, this was not the case at the black-run JAAMH and TVAH in Tuskegee, AL during the time of the TSUS.<sup>58</sup>

The second problematic area relates to photographs being incomplete, therefore again, inaccurate and distorted. The TSUS photographs show black male participants and several professionals—a black male, black female and white male. There is no photograph of any of the white female professionals who also had their names<sup>d</sup> represented on the TSUS publications similar to the three other race-gender persons.<sup>37,58,87-89,118-122</sup> Does their absence from the photographs and the TSUS dialog suggest any of the following possibilities: a) discrimination against white women by omitting them, b) an attempt to hide white women's involvement or c) incomplete historiography? After decades of much attention (e.g., media, books, a play, a movie, numerous peer-reviewed articles and a presidential apology), some critics may believe that framing the TSUS without including white women sustains the oft-cited and prevailing view of the TSUS being racist and genocidal and physician arrogance.

In conclusion, the photographs raise issues to ponder regarding the TSUS. The composites are of the wrong hospital (photos 1 and 3) and the wrong place (photo 2). The composites misrepresent the hospital, as it existed in the early 1950s, giving an impression that it was run-down. The TSUS photographs are not inclusive of white women, who also had roles in the study. To what end justifies these means? There is no justification in claiming artistic license for distorting these photographs. The commentary in the article about wrongdoings in the TSUS, their impact on the African-American community, the role played by Nurse Eunice Rivers or in the article's words: "a mammy view of black women" is also not a justification. The TSUS is a real occurrence. The events that occurred in and concurrent with the study should exist on their own merits or demerits. There is no need for fabrications, falsifications and stereotypes that create and fuel fictitious images. These composite photographs are not "testifying" to TSUS facts. If readers of the *Quarterly* make or

influence health decisions based on what they believe happened in the TSUS, their decisions should be based on facts—not photographs with: a) computer-generated fiction and b) the apparently deliberate omission of certain groups of persons.

There are other misrepresentations in the *Radcliffe Quarterly* article. Again, the article focuses on and negatively criticizes a black woman but excludes the role and responsibility of white women in the TSUS. The research of Susan Reverby, a professor of women's studies at Wellesley College, was the basis of the article. Reverby's work may be perceived as definitive, especially since she has been published in some peer-reviewed venues. However, her work has been characterized by challenges in her commentary and use of photographs, relating to black professionals, professional women, and medical and public health history. The following are examples:

- 1) In a *Research Nurse* article, in part about the presidential apology, Reverby published a photograph of five of the TSUS survivors, President Clinton, Vice President Gore and CDC Director Dr. David Satcher.<sup>46</sup> The legend did not name Satcher (this is semicorrected in *Tuskegee's Truths*, but the legend mislabeled Satcher as U.S.

surgeon general, which he was not at the time of the photograph).<sup>123(p.188)</sup> Also, Nurse Eunice Rivers is named, pictured and discussed in the article. Ironically, President Clinton did not mention Rivers or black nurses in his apology for the TSUS.<sup>124</sup> Again, no other women who were involved with the TSUS were mentioned in the apology or Reverby's article.<sup>46</sup>

- 2) In the front of a *Hastings Center Report* article authored by Reverby, a painting was reprinted with no apparent connection to the TSUS. The painting depicts a stereotypic caricature of a black man. While the painting's message may have been appropriate at the time in the 1940s, its link to the TSUS raises questions about its purpose in the article.<sup>69</sup>
- 3) In *Tuskegee's Truths*, Reverby published a photograph labeled as "U.S. Public Health Service Rapid Treatment Penicillin Clinic, ca. late 1940s."<sup>123(p.185)</sup> In the photograph, a number of white men were seated at a table receiving an intravenous infusion; two white male health professionals were tending to the men. Standing behind the white men was a number of black men apparently waiting to be treated next. This photograph is mislabeled in place, treatment and time.

