Talking Points

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California Assembly Drought and Health Hearing

I'm Dr. Linda Rudolph, a public health physician, co-director of the Center for Climate Change and Health at the Public Health Institute, and former Deputy Director at CDPH in the Center for Chronic Disease Prevention and Health Promotion. Thank you very much for the opportunity to speak with you today about this critical issue.

Much of today's hearing is - appropriately - focused on the emergency response to an epic drought, and the steps that can be taken to address the immediate needs of communities at risk of literally running out of water in the short term.

I'd like to talk briefly about the context in which we face a drought emergency, expand on Dr. Chapman's reference to the broader implications of drought for the health of our communities, and touch on the spectrum of actions that will be needed to protect the health of all Californians as the drought persists and as the climate changes.

It seems obvious, but it merits repeating, that water is life - our human survival is dependent on water, and on air, food, shelter, and security. All of these are threatened by drought and climate disruption.

In 2012, the legislature enacted an important amendment to the state water code - the Human Right to Water Bill - which states that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes."

Yet over 20 million Californians receive drinking water from community water systems that rely primarily on a contaminated groundwater source, and millions more receive water from systems that mix groundwater and surface water or private wells. Many groundwater basins in California are contaminated, for example with nitrates from fertilizer or animal feeding facilities, with pesticides, with industrial chemicals such as PCE and TCE, from oil extraction processes, or due to natural contamination with metals such as arsenic. Drought leads to higher concentrations of these contaminants, increasing the cost and difficulty of adequate treatment.

Reliance on groundwater is increasing now because of the drought, but it will continue to increase as climate change reduces surface water availability because of the shrinking snow pack in the Sierras, and increased evaporation due to warmer temperatures. As groundwater withdrawals increase, we not only deplete our life-sustaining aquifers, but also see more land subsidence, with its impacts on structures and critical infrastructure.

Warming water and lower water levels can also increase growth and concentration of pathogens (such as E.Coli or salmonella) or toxic algae. Low surface water levels due to drought may create stagnant water pools that are ideal for mosquito breeding, with increased risks for vector born disease such as west nile virus - and just recently the mosquito that carries dengue and yellow fever was found in the Central Valley.

Drought - especially in combination with higher temperatures due to climate change - also leads to low soil moisture levels, which increases dust levels and increases the risk of wildfires.

Dust may be laden with allergy-causing pollen, particulate matter, and pathogens such as the fungal spores that cause valley fever. And wildfire impacts include risks of injury, death, and displacement, respiratory

irritation, and exacerbation of asthma and heart disease due to high levels of particulate matter and other substances in smoke - which may spread hundreds of miles from the site of the fire itself.

Drought and climate change also have significant impacts on our food supplies - crop yields decline due to fallowing of fields or too few freeze days, cattle herds are reduced as feed grass dries up, and low stream flows adversely effect our coastal fisheries and fishing industry. The resultant increase in food prices lead to food insecurity, especially for low income families, with its associated increased risks for obesity, diabetes, and other chronic diseases.

For the many people whose livelihoods are directly tied to having an adequate water supply – farmers, ranchers, farmworkers, food processors, nursery workers, food transporters - the financial stress associated with drought impacts not only their economic well-being but also their mental health; drought is associated with anxiety and depression, and has been associated with increased rates of suicide in farming communities.
Clearly, we need not only a robust emergency response, but also to plan for the on-going impacts of drought and climate change on the health of Californians.
We need to assess and address the needs of those immediately impacted by drought. The President's just-announced package of assistance to ranchers and central valley food banks is a good start. But the serious economic impacts of the drought need to be more broadly addressed - unemployed farmworkers and food processors also need to pay the rent, clothe their children, buy medicines. How will these, and other needs such as mental health services, be addressed?

We need to identify funding mechanisms to develop longer-term solutions for those communities with no clean drinking and household water, or

reliant on very vulnerable sources of drinking water, such as connecting small systems to neighboring water systems to create reliable supplies.

We need to do more to conserve and protect our precious ground water resources so that the little we have now (and the less we may have in the future) is available to meet our core survival needs. Right now, we our running our water budget at a deficit - withdrawing more from our groundwater aquifers than is replenished each year - and that is clearly not sustainable. That means better monitoring, management, and regulation of groundwater withdrawals.

We need to step up the protection of our precious water from contamination - from overuse of nitrogen fertilizer, from pesticide applications, from oil extraction and other industrial sources - and create stronger penalties for contamination - so that we strengthen our ability to withstand the additional water stress we face due to drought and climate change

We need funding, incentives, and technology for rainwater capture, aquifer replenishment, water storage, cleaning up of contaminated water, water reuse and recycling, and incentives for water conservation and efficient use - for example in agricultural irrigation, and in our homes. We need our cities to build green infrastructure - trees, permeable pavements, underground water storage can all increase our local water resilience. We need to make sure that these steps also protect our health and the quality and safety of our drinking water supplies. And if we adopt pricing structures to incentivize water conservation and efficiency, we need to implement lifeline water rates so that low income people and disadvantaged communities are not left high and dry.

Finally, we need to step up our efforts to reduce greenhouse gas emissions. Yes, California is a leader among states, but we will need to establish and

meet even more aggressive goals if we want to avoid climate disruption that overwhelms our ability to adapt. Our water and our health are at stake.