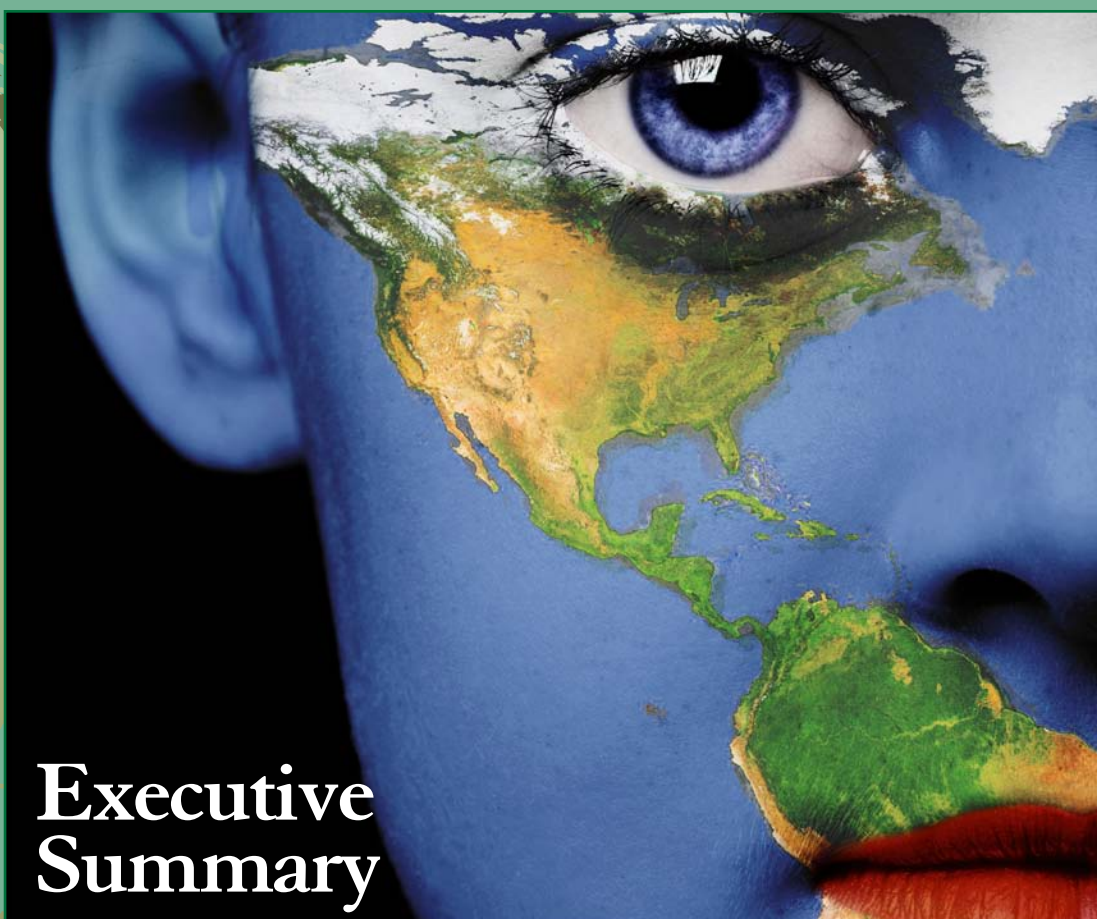




The Psychological Effects of Global Warming on the United States:

And Why the U.S. Mental Health Care System Is Not Adequately Prepared



Executive Summary

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National Forum and Research Report
FEBRUARY 2012

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National Wildlife Federation Climate Education Program

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PREFACE

Dear Friends and Colleagues,

Having the reality of the destructive forces presented by climate change fully *register* with people, so they will to act with the needed urgency, is indeed a challenge. And, while the physical and environmental effects of global warming are studied and described, what has rarely been addressed, and is as compelling a topic as any, are the *psychological* impacts.

This report aims both to fill in the gap in our awareness of the psychological impacts of climate change, and by exposing the emotional side of the issue, to find the place in our hearts that mobilizes us to fly into action, forewarned, determined, relentless. It also is a call for professionals in the mental health fields to focus on this, the social justice issue of all times, with their capacity to work through denial and apathy, to bring insight and commitment before it is too late.

