MODULE 4

HEAT ILLNESSES:
How to Prevent Them?

SESSION DURATION:
35–40 MINUTES

MODULE OVERVIEW:
This module introduces audiences to the three keys to preventing heat illnesses – staying informed, staying hydrated, and staying cool – with consideration given to differential opportunities for adopting them.

SLIDE 1: Heat Illnesses: How to Prevent Them?

PURPOSE: **To introduce Module 4, which is focused on learning the three keys to preventing heat illnesses: 1) staying informed, 2) staying hydrated, and 3) staying cool. It is important to note early on that not everyone will have the same opportunities for adopting the various recommendations provided in this module.. For this reason, it is essential to help audiences understand that each recommendation has value, and that it is less important that any one person be able to adopt every recommendation and more important that they are able to adopt some recommendations (or to do what they CAN do). Presenters are therefore invited to use the below talking points but are also encouraged to frame the communication of these topics within a broader discussion of equity.**

KEY TALKING POINTS:

1. This module is designed to help you understand the three keys to (or recommendations for) preventing heat illnesses.
2. As we'll discuss throughout this module, not everyone has the same opportunities for adopting these recommendations.
3. However, each recommendation has value. So as we move through this module, it will be important to identify what you CAN do to prevent heat illnesses.

NOTES:

SLIDE 2: Objectives

PURPOSE: To introduce the objectives for Module 4 and to provide audiences members with an overview of what they will learn. This is the Module 4 roadmap.

KEY TALKING POINTS:

1. This module has one primary objective: to help you learn the three keys to preventing heat illnesses.
2. The three keys are:
   a. Staying informed
   b. Staying hydrated
   c. Staying cool

NOTES:

SLIDE 3: Conversation Starter

PURPOSE: **This conversation starter is designed to create a break in the presentation and to help audiences start thinking critically about how to stay informed about heat. Presenters may choose to ask audiences only to reflect on the question or to discuss it with the people around them and/or with the broader audience. Note that this Conversation Starter is optional. Presenters are also encouraged to create their own questions (or their own Conversation Starters at other points in the presentation) that they know will resonate strongly with their audiences.**

KEY TALKING POINTS:

1. Let's pause for a moment.
2. What are some ways to stay informed about heat?
3. Would anyone like to share their ideas with the group?

NOTES:

SLIDE 4: Staying Informed

PURPOSE: **To emphasize the importance of staying informed as the first key to preventing heat illnesses. Also, to provide audiences with an overview of different sources for accessing heat (and weather) information and to help audiences understand that not all sources are equally transparent and reliable. For example, even though checking a weather app can be one of the easiest ways to access heat information, a lot of weather apps use data from unknown, private sources. This module focuses only on those sources that are known to be transparent and reliable (e.g., the National Weather Service, NWS) and/or those that typically share information derived from such sources (e.g., AlertSanDiego and SD Emergency App). However, this does not imply that audience members cannot or should not access heat (or weather) information from other sources if they choose. Lastly, it is important to acknowledge that not all audience members may have equal access to heat (and weather) information (e.g., they may lack access to a phone or the internet). For this reason, it is important to emphasize that connecting with others/word of mouth is another great way to stay informed.**

KEY TALKING POINTS:

1. Staying informed about heat is the first key to preventing heat illnesses. If you stay informed, then you know when to take action.
2. There are several ways to stay informed about heat, for example by:
   a. Connecting online or via social media with the National Weather Service (NWS)
   b. Signing up for emergency alerts (e.g., AlertSanDiego)
   c. Downloading emergency apps (e.g., SD Emergency App)
   d. Tuning into local news media
   e. Connecting with others/word of mouth
3. What about weather apps? Answer: a lot of weather apps use data from unknown, private sources. You can use weather apps, but the most transparent and reliable sources for heat (or weather) information are likely to be the ones listed here, such as NWS or those that disseminate information from NWS.

NOTES:

SLIDE 5: Staying Informed: NWS

PURPOSE: To provide audiences with an introduction to the National Weather Service (NWS) as the main public authority on heat (and weather). Though there are many ways to access information about heat, NWS is a public (US federal government) institution that is transparent about the location of its weather stations and where it gets its monitoring data. NWS also does the actual science behind weather forecasting (they are the experts!) and provides a lot of information beyond the temperature number that appears on a weather app. A lot of the additional information that NWS provides reinforces concepts in this curriculum, so linking people to NWS is also beneficial from an educational standpoint. The NWS Weather Forecast Office San Diego is responsible for providing heat (and weather) information for San Diego County. If presenters are not already familiar with the NWS Weather Forecast Office San Diego, it is recommended that they visit its website (http://www.weather.gov/sgx), Facebook page (http://www.facebook.com/NWS/SanDiego/), and Twitter (http://www.twitter.com/NWSSanDiego) to become familiar with them prior to giving instruction.

