

## THE JULIUS ROSENWALD FUND SYPHILIS SEROPREVALENCE STUDIES

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In 1929 the Julius Rosenwald Fund, in conjunction with the Public Health Service (PHS), sponsored a syphilis seroprevalence study in the South characterized as a humanitarian effort to benefit the health of rural African Americans. The study reported extraordinarily high rates of positive Wassermann tests, even among children. Despite the unreliability and nonspecificity of this test, modern authors continue to indict these subjects as syphilitic. However, there was no consistent relationship between syphilis and a positive Wassermann test. Additional treponemal pathogens that potentially caused false-positive tests could explain the results. After public outcry to the Tuskegee Syphilis Experiment, the Rosenwald study acquired new significance. It was used as evidence to bolster the argument that Tuskegee was a consequence of humanitarian motives that became captive to misguided methods of researchers at the Venereal Disease Division of the PHS. Humanitarianism implies the acknowledgment of a *right* invested in the recipient; health is an end in itself. However, African Americans were necessary as a source of cheap labor for competition in the world cotton markets and as a restraint on the market value of white labor in manufacturing. The administrative structure of the PHS, not zealous individuals, adopted utilitarianism as its paradigm for human research. Syphilis seroprevalence was a *calculated* use of public health as a means to economic development. (*J Natl Med Assoc.* 1996;88:315-322.)

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Herbert Hoover was elected president in 1928 on platforms that promised the exploitation of science to the prosperity of the nation. Policymakers looked to public health to provide healthy labor and placed hope in the industrialization of the South to exploit cheap labor resources.<sup>1</sup> In his presidential address to the Southern Medical Association in 1929, Surgeon General Cumming attributed the South's inability to attract industry to the high morbidity and mortality of African Americans. He underlined the economic importance of the Julius Rosenwald Fund syphilis survey<sup>2</sup>:

...the most important of all the things to which I have given thought...is the relation of public health work to the industrial progress of the South. The capitalist seeking a location for a new enterprise is to an increasing extent considering health conditions...He finds that it is not profitable to go where he cannot keep on hand a sufficient supply of efficient workers. Many of our cities in the South have realized this and today are taking the steps necessary to see that an attractive environment, from a health standpoint, can be offered the prospective industrial newcomer.

The creation of local health clinics was a critical element in a scheme to exploit the power of the Public Health Service (PHS) to the economic development of the South. Among its functions was "scientific investigation."<sup>3</sup> Twenty years earlier, Thomas W. Murrell of the Medical College of Virginia criticized the "lack of statistical material" on the incidence of syphilis in blacks and suggested using blacks exclusively for medical experimentation.<sup>4,5</sup>

### THE FOUNDATIONS AND SOUTHERN LABOR

At the end of the 19th century, Andrew Carnegie and John D. Rockefeller surveyed the South for its suitability to exploit cheap non-union African-American labor and reduced operating costs for manufacturing<sup>6,7</sup>:

He will willingly fill the more menial positions, and do the heavy work, at less wages, than the American white man or any foreign race which has yet to come to our shores. This will permit the southern white laborer to perform the more expert labor, and to leave the fields, the mines, and the simpler trades for the Negro.

The union of white labor, well organized, will raise the wages beyond a reasonable point, and then the battle will be fought, and the Negro will be put in at a less wage, and the labor union will either have to come down in wages or Negro labor will be employed...this will not be a clearly defined issue until your competition in the markets of the world force you to compete with cheap labor in other countries...