The language of science is, admittedly, not a stirring call to action. Scientists are by nature cautious, and restrained. While this report does not aim to present the forum participants as flame throwers, for this work to accomplish a primary goal, the reader will need to *feel* something in reading it. The language used here, and some of the questions asked, may feel uncomfortably probing, as they pierce our armor. After all, most of us want to be patriotic, to be optimist about the future. But we need to fully confront certain realities.

If we continue the adolescent-like disregard for the dangers we are being warned of, driving green house gasses up with only casual concern, there will be consequences. As our world begins to unravel and our role is undeniable, all eyes will be on us.

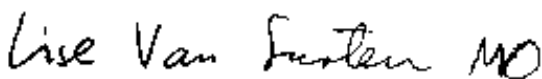
Questions beg to be asked:

- What will the rest of the world think of us?
- Where will we be safe?
- How *will we feel* about ourselves?

The interplay between the climate realities we likely face and the potential psychological fallout from them was the subject of a conference convened in Washington D.C., in March 2009. A highly respected group of experts offered insights. Their thoughts, recommendations and supporting evidence are presented in this report.

We extend our heartfelt thanks to the RWJ Foundation and to our forum participants. We also note the sad death of forum participant and friend Dr. Jerilyn Ross. She added her characteristic straight talk, practical knowledge, and bright intellect to the discussion.

Sincerely,



Lise van Susteren, MD,
Forensic Psychiatrist



Kevin J. Coyle, JD
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Our thanks to the Robert Wood Johnson Foundation for its support of this project.

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The Psychological Effects of **GLOBAL WARMING** on the United States

Executive Summary

CLIMATE CHANGE LESSONS FROM THE SEVERE WEATHER OF SUMMER 2011

Global warming...
in the coming years...
will foster public trauma,
depression, violence,
alienation, substance
abuse, suicide, psychotic
episodes, post-traumatic
stress disorders and
many other mental
health-related conditions.



The extreme and sometimes violent weather of the summer of 2011 can offer valuable insights into how a warming climate will affect the people in the United States and other parts of the world. The news headlines included: a worsening Texas drought, record heat in the eastern states, a rise in heat-related deaths in many U.S. cities; violent floods in the East and Midwest; an expanded range and season for some of the worst tornadoes on record and more.

These same headlines included the seemingly unrelated famine and refugee tragedy in Somalia, a rise in mental health difficulties among service men and women returning from war, and anomalous weather conditions and disease outbreaks in many parts of the world.

Climate scientists have begun to empirically link 2011's extreme weather events and natural disasters to climate change and report that these are representative of what science predicts the world will look like

The U.S. mental health care system is only minimally prepared to address the effects of global climate change-related disasters and incidents.

with more warming. The physical and economic harm caused by such events is evident but what will be the toll on the public's mental health?

To those who would deny, dismiss or just fail to envision the psychological impacts global warming, we urge you to take a deeper look. We may not currently be thinking about how heavy the toll on our psyche will be, but, before long, we will know only too well. A warming climate will cause many people, tens of millions, to hurt profoundly.

Global warming from increased green house gases in our atmosphere is leading to a spiral of worsening conditions that will include extreme and sometime violent weather. What we are already seeing is alarming indeed: in 2011 alone we faced devastating droughts, raging wildfires, record breaking snowstorms and rainfalls, stunning floods in the East and Midwest, higher temperatures and more frequent 100 degree days in more cities than we have ever known - with a commensurate rise in heat related deaths, an expanded range and season for some of the worst tornadoes on record, and the most costly hurricane in our history.

In November of 2011, the U.N. sponsored Intergovernmental Panel on Climate Change confirmed this in a report entitled: *Special Report on Managing the Risks of Extreme Events*

and Disasters to Advance Climate Change Adaptation. The report finds that changes in weather, due to climate warming, will be felt everywhere in the world. The *physical and economic* destruction surely boggles the mind but what is not being addressed are the human *psychological* consequences of all this devastation.

To begin with, the incidences of mental and social disorders will rise steeply. These will include depressive and anxiety disorders, post traumatic stress disorders, substance abuse, suicides, and widespread outbreaks of violence. Children, the poor, the elderly, and those with existing mental health disorders are especially vulnerable and will be hardest hit. At roughly 150 million people, these groups represent about one half of the American public.