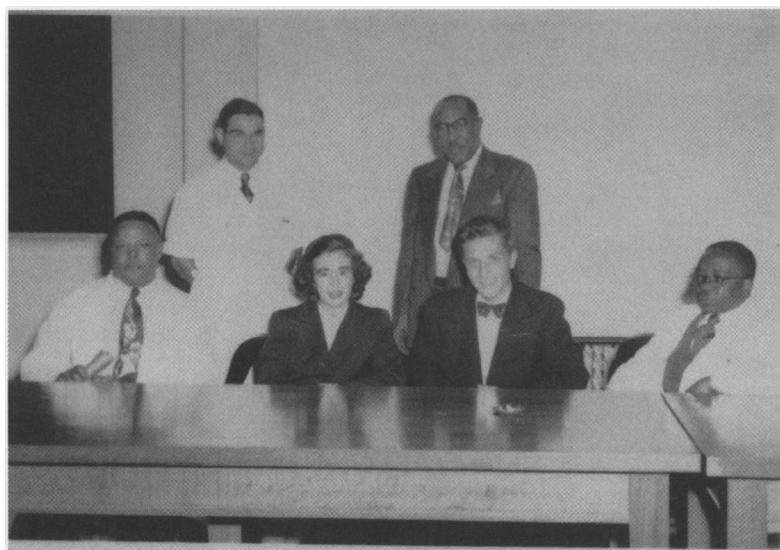
**Figure 4.** A USPHS Venereal Disease Clinic at Hot Springs, AK, circa 1920s. Inspection of the photograph illustrates fully-clothed men receiving an *intravenous infusion* (Call# WC 140 AA8 no. 1). Rapid treatment centers were inpatient facilities, and penicillin therapy for syphilis was *intramuscular injections* every 2–3 hours for 9–14 days or 1–2 times daily for 9–14 days, depending on the penicillin formulation<sup>129</sup> (Parklawn Library, Rockville, MD)



This photograph has been published in other historical works that provide evidence that the photograph was mislabeled in *Tuskegee's Truths*,<sup>125-127</sup>—none of these historical works corroborated the place, treatment and time in *Tuskegee's Truths*.<sup>e</sup> The National Library of Medicine (NLM) was the source of the photograph in *Tuskegee's Truths*, and the NLM's source was National Archives photograph no. 90-G-47-654. The description of the photograph in the NLM (call #WA 11 C29 no. 102) states, "A clinic is maintained at Hot Springs, Ark. by the USPHS in connection with the Government Free Bath House for the study and investigation of venereal diseases." The description of the photograph in the National Archives (Adelphi, MD) had similar information (i.e., 90-G-47-654) as the NLM. Although the "Finding Aid" in the National Archives for RG 90-G, Records of the Public Health Service, cited the time period for the boxes in this collection as 1880–1943, the photographic mount for 90-G-47-654 had the heading, U.S. TREASURY DEPARTMENT, BUREAU OF THE PUBLIC HEALTH SERVICE (Form 8906). The USPHS was housed

<sup>e</sup> Both of the Walls articles have a photograph similar to the one published in Reverby's book. Walls' photograph is a different shot of the same sitting, i.e., the gentleman sitting to the far left is facing the camera in Walls' photo and is only profiled in the photo in Reverby's book. Also, the attendant to the far left is facing more towards the camera. Walls dates the photograph as approximately 1925 and reports the treatment as intravenous arsphenamine.

**Figure 5.** "Who's that lady?" The photograph was taken in the TVAH in April 1952. Standing (left to right): Dr. Stanley Schuman (USPHS), Dr. George Branche (TVAH). Sitting (left to right): Dr. E.T. Odom (TVAH), unidentified woman, unidentified man, Dr. J.J. Peters (TVAH) (National Archives, CDC, East Point, GA)



in the Treasury Department until 1939, when it was transferred to the Federal Security Agency. This may mean that the photograph was archived on or before 1939 and, thus, before the rapid treatment centers were developed and penicillin was found to have activity in syphilis.<sup>128</sup> Figure 4 is the photograph from a third source that also does not corroborate the place, treatment and time in *Tuskegee's Truths*.

The photograph's content, including its racial image, cannot be refuted. However, in *Tuskegee's Truths*, the photograph was mislabeled. Furthermore, how persons were served by race may have been practiced differently at the rapid treatment center in Birmingham than portrayed in the photograph and relevant to the men in the TSUS for two reasons. First, the Slossfield Health Center in Birmingham was run by an almost entirely black staff; the center began in 1937 for the "Negro people." The rapid treatment center at Slossfield treated about 300 people every nine days.<sup>130</sup> Second, in the report about the Birmingham and Jefferson County execution of the 1943 Henderson Act (Table 6), the authors described an expansion of the rapid treatment center beds, i.e., "225 white, 675 Negro."<sup>64,112</sup> It is unknown whether blacks from Macon County, requiring a stay at a rapid treatment center were sent to the Slossfield Health Center or to the designated Negro beds described in the report. Nevertheless, readers may link the mislabeled photograph to the TSUS, shifting and linking racial images and views from an earlier time period to the time of the TSUS. Perhaps the image of the photograph plus the distorted title was to communicate the denial of treatment at the *fictional* Birmingham Rapid Treatment Center depicted in *Miss Evers' Boys* (Table 7). Interestingly, Reverby wrote that she began work on *Tuskegee's Truths* after she saw the play *Miss Evers' Boys*—a fictional version of a real event.<sup>123(p. xvii)</sup>