KEY TALKING POINTS:

1. The National Weather Service (NWS) is a US federal government agency that provides weather forecasts for public safety, including about heat.
2. NWS is VERY active online and on social media. Connect and prepare with them here:
   a. Website: http://www.weather.gov/sgx
   b. Facebook: http://www.facebook.com/NWS/SanDiego/
   c. Twitter: http://www.twitter.com/NWSSanDiego
3. You can also find these links through a simple Google search. Just be sure to search for "National Weather Service **San Diego**" or "NWS **San Diego**." There are 122 NWS offices across the US, and you want to be sure to find the one that provides information for San Diego County.

ADDITIONAL (OPTIONAL) INFORMATION:

Why does the National Weather Service have 122 Weather Forecast Offices? The National Weather Service has 122 Weather Forecast Offices located across the US, each of which is dedicated to providing weather information for a designated geographic area. The Weather Forecast Office that provides heat (and weather) information for San Diego County is located in San Diego (Rancho Bernardo area). It provides weather information for the following four counties: San Diego, Riverside, San Bernadino, Orange.

NOTES:

SLIDE 6: Staying Informed: NWS

PURPOSE: To build on the previous slide by showing some examples of the variety of communications that NWS shares about heat (and weather). Again, in addition to providing heat and weather forecasts, NWS regularly shares a lot of related information that directly reinforces concepts in this curriculum, as shown in the images included on the slide. Presenters are therefore encouraged to spend some time discussing each of the images to help audiences see the connection to the material in the curriculum. The image on the bottom left of the slide is an NWS Facebook post. The image on the upper right of the slide is an NWS heat map. The image on the lower right of the slide is an NWS infographic showing an "Excessive Heat Watch" (for more detail, see the additional optional information below).

KEY TALKING POINTS:

1. NWS often communicates heat information using a combination of text, infographics, maps, photos, and video, which helps make the information more accessible.
2. Here are some examples from the 2022 Labor Day heat wave in California.
3. As you can see, NWS often communicates about many of the concepts taught in these modules, so connecting with them is a great way to revisit what you've learned.

KEY TALKING POINTS

ADDITIONAL (OPTIONAL) INFORMATION:

What is an "Excessive Heat Warning"? NWS uses different terminology to warn the public about heat. An Excessive Heat Warning is issued within 12 hours of the onset of extremely dangerous heat. Generally, the criteria for this warning is a maximum heat index temperature of 105°F or higher for at least two days, and nighttime air temperatures that do not drop below 75°F. However, this criteria can vary across the country, especially for areas that do not typically experience extreme heat. When an Excessive Heat Warning is issued, ***it is a signal that the public should take action.*** Other terminology that NWS uses to warn the public about heat include Excessive Heat Watches, Heat Advisory, and Excessive Heat Outlooks.

What is a "Heat Advisory"? A Heat Advisory is issued within 12 hours of the onset of dangerous heat conditions. Generally, the criteria for this warning is a maximum heat index temperature of 100°F or higher for at least two days, and nighttime air temperatures that do not drop below 75°F. However, as with Excessive Heat Warnings, this criteria varies across the country, especially for areas that do not typically experience extreme heat conditions.

What is an "Excessive Heat Watch"? An Excessive Heat Watch is issued when conditions are favorable for a dangerous heat event in the next 24-72 hours. When an excessive heat watch is issued, it is a signal that the public should be prepared.

What is an "Excessive Heat Outlook"? An Excessive Heat Outlook is issued when the potential exists for an excessive heat event in the next 3-7 days. An Outlook is meant to provide warning to those who need considerable lead-time to prepare for the event.

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SLIDE 7: Activity

PURPOSE: This activity is designed to create a break in the presentation and to help audiences become familiar with NWS so that they are encouraged to stay informed about heat (and weather) through NWS. Presenters may choose to ask audiences only to discuss the activity in small groups or also to share what they discussed with the broader audience. Note that this activity is optional. Presenters are also encouraged to create their own questions as part of this activity (or their own activities at other points in the presentation) that they know will resonate strongly with their audiences.

KEY TALKING POINTS:

1. Let's pause for a moment.
2. Find a partner or break into small groups with some who has a smartphone.
3. Visit each of these NWS sites:
   a. Website: www.weather.gov/sgx/
   b. Facebook: www.facebook.com/NWSSanDiego/
   c. Twitter: www.twitter.com/NWSSanDiego
4. Discuss:
   a. What type of information does NWS provide on each of these sites (is it the same or different)?
   b. What types of visuals does NWS use on each of these sites (are they the same or different)?
   c. Which of the sites do you find most useful?
   d. How do you think you could use the information?