The American mental health community, counselors, trauma specialists and first responders are not even close to being prepared to handle scale and intensity of impacts that will arise from the harsher conditions and disasters that global warming will unleash. It is not that we haven't experienced natural disasters before, but the scientific data show that what lies ahead will be bigger, more frequent, and more extreme than we have ever known.

There are even broader implications, many of them beyond our shores. As climate related disasters and burdens spread across the world, the U.S. military will increasingly be called upon to help keep order. Service members will be faced with stressful, even horrifying conditions. They will see people - the young, the old, the innocent - suffer terribly. Back home their families will experience the ripple effects, suffering vicariously and experiencing their own disruptions in finances, relationships and child-rearing. There will be the disorders from the immediate trauma, and in some cases *chronic* psychological disorders will follow.



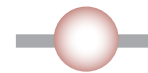


Another major problem for the military is a high rate of active service member suicide. Even though the numbers have recently declined after reaching a high of nearly double the rate of the civilian population, the problem persists. While suicide is the result of many complex factors, the linkage to global warming with respect to military personnel must be acknowledged. Burning fossil fuels for energy means depending on foreign areas where those supplies are most abundant. To the U.S. military this can mean sending young people into battle to protect our energy sources or to calm related unrest. Our service members will recognize that their own lives and limbs were sacrificed even though alternate renewable sources of energy could be more available. Our national need to put these young people in harm's way would also decline if we were simply more energy efficient. How will we answer these service members' questions about why we didn't work harder at fixing this problem?

Moreover, the United States is increasingly disliked, worldwide, as a global warming villain. Though representing less than 5 percent of the world's population, the U.S. emits about 25 percent of the world's green house gasses. As the link between climate disasters in other countries and the production of green house gases in

the U.S. becomes clearer, Americans will be blamed for inflicting harm on other countries. Critics may point to emissions from China (now surpassing the U.S.) and India as reasons why the U.S. can "share the blame" but our per capita emissions are second to none. Alarming, our perceived indifference is already the subject of rallying cries against us. It is used by leaders of terrorist groups, for example, as a tool to recruit new members. The President of one African country hit hard by drought linked to climate change addressed countries emitting high levels of green house gases: "We have a message here to tell these countries, that you are causing aggression to us by causing global warming." The President of Bolivia, faced with unprecedented flooding from heavy rains, threatened to sue the U.S. in international court.

The U.S. Department of Defense predicts that events linked to climate change, such as crop failures, water shortages, disease outbreaks, and more will soon be the leading cause of world turmoil. Unstable states, faced with these stressors, are at risk of slipping into chaos, and failing. This paves the way for takeovers by groups hostile to the U.S. and is a growing reality widely feared by our military.



The forum was designed as an exploratory, interdisciplinary assessment of the relationship between global warming trends in climate and how those changes, or at least their most acute manifestations, will have significant effects on the state of American public mental health and the practice and provision of mental services in the United States.



It is not a matter of whether these problems will occur, but rather how frequently and with what intensity.

The economic costs of climate change will be high by any measure. But its specific effect on U.S. mental health, societal well being and productivity will increase current U.S. expenditures on mental health services adding to our current \$300 billion annual burden. Incredibly this probable cost is overlooked in today's national public health debate and environmental discussions. The U.S. mental health care system is not prepared to address the full effects of global warming-related disasters and incidents. A comprehensive assessment of what will be required begs to be undertaken. Training health care providers and first responders to address the large-scale mental distress arising from the emergencies that are coming is imperative. Timely interventions may keep some early injuries from developing into costly, chronic, long-term conditions.

This report contains the proceedings, findings and recommendations of a national forum of experts in the fields of psychology, mental health, national security, climate change science and policy. The forum was designed as an exploratory interdisciplinary assessment of the effects that global warming will have on the state of American public mental health and the practice and provision of mental services in the United States. The forum, held on March 19, 2009 in Washington,

D.C., was supported by the Robert Wood Johnson Foundation. It sought to add information and context to an overlooked aspect of global climate change: the psychological and public mental health implications.

In addition to the professional insights and advice of the forum participants, this report draws from a wide body of supplemental research to assess:

- a) the most likely physical effects of climate change in the U.S.,
- b) the most likely psychological effects resulting from direct experiences and also from the anticipation of future harm,
- c) the subgroups of American Society most deeply affected,
- d) the cost of doing nothing or doing very little,
- e) the effect on the U.S. mental health care system,
- f) recommendations to researchers, policy leaders, public agencies, health professionals and first responders.



