



800 Maine Avenue, S.W.
Suite 900
Washington, D.C. 20024

October 31, 2022

Board of Trustees
2022-2023

Rebecca W. Brendel, M.D., J.D.
President

Petros Levounis, M.D., M.A.
President-Elect

Sandra M. DeJong, M.D., M.Sc.
Secretary

Richard F. Summers, M.D.
Treasurer

Vivian B. Pender, M.D.
Jeffrey Geller, M.D., M.P.H.
Bruce J. Schwartz, M.D.
Past Presidents

Eric M. Plakun, M.D.
Glenn A. Martin, M.D.
Geetha Jayaram, M.B.B.S., M.B.A.
Cheryl D. Wills, M.D.
Jenny L. Boyer, M.D., Ph.D., J.D.
Barbara Yates Weissman, M.D.
Mary Hasbah Roessel, M.D.
Elie G. Aoun, M.D., M.R.O.
Felix Torres, M.D., M.B.A.
Michele Reid, M.D.
Urooj Yazdani, M.D.
Seth L. Daly Stennis, M.D.
Trustees

Assembly
2022-2023

Adam Nelson, M.D.
Speaker

Vasilis K. Pozios, M.D.
Speaker-Elect

Steven M. Starks, M.D.
Recorder

Administration

Saul Levin, M.D., M.P.A.
CEO and Medical Director

Miriam Delphin-Rittmon, Ph.D

Assistant Secretary for Mental Health and Substance Use
5600 Fishers Lane
Rockville, MD 20857

Sent via email to ClimateChange@SAMHSA.HHS.Gov

RE: Request for Information: SAMHSA's Role in Climate Change

Dear Assistant Secretary Delphin-Rittmon:

The American Psychiatric Association (APA) is the nation's medical specialty society that represents more than 37,000 psychiatric physicians and their patients. We appreciate having the opportunity to respond to SAMHSA's Request for Information (RFI) on what should be its top priorities for climate change and mental health. The APA has worked with its Council on Research, Committee on Psychiatric Dimensions of Disaster, and importantly, its Committee on Climate Change and Mental Health to facilitate the development of this thoughtful response to each question SAMHSA listed in the RFI.

Climate change and related disasters cause anxiety-related responses as well as chronic and severe mental health disorders.¹ Natural disasters have the potential to damage and disrupt communities through physical destruction; however, they can also significantly impact mental health. Important mental health services are often disrupted by disasters, leaving patients without access to continuity of care. New trauma is likely to occur as a result of the disaster, even further highlighting the need for access to mental health services, including treatment for substance use disorders.

Research has demonstrated the ways that access to medication treatment for opioid use disorder (OUD) is limited during disasters. Access to methadone in particular faces significant barriers in such instances. At a time of unprecedented opioid overdose mortality, increasing access to care is vital, especially in communities threatened by climate change and natural disasters. APA has identified strategies to communicate with groups of people vulnerable to the mental health and substance

¹ [Lancet Commission on Health and Climate](#). Health and climate change: policy responses to protect public health. *The Lancet*. Published online June 2015.

use related toll of climate change as well as strategies to reduce the barriers that providers and patients face when trying to access mental health and substance use services after a natural disaster.

A. What should SAMHSA's top priorities be with respect to climate change and behavioral health? What are current strengths or gaps in SAMHSA's work in this area?

1. SAMHSA's priority should be to keep the focus on prevention of climate behavioral health impacts and prevent the accumulation of traumas within the most affected populations. This achievement will require setting both short- and long-term goals for population interventions, and includes:
 - a. Actions to mitigate the impact of ongoing events and prevent the impact of coming events. Starting immediately, the most vital contribution to prevent a mental health crisis is a strong public health message from a unified body of health and mental health professions, prevention scientists and other researchers across areas such as public health, social science, and climate science, advocating for a rapid transition to a zero-carbon economy.
 - b. Over an intermediate timeframe, a deep understanding that the scale of the climate crisis and current population growth requires a paradigm shift for psychiatry, psychology, public health, behavioral health, social science, and climate science. While developing and evaluating direct mental health interventions remains imperative, the fundamental shift includes placing greater emphasis among SAMHSA's priorities for funding toward training, and practice support on population-level interventions that are coordinated by these fields.
2. In shifting these priorities, SAMHSA's recent work to provide ways that evidence-based practices (EBPs) can be adapted for new settings is a strength as we face coming rapid planetary change. The deep commitment SAMHSA has shown to diversity and inclusion and equity, and substantial innovation in on-line technical assistant programs is also a strength. In terms of gaps, information specific to the mental health impacts of climate change is underrepresented compared to issues like general climate adaptation needs. Additionally, as detailed below, access for populations with lower educational attainment and broadband access may be difficult given the existing online platforms on which SAMHSA is represented and could be expanded to a greater phone-accessible media presence.
3. In terms of additional preventative measures mitigating climate trauma, SAMHSA should prioritize:
 - a. For those at risk of severe trauma through forced displacement and recurrent natural disasters:
 - i. Consistent messaging based in mental health and psychological expertise, as well as alliance with primary care, community-based organizations, faith-based organizations, allied mental health professions, and others. Psychiatrists and other mental health professionals will also need to be involved in this effort, to help their patients adapt optimally to climate realities. These professional groups will need help with direct interventions to facilitate change and to overcome disavowals of efforts that can be implemented in office practice.