Designs to develop the South were shrouded by nagging questions regarding the "vitality" of Southern labor, ie, its freedom of disease as an index of its ability to sustain maximum work hours and work days. The Rockefeller Foundation successfully dispelled the stereotype of the lazy white southerner with its demonstration of the etiology and social consequences of hookworm disease.<sup>8,9</sup>

The other concern was the poor status of education. Efficient manufacturing required workers with good elementary and specialized trade education. The foundations orchestrated a campaign to promulgate "industrial education" at the First and Second Mohonk Conferences on the Negro Question at Lake Mohonk in Ulster County, New York in 1890 and 1891. This was followed by a series of conferences from 1898 to 1914 that coordinated efforts among five funds with a division of labor. This group included the Julius Rosenwald Fund. The interest in education was economic.<sup>10,11</sup> The interest in health was no different<sup>12</sup>:

The labor unit of the South is still the negro, emancipated, but ignorant, unambitious and less trained than when a slave. In his present condition he renders difficult, if not impossible, the changes requisite to intensive and diversified agriculture and retards the development of all industries in which he is employed. As a race he is less skilled than during slavery. The industrial development of the South demands that the negro be either improved or gotten rid of...The problem is not political but purely, industrial...His colleges of law, of medicine, of theology and of literature, science and art should be turned into schools for industrial training. Hampton Institute and Tuskegee should be duplicated in every Southern State...

The plan to improve the value of African-American labor through public health and to expand education for blacks did not have complete support in the South. Paul

B. Barringer of the University of Virginia Medical Department and president of the Medical Society of Virginia in 1906 opposed any education of blacks<sup>13</sup>:

The question then plainly put, is simply this: Shall we, having by great effort gotten rid of the negro as a political menace, deliberately proceed to equip the negro of the future as an economic menace?...In furnishing the raw material, the cotton, he plays the old slave-day part, but in the function of the new South, in manufacture, he has no part...We cannot equip both, and to equip the negro to the neglect of the poor white would be a grave political error and an economic absurdity...An education that makes leaders at the expense of the led is a failure. *Every negro doctor, negro lawyer, negro teacher, or other "leader" in excess of the immediate needs of his own people is an anti-social product, a social menace.* [author's emphasis]

Medical research to document the unsuitability of black labor became a principal line of attack to protect white labor. Southern "medical research" presented empirical and anecdotal evidence that blacks were the source of the three dreaded diseases: hookworm, tuberculosis, and syphilis. As a presumed natural reservoir of these diseases, academic physicians recommended the exploitation of blacks for human experimentation<sup>4</sup> rather than labor. These claims absorbed the early years of the National Medical Association in efforts to reclaim confidence in the "vitality" of black labor.<sup>14-16</sup>

Despite the opposition, Andrew Carnegie explained the choices<sup>17</sup>:

...our colored people...constitute one of the most valuable assets of the Republic, viewed from an economic standpoint. It is certain we must grow more cotton to meet the demands of the world, or endanger our practical monopoly of that indispensable article. Either the efforts of Europe will be successful to grow in other parts [India], even at greater cost for a time, or the world will learn to substitute something else for it. We cannot afford to lose the Negro. We have urgent need of all and of more. Let us therefore turn our efforts to making the best of him.

"More" meant two things: importation (eg, black West Indians) and deliberate and artifactual procreation, ie, positive eugenics. As in slavery, uterine and venereal diseases caused capital loss and threatened successful procreation of labor.

The economics of cotton still dominated American prosperity. As late as 1937, the first technology assessment observed that despite more than 900 patented inventions, there was no substitute for human judgment

in chopping and picking cotton.<sup>18</sup> During the 1920s, the United States produced 60% of the world's cotton. The 1937 report noted that despite migration to the North, "...the Negro, the mule, and the plow are still characteristic of the social and economic system..." in the cotton belt. In all cotton-producing states, tenant farming had increased at least 1.5 times since 1880. There had been a sharp decline in gross earnings from \$1571 to \$669 per farm between 1929 and 1934. Despite this, cotton was "the greatest single source of employment for woman and child labor in America."

The foundations established a blueprint for an obedient and reverent black labor force. Education and health were among the reasons for emigration to the North. Northern industrialists pamphleted the South and invited blacks to the North with promises of employment to relieve labor shortage crisis caused by the return of immigrant labor to Europe following World War I. However, the long-term intent was to shift industry from the North to exploit cheap labor in the South. Education and health care were intended to stem the tide of migration and make Southern labor fit for manufacturing.

