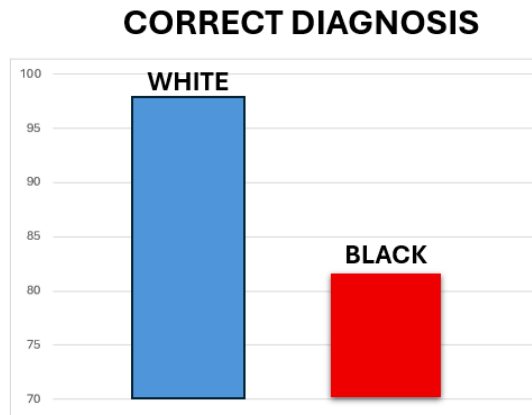


Witness Moment Little Girls and Medical Algorithms



This is the time when we take a moment to look at structural racism, the system of laws, regulations, algorithms and rules which govern our society, which are invisible to white Americans, but harm African Americans every day.

Pediatrician Alexandra Epee-Bounya had had enough. In her 20 years caring for children in Boston, she had seen hundreds of kids with suspected urinary tract infections. Each time, she'd turn to a calculator that was used by all Boston Children's Hospital clinicians, to judge the youngest children's risk. Did the infant have a high fever? Add a point. Was she a girl? Add two points.

As she went down the list, one of the factors tripped her up every time: Was the child Black? If not, add a point. The more points, the higher the risk of a UTI, which meant the child would get follow up testing. How could it be that the color of a child's skin dictated their care?

"It always rubbed me the wrong way," said Epee-Bounya, whose mother was from France and father from Cameroon. How would a doctor categorize her, or her children, she wondered?

Her frustration boiled over in the spring of 2019. In a hurried moment between appointments, she shared her concerns with a colleague. "I don't understand this 'Black race' characteristic," she said. "It doesn't make sense."

Let's step aside for a moment. When a child tests positive on the calculator, the next step is a catheterization, which is painful. When race was put into Boston Children's UTI calculator, it was because studies had shown that Black kids were less likely to be diagnosed with UTIs. Clinicians thought that knocking a point off their risk tally could be a helpful shortcut protecting black children from unnecessary catheterizations and pain.

Ok, but what was the real world result? When a researcher at the University of Pittsburgh evaluated his calculator, he found it would correctly identify 98% of non-Black kids (the blue bar) with a UTI, sending them on to get the necessary follow-up care. Black kids? Just 82% (the red bar). Black girls were

especially at risk, because girls get UTIs more easily than boys. Joseph Wright, chief health equity officer for the American Academy of Pediatrics, said “. . . [W]e are potentially creating a cohort of little Black girls who will have missed urinary tract infections and suffer complications.”

And the complications are major. If an infection goes untreated long enough, it can cause renal scarring — which can lead to hypertension, increased preeclampsia risk, and even kidney failure down the line. Clinicians can't be sure how many Black girls were harmed. By the time any scars appear, the initial, untreated UTI is long gone. How many African American women are suffering from hypertension, or kidney failure today as a result of untreated kidney infections when they were babies?

Dr Epee-Bounya's conversation would lead Boston Children's to remove or modify the use of race, from eight algorithms used to guide physicians' decisions about patient care, including for UTIs.

But it's not just Boston Children's. There are hundreds of race-based calculators in use in our nation's hospitals.

For example, as their kidneys fail, kidney patients are put on a transplant list. It's in the patient's best interest to be placed on the list as soon as possible, because that gives them more time to receive a lifesaving kidney. But up until Jan 2023, doctors used a race-based calculator which gave a higher rate of kidney function for Black patients than for white patients with the same patient-specific variables, based on the unsupported belief that Black people are more muscular. They aren't. This denied Black patients access to transplantation until a much later stage of their disease when they were already sicker and less likely to survive.

At the University of Pittsburgh, researchers have identified at least 40 clinical algorithms that still include race adjustments. And that doesn't count hundreds of home-grown tools in individual hospitals that are used daily by physicians to help make decisions about the patient in front of them. While a few calculators on that list are under review, dozens of calculators that are harming patients have yet to be changed, or even reexamined.

That's the harm done every day by structural racism.

Sources:

1) Transplant programs to begin contacting patients in 2023 **United Network for Organ Sharing** Jan 5, 2023

<https://unos.org/news/waiting-time-adjustment-approved-for-kidney-transplant-candidates-affected-by-race-based-calculation/>

2) Embedded Bias Katie Palmer and Usha Lee McFarling ; **STAT produced by Boston Globe Media** September 3, 2024

<https://www.statnews.com/2024/09/03/embedded-bias-investigation-health-equity-clinical-algorithms/>

3) Diversity and Discrimination in Health Care Brandon M. Togioka; Emily Young: **NIH National Library of Medicine** May 2, 2024

<https://www.ncbi.nlm.nih.gov/books/NBK568721/>

4) Early Evidence of Chronic Obstructive Pulmonary Disease Obscured by Race-Specific Prediction Equations **National Library of Medicine NIH** January 1, 2024

Elizabeth A Regan , Melissa E Lowe , Barry J Make , Jeffrey L Curtis , Quan Grace Chen , James L Crooks , Carla Wilson , Gabriela R Oates , Robert W Gregg , Arianne K Baldomero , Surya P Bhatt , Alejandro A Diaz , Panayiotis V Benos , James K O'Brien , Kendra A Young , Gregory L Kinney , Douglas J Conrad , Katherine E Lowe , Dawn L DeMeo , Amy Non , Michael H Cho , Julia Kallet , Marilyn G Foreman , Gloria E Westney , Karin Hoth , Neil R MacIntyre , Nicola A Hanania , Amy Wolfe , Hannatu Amaza , MeiLan Han , Terri H Beaty , Nadia N Hansel , Meredith C McCormack , Aparna Balasubramanian , James D Crapo , Edwin K Silverman , Richard Casaburi , Robert A Wise

<https://pubmed.ncbi.nlm.nih.gov/37611073/>