Recognizing Laboratory Medicine's Collaborative Role in Identifying and Eliminating Health Disparities

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Randye Kaye: Hello and welcome to this edition of "JALM Talk," from *The Journal of Applied Laboratory Medicine*, a publication of the American Association for Clinical Chemistry. I'm your host, Randye Kaye.

Understanding health disparities such as what they are and why they exist is essential to devising strategies to reduce and eliminate them. Clinical laboratories generate copious amounts of data and thus are uniquely poised to address health disparities. A Special Report in the January 2021 JALM special issue "Health Disparities" presents the results of an electronic survey seeking to understand how both laboratorians and non-laboratorians think about the relationship between laboratory medicine and health disparities. The report highlights ways in which laboratory medicine can play a role in eliminating health disparities.

The senior author of the report is Dr. Octavia Peck Palmer. Dr. Peck Palmer is an Associate Professor in the Departments of Pathology, Critical Care Medicine, and Clinical and Translational Science at the University of Pittsburgh School of Medicine. She is also the Division Director of Clinical Chemistry at UPMC Presbyterian and Shadyside Automated Testing Laboratories in Pittsburgh, Pennsylvania. Dr. Peck Palmer is our guest for this podcast.

Welcome Dr. Peck Palmer. Let's start with the basics. What is a health disparity?

Dr. Peck Palmer: A health disparity is a health outcome that exhibits differences between groups or populations of people and groups and populations can be defined by factors such as age, ethnicity, race, gender, sexual orientation, education attainment, income status, disability, and geographical location. Now, the Center for Disease Control expands the definition of health disparities as "preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health." Health disparities in diseases are products of complex interactions between social, economic, political, and to a lesser extent, biological factors, and can be mediated by structural racism and discriminatory policies.

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Randye Kaye: Okay. So, we have our definition. Now, can we talk about strategies, like at the national state and local level. Which ones have been used to try to reduce these health disparities?

Dr. Peck Palmer: Well, very broadly, past and current strategies that have been used to reduce health disparities include programs that provide individuals access to care like providing health insurance, transportation to healthcare providers, and access to clinical trials, public health programs and community partnerships that highlight annual physicals and screening, focus on reducing food deserts and establishing safe environments and wellness programs and other programs that employ family and faith-based interventions. Public health campaigns that are focused to educate individuals on diseases and syndromes with the intention to modify behaviors such as healthy eating, being active, self-identifying symptoms, hand washing, vaccination, and seeking care include types of strategies, but there's also something that's important. Programs that really build upon the public's trust of the medical field have been shown to be effective. New developments in the area of artificial intelligence that's being used to identify meaningful patterns in the electronic medical record are being tested. There have been instances in which bias has been built into these artificial intelligence programs and so they're being refined. Lastly, I'd like to just end on the development of the Minority Health and Health Disparities Research and Education Act of 2000 in which several initiatives were established, and they include the National Institute on Minority Health and Health Disparities, the Agency for Healthcare Research and Quality, Health Disparities Research, the Healthy People 2000 initiative which occurs every 10 years, the National Academy of Sciences Study on Health Disparities, all of which are focused on improving the health and well-being of Americans.

Randye Kaye: All right. Thank you. So, we've been at this for at least -- at least a couple of decades, right? So, for the JALM Special Report, your team conducted a survey on health disparities that was targeted at both laboratorians and non-laboratorians. So, can you share what you discovered regarding perceptions of how laboratory medicine can play a role in reducing health disparities?

Dr. Peck Palmer: Yes. The objective of our Special Report was to understand how both, like you said, laboratorians and non-laboratorians think about the relationship between laboratory medicine and health disparities, and to highlight ways in which laboratory medicine can play a role in eliminating health disparities. I'd like to give you some background on the study before I share some of our exciting results.

Randye Kaye: Okay.

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Dr. Peck Palmer: For the study, the term "laboratorians" was used to describe the various experts such as clinical chemists, pathologists, medical technologists, medical technicians, and clinical laboratory scientists, while the term "non-laboratorians" was used to describe several groups including teachers, authors, research scientists, pharmacists, computer scientists, dentists, entrepreneurs, and anyone that identified as other. So, for our results, a total of 215 individuals responded to our survey and it's important to acknowledge the self-identification of race among the survey respondents, as health disparities are prevalent among a variety of racial and ethnic groups. The survey respondents were racially diverse with a little less than 50% self-identifying as white, about 23% identifying as black/African-American, 9% as Asian, 7.4% as Hispanic, and 2.2% as Middle Eastern or North African.