### THE 'NEW NEGRO' AND LABOR RESISTANCE

These plans sparked and were jeopardized by race conflict. From 1889 to 1918, more than 2472 black men and 50 black women were lynched. On July 1, 1917, in east St Louis, white laborers, opposed to the importation of cheaper black labor, burned the black neighborhood and lynched or shot 37 blacks (in 1992, east St Louis blacks were cordoned off from a neighboring white town and all blacks entering were summarily expelled). Race conflict propagated to Chicago, New York City, Chester, Danville, Lexington, and Newark.

Military training camps also erupted. The largest and most serious conflict occurred at Houston, Texas. Twelve whites were killed and 156 blacks arrested. The city was placed under martial law, and black troops were ordered removed from Houston. Eventually, 13 black soldiers were hanged and 41 were sentenced to life imprisonment. Other riots ensued at Camp Upton, and Montgomery, Alabama. Several soldiers were hanged at Camp Dodge for allegedly insulting a white woman; the black regiments were ordered to attend the execution as a lesson.

Black soldiers returned from World War I militant and determined to fight for their rights. They were dubbed the "New Negro." Between January and October of 1919, more than 38 armed conflicts between whites and blacks

rocked the nation's cities, particularly the South, including Tuscaloosa, Alabama. Armed white bands planned a dawn raid on Washington, DC. The community learned of this in advance. On July 19, four were killed, 70 wounded, and 100 arrested. The "uprisings" received solid support from churches and the Equal Rights League. Demands for "absolute liberty" and encouragement to take their rights by "...all methods...even force" struck the same concern in the white press as did Malcolm X's "By any means necessary" many decades later. William Monroe Trotter, editor of the *Boston Guardian*, boldly petitioned the League of Nations to review the human rights of blacks in the United States (as would Martin Luther King several decades later). He stated "...unless and until a concerted guarantee were given of citizenship based upon full democracy, with no distinction as to race or color, there could be no world peace..." (*The New York Times*. July 28, 1919;4:2). This was taken seriously because race riots had rocked Britain in June and Jamaica in August, leading Parliament to consider repatriation of blacks to the West Indies. The Reverend J. G. Robinson, presiding elder of the African Methodist Episcopal Church in Chattanooga, Tennessee, declared in a letter to President Wilson that "...the white men will have to kill more of them than the combined number of soldiers that were slain in the great world war" before blacks would endure the injustice they did before the war (*The New York Times*. July 28, 1919;4:2). Then on July 27, 1919, race riots spread to Chicago where 23 blacks were killed. In September 1919, African Americans convened a national meeting to organize "race defense" for a potential race war in the United States.

This social history, in part, contributed to the renewed campaigns of philanthropic foundations in the South. The intent to exploit blacks for labor as well as drive down the costs of white labor created an urgent need to pacify black movement for civil rights and constitutional change. The foundations adopted a conciliatory stance. In a 1919 study of the race riots by Carl Sandburg, Julius Rosenwald commented candidly<sup>19</sup>:

With immigration restricted, it will be necessary for business to seek another source of labor supply. This exists in the colored population. When they settle here and become workers in the community they have a right to a place to live amid conditions that insure health and sanitation.

This statement does not reflect a belief in a *right* to health for both the unemployed and the employed, but

a legal philosophy of fair exchange of healthy environment (not care) as part of the *contract* for labor. Rosenwald did not say that health was an end in itself; if he had that would have been humanitarian. Rosenwald's policies for the medical education of blacks made his claim of equality between blacks and whites appear manipulative. The Rosenwald Fund endorsed Abraham Flexner's infamous chapter XIV, "The Medical Education of the Negro"<sup>20</sup> without any criticism. Public health was a priority because: "Not only does the negro himself suffer from hookworm and tuberculosis; he communicates them to his white neighbors...He has...the tremendous importance that belongs to a potential source of infection and contagion..." Contagion and unequal intellect dictated the dichotomous policy of medical education:

The negro is perhaps more easily "taken in" than the white; and as his means of extricating himself from a blunder are limited, it is all the more cruel to abuse his ignorance through any sort of pretense. A well taught negro sanitarian will be immensely useful; an essentially untrained negro wearing an MD degree is dangerous. Make-believe in the matter of negro medical schools is therefore intolerable...the more promising of the race can be sent to receive a substantial education in which hygiene rather than surgery, for example is strongly accentuated...