4) In the *Quarterly*, a statement was written that Nurse Rivers was "the only visible woman in the whole study." Nurse Rivers coauthored two of the publications about the TSUS.<sup>58,75</sup> What is generally unknown is that six other women also coauthored 10 of the TSUS publications.<sup>f</sup> In fact, in the *Research Nurse* article, there was a list of the 13 known articles concerning the TSUS.<sup>46</sup> Only

Rivers' name appeared on the list; the other women's names were hidden in "et al." The list of published reports on the study in *Tuskegee's Truths* also did not include the other women's names—only that of Eunice Rivers.<sup>123(p.606-607)</sup> Although their publications gave them credit and visibility for their TSUS work, these other women have not received the scrutiny, analysis,

<sup>f</sup> There were 10 publications but only nine manuscripts; one of the manuscripts was published twice.

**Table 2. Racism and Race**

<b>Standard Information</b>	<b>Alternative or Inclusive Information</b>
The TSUS has come to "symbolize exploitation of minorities" <sup>41</sup> and "exploitation of social vulnerability." <sup>48</sup>	According to Oliver Wenger of the USPHS: <ul style="list-style-type: none"> <li>• Public health problems of black population were ignored.</li> <li>• He planned to present data from his syphilis survey in Mississippi to Mississippi legislature.<sup>49</sup></li> </ul> According to Taliaferro Clark of the USPHS: <ul style="list-style-type: none"> <li>• Choice of blacks for studies was a matter of cooperation, not discrimination.<sup>50</sup></li> </ul> In a Rosenwald study in Tennessee: <ul style="list-style-type: none"> <li>• History of a primary syphilitic lesion was more accurate for blacks than whites.<sup>51</sup> Timing a primary lesion was important to estimate the duration of the syphilis infection—an entry criterion in the TSUS.</li> </ul> In 1932, the Alabama venereal disease control program was abandoned (i.e., elimination of many of the drugs previously furnished). Blacks in Macon County and in the TSUS may have had greater access to antisyphilitic drugs in 1932–1933 than poor whites in Alabama. <sup>52,53</sup> In 1937, the National Medical Association was the first national organization to vote cooperation with the syphilis control campaign of the USPHS. <sup>54</sup>
The TSUS was an USPHS-sponsored study with cooperation and assistance of the Macon County and Alabama state health officials. <sup>57,58</sup>	The work of the Rosenwald Fund (syphilis control studies in six rural counties in the South) in cooperation with the USPHS was celebrated in a 1957 publication. The work was important because it provided "information on patient and community attitudes, prevalence of syphilis, and possible methods of control." <sup>55</sup> In finding varying syphilis prevalences among blacks in the six counties—from 6.5% in Albermarle County, VA to 36% in Macon County, AL, the USPHS learned that: "syphilis is not peculiarly a racial disease, but is also influenced in large measure by environmental and social standards." <sup>56</sup>
Data from the first TSUS article was presented at the American Medical Association annual meeting in Kansas City and then published in the association's journal. <sup>57</sup>	The TSUS involved black-run institutions—John A. Andrew Hospital, Tuskegee Institute, and Tuskegee Veterans Hospital—which cooperated, assisted, and were consulted. <sup>57,58</sup>
	Data from first TSUS article was presented at the John A. Andrew Clinical Society in Tuskegee—a black-organized continuing medical education activity—and then published in the society's journal. <sup>59</sup>

visibility and notoriety as Nurse Eunice Rivers. For example, one of the women, Dr. Anne Roof Yobs, was a physician and chief of medical research of the venereal disease research laboratory.<sup>89</sup> The other five women were statisticians, who calculated the morbidity and mortality differences between the syphilitic men and the controls.<sup>37,58,87,88,118-122</sup> One of these women, Geraldine Gleeson, had her name on four of the publications (three manuscripts)<sup>37,87,119,120</sup> and was known to have given a statistical lecture ("The Value of Statistics to the Average Doctor and Their Application by the U.S. Public Health Service Today") to the resident house-staff and attending physicians at the TVAH.<sup>131</sup> Figure 5 illustrates black and white male professionals and a white female professional at the time of the 1951–1952 TSUS survey. Although not identified, this may be the first TSUS-related publication of a photograph of one of the many white female professionals who knew of and were involved with the TSUS. Unlike Rivers, these women have not been cited

for their involvement, i.e., their roles in and responsibility for the TSUS. This is not only unfair to Nurse Rivers, but it is also unfair in fully disclosing what is known about the TSUS.

There was also a photograph of Nurse Rivers and a TSUS participant in a cotton field in the *Research Nurse* article and in *Tuskegee's Truths*—works published by Reverby.<sup>46,123(p.184)</sup> This photograph, published in the *Quarterly*, was also altered, and therefore distorted.

