THE UNIVERSITY OF MEMPHIS | Center for Community Research and Evaluation

Disparity Impact Statement

OMH COVID-19 Health Literacy Proposal
Lead agency: Town of Inverness, Mississippi
Grant number: CPIMP211257

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Researchers of the Center for Community Research and Evaluation (CCRE), in communication with Alcorn State University, prepared a Disparity Impact Statement (DIS) to identify strategies for communicating culturally sensitive health messages to increase COVID-19 vaccination rates among residents in 11 rural counties in the Mississippi Delta[1]. The report outlines health disparities and social determinants of health in these counties, particularly among Black residents, and implications for increasing access and shifting mindsets toward COVID-19 vaccination acceptance. The report draws on local health metrics as well as self-reported data from individuals residing in the target counties. Our DIS will provide a framework for ongoing monitoring, determining the impact of our literacy intervention on adherence to COVID-19 recommendations, including vaccinations and prevention measures.

[1] Adams, Bolivar, Claiborne, Humphreys, Issaquena, Jefferson, Leflore, Sharkey, Sunflower, Warren and Washington along or in proximity to the Mississippi River

I. Populations

Population of Focus. The service area for the grant will focus on the populations of eleven fully rural counties in the Mississippi Delta, which lie along or in proximity to the Mississippi River (Adams, Bolivar, Claiborne, Humphreys, Issaquena, Jefferson, Leflore, Sharkey, Sunflower, Warren and Washington). The Centers for Disease Control and Prevention (CDC) Social Vulnerability Index (SVI) score for the service area is 0.9572 out of 1.0, which is highly indicative of the need for community support during and after a public health emergency. The index examines 15 different factors including poverty, lack of educational attainment, lack of vehicle access, crowded housing, and minority status, all determinants that can directly affect outcomes relating to COVID-19.[2]

Both in Mississippi and nationally, health disparities are significantly more prevalent among individuals facing systemic barriers to healthcare, resulting in disproportionate levels of illness and disease experienced by racial and ethnic minorities, especially in rural areas. Mississippi ranks last or close to last in the country for almost all primary health outcomes (e.g., diabetes, obesity, and early death).[3] However, when compared to Mississippi as a whole, the service area counties are disproportionately affected by myriad factors that negatively affect health and wellbeing. As shown in the following table[4], service area residents are more likely to report poor or fair health days than the state overall, along with more poor physical and mental health days in the past 30 days. Focus county residents also have higher health risk factors, such as adult smoking and obesity, and are uninsured at a higher rate than the state. They face a steep dearth of health providers (primary care physicians, dentists, and mental health providers), and children are on average about twice as likely to live in poverty than their peers in the rest of the country.

Table 1: Factors Affecting Health and Wellbeing.

County Health Factors produced by the RWJF	Mississippi	Service Area
Health Outcomes		
% Poor or fair health	22%	31%
% Poor physical health days (last 30 days)	4.5%	5.5%
% Poor mental health days (last 30 days)	4.8%	5.4%
Health Factors		
% Adult smoking	21%	25%
% Adult obesity	39%	41%
Food environment index (0 [worst] – 10 [best])	4.1	4.5
% Access to exercise opportunities	54%	57%
% Excessive drinking	15%	13%
STI rate	740.1	1126.2
Clinical Care		
% Uninsured	14%	15%
PC physicians (provider: patent ratio)	1,890:1	2,026:1
Dentists (provider: patent ratio)	2,050:1	2,025:1
Mental health providers (provider: patent ratio)	590:1	1,145:1
# Preventable hospital stays	5,702	6,468
Social/Economic Factors		
% Unemployment	5.4%	7.6%
% Children in poverty	28%	46%

[2] Centers for Disease Control, Agency for Toxic Substances and Disease Registry, CDC/ATSDR Social Vulnerability Index Fact Sheet, https://www.atsdr.cdc.gov/placeandhealth/svi/fact_sheet/fact_sheet.html. Accessed 5/10/21.
[3] https://msdh.ms.gov/msdhsite/_static/44,0,236.html
[4] County Health Rankings

Below, we include a table of the proposed number of individuals to be reached or served in the geographic area of focus, by budget period, and by race and ethnicity.

Table 2: Individuals in our Geographic Area to be Reached in the Grant Period.