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SUMMARY OF FINDINGS

An estimated 200 million Americans will be exposed to serious psychological distress from climate related events and incidents:

The severity of symptoms will vary, but in many instances the distress will be great.

In the coming years, a majority of Americans will experience direct adverse effects from the impacts of global warming. Natural disasters and extreme weather events will strike many places that are densely populated: 50 percent of Americans live in coastal regions exposed to storms and sea level rise, 70 percent of Americans live in cities prone to heat waves; major inland cities lie along rivers that will swell to record heights, and the fastest growing part of the nation is the increasingly arid West.

Climate change will become a top-of-mind worry in the future:

Some Americans already are or will soon experience anxiety about global warming and its effects on us, our loved ones, our ecosystems, and our lifestyles. This anxiety will increase as reports of the gravity of our condition become more clear and stark. Despite alarming evidence that environmental conditions are worsening, a majority of Americans do not feel much conscious unease about global warming. They self-report not considering it “top of mind” and most do not see that global climate change has real implications for their daily lives. They see the global warming problem as distant in both time and place. A lack of knowledge about the basics of climate change, the “point of no return” consequences of reaching atmospheric tipping points, along with innate psychological resistance are major impediments to fully grasping how dire the consequences can eventually be.

People may, indeed, suffer from anxiety about climate change but not know it. They will have a vague unease about what is happening around them, the changes they see in nature, the weather events and the fact that records are being broken month after month. But they won't be sufficiently aware of the source, and furthermore, we all conflate and layer one anxiety upon another. Not knowing exactly what bothers us is common. For this reason research, based on self-reporting, indicating that Americans do not worry about climate change is unreliable and likely underestimates the actual numbers.



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Major segments of U.S. society are more psychologically vulnerable now:

- Children: America's 70 million children will not only suffer long term effects from climate change but will also experience acute reactions to natural disasters and extreme weather events. Some children are already anxious about global warming and begin to obsess (understandably) about the future, unmoved by the small reassurances adults may attempt to put forth. In the first known “climate change delusion” a depressed 17 year old boy was hospitalized for refusing to drink water out of fear it would cause many more deaths in drought ridden Australia. The doctor who treated him has seen

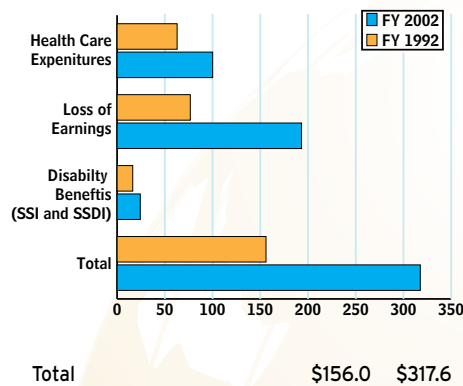
...anxieties could increase with continuous and frequent media reports on the subject...



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**Comparison of 1992 to 2002
Components of the Economic Burden
of Serious Mental Illness, Excluding
Incarceration, Homelessness,
Co-morbid Conditions and Early
Mortality (in Billions)**

Type of Cost	1992 ^a	2002 ^b
Health Care Expenitures	\$62.9	\$100.1 ^c
Loss of earnings	\$76.7 ^d	\$193.2 ^e
Disability benefitis (SSI and SSDI)	\$16.4 ^d	\$24.3 ^f



^a Normal 1992 dollars based on general Consumer Price Index data; \$1 in 1992 = \$128 in 2002 (www.bls.gov/cpi).
^b Normal 2002 dollars
^c Source: Mark et al. (4).
^d Source: Rice et al. (7).
^e Source: Kessler et al. (6).
^f Author's calculations based on data from the Soical Security Administration (www.ssa.gov/policy/docs/stat-comps).

Some 50 million elderly people, and America's 35 million low-income people will suffer a disproportionate amount of physical and psychological stress.

other children suffering from climate related anxiety disorders. A body of research showing how distressed Russian and U.S. children were by the threat of nuclear bombs during the cold war era underscores the potential for global climate change to have the same destructive impact.