As illustrated above, Reverby's TSUS research, over time, seems to be associated with selected and biased reporting of certain information about black people and their institutions, women's studies, and medical and public health history. This reporting includes: a) excluding white women at the expense of targeting a lone black woman; b) deleting the name of a black public health official while citing everyone else in a photograph; c) associating her TSUS work with stereotypic and caricature artwork; d) mislabeling an archival public health photograph; and e) altering and distorting the

**Table 3. Racism and Race: Distortions**

Standard Information	Alternative or Inclusive Information
In a 1998–1999 survey, 76% of blacks and 59% of whites who were familiar with the TSUS indicated that the men in the TSUS were injected with syphilis by the researchers. <sup>60</sup>	The USPHS found 400 untreated syphilitic black men in rural Macon County, AL. <sup>36</sup>
"The study was racially motivated and discriminated against African Americans in that no whites were selected to participate in the study; only those who were poor, uneducated, rural and African-American were recruited." <sup>47(p. 83)</sup>	Nontreatment occurred in whites and/or blacks with late latent syphilis in the Stanford Study, <sup>61</sup> at Harvard University, <sup>62</sup> at the Mayo Clinic, <sup>63</sup> in the Birmingham, AL portion of the Alabama 1943 mass survey law (the Henderson Act) <sup>64</sup> and in the Blue Star Study. <sup>65-67</sup> The two latter programs involved penicillin. Age of the patient and duration of the infection influenced a nontreatment decision. Internationally, nontreatment occurred in men and women with early syphilis in the Oslo Study. <sup>68</sup>
Julian Lewis, in <i>Biology of the Negro</i> , "did not consider whether treatment should be different for blacks than for whites." <sup>69</sup>	Lewis described a treatment for blacks with neurosyphilis. <sup>33(p. 181)</sup> In general paresis, Plasmodium vivax (tertian), the standard used for malariotherapy in whites, did not take in blacks. Based on research begun in November 1932, George Branche of the TVAH found success with <i>P. malariae</i> (quartan). <sup>70,71</sup> This difference in biological therapy—"White people respond best to tertian malaria (plasmodium vivax); negroes to quartan (plasmodium malariae)"—was acknowledged in the both the syphilology and malariology literature. <sup>72,73</sup>
Miss Evers' Boys: a reference to a dance and music group <sup>74</sup>	Miss Rivers' Lodge: a reference to "free medicines, burial assistance or insurance" <sup>75</sup>
"Tuskegee": symbol of research abuse and racial oppression <sup>48</sup>	"Tuskegee": Booker T. Washington, Tuskegee Institute (now University), George Washington Carver, TVAH, training base for World War II black pilots (now Tuskegee Airmen), Tuskegee Civic Association <sup>76</sup>

images of historic black institutions.

Claims of artistic license or academic freedom cannot justify these distortions. The events that occurred in and concurrent with the TSUS should exist on their own merits or demerits. There is no need for apparent fabrications and falsifications—leading to stereotypes and creating images that did not exist. Articles, such as “Testifying on Tuskegee,”<sup>35</sup> may contribute to negative feelings and ineffective relationships among doctors and patients, and researchers and participants (e.g., distrust of and noncompliance with appropriate medical, preventative and public health programs). These negative processes and outcomes, in turn, may contribute to black–white health outcome disparities.

## DISCUSSION

During 20th-century America, black health professionals—out of exigency—were forced to be activists—i.e., interested, attached and political—when it came to their advancement, service and

leadership in medicine (Table 1). Some of the most demeaning rhetoric and predictions about African-American health did not result in African Americans’ retreat or defeat but served as “one of the strongest and earliest stimuli for race pride and public health effort among colored people. It goaded and infuriated them.”<sup>22</sup> Through the NMA’s vision, purpose and fortitude, much progress has come to pass. Nevertheless, challenges persist and require energetic, focused attention and leadership.

The TSUS has become an important contemporary topic, often interjected into research, healthcare, ethics, and race relations discussions and debates. However, misrepresentations about the TSUS, including myths and revisionist history, have intruded into the literature. This literature includes unscientific historiography, ethically substandard research and questionable interpretations. A comparative analysis of standard TSUS information with alternative evidenced-based information brings balance to issues of