- ii. Collaboration with NIMH on enhanced research into factors associated with post-traumatic growth in this setting, into evidence-based tools and large-group interventions to facilitate change and growth, and preparation of potentially displaced communities for coming change and the associated mental health challenges should be a priority.
 - iii. Establishment of psychiatric service delivery IT and programs that can track and transfer medications, service delivery, payment, provider location and other service-related data so that care can be delivered without disruption during acute situations and with migratory patterns. In addition, investment in tools that can help psychiatrists and other mental health professionals, access and track this data, is needed to ensure their patients have adequate resources.
 - iv. Efforts that can enhance the prediction and anticipation of longer-term migration patterns and establishment of mental health services where people will live are imperative.
- b. For climate distress in young people:**
- i. Collaborate with NIMH on research into the risk associations (e.g., styles of parenting, pediatric anxiety disorders, bullying, etc.) that elevate climate distress into clinical-level distress, suicide, substance use, depression, obsessive-compulsive disorder and so on, are needed in order to identify and offer early interventions for those climate-distressed youth at more risk.
 - ii. Establishment and support for programs to prevent clinical-level symptoms in young people distressed about their climate future. These might include:
 - a. The development of youth-empowerment programs
 - b. Training in resilience skills
 - c. Parental education programs about parenting styles, child abuse and neglect that include the negative impact of intergenerational uncaring about children's climate future on their mental health
 - d. Parental programs that support the development of grit, courage, critical analysis, and other climate survival skills in offspring
 - e. Social media public health campaigns targeting youth climate distress
- c. In terms of mitigation of trauma:**
- i. SAMHSA has previously acknowledged that first responders are at increased risk of substance use throughout the lifecycle of a disaster.² As soon as possible, SAMHSA should coordinate with the Federal Emergency Management Agency and other disaster response groups such as the American Psychiatric Association's Committee on the Psychiatric Dimensions of Disaster and Vibrant Health to provide a

² Kopak, A. M., & Van Brown, B. (2020). Substance use in the life cycle of a disaster: A research agenda and methodological considerations. *American Behavioral Scientist*, 64(8), 1095-1110

national first-responder training into the impacts of compounding disasters on first-responder mental health and measures to limit and recover from excessive stress. A portion of this should be allocated to community training in moral injury, responses to governmental failures, and reciprocal relatedness to de-idealize the availability of endless resources and promote inter-disaster action and self-reliance in community members.

- ii. Implicit in this action is an understanding that as a long-term strategy, SAMHSA should expand existing disaster response models to include compound (repeating) disasters and a longer post-disaster focus of care. Mental health effects of disaster increase over time as community attention to them decreases, therefore, an effort to shift national understanding of what post-disaster care involves, to include long term effects will be helpful. The model developed by Vibrant is an excellent first step in this regard³.
- iii. SAMHSA should coordinate with pharmacy boards such as the American Pharmacy Association, Centers for Medicare and Medicaid Services, other governmental agencies, and with community health plans to ensure safe storage of an adequate supply of psychiatric medications during natural disasters. As part of this, SAMHSA should work with these national agencies to develop a web-based tool that allows patients and care providers to check which of the medications a patient is taking place them at greatest risk (e.g., of withdrawal or relapse) during service disruptions and highlights the risks of these medications.

