Highlights from the

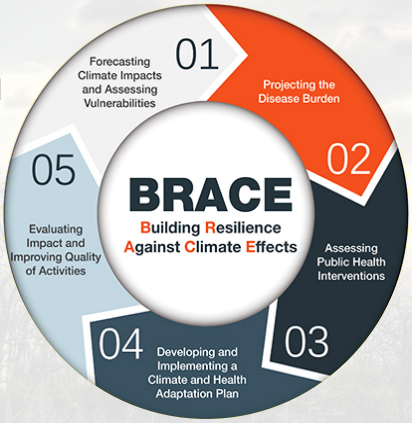
Maryland Climate and Health Profile Report

The Maryland Department of Health and Mental Hygiene
April, 2016

INTRODUCTION

The Maryland Commission on Climate Change published the Phase II Strategy for Reducing Maryland's Vulnerability to Climate Change in January 2011. The first recommendation of this report was to look at how vulnerable Maryland's populations and communities are to the negative health effects of climate change. Funded by the U.S. Centers for Disease Control and Prevention's Climate-Ready States and Cities Initiative, the Maryland Department of Health and Mental Hygiene (DHMH) in collaboration with the University of Maryland School of Public Health have jointly developed this Maryland Climate and Health Profile.

- **The objectives of the Climate and Health Profile Report are to:**
  - Identify vulnerable populations in Maryland that will be more severely affected by climate change.
  - Understand how extreme heat and precipitation events (i.e., rain, snow, and ice), that are projected to increase in frequency and intensity in response to our changing climate, are affecting the health of Marylanders today.
  - Estimate the future burden of disease Marylanders may develop as extreme weather events increase.



EXTREME WEATHER

There are many ways extreme weather events may affect health, including increasing infectious disease, allergens, and physical hazards like heat or flooding.

- In Maryland, the occurrence of summertime extreme heat events more than doubled during the 1980s, 1990s, and 2000s compared to the 1960s and 1970s. The seasonal frequency of extreme precipitation events remained relatively stable over the same time period.
- Modeling shows that the number of extreme heat events are projected to rise across all counties in Maryland into 2040.

Public Health Vulnerabilities to Climate Change

Knowing how extreme weather events affect the health of Marylanders will help us better prepare for the future, where such events are expected to occur more often, be more intense, and last longer.

The Risk of Motor Vehicle Accidents in a Changing Climate

Between 2000 and 2012, there were over 1.3 million unique motor vehicle accidents in Maryland.

- Extreme precipitation events increased the risk of motor vehicle accidents in Maryland by 23%.
- The risk of motor vehicle accident related to extreme precipitation was highest during the Fall season.
- The risk of motor vehicle accident related to extreme precipitation event was highest on roads with defects or obstructions.
- Because motor vehicle accidents are a major regional and statewide cause of injury-related emergency department visits and hospitalizations, the health and cost impacts of increasing extreme weather events on motor vehicle accidents may be significant.

▶ During extreme precipitation events, the risk of motor vehicle accidents in Maryland increased by 23%.

The Risk of Heart Attacks in a Changing Climate

Between 2000 and 2012, there were 32,670 cases of hospitalizations for heart attack during summer months in Maryland. The majority (57%) of hospitalizations were among those aged 65 or older.

- Extreme heat events increased the risk of heart attack in Maryland by 11%.
- The increase in heart attack risk related to extreme heat events was much higher among non-Hispanic blacks compared to non-Hispanic whites (27% vs 9%).
- When comparing counties across Maryland, residents of Baltimore City had the highest risk of hospitalization for heart attack during extreme heat events.
- Compared to 2010, increases in the frequency of extreme heat events during summer months in 2040 are projected to result in a higher rate of hospitalization for heart attack in Maryland .

▶ Projected increases in the frequency of extreme heat events during summer months are projected to result in a higher rate of hospitalization for heart attack in Maryland in 2040.

The Risk of Hospitalization for Asthma in a Changing Climate

There were 20,776 cases of hospitalizations for asthma during summer months between 2000 and 2012 in Maryland. Over 50% of these cases were non-Hispanic blacks and 39% were non-Hispanic whites.

- Although non-Hispanic blacks have a higher baseline rate of hospitalization for asthma, the increase in extreme heat-related risk was larger among non-Hispanic whites (33%) compared with non-Hispanic blacks (20%).
- Summertime extreme precipitation events increased the overall risk of hospitalization for asthma by 11%.
- Compared to 2010, increases in the frequency of extreme heat events during summer months in 2040 are projected to result in a higher rate of hospitalization for asthma in Maryland.

▶ Projected increases in the frequency of extreme heat events during summer months are projected to result in a higher rate of hospitalization for asthma in Maryland in 2040.

The Risk of Foodborne and Waterborne Infections in a Changing Climate

Between 2002 and 2012, a total of 9,529 confirmed cases of *Salmonella* and 4,804 confirmed cases of *Campylobacter* infection were reported to the Maryland FoodNet system.

- Both extreme heat and extreme precipitation events increased the risk of *Salmonella* infection in Maryland.
- The increases in risk of *Salmonella* infection associated with extreme weather events are considerably higher among coastal communities surrounding the Chesapeake Bay and Eastern Shore of Maryland.
- Extreme precipitation increased the risk of *Campylobacter* infection in the coastal areas.
- Compared to 2010, increases in the frequency of extreme heat events during summer months in 2040 are projected to result in a higher rate of *Salmonella* infection in Maryland.

▶ Projected increases in the frequency of extreme heat events during summer months are projected to result in a higher rate of Salmonella infection in Maryland in 2040.