This contrasted with Flexner's stated meaning of medical education for whites: "medical education must be conceived as primarily the effort to train students in the intellectual technique of inductive science."<sup>21</sup> Blacks at white medical schools did not escape Flexner's reach: they were placed at Howard, Meharry, or a neighborhood black hospital for clinical training. According to the dean of the University of Chicago:

...it is not practicable to assign colored students to clerkships in white hospitals in a routine way. We have tried it in the Billings Hospital in a small experimental way with one or two tactful colored students. It can be done perhaps to a small extent but it creates an embarrassing situation and cannot be the real solution to the problem...Internships [sic] for colored students can be served only in colored hospitals or general hospitals with many colored patients.<sup>22,23</sup>

The Julius Rosenwald Fund, the General Education Board, and the Association of American Medical Colleges created policy to establish segregated training facilities. Dr Montague Cobb astutely criticized what he called the creation of a "Black Medical Ghetto."<sup>24</sup> These criticisms were laid against the Rosenwald plan by black

physicians and the NAACP in New York City. The Rosenwald Fund originally intended to institute a similar segregated plan in Harlem. Louis T Wright, MD, at Harlem Hospital, organized the opposition: "Mr Rosenwald has not, as far as we know, advocated the segregation of Jewish students at the University of Chicago and the sending of Jewish students to Jewish hospitals for their clinical clerkships and internships."<sup>25</sup>

### THE JULIUS ROSENWALD FUND SYPHILIS SEROPREVALENCE SURVEY

It was within the larger economic perspective of the necessity of healthy cheap labor that the Julius Rosenwald Fund and the PHS conducted their syphilis seroprevalence studies. The Julius Rosenwald Fund coordinated health surveys limited exclusively to blacks in five Southern states: Alabama,<sup>26</sup> Mississippi,<sup>27</sup> Tennessee,<sup>28</sup> North Carolina, and Virginia.<sup>29</sup> Motivated by the economic necessity of healthy cheap labor, the initial intent of the Fund was to establish clinics. It sought advice from the PHS about how best to accomplish this. However, in 1929, Surgeon General Hugh S. Cumming, overseer of the Clinical Cooperative Study of treatments for syphilis and the Tuskegee Syphilis Experiment, proposed to exploit this activity to conduct a serological survey. The prevalence of disease determines the clinical and economic value of a test and justifies further research and development (ie, Tuskegee).

The communities selected had two features: they were sites for lumber (Scott County, Mississippi; Glynn County, Georgia; Albemarle County, Virginia; and Macon County, Alabama) or tobacco (cigarettes) manufacture (Pitt County, North Carolina). These sites also had no history of civil disobedience. From 1914 to 1929, the tobacco industry increased its value 188% and grew 75% between 1933 and 1937. Lumber increased 135%. From the 19th into the 20th century, the northeast and the west were the dominant sites of lumber supply and manufacture. However, by 1939, the South accounted for one third of wood pulp, 25% of total lumber value, and held close to 40% of the nation's sawmills. Virginia and North Carolina alone accounted for the second largest fraction of lumber behind Washington state. Macon County, Alabama, also was the fourth largest producer of cotton in the state.<sup>30</sup> The growth of administration in business and industrialization created sharp demands for lumber and wood pulp products such as paper. The five counties of the Rosenwald Survey experienced a mean  $737 \pm 59\%$  growth in their local economies from 1939 to 1947.<sup>31</sup> The survey did not examine rural areas that were not of potential economic or agricultural consequence. Economic

questions spearheaded the research: “Just how much damage is syphilis doing to the colored race in the way of increasing loss of time from work and decreasing the efficiency of the worker?”<sup>32</sup>