**Table 4. Nontreatment**

<b>Standard Information</b>	<b>Alternative or Inclusive Information</b>
In the 1930s, a standard of care for early syphilis: weekly arsenotherapy or heavy metal therapy for 70 weeks. <sup>59</sup>	Harry Robinson of Baltimore, MD reported that many former students were not recommending the standard of care but the average physician in their community advised 7–10 injections of arsenotherapy or bismuth as complete therapy for syphilis. <sup>57</sup>
The Rosenwald Study is viewed as a positive program because of the provision of treatment to blacks in the six rural Southern counties. <sup>39,40,43,46</sup>	In a study in Boston, with all whites except (one black), 71% of the patients received 0–12 doses of arsenotherapy within the first five years of infection; 70% of these received 0–12 doses of arsenotherapy in the late latent period 5–15 years post infection. <sup>77</sup> John Kenney cited this report in the JNMA with the following caution: “In a person past 50 with no clinical evidence of syphilis, what is to be achieved by pumping arsenicals into his blood stream anyway just because his blood has shown a positive reaction?” <sup>78</sup>
The life expectancy of untreated syphilitics compared to nonsyphilitics was reduced. <sup>84</sup>	Only 15–25% of infectious syphilitics completed a full course of therapy because of stigma, cost and/or remission of symptoms. <sup>79–81</sup>
	“So long as the private practitioners are the arbiters of who shall be permitted to go to the clinics, it will never be determined whether the whites are actually being given adequate treatment or not, or, in fact, whether their infections are even being detected.” <sup>82</sup> In Alabama, the clinic service was primarily for blacks.
	In the Rosenwald Study, treatment was eight or nine doses of an arsenical—enough to render them noninfectious. Taliaferro Clark presented this treatment plan at a constituent meeting of the 1932 Annual Convention of the National Medical Association at Howard University, Washington, DC. <sup>83</sup>
	The life expectancy of treated syphilitics compared to nonsyphilitics was reduced. <sup>85</sup> It is noteworthy that the seemingly conflicting articles were consecutive in the same publication.

racism and race, nontreatment and denial of treatment (Tables 2–7). Nevertheless, the problem is not resolved. For example, an article in the *Radcliffe Quarterly* and some of the work supporting the article indicated a host of deficiencies in completeness, fairness and historical accuracy.<sup>35</sup>

This is important because distortions about the TSUS may have resulted in alleged mistrust of the medical system in the African-American community. These distortions may continue to contribute to mistrust and ineffective doctor–patient and researcher–participant relationships, such as poor recruitment of African Americans on clinical trials and as organ transplant donors, and risky health behaviors. The consequences have dire impact on health outcomes in

the African-American community.

This is not the first time that distortions intruded into the African-American experience. Three examples are selected to illustrate conceptual similarities between the TSUS and historical and contemporary events.

The first example is the analysis of distortions of the history of black people written by W.E.B. DuBois. In his review of the 1860–1880 Reconstruction era, DuBois stated, “I stand at the end of this writing, literally aghast at what American historians have done to this field.” This was in reference to the tactics he described as libel, innuendo, silence, misstatement and obliteration of the role blacks played in their emancipation and America’s reconstruction.<sup>132</sup> For newly emancipated blacks, reconstruction was a peri-

**Table 5. Nontreatment: Genocide**

Standard Information	Alternative or Inclusive Information
The men may have infected sex partners and fetuses because the men were denied treatment. <sup>86</sup>	The TSUS group was confined to men so that “there would be no problem of the transmission of congenital syphilis.” <sup>87</sup>
	The older latent syphilitics were presumably noninfectious; many of the younger men entered on the study received treatment to render them noninfectious. <sup>87-89</sup>
	The 1943 Henderson Act (Table 6) should have detected women and children who may have been infected.
	After 20 years on the study, the average number of children among the TSUS men interviewed: <sup>90</sup> <ul style="list-style-type: none"> <li>• 5.2 for syphilitics</li> <li>• 6.3 for controls</li> </ul>
The health of the entire community was placed at risk by leaving a communicable disease untreated. <sup>43</sup>	Correspondence between two members of the HEW ad hoc panel that investigated the TSUS: “The evidence now suggests that all women and children with syphilitic infection at any stage were, after 1932, always treated if they could be found.” <sup>91</sup>
	In 1933, treatment records from the TSUS were used to apply to the Reconstruction Finance Corporation for antisyphilitic drugs for Macon County. <sup>92,93</sup>
	In the first 10 years of the TSUS, the Macon County syphilis prevalence rates in blacks were decreasing and lower than the surrounding counties. The drop in syphilis in Macon County was referred to as “a medical miracle.” <sup>94</sup> In 1941, Macon County had more VD clinic sites than the surrounding counties. <sup>95</sup> (Figure 1)
The TSUS is, in part, the basis for persistent rumors about genocide in the African-American community. <sup>102</sup>	In a 1948 <i>Ebony</i> magazine article: <ul style="list-style-type: none"> <li>• “Macon County...which 16 years ago had one of the highest syphilis rates in the nation.”</li> <li>• “...enlightened Dr. Murray Smith, was determined to do something about it. With the aid of Tuskegee Institute leaders, the area became a testing ground for an anti-VD campaign.”</li> <li>• “Today the VD rate for the county is not only far better than the national average, but better than rates in most progressive Northern states...”<sup>103</sup></li> </ul>

od to begin homes and families, earning a living and pursuing an education. For hate-mongers, reconstruction was a period of burnings, lynchings, tenancy and sharecropping, and inferior schools imposed on blacks.<sup>2</sup> The result of distortions about this period was the preservation of caricatures of African Americans and support of organized, race-based policies against African Americans.<sup>132</sup>