B. What should SAMHSA's top priorities be to ensure behavioral health equity with respect to climate change?

1. Behavioral health equity includes access to the natural systems that support healthy life. In recognition of this, SAMHSA should:
 - a. Work with appropriate federal agencies to fund studies of mental health outcomes associated with: a) maintaining without disruption and b) improving the quality of air, water, healthy food, and contact with nature and animals.
 - b. Highlight information about these benefits to other federal agencies and organizations, for example, state governors, planning boards, and health associations.
 - c. Support contact with nature and animals as mental health treatments in proportion to the scientific evidence that supports their impact compared with other forms of mental health treatment.
 - d. Support efforts that guarantee access to healthy natural systems to the same degree that SAMHSA supports efforts supporting equitable access to mental health care for Americans.
2. Over the intermediate to longer term, SAMHSA should develop and validate a climate mental health scoring system for both individuals and communities that could be used to ensure that resources are fairly allocated. As an example of an individual scorecard,

³ Vibrant Emotional Health, Chronic Cyclical Disaster Model. (2022). <https://chroniccyclicaldisasters.info>

children in areas of repeated or prolonged climate disasters have multiple traumas, each of which carries an impact, as well as multiple hits to their social determinants of health and mental health. Those from more vulnerable populations, those who have significant climate-related anxiety, and those with pre-morbid mental health risks carry additional climate risks. These could be tallied similar to a suicide risk scale to assess the magnitude of climate impacts on an individual and to tie allocated resources to the depth of need. Such a scorecard must also be particularly capable of assessing non-disaster chronic climate risks, such as number of days of extreme heat exposure or factors such as losses of animals, contact with nature, destruction of natural landscapes due to climate change, and other factors that have been shown to have near and long-term negative effects on mental health.

3. Within principles of behavioral health equity, SAMSHA should include equitable distribution of climate health resources for the special needs of those with mental illness, such that their greater difficulties with accessing resources and transportation (e.g., provision for backup supplies of psychiatric medications and provision of bus and train tickets in advance of natural disasters) and social support (e.g., special telephone phone trees to contact those with mental health disorders to communicate important climate risks), are provided for in community adaptation planning. A general document outlining the needs of the mentally ill in predicted climate scenarios could be broadly useful to distribute to agencies such as the United States Department of Transportation and others charged with infrastructure development to ensure appropriate measures do not have to be retrofitted to systems under development now.
4. Behavioral health equity vis-à-vis climate change does not only include responding to those in particular need, however. Equity must be achieved in a variety of systematic ways, starting by following principles of procedural equity in implementing evidence-based practices suggested in a parallel document from the Climate Psychiatry Alliance. Additionally, and in some reiteration of what has been said above, climate equity is the commitment to provide equal chance and equal skills for positive mental health outcomes to the entire population that must adapt and change to climate-based demands, including those with mental illness. This emphasis supports development of programs that:
 - a. Educate the population about coming psychological stresses and other risks associated with climate change
 - b. Effectively communicate the need to adapt and the difference between resilience and adaptation
 - c. Train the public in strategies for rapid behavioral change
 - d. Train the public in cognitive and psychological evaluation of risk information, including the ability to overcome denial and disavowal and apply such scientific information to oneself in a meaningful way (e.g., the ability to grasp without disavowal or suppression that buying waterfront property when sea levels rise means that your property will be underwater)
 - e. Train the public in techniques for emotion management in life-threatening or high stress situations

5. Behavioral health equity further involves special allocation of resources to those who will most bear the brunt of climate change impacts in order to secure their equal resilience:
 - a. Communities whose lives and livelihoods are closely tied to the land for production, culture, and habitation will need to be a particular focus of programs supporting land and agricultural sustainability.
 - b. Those whose livelihoods are threatened by climate adaptation, (e.g., coal miners) will need extensive support to achieve a just transition, for example through job retraining and psychological support for changes in identity.

C. Which population(s) are most vulnerable to the behavioral health impact(s) of climate change? How can SAMHSA communicate with such population(s) and others to support their preparedness for the behavioral health impact(s) of climate change?

1. Children and young people, women, and elders as well as disadvantaged and under-resourced populations such as communities of color and Native American populations, the homeless and individuals with serious mental illness, are particularly vulnerable to climate change. More importantly, those living in areas prone to hurricanes, heat waves, flooding, and other climate-related extreme weather are currently suffering the greatest climate impacts, and these particularly vulnerable groups suffer most in these areas. As time passes, these groups will also be most unable to relocate or rebuild. Long-term planning for their relocation and subsequent mental health needs is a national priority across agencies in which SAMHSA will need to find its voice.
2. Indigenous, homeless, and marginalized communities living in poor environmental circumstances will need to be an immediate focus of climate mitigation to prevent inequitable severe climate health impacts in these populations.
3. Given the rapid pace of change anticipated in the next decade, SAMHSA should, in alliance with the Health and Human Services Department Office of Climate Health Equity, develop a Just Transition program that addresses the behavioral health processes that these groups must face in order to adapt to climate impacts. Such a program should contain:
 - a. Ways to adapt the Just Transition tool's use for particular populations, (e.g., women with young children, those forced to relocate, those with job transitions mandated by climate change, those needing to adapt community infrastructure to cope with rising heat).
 - b. Research to evaluate the effectiveness of the Just Transition tool.
 - c. Needs assessment and need responsiveness. Needs can include anticipated mental health needs (increased rates of violence and suicide due to high temperatures, excess depression and alcohol use due to loss of means of employment to new technologies) and psychological needs (e.g., adjusting to new ways of eating or transport, or placing climate needs as a priority in proportion to impacts rather than responding to apparently more immediate concerns, accepting the loss of one's form of work and vocational rehabilitation, community cohesion through change).
 - d. Individual and Community tools for each aspect of the Just Transition program.