The PHS gained access to subjects through the authority of the county health departments, medical societies (there to assure that state medicine did not administer treatment and undermine fee-for-service medicine), and black churches and schools. Researchers conducted examinations in churches, schoolhouses, and general stores. The 1931 film “Arrowsmith,” after Upton Sinclair’s novel by the same title, portrayed the long lines of patient subjects as it probed the ethics of human experimentation on blacks on a Caribbean island.

This survey used the Kolmer modification of the Wassermann test, which replaced extracts of syphilitic human fetal livers with cholesterol-lecithin antigen. There was no standard procedure to allow reliable comparison of results. Each state performed its own unique protocol using its own reagents. The Kolmer complement fixation test had the same problems of nonspecificity as the original Wassermann. Without a reliable treponemal antigen test, the convictions of syphilologists that this reflected racial differences in predisposition to syphilis<sup>33</sup> led the PHS to overlook shortcomings of the Wassermann test. Wassermann-based tests caused artifactually higher positive rates, which were used to manipulate policy and allocation of funds, justify more invasive social interventions, and to legitimate biological determinism in social policy.

Ostensibly, the Rosenwald Fund studies were pre-treatment studies to provide a baseline comparison for health measures. The principal author of the Mississippi study was from the International Health Division of the Rockefeller Foundation, based at Johns Hopkins, the university that supervised the clinical and serological arms of the Tuskegee Syphilis Experiment. The description of the 7228 subjects in Mississippi was that “their sex appetite is enormous” and ridiculed their condition as sharecroppers: “Their economic status is low because their foresight is short; they are not heedful of the future because their past offers them little reason to expect a change.” Children between the ages of 3 and 15 comprised 2100 (29%) of the survey group.

Of the 30,000 people examined in all five states, 8864 (30%) were between the ages of birth and 14 years. The rate of positive Wassermann tests was 8.71%; this was higher than the syphilis rate for sexually active white adult males aged 15 to 65 (4.3%) in Tennessee. This result did not raise questions. The study did not control for childhood infectious diseases that regularly caused

false-positive tests. The presumption that the children were born syphilitic of syphilitic parents made this rate believable to the PHS and the Rosenwald Fund. High school children aged 15 to 19 comprised 4556 (15%) with a syphilis prevalence of 17%. Young adults aged 20 to 29 (6360) had a positive rate of 32%. Women in this age group (3268) had a positive rate of 33.7%. The tests were performed without regard to the menstrual cycle, a major source of error considering that the menses caused false-positive Wassermann tests.<sup>34</sup> The Tennessee study was the only one to separately assess stillbirths and miscarriages: the rate was 27.1% among those with positive Wassermann tests compared with 3.3% among those with negative Wassermann tests.

## THE PSEUDOSCIENCE OF SYPHILIS SEROPREVALENCE

Results of the Rosenwald Wassermann survey are still quoted and reported as syphilis. However, the only reliable method of diagnosis, in the absence of an ability to culture *Treponema pallidum*, was darkfield examination. This was not done. Instead, syphilis was inferred by serological testing. The only true characterization of the results is that they were the incidence of positive Wassermann reactions, which cannot be attributed to a true relationship to syphilis for several reasons.

