Deeply imbedded attitudes about race influence the way doctors care for their African-American patients, according to a Harvard study that for the first time details how unconscious bias contributes to inferior care.

Researchers have known for years that African-Americans in the midst of a heart attack are far less likely than white patients to receive potentially life-saving treatments such as clot-busting drugs, a dramatic illustration of America’s persistent healthcare disparities. But the reasons behind such stark gaps in care for heart disease, as well as cancer and other serious illnesses, have remained murky, with blame fixed on doctors, hospitals, and insurance plans.

In the new study, trainee doctors in Boston and Atlanta took a 20-minute computer survey designed to detect overt and implicit prejudice. They were also presented with the hypothetical case of a 50-year-old man stricken with sharp chest pain; in some scenarios the man was white, while in others he was black.

“We found that as doctors’ unconscious biases against blacks increased, their likelihood of giving [clot-busting] treatment decreased,” said the lead author of the study, Dr. Alexander R. Green of Massachusetts General Hospital. “It’s not a matter of you being a racist. It’s really a matter of the way your brain processes information is influenced by things you’ve seen, things you’ve experienced, the way media has presented things.”

Specialists predict that the novel study, appearing on the website of the Journal of General Internal Medicine, will result in considerable soul-searching in the medical profession, rethinking of medical school curriculum, and refresher courses for veteran doctors.

“Years of advanced education and egalitarian intentions are no protection against the effect of implicit attitudes,” said Dr. Thomas Inui, president of the Regenstrief Institute Inc. in Indianapolis, which studies vulnerable patient groups. “When do they surface? When we’re involved with high-pressure, high-stakes decision-making, when there’s a lot riding on our decisions but there isn’t a lot of time to make them, that’s when the implicit attitudes that are not scientific rise up and grab us.”

Green said he cannot explain why implicit bias would cause doctors to deprive patients of potentially life-saving therapy, and other researchers said they do not know how big a factor unconscious prejudice is in the far-reaching problem of disparities.

The best way to combat those impulses is by acknowledging them, specialists said, suggesting that medical personnel take a test to measure unconscious bias, such as one at implicit.harvard.edu.
The best way to combat those impulses is by acknowledging them, specialists said, suggesting that medical personnel take a test to measure unconscious bias, such as one at implicit.harvard.edu.

“The great advantage of being human, of having the privilege of awareness, of being able to recognize the stuff that is hidden, is that we can beat the bias,” said Mahzarin R. Banaji, a Harvard psychologist who helped design a widely used bias test.

Dr. JudyAnn Bigby, Massachusetts secretary of health and human services and a specialist in health-care disparities, said the study demonstrates the importance of monitoring how hospitals and large physician practices provide care to patients of different races.

But Inui and other specialists said that even conquering doctor bias will not be enough to eliminate healthcare disparities.

A succession of studies during the past decade has demonstrated graphically the scope of disparities and the complexity of the problem, which touches on issues from poverty to geography to genetics.

Black patients in the process of having a heart attack, for example, are only half as likely as whites to get clot-busting medication, and they are much less likely to undergo open-heart surgery. Similarly, African-American women receive breast-cancer screenings at a rate substantially lower than white women. Fewer black babies live to celebrate their first birthdays: In Massachusetts, the mortality rate for black infants is more than double the rate for white babies.

Healthcare disparities emerged as a national issue with the 2002 release of a landmark study titled “Unequal Treatment” that was commissioned by Congress and produced by the Institute of Medicine. In Boston, the city health department released a sweeping blueprint for addressing disparities two years ago, with Mayor Thomas M. Menino describing the issue as the most pressing health problem confronting the city.

“Most physicians are now willing to acknowledge that important disparities exist in the healthcare system,” said Dr. John Ayanian, a healthcare policy specialist at Brigham and Women’s Hospital who was not involved with the new research. “There’s still a barrier, though, to many physicians acknowledging that disparities may exist in the care of their own patients.”

It was during a lecture three years ago by Banaji that Green came up with the idea of measuring the unconscious bias of physicians by using a test Banaji had helped develop.

Green and his colleagues decided to test residents at Massachusetts General, the Brigham, and Beth Israel Deaconess Medical Center in Boston, as well as at an Atlanta hospital. Residents were told that the study was evaluating the use of heart attack drugs in the emergency room, but not that it was also examining racial bias; 220 trainee doctors were counted in the results.

The residents were first given a narrative describing a male patient who shows up in the emergency room complaining of chest pains. Accompanying the narrative was a computer-generated image of the patient, either a black or white man shown in a hospital gown from the chest up, wearing a neutral facial expression.

The doctors were asked if, based on the information provided, they would diagnose the man as
having a heart attack and, if so, whether they would prescribe clot-busting drugs called thrombolitics, commonly used in community hospitals to stabilize patients having heart attacks, and how likely they were to give those drugs.

Study participants were also asked questions designed to determine if they were overtly biased. Answers showed they were not.

Last, the residents took Banaji’s “implicit association test,” which is based on the concept that the more strongly test-takers associate a picture of a white or black patient with a particular concept, say cooperativeness, the faster they will make a match. White, Asian, and Hispanic doctors were faster to make matches between blacks and negative concepts and slower to make matches between blacks and positive ones. The small number of African-American physicians in the study were as likely to show bias against blacks as against whites.

The researchers then compared the implicit association test scores with the decisions about whether to provide the clot-busting medicine and found that doctors whose ratings of African-Americans were most negative were also the least likely to prescribe the drug to blacks.

Another study, scheduled to be presented by a Johns Hopkins medical researcher in October, reaches similar results.

“At the end of the day, even among very well-intentioned people, implicit biases can be both prevalent and in some situations can impact clinical decisions,” said Dr. Amal Trivedi, a healthcare disparities specialist at Brown Medical School who was not involved in the study. “What this study can do is raise awareness of that finding.”

Stephen Smith can be reached at stsmith@globe.com.

(Correction: Because of an editing error, headlines on a Page One story Friday about tests finding signs of racial bias in medical care incorrectly described the doctors tested as emergency room trainees. Groups of medical residents were tested.)