The second example is myths surrounding the death of Dr. Charles Drew. The myths had negative effects on the African-American community (e.g., reluctance to participate in donor programs).<sup>29,133,134</sup> Drew died on

April 1, 1950 in Burlington, NC en route to the John A. Andrew Clinics in Tuskegee. In the report about the car accident, the May 1950 issue of the *JNMA* stated:

*"an ambulance quickly brought Dr. Drew to the Alamance General Hospital in Burlington, a white institution, where he received instant and expert attention from the staff without hesitations."<sup>135</sup>*

In contrast, the 1990 *New Encyclopaedia Britannica* stated:

<b>Table 6. Denial of Treatment</b>	
<b>Standard Information</b>	<b>Alternative or Inclusive Information</b>
"Preventing the men from receiving treatment had always been a violation of Alabama's public health statutes requiring public reporting and prompt treatment of venereal disease cases." <sup>144(p.178)</sup> The survivors' attorney made the same claim that "A number of state health laws did seem to have been violated." <sup>147(p.103)</sup>	The 1927 Alabama law mandating treatment for syphilis pertained to treating infected individuals until no longer infectious, i.e., no longer a public health risk. <sup>104</sup> The TSUS men were presumably noninfectious.
The TSUS World War II draft selectees, with a positive serology, were excluded from treatment. <sup>105</sup>	The 1943 Alabama law (the Henderson Act) required that "all persons between the ages of 14 and 50...shall have their blood examined for syphilis...When one member of a family...shows a positive test for syphilis all members of that family shall be included under the provision of the Act." In practice, at the Birmingham Rapid Treatment Center, treatment was limited to early syphilis—infected and a danger to the public health. Late-latent syphilitics were turned away. <sup>64</sup>
By 1952, 33% of the controls examined in the TSUS had received penicillin. <sup>58</sup>	In an eastern city, follow-up of World War II induction rejects was limited to cases of syphilis infection less than five years plus less than minimum therapy (i.e., 20 arsenic + 20 bismuth). <sup>106</sup>
There was clear scientific evidence for penicillin treatment of late latent syphilis during the time of the TSUS. An article in the <i>JNMA</i> —critical of the TSUS—hailed penicillin as the miracle drug and stated the drug was available in 1946. <sup>39</sup>	By 1952, 28% of the syphilitics examined in the TSUS had received penicillin. <sup>58</sup>
The men suffered the ravages of syphilis. <sup>86</sup>	The rationale for use of penicillin in previously untreated latent syphilis was based on effects on measurable lesions, safety, and convenience—not efficacy in late latent syphilis. <sup>107</sup>
	There was a prevailing belief that the late use of penicillin in syphilitics of long duration may be useless and/or harmful (therapeutic paradox) and that the optimal time for therapy was during early syphilis. <sup>108,109</sup>
	It was unclear in 1972 what role currently available penicillin preparations had in late latent syphilis. Spiral organisms, resembling <i>T. pallidum</i> , were reported in the cerebrospinal fluid and aqueous humor of patients who had received adequate penicillin therapy for latent syphilis. <sup>110</sup> Vernal Cave also reported persistence of spiral organisms after penicillin therapy in the <i>JNMA</i> . <sup>111</sup>
	After 20 years on the study: <sup>90</sup>
	<ul style="list-style-type: none"> <li>• There was no difference between the syphilitics and the controls in median hours of work/week, median acreage cultivated/farmed, and retired or unemployed.</li> <li>• The men were described as "lean and hard-muscled" (Figure 2).</li> </ul>

*"Drew was injured in an automobile accident. In desperate need of a blood transfusion, he was rushed to the nearest hospital, which turned him away because of his race. He died en route to a hospital for blacks."*<sup>136</sup>

The narrative in the May 1950 issue of the *JNMA* is the correct version of the events surrounding the death of Dr. Charles Drew. The narrative in the 1990 *New Encyclopaedia Britannica* about the events surrounding the death of Dr. Drew is false and appears racial drama-driven.

