Table 1.

Barriers to Diversity in Clinical Trials and Real-World Solutions

Barriers to diversity in clinical trials	Potential solutions to barriers	Real-world examples
Implicit bias of HCPs[92,108,116]	• Deliver diversity training for HCPs[116] • Build a trusted therapeutic alliance between the HCP and patient[116]	• Several states have passed laws requiring some categories of HCPs to undergo implicit bias training[117]
BIPOC populations not being informed about clinical trials[108]	• Build relationships with local physicians to increase their readiness to recruit patients for clinical trials[108] • Train HCPs in using participant-centered communication to be culturally sensitive and build trust, which is important for enrollment[108]	• A day-long intensive communication course for doctors improved their discussions with patients about clinical trials[108] • An interactive online tool for patients was created to improve awareness and understanding of clinical trials for marginalized populations[108]
Lack of diversity among clinical researchers[90]	• Recruit and mentor more researchers from marginalized backgrounds[108] • Diversify the clinical research workforce and increase diversity in leadership of clinical trials[90]	• Publications from heart failure clinical trials with female first or senior authors enrolled significantly more female participants[118] • Before 2007, The Ohio State University had not trained any cardiologists from marginalized populations, but since then has successfully instituted a program to intentionally recruit and support trainees from these populations[119]
Researchers not understanding how to engage with marginalized communities[120,121]	• Educate researchers on methods of recruiting and retaining marginalized populations in clinical trials[120]	• A massive open online course has been developed to train research teams about recruiting marginalized populations for clinical trials[120]
Researchers not understanding the community from which they are recruiting[110,122]	• Conduct interviews in the community to learn their unmet needs and discover potential data gaps, use that data to inform decisions[114]	• Responding to the COVID-19 pandemic, CTSA-funded institutions learned about community needs through surveys in multiple languages, focus groups, working with local organizations, and developing registries to track health and financial outcomes; they used this information to create new testing sites, increase health care accessibility, and gain a better understanding of the communities[114]
Researchers communicating with insensitive terminology[3]	• Involve community members in identifying respectful language to use[3]	• Elected and non-elected leaders helped inform language choices (eg, older adult vs elderly, priority population vs target population) for the COVID-19 vaccine trials[3]
Physical inaccessibility of clinical trials[90,123]	• Reach participants where they are: expand clinical trial sites to new geographic areas and non-traditional sites within communities, and use technology to decentralize clinical trials through remote data collection[90,123]	• Barbershops were used to recruit and deliver an intervention to improve hypertension in Black men[90]
Financial inaccessibility of clinical trials (eg, lack of access to transportation, childcare, health care, and adequate health insurance)[108]	• Financially compensate participants for their involvement,[109] including medication and procedures from the trial as well as indirect costs such as gas, hotels, and any time missed from work[116]	• Participants in the IMPACT study with a household income below a certain amount were eligible for reimbursement for indirect costs such as gas, parking, tolls, rideshare, lodging, and travel costs for a companion[124]
Trial design inaccessibility[90,121]	• Make participation requirements in trials more inclusive, such as not requiring proficiency in English[121] • Use digital health tools to collect data remotely, reducing the burden of participation[90]	• Fully remote clinical trials have been implemented successfully using digital health technologies, achieving higher diversity than typical[125,126] (eg, among participants enrolled in a clinical trial for COVID-19 treatment with remote cardiac monitoring, 17.4% were AI/AN and 29.8% were H/L)[125]
Community mistrust of research and medical institutions due to historical and ongoing mistreatment[90,110]	• Acknowledge historical wrongdoing[90] • Put time and effort into earning trust[90] • Adhere strongly to ethical standards[109] • Educate the community about any possible risks[109] • Involve the community in all aspects of the trial[3] • Be receptive to feedback from the community and implement it[110] • Be transparent and use plain language[3] • Use personal stories to communicate why the area of study is important to the researchers[110] • Be transparent about data for drug efficacy in diverse populations, including gaps in data[92]	• To circulate information about COVID-19 and the vaccine trials, researchers partnered with trusted community organizations (eg, social service agencies, advocacy groups, media, faith-based organizations serving BIPOC communities)[3] • For the COVID-19 vaccine trials, researchers and the communities discussed the role racial disparities in health care play in mistrust for biomedical research, providing new insight and leading to additional data collection[114] • To increase enrollment of diverse populations in the COVID-19 vaccine trials, researchers convened expert panels for each priority community (eg, AI/AN, Black/African American, H/L, older adult/veterans), consisting of scientists and community leaders from those populations. These efforts led to decisions to reimburse participants for study costs, implementation of mobile clinics, and researchers working with Tribal nations to develop contracts together[3]
Community misinformation and misperceptions about trials[3]	• Use community-based participatory research approaches[3]	• Educational materials were developed for the COVID-19 Prevention Network–sponsored vaccine trials, with input from the CAB, including a website, a toll-free call center, and a Dropbox with infographics, videos, animations, and social media posts, all available in English and Spanish[3] • With the help of trusted organizations and celebrities, a multimedia campaign to address concerns about vaccine trials was launched and disseminated with an advertising buy focused on Black and Latino adults[3] • In response to the COVID-19 pandemic, CTSA-funded institutions communicated accurate information to the public through town halls, social media, infographics, webinars (in Spanish and English), local ethnic media, and guides on how to evaluate news stories[114]

Abbreviations: AI/AN = American Indian/Alaska Native, BIPOC = Black, Indigenous, and People of Color; CAB = community advisory board; CTSA = Clinical and Translational Science Award; HCP = health care provider; H/L = Hispanic/Latino; IMPACT = IMproving Patient Access to Cancer clinical Trials.