NOTES:

SLIDE 8: Staying Informed: Emergency Apps

PURPOSE: To provide audiences with an introduction to the ReadySanDiego emergency alert system, with which they can sign up to receive messages about heat (and other emergencies) over their phones and other communication devices. Also, to provide audience members with information on how to sign up to receive alerts from ReadySanDiego. If presenters are not already familiar with the ReadySanDiego emergency alert system, it is recommended that they visit the website (https://www.readysandiego.org/alertsandiego/) or sign up for it themselves so that they are knowledgeable about how it works prior to giving instruction.

KEY TALKING POINTS:

1. Another way to stay informed is by signing up for heat and other emergency alerts from ReadySanDiego at: https://www.readysandiego.org/alertsandiego/.
2. Note that there are two options: AlertSanDiego and AlertSanDiego for American Sign Language (ASL).
3. AlertSanDiego will deliver heat information to your cellphone, VoIP phone number, or email. Listed and unlisted landlines are already included and do not need to be registered.
4. AlertSanDiego for American Sign Language (ASL) will deliver heat information in ASL, English voice, and text to internet and video capable devices (e.g., computers, cell phones, smartphones, tablets, and wireless braille readers).

ADDITIONAL (OPTIONAL) INFORMATION:

Who operates ReadySanDiego? ReadySanDiego is operated by the County of San Diego Office of Emergency Services (OES) and is designed to educate and ready the public to prepare for and respond to emergencies. For more information about ReadySanDiego, visit: https://www.readysandiego.org/.

What is a VoIP phone number? A VoIP ("Voice Over IP") phone number is a real telephone number that operates over an internet connection. VoIP numbers are assigned to a user and not to a physical location. This means that you can use your VoIP number anywhere via a VoIP phone app that works on any mobile device or computer.

NOTES:

SLIDE 9: Staying Informed: Emergency Apps

PURPOSE: To provide audiences with an introduction to the SD (San Diego) Emergency App and the OSHA-NIOSH Heat Safety Tool App, both of which can be downloaded onto smartphones and used for free. Also, to provide information on how to download the apps onto smartphones. If presenters are not already familiar with the SD Emergency App and the OSHA-NIOSH Heat Safety Tool App, it is recommended that they download them to become knowledgeable about how they work prior to giving instruction.

KEY TALKING POINTS:

1. Another way to stay informed is by downloading these emergency apps from the App Store or Google Play and checking them for heat information.
2. The SD (San Diego) Emergency App is part or ReadySanDiego. It delivers emergency information to your smartphone and has a number of additional features (e.g., tools to help you plan for emergencies).
   a. The yellow arrow here shows an example. It is an Excessive Heat Warning that was delivered via the app.
3. The OSHA-NIOSH Heat Safety Tool App provides information on heat for planning outdoor work activities. It provides hourly heat forecasts specific to your location as well as worker safety recommendations based on the forecast.
   a. Note that the app presents the "Feels Like" temperature. This refers to the "apparent temperature," meaning what the temperature feels like to the human body when relative humidity and air temperature are combined.
4. Both apps are free.

KEY TALKING POINTS

I don't know how to answer that question. What do I do?

Someone asked what the acronyms OSHA-NIOSH mean. Tell them: OSHA stands for Occupational Safety and Health Administration, which is a regulatory agency of the US Department of Labor that sets and enforces standards for assuring workplace safety and health. NIOSH stands for National Institute for Occupational Safety and Health, which is a US federal agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness.

Someone asked what Relative Humidity is. Tell them: Relative humidity is a measure of how much water vapor is in the air compared to the maximum amount the air can hold at a given temperature. The combination of high temperature and high RH can make the air feel a LOT hotter, for example:

- On a 95°F day with 40% RH, it can feel like 101°F
- On a 100°F day with 40% RH, it can feel like 110°F
- On a 105 °F day with 40% RH, it can feel like 115°F

NOTES:

SLIDE 10: Staying Hydrated

PURPOSE: To emphasize the importance of staying hydrated as the second key to preventing heat illnesses, as dehydration increases the risk of heat cramps, heat exhaustion, and heat stroke. Also, to introduce audiences to the signs of dehydration, both in children and in adults.