The Wassermann test (and its modifications) was not specific for syphilis. The initial test only detected 15% of known syphilitics.<sup>35</sup> Despite improvement, it had an intolerably high false-positive rate that was most obvious with unrelated illnesses, such as leprosy and malaria, but also extended to nonsyphilitic *Treponema*. The order Spirochaetales comprises five genera: *Treponema*, *Borrelia*, *Leptospira*, *Cristispira*, and *Spirochaeta*. There are group antigens that are common to each of these genera leading to some cross-reactivity between genera. Within the genera *Treponema*, two additional organisms, *Treponema pertenue* and *Treponema carateum*, show closer relationship to *T pallidum*. These are the causative agents of yaws (once prevalent in the South) and pinta, respectively. The Wassermann test was susceptible to misinterpretation because it did not differentiate general immunity for group antigens common to all *Treponema* from specific immunity to *T pallidum*. Wassermann results were confidently, if mistakenly, taken to be exclusive to *T pallidum* and syphilis. During the Tuskegee Syphilis Experiment, investigators complained of widespread dental disease and Vincent’s angina, which can involve treponemal organisms.<sup>36</sup>

Could immunity for other treponemal organisms have caused false-positive Wassermann tests in the Rosenwald

survey? *Treponema hyodysenteriae* infects the intestinal tract of pigs. It causes swine dysentery, which was not differentiated clinically from the major swine disease, hog cholera, until 1921.<sup>37</sup> The organism was not identified until 1972.<sup>38,39</sup> Humans contracted a number of illnesses from infected meat. Hog epidemics caused Europe to ban American pork. Poor veterinary control of animal health on small farms may have been a critical variable. The entrails and other portions of the pig that were not marketable, including animals with marginal health, formed a part of the diet. Chitterlings, the intestines of the pig, were prepared by boiling, but also mixed with cornmeal into scrapple, a breakfast staple. This may be a point of departure from the diet of many but not all Southern whites. The French, also indicted by Wassermann tests, had a diet of chitterlings sausage (andouillette). In contrast, the British diet excluded entrails. American microbiology was in its infancy. Animals were not screened with laboratory tests, and the detection of infected meat was entirely visual and generally not recognized unless advanced. Rural residents in particular did not purchase meat at the butcher (which was inspected) but slaughtered their own animals. This was so much a part of rural life that residents spoke in metaphors using this experience. For example, a study of the Tuskegee Syphilis Experiment quotes a patient who described a doctor's skill at venopuncture as though "...he were guttin' a hog..."<sup>40</sup>

The high degree of identity between *T hyodysenteriae* and human intestinal *Treponema* suggests that domestic animals are a reservoir for nonsyphilitic human treponemal infections.<sup>41,42</sup> *Treponema cuniculi* causes disease in rabbits. These dietary staples present the probability of induced protective immunity on exposure to these organisms in the diet, as well as disease. Some *T hyodysenteriae* proteins are similar to *Treponema phagedenis*,<sup>43</sup> an organism of the Reiter treponema that cause positive syphilis serology. This raises the consideration that immunity for *T hyodysenteriae* may cause false-positive syphilis testing. This is not far-fetched considering that *T cuniculi* infection has been shown to induce positive VDRL syphilis serology in primates.<sup>44</sup> Furthermore, a 1940 study of the Wassermann, Kahn, Kolmer, Eagle, and Kline serologic tests for syphilis in 25 species of animals that do not contract syphilis showed false-positive rates that varied from 40% to 100% and were greatest in older animals.<sup>45</sup> Swine were among the highest reactors. The tests were dubious if not useless for humans. Yet the investigators were undeterred: "...the frequency with which they are positive in other animals must not be

used as a reason to question the validity of the tests now accepted for the detection of syphilis in man...[it] is not relevant to the problem as to their validity when they are only evidence of syphilis in man." The interference of cross-reactive immunity for group antigens of *T hyodysenteriae* in syphilis testing is a testable hypothesis to explain the history of high incidence of positive Wassermann tests in American communities and other cultures with similar diets (eg, France and China).