- The elderly and the low income people: will also be disproportionately affected, due to more fragile overall health and reduced mobility. Economic limitations will affect many of the 50 million elderly people in the U.S. and 35 million lower income people with higher levels of climate and weather-related psychological stress. They are less able to pay for goods and services, such as air conditioning, that provide additional protection from higher temperatures. The elderly often experience severe psychological distress during heats waves and low income people likewise suffer anxiety from higher exposure to the dangers of extreme weather.
- People with pre-existing mental health conditions: The estimated 60 million Americans who currently suffer from psychological disorders of varying degrees of severity will face additional challenges when confronted with the harsh realities of climate change. In addition to trying to contend with higher temperatures and more violent or extreme weather, they certainly will have a harder time finding publicly funded mental health treatment programs as these budgets shrink in favor of more basic emergency response services and community repairs. As jurisdictions struggle following natural disasters to meet the bills to clean up, replant, feed or otherwise provide basic and emergency services, funding for the needy, the sick, and the vulnerable will inevitably be cut. Funding for mental health services is among the "first to go" in economic hard times. Indeed since 2008, two thirds of U.S. states have cut funding, (as high as 47 percent in one state) though many of these services are deemed "critical." (Medscape: Psychiatry and Mental Health)



- Members of the Military and their families: One of the most dramatic manifestations of the impact of global climate change on the mental health of Americans could originate from beyond its borders. The U.S. Military has concluded that global climate change will have destabilizing effects on economically, politically and environmentally fragile nations, putting them at risk of collapse and opening them up to conflict and war. Many of these crisis zones will draw in American fighting forces. Some of these failed states may become seedbeds of terrorism; putting Americans in danger on our own soil. U.S. military interventions in failing nations will have many serious psychological effects as evidenced by experiences with the wars in Afghanistan and Iraq. Common manifestations include anxieties and fears associated with entering or being in combat, post traumatic stress disorders, emotional reactions to injuries, suicide, painful separations from family, and the economic and emotional hardships back home that often accompany having a spouse or parent in the active military.

The mental health care system of the U.S. is not prepared to handle the wide-spread psychological stresses of climate change:

While the U.S. mental health care professions are coming to recognize and address the larger scale perils associated with climate change, no comprehensive strategies are in place to cope with the full psychological and public mental health implications. Given the foreseeable magnitude of the impacts and the rate at which the world is changing, a campaign focused on what this segment of the U.S. mental health service community can do to help is certainly needed. Examples of needs include how to address large populations (sometimes millions) who have witnessed or been displaced by violent weather, are suffering through heat waves or drought and other conditions that create the need for large scale emergency mental health interventions in affected locations.

There is also low first responder preparedness:

Due to the number of emergency situations in which global climate change and mental health issues will be connected, first responders will need additional education and training to handle the immediate psychological trauma and symptoms of climate disaster victims. Such training will support rescue operations, triage decisions, application of medications, patient safety and more.

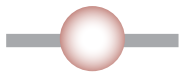
First responders will need further education and training on handling psychological symptoms of those they are helping.



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**Priority for guidelines,
models, training and other
support should be given to
mental health professionals**



Some climate change-related conditions and their psychological effects merit specific preparation:

- **Summer heat waves:** the physical distress arising from prolonged heat waves is well known. What is not widely known is the psychological distress that is caused by higher temperatures, and, in particular, the relationship between rising temperature and aggression. Research from Iowa State shows that, as the temperature rises, so does the incidence of violence. (DeLisi 2010)
- **Coastal and river flooding:** the direct adverse effects of flooding are obvious, but these weather and climate related events are especially likely to lead to psychic injury from the stress of displacement, loss of possessions (including pets), and uncertainty about interim and future housing and employment.
- **High impact and more intense storms:** the far-reaching consequences of destructive weather saw its prototype in Hurricane Katrina. The Hurricane scattered residents of New Orleans all across the U.S. It shattered a culture, broke up families, spiked outbursts of outrage and blame at a government that was slow to respond, and lead to a jump in violence in at least one city that took them in (Houston). Six years later New Orleans has yet to fully recover, and many of the victims

have experienced post-incident stress and post-traumatic stress disorders (PTSD). Their shaken confidence in institutions and government is less quantifiable but also potentially damaging especially as a cumulative effect over time.

- **Severe drought and reduced snow pack:** the unrelenting day by day despair of watching and waiting for water that doesn't come will have a singularly damaging impact on the psyche of the people who have depended on Mother Nature's rainfall for their livelihood.