4. SAMHSA should participate in a public health campaign about the health and mental health impacts of climate change with the U.S. Department of Health and Human Services. This should be done through collaboration with mental health and substance use disorder professional organizations such as the APA. This campaign should be story and picture based with multiple memes and slogans to help the public recognize the links between climate impacts and mental health outcomes. To reach vulnerable groups, SAMHSA must adapt existing education and programs and create new opportunities for community members to share their experiences. SAMHSA should provide grant funding for communities to perform needs assessments that address the community's risk for mental health and substance use after a climate disaster. APA encourages SAMHSA to coordinate with other federal agencies, such as the Assistant Secretary for Preparedness (ASPR), to develop community disaster preparedness plans, ensuring a public-based participatory model that allows community members to have the opportunity to use their lived experience to highlight the unique needs of vulnerable populations.
5. APA recommends that the educational materials available through SAMHSA's Disaster Technical Assistance Center (DTAC) be updated. The DTAC website includes educational materials about the risks and warning signs of problematic substance use in first responders; however, there is no educational material about the risk and warning signs of problematic substance use in survivors of a natural disaster.⁴ To remedy this, SAMHSA can work with partners to create a new flyer by adapting the educational materials about substance use to reflect the needs of disaster survivors.⁵ Monitoring substance use patterns in a community are vital to understanding the needs of the population. DTAC provides data collection forms for crisis counselors to use while working with disaster survivors.⁶ These forms are designed to capture the existence of past and/or current substance use in binary format, but they are not able to capture any detail about current use habits. These forms should be updated to include questions about the types of drugs someone uses, whether they use by themselves, and whether they have experienced any overdoses. With this information, crisis counselors can better understand the needs of the individual and community. Understanding an individual's current substance use patterns offers the opportunity to provide overdose prevention training and/or referrals to medical care or substance use treatment.

D. In thinking about behavioral health, what are the top lessons learned from past climate-related emergencies and natural disasters, such as recent or past hurricanes, heat waves, wildfires, or other events?

The most important lesson from past climate-related emergencies and natural disasters is that a new paradigm for understanding these phenomena is necessary to best coordinate future preventive

⁴ SAMHSA (2022) Crisis Counseling Assistance and Training Programs (CCP) <https://www.samhsa.gov/dtac/ccp-toolkit/ccp-outreach->; Survivors of Disasters Resource Portal (2022) <https://www.samhsa.gov/dtac/disaster-survivors>

⁵ SAMHSA, (2014). Tips for Disaster Responders <https://store.samhsa.gov/sites/default/files/d7/priv/sma14-4874.pdf>

⁶ SAMHSA, Individual/Family Crisis Counseling Services Encounter Log <https://www.samhsa.gov/sites/default/files/dtac-ccp-toolkit-individual-family-encounter-log.pdf>

measures as well as response to specific disasters. This paradigm involves recognition that climate disruption is most appropriately understood not in terms of individual disasters of different types but rather as an overarching, progressive disaster process which will increasingly affect the vast majority of “single” disasters, both natural and man-made. We have also learned through COVID and other recent experiences that human-made disaster consequences such as interpersonal, domestic and international conflict are at risk of increasing in relation to climate factors such as prolonged drought, famine and mass migration. Psychiatrists are trained to create “safe spaces” for emotive interactions, but may, along with first responders, increasingly need to teach and implement skills for management of hostile groups and conflict resolution as part of their professional toolbox. Recent experience has also taught us that the secondary psychological and mental health impacts of natural disasters extend far beyond the usual time frame of disaster response, suggesting that the time frame of SAMHSA’s response should be similarly extended.

Funds allocated for disaster response and rebuilding efforts were often not used well or in a timely manner. We recommend SAMHSA develop in advance a financial distribution structure for climate-related mental health funding in response to disasters. It would also be useful to have transparent systems to ensure that centralized funds penetrate through bureaucratic barriers and to offer adequate models and tools so that small communities can use these funds in optimal ways.