THINGS YOU CAN DO

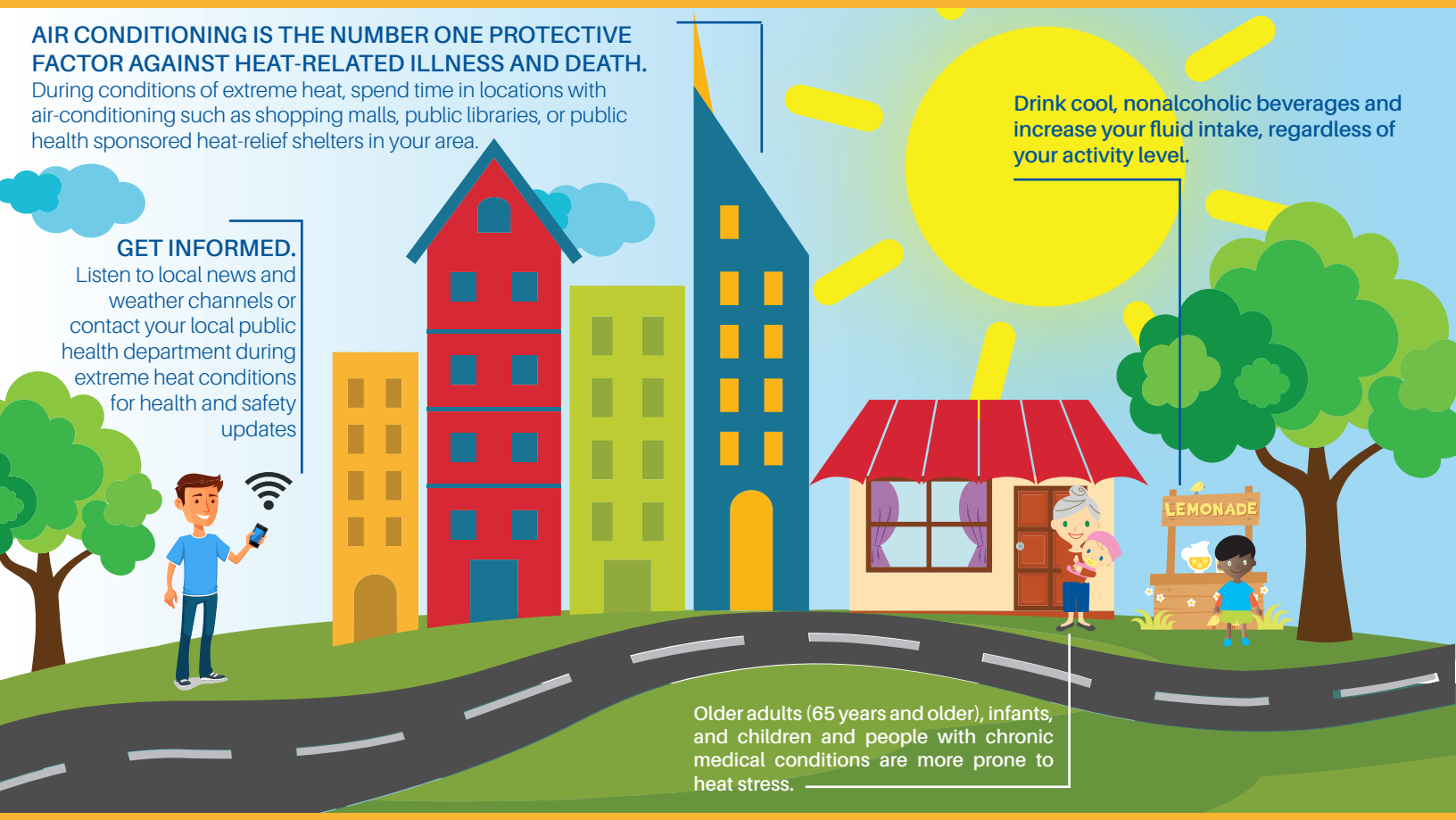
Individual and Family Actions

DURING EXTREME HEAT EVENTS:

AIR CONDITIONING IS THE NUMBER ONE PROTECTIVE FACTOR AGAINST HEAT-RELATED ILLNESS AND DEATH.
During conditions of extreme heat, spend time in locations with air-conditioning such as shopping malls, public libraries, or public health sponsored heat-relief shelters in your area.

GET INFORMED.
Listen to local news and weather channels or contact your local public health department during extreme heat conditions for health and safety updates

Drink cool, nonalcoholic beverages and increase your fluid intake, regardless of your activity level.



Older adults (65 years and older), infants, and children and people with chronic medical conditions are more prone to heat stress.

DURING EXTREME PRECIPITATION EVENTS:

Plan ahead - be prepared for extreme precipitation events and floods before they happen:

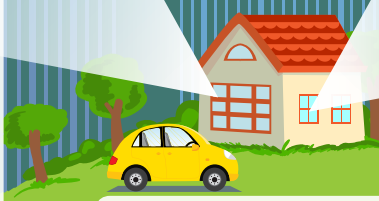
- Make afamily plan.
- Make a disaster supply kit.
- Identify your evacuation routes.
- Make **a** plan for your pets.

For more information, visit: Maryland's Emergency Management Agency's information on floods

During a flood:

- Listen to radio or local news for information.
- Use water that you know is safe for drinking, bathing, and other purposes.

For more information, visit: Maryland's Emergency Management Agency's information **on floods.**



Do not drive though flood waters.

After a flood:

- Avoid floodwaters.
- Listen for news about safe water use.
- Use caution entering buildings, and be careful about hidden damage, chemicals and sewage, and electric power lines.

For more information, visit: Maryland's Emergency Management Agency's information on floods