Already underway is a 21st century dust bowl in Australia that has spawned a growing population of desperate migrants. Texas has recently experienced a drought (with accompanying wildfires) the likes of which has not been seen in more than 50 years.

- **Increased large-scale wildfires:** raging wildfires are incredibly dangerous and have a particularly savage effect on our psyches by devastating landscapes, wiping out homes and possessions, incinerating wildlife and clogging the air with pollutants that sicken people locally and can travel hundreds of miles to sicken people at a distance. Persistent psychological stress is common, with anxiety reactions recurring from unavoidable re-exposure to the odors, smoke and ash.



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- **New disease threats:** higher temperatures favor the formation of ozone which triggers asthma attacks. Anyone who has asthma and parents of children with asthma are familiar with the fears this illness engenders. People die from untreated asthma. Many other fears linked to disease are harder to “nail down.” As malaria and dengue fever and other infectious diseases march northward due to warmer temperatures, inchoate fears of threat and vulnerability drift into people’s consciousness. This will be compounded by a growing number of sensational media reports tied to disease outbreaks and public health warnings.



When natural disasters are no longer truly natural:

Research shows that when a disaster is viewed as avoidable, as is the case with the harm caused by man-made carbon emissions, people find it harder to accept, become resigned to, and move on. The anger and outrage at callous, willful ignorance toward public welfare will make for incendiary, difficult to get over conditions. With increasing media coverage educating people about the causes of climate change and the ensuing extreme weather events and other disasters, we can expect more powerful and troubling responses to human-caused climate disasters than when disasters were previously experienced as natural or “acts of God”.



There is no organized discipline for the study of the psychological aspects of global warming:

While considerable research and professional literature report on psychological reactions to natural disasters, no overarching discipline or field of study connects human psychology to the many faces of global warming. A long term and disciplined approach to studying these problems within public health agencies, the academic and clinical community is needed to adequately assess and address the full meaning of global warming on the mental health of the American public.



Persistent psychological stress is common, with anxiety reactions recurring from unavoidable re-exposure to the odors, smoke and ash.

This will require more education, persuasive messages, and consistent reinforcement from people and organizations with a reputation for trustworthiness and objectivity.

The mental health community could be more effective at communicating the threat of climate change and the urgent need to take action:

Although the field of psychology has developed policy positions in climate change, it has remained relatively silent on the depth and scale of the threat. Americans must have the threat register, in order to find the impetus and sustained interest in adopting solutions and supporting officials and policies that recognize what we stand to lose. This will require more education, persuasive messages, and consistent reinforcement from people and organizations with a reputation for trustworthiness and objectivity. The magnitude of the task is daunting, but deploying the collective influence of members of the mental health community, who have both an understanding of science and a commitment to helping people break through their resistance and denial, would be a major help.

There will be huge national price tag for ignoring the mental health implications of climate change:

The mental health care expenses of large scale events such as Hurricane Katrina in 2005, or Hurricane Irene in 2011, point dramatically to how the current estimated average annual U.S. mental health care and lost productivity. The current estimated average annual level of more than \$300 billion to provide mental health services and to accommodate the indirect costs such as lost work time in the United States will increase significantly as a direct result of the physical, economic, social and psychological effects of global warming and related incidents in the coming decades.



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SOLUTIONS AND RECOMMENDATIONS:



...anxieties could increase with continuous and frequent media reports on the subject...

Mental health practitioners, first responders and primary care professionals should have comprehensive plans and guidelines for climate change:

The psychology and mental health fields have many well-developed tools and approaches to help respond to disasters and to take care of patients faced with emergencies. But these need to be honed and better placed in anticipation of meeting the demands of escalating large-scale crises. Increased and better targeted emergency management and disaster response training on the psychological reactions of victims to violent weather and other disasters is needed.

Priority should be given to training mental health professionals who serve the most vulnerable populations:

Examples include: school counselors, pediatric health care professionals, healthcare specialists serving the aged, public clinic staff, and specialists serving patients susceptible to stress reactions.

Improve the assessment, diagnosis, and treatment of people suffering from climate related mental health problems:

We need a new discipline of study and practice that will help practitioners and public health officials prepare for the foreseeable and unavoidable mental health effects of global warming. This will require research, professional development, operating centers of excellence in practice and best methods, and guidelines for interventions and treatment for those psychologically injured or in torment. This body of knowledge should also be incorporated into existing academic disciplines: environmental studies, law, business, other social sciences and medicine.