1. The general population continues to underestimate the risks of recurrent disasters and to adopt a “bounce-back” approach to resilience. Change-oriented strategies can help them shift to an understanding of our new situation, in which going “back” is increasingly unlikely and adaptation is required.
2. The general population does not connect the experience of a climate-related emergency to future behavior about climate change, although they do connect direct experience to increased climate awareness.
3. After Hurricane Katrina, substance use increased in many people who fled New Orleans.⁷ Access to illicit substances was limited in the wake of Hurricane Katrina, creating specific emotional and physical needs for people with SUD.⁸ Such circumstances may lead people with OUD to seek medication treatment to manage their withdrawal symptoms. Prior research has shown that methadone access was limited during and after Hurricane Katrina as well as other natural disasters.⁹ After Hurricane Sandy, three quarters of patients at SUD treatment programs in New York City experienced disruptions in care due to the forced closure of their facilities.¹⁰ Public transit and the highway system were shutdown in the wake of Sandy, creating significant barriers regarding transportation for OUD patients, who are often required to travel daily to their opioid treatment program (OTP) to receive medication. This disproportionately affected methadone patients as compared to buprenorphine patients.¹¹ Additionally, OTP administrators and

⁷ Cepeda, A., Valdez, A., Kaplan, C., & Hill, L. E. (2009). Patterns of substance use among Hurricane Katrina evacuees in Houston, Texas. *Disasters*, 34(2), 426-446

⁸ Dunlap, E., & Golub, A. (2011). Drug markets during the Katrina disaster. *Disaster Prevention Management*, 20(3), 251-265

⁹ “deadly Sisters”

¹⁰ McClure, B., Mendoza, S., Duncan, L., Rotrosen, J., & Hanson, H. (2014). Effects of regulation on methadone and buprenorphine provision in the wake of Hurricane Sandy. *Journal of Urban Health*, 91(5), 999 - 1008

¹¹ McClure, B., Mendoza, S., Duncan, L., Rotrosen, J., & Hanson, H. (2014). Effects of regulation on methadone and buprenorphine provision in the wake of Hurricane Sandy. *Journal of Urban Health*, 91(5), 999 - 1008

physicians described a lack of clarity with regards to emergency take-home prescribing guidelines after Hurricane Sandy and wished for a streamlined method of communication with regulatory agencies.¹² Patient records were lost during Sandy, leaving physicians with limited ability to verify dosage for displaced patients, mirroring the experience after Katrina.¹³

E. What peer reviewed articles, papers, toolkits, listservs or other resources related to climate change should SAMHSA highlight in its work with states, local, tribal and territorial health authorities, behavioral health providers, grant recipients, national and local stakeholder organizations, and the general public?

The Climate Psychiatry Alliance website has a library of relevant articles, toolkits and other resources. <https://www.climatepsychiatry.org>. Among these are:

Climate Psychiatry Alliance website

<https://www.climatepsychiatry.org/resources-to-mitigate-climate-distress>

Coping with Extreme Heat: (English, Spanish and Chinese language material)

<https://www.climatepsychiatry.org/resources-to-mitigate-climate-distress>

Coping with climate Distress:

<https://www.climatepsychiatry.org/climate-distress-coping-toolkit>

Coping with Wildfires: English, Spanish, Chinese translation for patient population

<https://climatehealth.ucsf.edu/wildfires-health-education-hub>

1. Chapters on the mental health impacts of climate change can be found in the following psychiatric textbooks: *Tasman's Psychiatry*, 5th Edition, *Textbook of Community Psychiatry*, (both from Springer Press) as well as *Seeking Value: Balancing Cost and Quality in Psychiatric Care*, (APA Publishing).
2. A forthcoming book, *Climate Change and Youth Mental Health: Multiple Disciplines Respond*, K. Hudson and E. Haase, eds., Cambridge University Press, will be helpful for those working in educational and other youth settings.
3. The American Psychological Association report on climate change and mental health is excellent. [American Psychological Association, APA Task Force on Climate Change. \(2022\) Addressing the Climate Crisis: An Action Plan for Psychologists, Report of the APA Task Force on Climate Change. Retrieved from https://www.apa.org/science/about/publications/cl](https://www.apa.org/science/about/publications/cl).
4. The American Psychiatric Association is preparing a resource document summarizing climate mental health impacts. This will be available by May of 2023.
5. The following is an outstanding article for public health preparation for climate mental health: Hayes, K., Blashki, G., Wiseman, J., Burke, S., & Reifels, L. (2018). Climate change and mental