KEY TALKING POINTS:

1. The second key to preventing heat illnesses is to stay hydrated. Remember that dehydration increases the risk of heat cramps, heat exhaustion, and heat stroke.
2. Signs of dehydration in children include:
   a. Dry tongue and lips
   b. No tears when crying
   c. Fewer wet diapers
   d. Sunken eyes
   e. Dry, wrinkled skin
   f. Deep, rapid breathing
   g. Cool, blotchy hands and feet
3. Signs of dehydration in adults include:
   a. Headache, delirium, and confusion
   b. Tiredness (fatigue)
   c. Dizziness, weakness, and lightheadedness
   d. Dry mouth and/or dry cough
   e. High heart rate but low blood pressure
   f. Loss of appetite but may crave sugar
   g. Flushed (red) skin
   h. Swollen feet
   i. Muscle cramps
   j. Heat intolerance or chills
   k. Constipation
   l. Dark-colored urine

NOTES:

SLIDE 11: Staying Hydrated: What to Drink

PURPOSE: To help audiences understand which drinks hydrate and which drinks do not (and so should be avoided when it is hot).

KEY TALKING POINTS:

1. It's important to be careful about what you drink on a hot day because not all drinks are hydrating.
2. Water and sports drinks are good for hydrating.
3. Sugary drinks and alcoholic drinks are not good for hydrating.
4. To stay hydrated, it's important to not wait until you're thirsty! Instead, drink extra fluids starting early and throughout the day.

ADDITIONAL (OPTIONAL) INFORMATION:

Why are water and sports drinks good for hydrating? Water is the best source of hydration and it tends to be more easily accessible (often physically and in terms of cost). Sports drinks are also good sources of hydration, especially for outdoor workers and athletes, because they contain electrolytes. Electrolytes are minerals found in the body that help regulate and control the balance of fluids. However, it is preferable for people who are not outdoor workers or athletes to drink water, as sports drinks can contain a lot of sugar.

Are some sports drinks better for hydration than others? There is no "best" sports drink, and water is the best option for hydration. Sports drinks with lower sugar and higher mineral content can be good for "emergency" hydration if people have acute symptoms of dehydration or are engaged in heavy outdoor exercise/ athletics or work.

Why are sugary drinks and alcoholic drinks not good for hydrating? Sugary drinks dehydrate the body because they increase the amount of sugar in the blood. This causes water to be drawn out of cells in the body and into the blood. For this reason, children should drink water; not fruit juice of sugar-sweetened drinks. Alcoholic drinks (and caffeinated drinks) are diuretics, meaning that they cause water to be lost from the body via urination.

What about Pedialyte - does it hydrate? Pedialyte does hydrate, and like many sports drinks, it also contains carbohydrates (i.e., sugar) and minerals which can help replenish the body after heavy sweating. However, Pedialyte should be reserved for more severe dehydration. Water should be the regular drink of choice on hot days.

NOTES:

SLIDE 12: Conversation Starter

PURPOSE: **This Conversation Starter is designed to create a break in the presentation and to help audiences start thinking critically about ways for staying cool. Presenters may choose to ask audiences only to reflect on the question or to discuss it with the people around them and/or with the broader audience. Note that this Conversation Starter is optional. Presenters are also encouraged to create their own questions (or their own Conversation Starters at other points in the presentation) that they know will resonate strongly with their audiences.**

KEY TALKING POINTS:

1. Let's pause for a moment.
2. What are some ways to stay cool?
3. Would anyone like to share their ideas with the group?

NOTES:

SLIDE 13: Staying Cool

PURPOSE: To emphasize the importance of staying cool as the third key to preventing heat illnesses. Also, to provide audiences with specific recommendations for staying cool, for example by modifying: 1) what they wear, 2) what they do, and 3) where they go, and 4) how they get there. Given that not everyone will have the same opportunities for adopting these recommendations, it is essential to help audiences understand that each one has value. Therefore, it is less important that any one person be able to adopt every recommendation and more important that they are able to adopt some recommendations (or to do what they CAN do). Presenters are invited to use the below talking points but are also encouraged to frame the communication of these topics within a broader discussion of equity.

KEY TALKING POINTS:

1. Staying cool is the third key to preventing heat illnesses. If you stay cool, your body has a better chance of preventing heat illnesses because it won't overheat as easily. Some ways to stay cool are by modifying:
   a. What you wear
   b. What you do
   c. Where you go
   d. How you get there
2. We will discuss each of these recommendations in more detail. Before we do, it's important to note that not everyone has the same opportunities for adopting them. However, each and every one of these recommendations has value. For this reason, it is less important that any one person be able to adopt every recommendation and more important that they are able to adopt some of the recommendations.
3. That said, as we move through this discussion, it's important for you to identify which recommendations you CAN adopt.