Alternatively, false-positive syphilis tests may have been caused by systemic lupus erythematosus (25% to 50%), rheumatoid arthritis (10%), sarcoidosis, or the antiphospholipid antibody syndrome.<sup>46</sup> Reactivity for cardiolipin interferes in syphilis serology and precedes clinical manifestations. These diseases have a higher incidence in blacks than in whites. Other studies at this time showed high incidence of positive Wassermann tests in Asians and Pacific Islanders who show the highest incidence of systemic lupus erythematosus (24/100,000 and 50/100,000, respectively). Rosenwald subjects were in the primary age range for the onset of systemic lupus erythematosus (age 16 to 50) and sarcoidosis. The propensity for systemic lupus erythematosus to show false-positive Wassermann tests before the manifestations of disease remained unrecognized until 1952.<sup>47</sup> Although spontaneous abortions were attributed to syphilis, both systemic lupus erythematosus and the antiphospholipid syndrome are associated with spontaneous abortions.

Additionally, pellagra, a vitamin deficiency disease was mistaken for and claimed by some to be a consequence of syphilis. Although its nutritional basis was proven in 1914, social policy accepted eugenic claims that the disease was hereditary and infectious in origin. Henry Pelouze de Forest, who collaborated with Major Shufeldt in the structuring of racial theories of syphilis,<sup>48</sup> claimed an infectious origin of pellagra as late as 1932.<sup>49</sup> Consequently, pellagra reached its peak at 6623 cases in 1929. More than half of these cases were African Americans. Pellagra frequently caused false-positive Wassermann tests.

Lastly, the Wassermann test was a component of the PHS eugenic philosophy regarding syphilis and African Americans. At the Second International Eugenics Congress in 1921, the PHS stated its conventions.<sup>50</sup>

...some day we may find a method of detecting the presence of syphilitic infection in those who do not prove to be syphilitic by the present methods...A negative Wassermann in the remainder of this group does not prove that they are not syphilitic...

## SYPHILIS SEROPREVALENCE AS AN OVERTURE TO THE TUSKEGEE SYPHILIS EXPERIMENT

Forty-five percent of the people screened were school aged and 66% were younger than 30 years of age. This encompassed the working age of women and children in the cotton fields. The Rosenwald Fund also established educational policy for the education of black children. Policymakers used health data to support industrial education and dissuade college education. Southerners used the data to support Jim Crow policies of segregation.

The Rosenwald data defined populations that could be used longitudinally for the biotechnological objectives of the Tuskegee Syphilis Experiment.<sup>51</sup> However, Macon County only had a rate higher than the other communities in the Rosenwald study. If Macon County was selected for its rate of syphilis and not because of race, then it also should have had a higher rate than all other communities. This was not the case. The rate of syphilis in Macon County was substantially lower than other areas of Alabama. The PHS examined the first 1 million selectees and volunteers for World War II and reported syphilis rates categorized by city and state.<sup>52</sup> The rate for Tuskegee of 74.6 per 1000 was considerably less than Alabama cities of comparable size. The rates for Athens, Union Springs, and Demopolis were 175, 161.5, and 152.9 per 1000, respectively. Alabama cities with the highest rates were Troy (214.3), Fairfield (213.7), and Opelika (205.1). Of the 59 Alabama cities reported, only 7 had a rate <60, 12 a rate <70, and 16 a rate <80. The mean was 102±52. Therefore, Tuskegee was not the syphilis center of Alabama by any means. The rate of syphilis was an unlikely reason for the selection of any African-American community for either the Rosenwald Fund Survey or the Tuskegee Syphilis Experiment.

The PHS admitted that the Julius Rosenwald Fund survey also was a social experiment to test the feasibility of national syphilis surveys<sup>53</sup>:

All that had been done before that time was in the form of investigation and demonstration, essential to the development of such a plan, and these preliminary steps...prepared public health administrators so that...the programs of *real* service was begun in all the states immediately."

The Julius Rosenwald Fund syphilis seroprevalence study was characterized as humanitarian.<sup>40</sup> Neither the Julius Rosenwald Fund nor the PHS recognized an inherent right to health care, nor African-American health as anything other than a means to economic ends. African Americans were reduced to *things* that were the subject

of a right of private interests to social and biological research to assess the economic value of serologic tests for syphilis.

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