¹² McClure, B., Mendoza, S., Duncan, L., Rotrosen, J., & Hanson, H. (2014). Effects of regulation on methadone and buprenorphine provision in the wake of Hurricane Sandy. *Journal of Urban Health*, 91(5), 999 - 1008

¹³ McClure, B., Mendoza, S., Duncan, L., Rotrosen, J., & Hanson, H. (2014). Effects of regulation on methadone and buprenorphine provision in the wake of Hurricane Sandy. *Journal of Urban Health*, 91(5), 999 - 1008

health: risks, impacts and priority actions. *Int J Ment Health Syst*, 12, 28. doi:10.1186/s13033-018-0210-6.

6. Regarding the current state of research, although somewhat narrow in focus, this article is valuable: Hwong AR, Wang M, Khan H, Chagwedera DN, Grzenda A, Doty B, Benton T, Alpert J, Clarke D, Compton WM. Climate change and mental health research methods, gaps, and priorities: A scoping review. *Lancet Planet Health*. 2022 Mar;6(3):e281-e291. doi: 10.1016/S2542-5196(22)00012-2. PMID: 35278392.

F. Should SAMHSA programs highlight the importance of climate change to its grant recipients? If so, how?

APA encourages SAMHSA to highlight to its grant recipients the importance of climate change as a great threat to public health. SAMHSA can achieve inclusion of climate impacts in its grant awards by:

1. Defining equity - as you are doing - to include climate equity.
2. Requiring that all proposals consider climate change as an equity determinant to the same degree that other priorities such as diversity and equity are included now.
3. Scoring grants based on whether climate-health co-benefits and sustainability goals are achieved as secondary endpoints of the grant proposal (e.g., testing replacement of school buses with electric bikes to reduce childhood depression and obesity and to promote development of social interaction among children).
4. Providing additional stage 2 funding to grants that implement their proposal goals or findings in climate-vulnerable settings.
5. Including the challenge to design interventions that can be implemented in non-traditional settings for which climate change will increase demand, such as mobile service delivery, in evaluating the success of a grant's implementation.
6. Changing grant funding priorities to include more public health, prevention, and behavioral change proposal funding in addition to funding for traditional mental health disorders and their treatments.

G. What barriers exist in SAMHSA's programs or regulations that make it difficult to prepare for, mitigate, respond to, or recover from the impacts of climate change on mental health or substance use disorders?

SAMHSA's current approach demonstrates the agency's motivation and flexibility in adapting existing mental health treatments to meet the needs of particular populations and to flex evidence-based practices to this end. However, we recommend grants be targeted toward non-clinical populations, or populations as a whole as well as at the community level. SAMHSA does not have grants or programs for non-clinical populations, or for the population as a whole. As many aspects of the mental health impacts of climate change affect the population as a whole, (e.g., emotional reactions to the phenomena of climate change such as climate anxiety [i.e., distress related to worries about the effects

of climate change], ecological grief and others, population effects of higher temperatures on mental function), these impacts cannot be addressed within the existing SAMHSA structure.

In addition, SAMHSA does not adequately support program innovation by laypersons, particularly at the community level. Many of the current therapeutic responses to climate change distress have originated from indigenous, spiritual, and cultural practices developed by laypersons deeply immersed in environmental movement. These practices often share elements with evidence-based mental health treatments, but at the current time, there is no way for them to be tested, vetted, scaled up, or otherwise brought into the wheelhouse of national mental health care that is SAMHSA. This is true for nature-based treatments, community processing models, literary and creative processing of climate distress, spiritual explorations of the sustainable relationship between human beings and their planet, and many other diverse psychological modalities of climate response which are likely to have mental health benefits but have not been established as evidence-based psychiatric practices.

We recommend developing non-specific grants for organized psychiatry, community, and small organization responses to the psychological and mental health impacts of climate change, defined broadly, and in addition have specific grants for research on these innovative programs and their rapid incorporation into existing evidence-based treatments.

In addition, APA recommends user-friendly public education materials such as:

1. Quick graphic suggestions or short PowerPoints on what to do rather than long podcasts.
2. One on one support for grant implementation, financial oversight for how grant funds are spent, and help using the technical offerings SAMHSA has developed.
3. Training a large youth service worker corp, similar to AmeriCorps, to oversee use and implementation of SAMHSA's efforts to promote not only the development of future mental health providers but also the full use of what SAMHSA is offering.

Finally, the fragmentation across research agencies relevant to climate change and mental health makes a coherent response difficult. There should be one place to go for climate health and mental health information and funding, and a dedicated service line to help people navigate what is available.