A rigorous estimate should be made of the cost of addressing the psychological effects of climate change vs. the costs of ignoring the problem:

The size and scope of the problem of climate change disasters will cause mental distress requiring care on a massive scale. The existing \$300 billion direct and indirect annual price tag will increase as the frequency of disasters mounts, but the greatest public costs could come from ignoring the effects. Timely interventions could reduce the number of disorders

that become chronic. An assessment should be made of what the mental health consequences of global climate change will mean to the U.S. economy in the short and long term.

Governments should develop and deploy mental health incident response teams:

This would be similar to current practices used by public health agencies for disease outbreaks but would be designed for trained mental health professionals. These teams would arrive at the time of a climate or weather related incident to advise local clinics, mental health providers and first responders on what psychological responses to expect and how to address them. They would also coach them on how to deal with their own emotions.

examples of behaviors that engender optimism. There are psychological barriers to taking action and hidden impediments and fears that stand in the way of these efforts. The field can help leaders to learn how to get them out of the way or break them down into components that can be corrected.

Steps to Changing your Outlook

Understanding the issue

Identifying five steps you can do in your own home or work place to reduce impact.

Surround yourself with good people

Share with others your concerns

Learn how to deal with stress from outside influences

Get help when you need it.

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Professionals in the American mental health community can help shape the best language and tone to help us understand, prepare for, and face the challenges of climate change.

.....

Helpful models for positive individual and community action should be developed:

Health professions have had success changing behaviors in campaigns to stop smoking, use seat belts, and get vaccinated. The “health belief model” and its many refinements used by health institutions could be effective tools to fight global warming. A campaign to show how coal is not only driving up CO₂ but sickening and killing people from cardiovascular disease, lung ailments, cancer and more, could be a test case. People feel better when they take steps to improve their lifestyle and help their communities. Lowering a home’s carbon footprint, saving energy and working on collective efforts to lower green house gas emissions are all



Psychological implications of global warming should be factored into public policy development:

No public policy framework currently exists that would assess and address the capacity of U.S. public health departments, first responders and practitioners to handle disasters and other manifestations of global warming that will require large scale mental health care responses.



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The American mental health community should help teach the public and leaders about how global warming will affect us and what we can do:

Professionals in the American mental health community can help shape the best language and tone to help us understand, prepare for, and face the challenges of climate change. Furthermore, with all the dire consequences being discussed, the populace risks becoming discouraged and avoidant, and even paralyzed. Psychologically minded messages can help counter this. America's leaders should be trained to use the most persuasive educational tools to influence people to change and to sustain their changes. The underpinnings of denial and inaction should be common knowledge and openly addressed. Being versed on how to craft messages that resonate and stick with people should be a fundamental part of any science communication training. Mental health professionals are in an ideal position to show that collective, altruistic action is an antidote to feelings of powerlessness and other painful emotions. Also in the province of professionals is the courage to tackle taboo issues, such as how and what we eat, as well as our mode of travel. These are uncomfortable questions that we need to find a better way to ask.

The American mental health community needs to become a strong public voice for protecting the public from climate change.

Ramping up and sustaining pressure on public officials is imperative. The American mental health community, with its combination of clout and expertise, could help confront public policy leaders with the full implications of inadequate action on climate change. As experts in breaking down denial, and dedicated to bringing reality and rational thinking into decision making to help people get off destructive paths, mental health professionals should be in the vanguard of the fight against global warming. With the exception of



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policy statements such as that published by the American Psychological Association, the relative silence of the mental health care community on the subject of climate change is a subliminal suggestion that danger does not abound. Given the truth of the threat, this could be a deadly misconception.

The American mental health community should have an ethical call to action:

This would include publishing and upholding a strong ethics position on climate change. Mental health practitioners are trained, indeed are ethically bound, to respond to emergencies. They are also required to report to authorities if they have reason to believe, for example, that a child is being abused. The requirement is a legal one, but it is also a moral one. We must ask, knowing full well what the science is telling us, if the call for climate change action is any less compelling than stopping child abuse or protecting the sick. In the final analysis inflicting the burden of climate change on the vulnerable is an immoral act that puts future generations in mortal danger.

The following report and forum proceedings provide the background and rationale for these findings and recommendations.

Ramping up and sustaining pressure on public officials is imperative





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