Budget Period	Phases and Dates	Target populations	Expected # Reached	# Expected Black, non-Hispanic	# Expected White, non-Hispanic	# Expected Hispanic or Other
1	Phase 1: July 2021 – Aug 2021	Direct employees, faculty, volunteers and their families of the Town of Inverness, Alcorn State University, Delta Health Alliance (DHA), Leland Medical Clinic (LMC), partnering faith-based centers, and CCRE	2,500	2,000	450	50
	Phase 2: Sept 2021 – Dec 2021	Residents who have an existing relationship with the Town of Inverness and partners, which include employees of local Chambers members, Ministerial Alliance churches, unique participants in DHA's programs, patients of LMC, and students of Alcorn State University.	40,000	35,000	4,000	1,000
	Phase 3: Jan 2022 – June 2022	General public residing in the targeted rural counties, focusing on racial minorities	50,000	35,000	13,000	2,000
2	Phase 3: Jan 2022 – June 2023	General public residing in the targeted rural counties, focusing on racial minorities	150,000	100,000	45,000	5,000
		TOTAL	**242,500**	**172,000**	**62,450**	**8,050**

Disparate Populations at Highest Risk. While the grant will target the general public, the Black residents of this service area are at highest risk of health disparities. This disparate population, comprising 66% of the total service area population, have faced tremendous health disparities long before the COVID-19 pandemic. However, COVID-19 has created an extremely precarious situation for Black families that were already on the precipice of poor health and economic ruin.

We wish to point out that other racial and ethnic minorities (e.g., Hispanic and Native American residents) who experience many of the same disparities as the Black population locally and nationally will be reached through the health literacy intervention. However, they are not identified explicitly as a focus group as they comprise an extremely small proportion of the service area and Mississippi population (less than 1% American Indian, Alaskan Native, Native Hawaiian or Pacific Islander, and 3.4% Hispanic).

Comparison Group compared to assess the level of difference in access, use, and outcomes. The comparison group will be White residents living in the same counties. Even though all focus area residents are at a "health disadvantage" compared to Mississippi as a whole and the nation, we compare the Black and White populations as the Black community is by far the subpopulation facing the greatest disparities.

The next table on the following page highlights health disparities between Black and White residents in the service area.[5] For every vital statistic observed, the Black population has significantly higher rates than Black residents in the rest of the state and the US as a whole. This holds true for the White population, as well, but Black service area

[5] https://mstahrs.msdh.ms.gov/ (2015-19 data)

residents have at least twice the rate of White service area residents in every measure except the premature death rate (which is still much higher).

Table 3: Vital Health Statistics

Vital Health Statistics	White*			Black*		
	Service Area	Mississippi	USA	Service Area	Mississippi	USA
Teen pregnancy rate	13.5	13.9	13.2	28.8	22.5	27.5
Low birthweight rate	8.0	8.5	7.0	15.6	16.7	13.9
Very low birthweight rate	1.2	1.3	1.0	3.2	3.4	2.9
Premature death rate	689.2	616.4	1079.0	920.8	777.9	798.0
Infant mortality rate	6.6	6.6	4.6	12.4	11.9	10.8
Total population[6]	393,578	8,844,110	196,789,401	792,564	5,631,990	40,596,040
Percent of total population	32.6%	59.2%	76.3%	65.6%	37.1%	13.4%

*Table contains figures for White and Black populations of non-Hispanic origins

Social determinants of health are also highly disparate. As shown in the table below[7], large disparities exist related to education, salaries, health insurance, number of households led by single mothers, and levels of poverty. Black residents in the service area fare more poorly on all these measures than 1) other Black individuals in the state and nationwide and 2) White residents in the service area, state, and the US as a whole.