H. Can SAMHSA promote behavioral health equity by addressing intergenerational trauma resulting from climate change? If so, how?

Intergenerational trauma from climate change results from intergenerational inequity. Inequity is foundationally connected to an expansionist world view which fails to understand sustainability and presupposes a world of unlimited resources and taking rather than cultivating as the means to obtain them. SAMHSA can promote behavioral health equity by using interpersonal science to redefine mental health to include mutually care-taking intergenerational, inter-species and intra-planetary relatedness, working with other mental health disciplines such as psychologists, counselors and social workers to embed this view in our shared approach to human care. Assumptions about mental health practice and treatment goals must be questioned and redefined in this light. This paradigm shift must be taught to mental health practitioners and then filtered down through the goals of and payment for mental health treatments. More immediately, and practically, an evidence-based definition of the fundamental role of

a clean healthy environment in mental health of children and young people and minimum standards for that environment to achieve mental health parity would be helpful to prevent massive intergenerational trauma from climate uncare.

1. Greater public awareness of the concept of intergenerational trauma and its application to climate change-based abuse and neglect of children would also potentially promote less abusive and neglectful treatment of the environment by older generations.

I. How can SAMHSA support access to behavioral health and climate change resources and supports for future generations?

SAMHSA can support youth by partnering in their climate mental health response with the American Academy of Pediatrics, American Association for Child and Adolescent Psychiatry, and other professional groups, with ongoing youth climate mental health groups such as the Raffi Foundation for Child Honouring, parental groups working in this area (e.g., Climate Mamas, others), and schools. SAMHSA can implement national youth training programs on climate mental adaptation and resilience as described elsewhere in these responses, e.g., AmeriCorp and Teach for America.

J. How can SAMHSA effectively collaborate with governmental and non-governmental partners to facilitate adaption to current and future climate change impacts?

1. SAMHSA can collaborate best by developing a set of criteria related to environmental mental wellness as well as by defining the needs of the mentally ill and tools for protecting mental wellness with climate changes. These criteria and tools should be incorporated across climate spending by all government agencies working on infrastructure and program development.
2. Regardless of all of these alliances, most of us, including those working in the climate sphere, continue to act in discord with our knowledge and beliefs. As failure of behavioral change is the greatest cause of the climate crisis, SAMHSA can further collaborate by serving a consulting function on why government climate-related programs (e.g., tax credits for electric vehicles) and infrastructure implementation might fail for psychological reasons.
3. APA recognizes and commits to support and collaborate with patients, communities, and other healthcare organizations engaged in efforts to mitigate the adverse human and mental health effects of climate change.¹⁴ Psychiatrists are uniquely positioned to help address the mental health effects of climate change and enhance communications that address the mental health risks of climate change that can result in sustained behavioral change. APA has the resources and expertise through its membership to partner with SAMHSA as the leader in responding to mental health and substance use wellbeing in the context of climate change and health equity.
4. APA also encourages SAMHSA to work with community partners to increase access to climate protective spaces for patients. At the local level, communities may have unique needs that create barriers to access mental health and substance use treatment services. For example, many OTP

¹⁴ American Psychiatric Association, (2017, March) Position Statement on mental Health and Climate Change. <https://www.psychiatry.org/getattachment/0ce71f37-61a6-44d0-8fcd-c752b7e935fd/Position-2017-Mental-Health-Climate-Change.pdf>

clinics may lack air conditioning and space to support people with OUD during extreme heat, which may become more prevalent and intense overtime, causing significant stress to communities. Since, mental health and substance use populations have increased morbidity and mortality during heat waves, preparing for raising temperatures may allow local clinics to better support the needs of the populations they serve.¹⁵

K. What research should be prioritized to build the evidence base on how climate change affects mental health and substance use disorder outcomes?