We also had about 7% that preferred not to respond to this question. Interestingly, we found that 93% of the survey respondents reported that they understood the meaning of the term "health disparity" in disease prevalence and healthcare, and health inequity. The participants were then asked to look at five strategies and to select the top strategies that they felt laboratorians could take as first steps in order to eliminate health disparities. And the most common strategy selected among both laboratorians and non-laboratorians was for laboratory medicine to proactively track those with chronic diseases in cooperation with their healthcare providers to prevent acute events.

And then secondly, both groups said laboratory medicine could play a pivotal role in ensuring gender and ethnic diversity in new trials to make sure that individuals are fully represented. They also noted that the laboratory would be first in including appropriate curriculum in laboratory medicine training, and that laboratory medicine has at their use, equations and reference intervals that they develop that would truly reflects physiological differences rather than shortcuts such as using race and ethnicity to provide results. And lastly, they noted that laboratory medicine can lead in identifying unconscious and implicit bias that is used in the practice of medicine.

Randye Kaye: Wow! So, quite a lot of discoveries there, and I think you've already answered this question, but you may want to add to it. Are there any other specific ways that the fields of laboratory medicine or pathology can reduce health disparities, like, where or how can people in these fields get that process started?

Dr. Peck Palmer: You know, I believe that laboratory medicine can start their process by building upon the visibility that they currently have, and demonstrating to the public that we truly believe

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in a high standard of public health. Two things that came out from the study of where laboratory medicine can begin, is really understanding where unconscious and implicit bias lies in the way that medicine is delivered. And we can play a large role in ensuring individuals have access to testing, to ensure that there are diverse populations that are involved in the reference range development that we generate, and also to ensure that the interpretation of the results are appropriate and not skewed based on stereotypes or prejudices.

The second one was to really acknowledge and address the underrepresentation of minorities in laboratory medicine leadership, and to build both inclusive and healthy mentoring environments so that we can recruit and retain current talent.

And then also to really focus on outreach programs that target underrepresented minorities during middle and high school years and introduce them to laboratory medicine and pathology. You know, as our field grows, we must progress to be more reflective of the general population. Thus, embedded biases can become more apparent as those affected by these biases are now part of the decision-making team.

Randye Kaye: Wonderful! Thank you. Certainly, awareness is the beginning of any change. And finally, are there any specific health disparities that you think laboratorians in particular can take a collaborative approach to reduce or even eliminate?

Dr. Peck Palmer: Yes. There are several diseases in particular in which there are disparities in the incidence among populations and they include diabetes, cardiovascular disease, preeclampsia, sexually transmitted diseases, and renal disease. Laboratorians continue to lead in developing standardized testing algorithms for the detection and management of these diseases by regularly assessing the demographics of the pediatric and adult populations they serve, and to make sure that this test, again, is accessible to all, in both urban and rural communities. Current laboratorians' efforts should be continued, which have been focused on practicing evidence-based medicine, which in many instances is generated through expert collaborations with other medicine specialties. Laboratory leadership in the development of test methods that are both sensitive and specific for syndromes like preeclampsia are critical to close the maternal and neonatal mortality gap. Laboratorians can aid healthcare providers by providing electronic alerts and ensuring at-risk and hypertensive pregnant patients receive medically-endorsed guideline-based testing.

Lastly, laboratories can think about, does their testing unintentionally exacerbate health disparities? And an example is a practice that in more recent years has come into

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question, the race specific correction factor for black or African-American individuals that's used when calculating the estimated glomerular filtration rate. There's no data to support an exclusive biological difference in black or African-American individuals from all other populations, and studies have reported that using these race correction factors associated with delays in black and African-American patients receiving nephrology consult, therapies, and transplantation. At this time, many healthcare systems have removed the race correction factor and medical and professional societies have pledged to examine the harm of using these variables and other race practices.

So, laboratory medicine has a unique set of skills that allows them to play a key role in identifying the health disparities in the populations that they serve and ultimately, putting into play strategies that will reduce and ultimately eliminate the health disparities that affect their population.

Randye Kaye: That was Dr. Octavia Peck Palmer from the University of Pittsburgh School of Medicine, describing the JALM Special Report, "Recognizing Laboratory Medicine's Collaborative Role in Identifying and Eliminating Health Disparities." Thanks for tuning in to this episode of JALM Talk. See you next time and don't forget to submit something for us to talk about.

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