Table 4: Social Determinants of Health

Census Metrics	White*			Black*		
	Service Area	Mississippi	USA	Service Area	Mississippi	USA
% Less than HS education	13.0%	11.9%	7.1%	23.6%	20.3%	14.0%
% Bachelor or greater	28.1%	25.8%	35.8%	14.4%	15.4%	21.7%
% Uninsured	9.2%	10.3%	5.9%	16.0%	13.7%	10.1%
$ Median income	$55,992	$51,233	$68,785	$23,487	$26,195	$41,935
% Family households led by single mother	13.4%	14.2%	13.5%	53.6%	47.5%	44.4%
% Population with poverty status, last 12 months	12.1%	12.5%	9.6%	40.6%	31.6%	23.0%

*Table contains figures for "White alone" - Not Hispanic or Latino" and "Black or African American Alone"

As with general health disparities, COVID-19 has taken a notably larger toll on the high-risk, underserved Black population residing in the service area. The following table[8] shows higher rates of COVID cases and deaths among the Black population in the service area compared to White residents in the service area, as well as other Black and White populations in the state. (National comparisons are not included in the table as they do not reliably count race data.)

Table 5: COVID Cases and Deaths

	White*	Black*

[6] https://mstahrs.msdh.ms.gov/ (2015-19 date for MS) https://www.census.gov/quickfacts/fact/table/US/PST045219 (USA)

[7] https://data.census.gov/cedsci/ (Single mother household: B11001A (White), B11001B (Black); Poverty status: B17020A (White), B17020B (Black); Median income: B19013A (White), B19013B (Black); Uninsured: C27001A (White), C27001B (Black); Educational attainment: C15002A (White), C15002B (Black))

[8] https://msdh.ms.gov/msdhsite/_static/14,0,420,884.html

COVID Cases and Deaths as of July 14, 2021	Service Area	Mississippi	Service Area	Mississippi
% COVID case rate	14.9	14.5	16.2	15.9
% COVID death rate	0.5	0.4	0.6	0.5

*Table contains figures for White and Black populations of non-Hispanic origins

A range of factors amplify poor outcomes from COVID-19, including living conditions, underlying medical conditions, and inadequate access to both physical and mental healthcare services. Barriers to healthcare in the service area include access (e.g., proximity to healthcare services, transportation), poverty, lack of health insurance, fear of medical diagnosis, stigma, racism, and distrust in the medical system.[9] Another sometimes hidden barrier relates to health literacy, or individuals' ability to find, understand, and use medical services and information to make informed, health-related decisions. Mississippi is one of the lowest health literacy states in the nation with 22% residents in the service area counties having "below basic" health literacy skills.[10] Assessments of health literacy are often based on the National Assessment of Adult Literacy (NAAL)[11], which assesses reading, math, and science knowledge, providing a reliable assessment for skills needed to understand information offered by medical providers (e.g., instructions on prescription drug bottles, appointment slips, medical education brochures, doctor's directions and consent forms). Given that health literacy levels are disproportionately lower among low-income, rural, uninsured, and racial subgroups, it is critical to adopt culturally sensitive approaches to health outreach and communication strategies. Such approaches need to address a range of barriers to accessing and utilizing health services to serve communities more equitability.

Data from a needs assessment conducted by the Delta Health Alliance in 8 of the 11 target counties suggest that grassroots, community-level approaches may play a key role in narrowing disparities in health literacy in rural Mississippi. Interviews with community stakeholders indicated that low levels of health literacy are linked to deficits in education about health at the school level (e.g., focus on test scores rather than "life readiness" and skills to manage health), workplace level (e.g., few or no policies/activities to encourage healthy behaviors among employees), and healthcare level (e.g., poor communications between doctors and patients that help uncover medical concerns, promote healthy lifestyle choices to prevent disease and manage existing medical conditions). Limited health awareness was also described to be impeded by a poor health culture that normalizes fast food and physical inactivity and the assumption that chronic diseases are a regular part of life. Interviewees discussed the importance of community venues (e.g., churches, schools and workplaces) for educating residents about health. According to a survey completed by 1,445 residents, community settings may serve as key points of access for health-related interventions; a half to two-thirds of participants indicated that churches, workplaces, and grocery stores would serve as trusted locations for health services and screenings (e.g., blood pressure, glucose, and cholesterol checks).

In response to COVID-19, the Delta Health Alliance formed the RIVER coalition in February 2021 to implement strategies to increase the availability, acceptability, and use of COVID-19 information and services by rural communities of color in the Delta. The Delta Health Alliance attained perspectives from Black community health workers, faith-based leaders, business owners, leaders of area municipalities, and residents to get a sense of the underlying issues impacting COVID-19 health literacy among communities of color. Perceived barriers fell within three categories: 1) vaccine and safety measure hesitancies driven by a lack of trust in medicine and government and fueled by misinformation; 2) difficulty scheduling appointments due to lack of access to and familiarity with online systems; and 3) difficulty obtaining vaccines due to lack of transportation or time needed off work to travel to distant vaccine centers in larger cities.