1. Two core priorities for research include:
 - a. Research that studies intersectional issues. This is important because most climate mental health outcomes are likely to be downstream and multifactorial to actual environmental changes. Examples might be research on the potential interrelationships among extreme heat, domestic violence, recent extreme weather, and associated child abuse and substance use, and whether there are particular predictive events or factors that worsen outcomes.
 - b. SAMHSA should review and contribute to the existing research on the impact of extreme heat and fossil-fuel based air pollution and other primary impacts of climate-related environmental changes on the brain that have been extensively demonstrated outside of the mental health literature so that it becomes part of the psychiatric and mental health mainstream knowledge base. For example, those with severe mental illness, dementia, and substance use, particularly in populations exposed to more extreme heat conditions, are likely to have very significant mental health impacts from increasing heat waves, but little is known about how to treat heat stroke and heat exhaustion in ways specific to the neurophysiology and treatments of this group, which may require alternative interventions. Similarly, research on the brain impacts of fossil-fuel based air pollution should be brought into psychiatric knowledge and practice.
2. Additional research priorities should include psychiatric service research:
 - a. How and where care can be delivered differently: for example, more mobile forms of care delivery may be necessary after extreme weather events.
 - b. What is effective training of mental health professionals in response to climate impacts: how different uses of time and psychiatric roles impact overall community health outcomes.
3. Additional research agenda for the climate mental health response:
 - a. The impacts of climate change on mental health and substance use disorders can be broken down into three domains: direct, psychological, and indirect effects, all of which must be studied.
 - b. Regarding direct impacts, there is a growing body of literature that heat fluctuations, especially heat waves, are associated with increased risk for violence, suicide, and exacerbations of certain psychiatric conditions, including mania and PTSD. However, it still remains unclear how fluctuations in temperature during heat waves or seasonal variations directly affect neurotransmitter levels, neurovascular inflammation, and

¹⁵ Climate Psychiatry Alliance, Resources for Mental Health Providers and Caregivers, Managing During Extreme Heat, <https://www.climatepsychiatry.org/heat-wave-toolkits-for-providers-and-caregivers>

other aspects of neuronal function which can affect the pathogenesis of mental illness. The epidemiology and basic science of heat's effects on mental health need to be investigated. It is also unclear which individuals are most susceptible to the negative mental health effects of changes in ambient temperature. For example, there is evidence that patients with depression and schizophrenia have baseline dysfunction in temperature homeostasis, which predispose them to heat-related morbidity and mortality. Heat homeostasis in mental illness needs to be investigated, as well as how psychotropic medications may alter temperature homeostasis for better or worse.

- c. Regarding psychological impacts, climate change is associated with more frequent and severe natural disasters, which have implications for trauma and stress responses in individuals living through these disasters. There is evidence that these traumas are linked to increased rates of substance use and domestic violence. APA supports more research to determine ways of intervening in these communities before, during, and after these natural disasters to increase psychological preparedness and increase resilience. Interventions will require community and school-based programs prophylactically, during, and after such disasters. There will also be a need to identify ways of delivering mental health services in disaster-hit areas, which will require further improvements in telehealth and automated (e.g., phone app) mental health services. Underrepresented minority and indigenous populations are particularly vulnerable to these weather events, as these communities often live in areas more prone to flooding and property damage from extreme weather events. They also often have fewer resources to deal with the financial and psychological fallout proactively and retroactively. Research efforts to support these communities will be particularly important.
- d. Separate from trauma responses, there is also a rapidly growing literature on the impacts of climate change on anxiety and mood symptoms, termed eco-anxiety, as well as pre-traumatic responses concerning what disasters people expect to soon face secondary to climate change. Scales to measure eco-anxiety are in the early stages of development, and these, as well as the development of other scales to measure psychological sequelae of climate change, will be essential as this field develops. Large epidemiological studies are starting to reveal that many children and adolescents are particularly vulnerable to these anxieties and existential concerns. Interventions to support and empower these youths will be important. Young mothers are also a particularly vulnerable population, and their mental wellbeing in the face of climate change has direct impacts on the healthy psychological development of their children.
- e. Regarding indirect effects, there are mental health consequences of climate change that are less intuitive but must also be studied. For example, changes in heat and atmospheric concentrations in carbon dioxide are predicted to significantly reduce nutritional and micronutrient content, such as protein, iron, and zinc, of most staple crops. Even minor decreases in iron and zinc levels have been correlated with effects on neurodevelopment and the pathogenesis of psychiatric disorders. Changing climates will also change the regional boundaries where many zoonotic diseases (e.g., tick-borne illnesses) will become endemic, and there will likely be an increasing demand to learn how to treat the psychological sequelae of these diseases. Accumulation of pollutants has also been associated with the onset and progression of multiple dementias. Studying these less obvious impacts of climate change on mental health will be important as climate change continues to progress.

Thank you for the opportunity to respond to this RFI and provide recommendations on what should be SAMHSA's top priorities for addressing climate change and its impact on the American population. If you have questions or would like to discuss these comments in more detail, please contact Brooke Trainum, Director Practice Policy at btrainum@psych.org.

Sincerely,

A handwritten signature in black ink that reads "Saul Levin, M.D., M.P.A." in a cursive style.

Saul M. Levin, M.D., M.P.A., FRCP-E, FRPsych
Chief Executive Officer & Medical Director
American Psychiatric Association