Information about Drew's World War II work in blood preservation and transfusions preceded the false statement. The truth cannot diminish Drew's stature—he was a pioneer in blood banking. After he was in a fatal car accident, the irony was the race-based denial of a blood transfusion by refusing him entry into a white institution—an irony based on myth. Also, Drew fought for the inclusion of African Americans in medicine.<sup>21</sup> In reality, an irony was that some African Americans excluded themselves from donor programs because they invoked the false claim about Drew's race-based denial of a blood transfusion and refusal of his entry into a white hospital. This clearly is at the expense of African-American health.

The third example is a study on the effects of sex

and race on physician management of chest pain. Recently, Schulman and coauthors in the *New England Journal of Medicine* reported that race and sex affected how physicians manage chest pain. In their study, physicians viewed videotaped scripted interviews of *actors and actresses*. The authors reported that race and sex independently influenced the referral of blacks and women for cardiac catheterization, i.e., blacks and women were referred less for cardiac catheterization than whites and men.<sup>137</sup> The news media reported and even sensationalized the article, which grabbed the public's attention.

Five months later, a subsequent article in the same journal indicated that the results from the Schulman and coauthors article were overstated. Subset analysis of the data revealed that the physicians, viewing the scripted interviews, identically managed the white actors, white actresses and black actors. For unknown reasons, the physicians referred less often only the black actresses for cardiac catheterization.<sup>138</sup> In the Schulman and coauthors article, the authors segregated the data derived from the black actresses with the black actors and compared it to the data from the white actors; their conclusion was that blacks were referred less for cardiac catheterization. They integrated the data derived from the black actresses with the white

**Table 7. Denial of Treatment: Birmingham Rapid Treatment Center**

**Standard Information**

In the fictional Birmingham Rapid Treatment Center depicted in *Miss Evers' Boys*, treatment was one shot of penicillin in the mid to late 1940s.<sup>74(p.69-71)</sup>

In an interview with David Feldshuh, author of *Miss Evers' Boys*, two survivors of the TSUS claimed that Nurse Rivers pulled them out of the line at a clinic in Birmingham.<sup>113</sup> (footnote 71) The survivors' attorney made the same claim that one of the men was sent to Birmingham and he was returned home without treatment.<sup>47(p.60)</sup>

**Alternative or Inclusive Information**

In the real Birmingham Rapid Treatment Center, treatment was reported as 1,200,000 units of sodium penicillin intramuscularly in 72 divided doses—one dose every three hours for nine days; arsenic (five doses) and bismuth (three doses) therapies were also included. In practice, treatment was limited to early syphilis. Late-latent syphilitics were denied treatment.<sup>54,112</sup>

In contrast to the survivors' complaints made over 20 years after this alleged incident of denial of treatment, in the 1950s, the USPHS wrote that some of the men in the TSUS were "inadvertently rounded up and sent to rapid treatment centers" and treated with penicillin. At least 32 men received inadequate penicillin (by a future standard—the Sing Sing criteria) but treatment that many critics of the TSUS make an issue about its alleged denial to the men and another 14 men received adequate penicillin. All men who received penicillin should have had a selective advantage over those who were untreated and those allegedly denied penicillin at the Birmingham Rapid Treatment Center.<sup>58,89</sup>

One article stated that since both of the survivors, who claim they were denied treatment, saw the play, *Miss Evers' Boys*, several times and viewed a video of the play prior to being interviewed by Feldshuh, it is difficult to ascertain what actually happened<sup>113(footnote 71)</sup>

Discussions have been limited to the men who were allegedly not treated at the rapid treatment center in Birmingham and have not included the men who were treated.

actresses and compared it to the data from the white actors; their conclusion was that women were referred less. Instead of using risk ratios, Schulman and coauthors used odds ratios to present their data. Odds ratios inflated the differences between the groups because the events were common.<sup>138</sup> Also, in the Schulman and coauthors article, only 4.6% (33 of 720) of the physicians surveyed were black—an insufficient number of physicians to do an appropriate analysis of the effect of physicians' race on referral for cardiac catheterization. This is important, because a disproportionate number of female physicians evaluated the black female actresses<sup>137</sup>—the group with the lower referral rates. Clearly, a sufficient number of black physicians in the sample may have provided similar useful information and perhaps reduce the claims of racism.

The methodological challenges in the Schulman and coauthors article<sup>137</sup> do not minimize the epidemiologic studies that have demonstrated sexism and racism in the treatment of cardiovascular disease. However, given that issues of sexism and racism in medicine are often attention-grabbers in the media, overstating the results of the Schulman and coauthors article may have the following potential behavioral problems specific to the African-American community: a) blacks with chest pain may not go for evaluation—indirectly fulfilling the prophecy, and b) blacks with chest pain may over-demand cardiac catheterization—increasing the risk of procedure-related deaths.<sup>139</sup> Again, the promotion of selective or inappropriate comparisons and distorted conclusions that diverge from the data are not in the best interests of the African-American community—or any group for that matter. Unfortunately, in many commentaries about racism in medicine, the former article<sup>137</sup> continues to receive attention without concurrent acknowledgement of the latter article.<sup>138</sup> This gives credence to the notion that the truth does not matter, posing troubling issues relating to African-American health issues.