Corroborating safety concerns, the Mississippi COVID-19 Vaccination Confidence Survey[12] reported high levels of vaccination hesitancy among African-American participants, with key concerns being fears about the speed the vaccine was developed, side effects, long-term health risks, and possible death from the vaccine. Research indicates

[9] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6612316/
[10] http://www.jsums.edu/murc/files/2018/01/Jin_Research-Brief.final-1.pdf?x11471
[11] https://www.cdc.gov/healthliteracy/researchevaluate/measure-peoples-skills-experiences.html
[12] https://msdh.ms.gov/msdhsite/_static/resources/13827.pdf

that changing mindsets on getting the vaccine will require carefully crafted health messages delivered from trusted sources, including local medical providers (e.g., Black primary care physicians, nurses, and pharmacists).[13]

[13] https://time.com/5925467/covid-19-vaccine-hesitancy/

II. Quality Improvement Plan

A continuous quality improvement process will be used during every stage of the program to assess the efficacy of the intervention along the domains **of access, use**, **and outcomes**. Both project performance data drawn from the field and the National CLAS Standards will be used to assess impact monthly as a permanent agenda item on meetings of this initiative's Steering Committee.

Access. DHA will ensure that populations engaged in the health literacy intervention are representative of residents living in the service area. Based on the overall rural health disparities and high levels of the population at risk for COVID-19, we will engage all adult (18 years and over) residents in the service area in the health literacy outreach project. However, as mentioned above, Black residents, making up two-thirds of the service area population and experiencing the largest health and COVID disparities, will serve as a priority audience for receiving messages about the COVID vaccine.

Programmatic data will be used to ensure (a) that the targeted populations are engaged in project activities; (b) that the populations are representative of the catchment area; (c) that targeted populations are included in all varieties of project activities; and (d) that all population groups not being reached are identified. Enrollment forms and survey tools will be used to identify the demographics of program participants reached by the intervention. This will be paired with attendance records documenting the types of activities that each participant engages in. Evaluators will routinely construct a demographic profile of who is reached by the intervention using these records, which will be stored in Delta Health Alliance's Efforts to Outcomes case management software, comparing this to data from the United States Census and other sources to identify alignment with program goals.

Partnerships will also ensure sufficient access with respect to the intervention. Engaging Black community members in developing and implementing the health literacy intervention will help ensure Black representation and the development of culturally relevant messaging strategies that foster buy-in and mobilize collective community action.[14] Partnerships between the Delta Health Alliance and community agencies (e.g., Mississippi Department of Health, the Leland Medical Clinic, Ministerial Alliance, and Alcorn State University) and relationships with outreach workers, faith-based leaders, business owners, and leaders of area municipalities will underpin efforts to engage broad participation among Black residents and develop COVID-focused outreach that equitably reflects the voices and needs of service area residents.

Use. DHA will continuously monitor the level and quality of participation in the project by disparate populations, analyzing the effectiveness of program activities to retain disparate populations and ensure appropriate services are delivered. Key will be ensuring that the services offered through the grant focus on delivering coordinated, audience-tailored community messaging about COVID-19 and the vaccine that accommodates the needs and perspectives of the service-area residents. The approach is founded upon recommendations of the National Institutes of Health's Rapid Working Group on COVID-19 Vaccine Communication[15], offering an evidence-based framework for community-based health outreach which includes: 1) coordinated communication and consistent messaging, 2) use of vaccine messengers trusted by the community, 3) strategies to tailor vaccination messages specific to different audiences, 4) trust building through partnerships, 5) consideration of different health literacy levels in the population and 6) prioritizing equity in all aspects of communication. The approach is also commensurate with Mississippi data that suggests the need for a multi-pronged approach whereby health messages are aligned with education level, first language, age, gender, and messaging preferences (e.g., social media, information brochures, doctor consultations, conversations with pastors)[16] and addresses access barriers to healthcare and education (see Part 1, DHA baseline conversations with community members).

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[14] https://pubmed.ncbi.nlm.nih.gov/23349398/

[15] Choe, S., Burgdorf, C., Gaysynsky, A., and Hunter, C., National Institutes of Health, "COVID-19 Vaccination Communication: Applying Behavioral and Social Science to Address Vaccine Hesitancy and Foster Vaccine Confidence". https://obssr.od.nih.gov/wp-content/uploads/2020/12/COVIDReport_Final.pdf. Accessed 5/5/21. Note: Significant portions of this model were replicated verbatim for clarity in the following section on Approach.

[16] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7365659/

Approaches to change mindsets about the COVID vaccine will require trained individuals from the above-named partnering groups to use a toolkit that includes print materials with targeted concepts and action-oriented steps, protocols for messengers, and mediums for reaching the target population (e.g., digital platforms, TV, radio and in-person meetings)[17]. We adopt a phased approach to build messenger training, COVID messaging strategies, and materials (see Table 1) to allow representative, community-wide health literacy outreach to be built in stages. This approach will allow for the continuous monitoring regarding the suitability of the healthy literacy training (for educators) and outreach approaches and allow time for modifications and the development of new approaches. While almost all residents speak English as a primary language, we will use translation as appropriate to meet health needs of non-English speakers.

Shirley Evers-Manly, PhD, RN, FAAN from Alcorn State University, an accredited HBCU in our service area, will operate with full independence to develop, implement, and maintain systems to evaluate use, as well as access and outcomes, and will coordinate the development and maintenance of our consortium's monthly continuous quality improvement processes, and report writing. Dr. Evers-Manly's evaluation will utilize focus groups of minority households, businesses and churches, and pre-/post- testing to assess behavioral changes in participants, as well as the cultural and linguistic appropriateness of materials, intervention approaches, and data tools used.

Outcomes. Dr. Evers-Manly will also evaluate the outcomes of the project, including whether there were any changes in the access, use and outcomes of COVID-19 vaccination, testing, preventative behaviors, health literacy, and other related activities. Alignment with the following Healthy People 2030 objectives will also be assessed, to the extent feasible:

- HC/HIT-01: Increase the health literacy of the population
- HC/HIT-02: Decrease the proportion of adults who report poor communication with their health care provider
- HC/HIT-03: Increase the proportion of emergency messages in news stories that include steps for reducing personal health threats
- IID-D02: Increase the proportion of people with vaccination records in an information system

As mentioned in the previous section, Dr. Evers-Manly's evaluation will utilize focus groups of minority households, businesses and churches, and pre-/post- testing to assess behavioral changes in participants and data from the MS Department of Health. The evaluation will adopt ongoing formative assessments to maintain regular feedback loops with front-line providers, managers, stakeholders and consumers to advise continuous quality improvement. In all phases of the project, individuals trained to conduct outreach with the service-area residents will complete a pre-post survey to assess the quality of the training and identify the extent to which the training builds confidence and knowledge to talk to members of the community about the vaccine. Community health workers conducting outreach with service-areas residents in Phase 3 of the program will be visited by program staff and stakeholders regularly and surveyed every month to specifically identify any challenges or concerns that may be impacting their efforts to communicate health messages using the abovementioned toolkit. They will also record participants receptivity and reaction to the messaging approaches and contents. All issues will be documented then submitted to the DHA Management and the Advisory Council review. DHA's issue tracking system will be utilized to measure changes in the program's processes over time to reconcile new systems or protocols with any observed changes that result in improved communications with the target audiences.

National CLAS Standards.

The health literacy intervention implements a continuous quality improvement process which draws on project outcome data as well as ensuring adherence to the 15 culturally and linguistically appropriate services (CLAS) standards to measure program impact (Table 6).[18] The approaches used are commensurate with Alcorn

[17] https://pubmed.ncbi.nlm.nih.gov/24633539/
[18] https://thinkculturalhealth.hhs.gov/clas

and DHA policies and procedures designed to be culturally sensitive to meet the needs of the communities being served, disparate populations, and non-English speaking individuals.