The misrepresentations of various medical topics and issues are, in fact, misinformation that contributes to the ill health in the African-American community. They may lead to other unhealthy attitudes and subsequent behaviors by healthcare providers. Misinformation contributes to wide health disparities to the disadvantage of the African-American community. For example, past and current historical misinformation about the TSUS can contribute to stereotypes, superstition, and negative feelings and behavior between and among various racial and ethnic groups in the general population. Health professionals have the opportunity plus alternative/substitute information from this article to educate the American community about the TSUS and the numerous issues relevant to the community's current health needs.

Race matters and is important; however, facts also

matter and are equally as important. Misrepresenting the truth in an effort to counter racism, as illustrated and critiqued in this article, is incorrect and has no authority. Although deviations from the truth may achieve short-term, individual goals, there may be pervasive, long-lasting and negative community impacts. A faith-based quote provides a cogent statement about the need for evidenced-based health information for the African-American community: "my people are destroyed for the lack of knowledge, they have the zeal but not according to knowledge."<sup>140</sup>

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## MISREPRESENTING THE TUSKEGEE SYPHILIS STUDY

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## About the Author

Dr. Robert M. White is a medical oncologist in Silver Spring, MD. He earned academic diplomas and/or degrees from Newark, NJ public schools, Wesleyan University and New Jersey Medical School. His training included an internship at New Jersey Medical School, an internal medicine residency and oncology fellowship at Georgetown University Medical Center and a clinical associateship in basic and clinical research at the NIH. Professionally, he has worked as an assistant professor and then as an associate professor of Medicine at the Howard University Cancer Center and as a medical officer in the Division of Oncology Drug Products at the FDA.

In his private time and without academic affiliation, White does research on the Tuskegee Study of Untreated Syphilis (TSUS). He became interested in the TSUS as a junior medical student after reading about the TSUS in his textbook of medicine. The topic remained an important issue of clinical practice and research throughout his training and career. However, many questions and issues were unanswered and not posed. In 1995, he began research on the topic to seek answers to his questions and to further understand what happened in the TSUS. Some of the primary data sources, literature and other archival data are stored in the Washington, DC metropolitan area; however, the search for historical material has included other sites located in Philadelphia; Newark; New York; New Haven; Northhampton, MA; Montgomery, AL; and Atlanta. A review of the *Journal of the National Medical Association (JNMA)* from 1909 to 1975 provided, in part, a blueprint for understanding aspects of the TSUS—often neglected through omissions, misinterpretations and distortions by standard historical works about the TSUS. Thus, the JNMA became a roadmap for a reanalysis of the TSUS. White intends to shift the TSUS discussion to include policies, programs and procedures from peer-reviewed, evidenced-based articles and facts concurrent with the TSUS, science, medicine and public health. This is in contrast to silence, fictional accounts and unexamined symbolic legacies. The outcome for the black community, specifically, and America, in general, may be to illuminate the public health, medical, historical and racial issues concerning the TSUS without motivating health consumers to become and remain angry, frustrated and complacent—culminating in possible poor health decisions.

There have been at least two outcomes of this historical work. First, White rediscovered a historic site in Newark that was the first and only hospital in New Jersey for African Americans (i.e., as physicians and surgeons, interns and nursing trainees, and patients) in the 1920s, 1930s and 1940s. The Kenney Memorial Hospital was one of the places for meetings and clinics for the 1929 Annual Meeting of the National Medical Association in Newark. White shared findings about the Kenney Memorial Hospital in the *JNMA* in May 1999 and in other lay-oriented publications. In 2004, the site—now New Salem Baptist Church—was named to the NJ Register of Historic Places. Second, White has published findings on the TSUS in a guest editorial (*JNMA* 1997), an article (*Archives of Internal Medicine* 2000) and letters to the editor (*International Journal of Radiation Oncology, Biology and Physics* 1999; *Arthritis Care and Research* 2002; *Hastings Center Report* 2002; *Annals of Emergency Medicine* 2003), creating what appears to be the first series of dialogues in the literature that did not exist concurrent with the TSUS nor in the decades postexposure of the TSUS.

White has received the following recognitions: fellowship (direct) in the American College of Physicians (1997), Man of the Year Award from the North Jersey Unit, National Association Negro Business and Professional Women's Clubs Inc. (1997), listings in Who's Who in America from 2001 to 2004, and the Eagle Certificate of Excellence from the National Medical Fellowships (2004) for his long-term, sustained support of the medical education of students of color.

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