Table 6: National CLAS Standards

Area	National CLAS Standard	Project Strategies
Principal Standard	1. Provide effective, equitable, understandable, and respectful quality care and services that are responsive to diverse cultural health beliefs and practices, preferred languages, health literacy, and other communication needs.	A COVID vaccination strategy will be embrace: 1) coordinated communication and consistent messaging, 2) use of vaccine messengers trusted by the community, 3) strategies to tailor vaccination messages specific to different audiences, 4) trust building through partnerships, 5) consideration of different health literacy levels in the population and 6) prioritizing equity in all aspects of communication.
Governance, Leadership and Workforce	2. Advance and sustain organizational governance and leadership that promotes CLAS and health equity through policy, practices, and allocated resources.	A coalition approach is used to develop a health messaging strategy that reflects the voices of the service-area community. Minority community leaders from partnering institutions and municipalities will play a leading role in highlighting needs of minority residents in terms of health literacy in general and COVID-19 in particular. All community partners and stakeholders will be trained to use culturally sensitive health messaging by personnel from rural Delta communities approaches that enable effective outreach and health education to service-area residents.
	3. Recruit, promote, and support a culturally and linguistically diverse governance, leadership, and workforce that are responsive to the population in the service area.	
	4. Educate and train governance, leadership, and workforce in culturally and linguistically appropriate policies and practices on an ongoing basis	
Communication and Language Assistance	5. Offer language assistance to individuals who have limited English proficiency and/or other communication needs, at no cost to them, to facilitate timely access to all health care and services.	Health literacy strategies will be developed such that they include timely outreach approaches and materials suitable for the Hispanic and Spanish-speaking service-area residents. Steps will be taken to ensure communications are adapted to residents' language needs with verbal, written and print messages being language sensitive and easily culturally tailored for engagement and comprehension. We will assess whether Spanish-speaking trainers are for Phase 3 outreach to adequately accommodate the needs of the Hispanic residents.
	6. Inform all individuals of the availability of language assistance services clearly and in their preferred language, verbally and in writing.	
	7. Ensure the competence of individuals providing language assistance, recognizing that the use of untrained individuals and/or minors as interpreters should be avoided.	
	8. Provide easy-to-understand print and multimedia materials and signage in the languages commonly used by the populations in the service area.	
Engagement, Continuous Improvement, and Accountability	9. Establish culturally and linguistically appropriate goals, policies, and management accountability, and infuse them throughout the organization's planning and operations.	In accordance with the DHSS National Plan to Improve Health Literacy, the Delta Health Alliance will take steps to ensure individuals in the service area has access to accurate and actionable health information, deliver person-centered health information and services and support skills to promote good health decisions and practices. Community groups will play a leading role in
	10. Conduct ongoing assessments of the organization's CLAS-related activities and integrate CLAS-related measures into measurement and continuous quality improvement activities.	

	11. Collect and maintain accurate and reliable demographic data to monitor and evaluate the impact of CLAS on health equity and outcomes and to inform service delivery. 12. Conduct regular assessments of community health assets and needs and use the results to plan and implement services that respond to the cultural and linguistic diversity of populations in the service area. 13. Partner with the community to design, implement, and evaluate policies, practices, and services to ensure cultural and linguistic appropriateness. 14. Create conflict and grievance resolution processes that are culturally and linguistically appropriate to identify, prevent, and resolve conflicts or complaints. 15. Communicate the organization's progress in implementing and sustaining CLAS to all stakeholders, constituents, and the general public.	messaging design and outreach to address the needs and build trust among racial minorities. A quality improvement initiative will be employed that continuously assesses the effectiveness of outreach and communication approaches to validate their cultural sensitivity and suitability for the target audience. Approaches and materials will be adapted throughout the three phases of the program to ensure the most relevant, impactful communication strategies are used to deliver messages about the COVID-19 vaccine that build trust and engage residents. Feedback from trainers and residents about the suitability and effectiveness of the communication strategies will be integral to this process. As part of a comprehensive program evaluation, systematic data about the race, ethnicity, age and gender of the residents reached will be collected to ensure outreach efforts are effective in reaching minority residents. It is envisioned that community efforts and progress will serve to build a best practice model of health literacy for serving racial minorities in rural areas. Feedback about “what works” and “lessons learned” will be disseminated among stakeholders and the broader community on a periodic basis. A grievance resolution process will be implemented that can equitably manage possible concerns and complaints by residents, stakeholders and partners.