NOTES:

SLIDE 14: Staying Cool: What to Wear

PURPOSE: To introduce audience members to ways for staying cool by modifying what they wear. Presenters are encouraged to continue the above discussion (Slide 13) about the importance of identifying what audience members CAN do into their discussion of this slide.

KEY TALKING POINTS:

1. Modifying what you wear can help you stay cool, for example:
   a. Wear lightweight, light colored, loose-fitting clothing
      i. Cotton, linen, and jersey are more breathable and help the body release heat
      ii. Polyester, nylon, and acrylic can actually trap heat
   b. Wear a brimmed hat (or baseball cap)
   c. Wear a bandana or scarf dipped in cold water
   d. If you have long hair, tie it up to get it off your neck, shoulders, and back (e.g., in a ponytail)
   e. Use an umbrella for shade or a handheld fan

ADDITIONAL (OPTIONAL) INFORMATION:

How does wearing lightweight, light colored, loose-fitting clothing help you stay cool? Certain lightweight fabrics (e.g., cotton, linen, jersey) are more breathable and help the body release heat, especially when loose-fitting. However, note that some lightweight fabrics (e.g., polyester, nylon, acrylic) can actually trap heat. Light colored fabrics absorb less heat. When it comes to shoes, those that are open, like sandals, or made from materials like canvas (as opposed to leather), are more breathable. Note that long sleeved clothing can help decrease skin and core body temperature under sun exposure. However, people may feel uncomfortable wearing long sleeves particularly if it is humid.

How does wearing a brimmed hat help you stay cool? Wearing a brimmed hat creates a layer between the sun and the top of the head, and it creates shade around the face, shoulders, and neck/back. Wearing a baseball cap also creates a layer between the sun and the top of the head, but it tends to only create shade around the face.

How does wearing a bandana or scarf dipped in cold water help you stay cool? Dipping a bandana or scarf in cold water, wringing it lightly to get rid of excess water, then tying it around the head or neck can help cool the skin by evaporation.

How does tying up long hair help you stay cool? Body hair traps heat, so tying up long hair helps prevent heat from becoming trapped along the neck, shoulders, and back, as it would if long hair were left down. Tying up long hair specifically in a ponytail or other loose style also allows air to pass through it.

NOTES:

SLIDE 15: Staying Cool: What to Do (Low Cost)

PURPOSE: To introduce audience members to ways to stay cool by modifying their actions (or what they do) at home. Presenters are encouraged to continue the above discussion (Slide 13) about the importance of identifying what audience members CAN do into their discussion of this slide.

KEY TALKING POINTS:

1. Modifying what you do can help you stay cool. For example, here are some actions that you can take at home:
   a. Open windows (and doors) to create a cross breeze
   b. Turn off the lights or use them less
   c. Use the oven/stove less
   d. Take a cool shower
   e. Use a light, cotton pillow case and sheets (no blankets or comforters) and put them in a plastic bag in the freezer before bed
   f. Run ceiling fans counterclockwise
   g. Freeze water bottles or ice packs to place behind your neck, on your forehead, on the sides of your head, under your knees, in the crease of your elbows, or on the inside of your wrists
   h. Eat cool foods (avoid hot and heavy meals)

ADDITIONAL (OPTIONAL) INFORMATION:

How does taking a cool shower help you stay cool? Taking a cool shower lowers body temperature by transferring cold to the body, and it provides a cool sensation on the skin. However, taking a very cold shower (<68°F) will cause the body to try and warm itself. So it is important not to make the water too cold.

How does sleeping on lightweight, cotton sheets (no comforters or blankets) help you stay cool? Lightweight, cotton sheets provide good ventilation, helping the body dissipate heat into the air. A comforter or blanket will trap air near the body, keeping it warm.

How does putting your pillowcase (and/or sheets) in a plastic bag in the freezer before bed help you stay cool? When you use a cool pillowcase and sheets, body heat is transferred to them.

How does freezing water bottles or ice packs and placing them on your body help you stay cool? Frozen water bottles or ice packs placed on the body can help reduce body temperature by transferring cold to the body.

How does eating cool foods (and avoiding hot and heavy meals) help you stay cool? Eating cool foods lowers body temperature by transferring cold to the body.

I don't know how to answer that question. What should I do? Someone asked if putting socks in the freezer then wearing them can help cool the body. Tell them: Wearing socks that have been in the freezer can help cool the body. Our hands and feet have large surface areas and high blood flow, so cooling them can help reduce body temperature.

NOTES:

SLIDE 16: Staying Cool: What to Do (Mid Cost)

PURPOSE: To introduce audience members to ways to stay cool by modifying their actions (i.e., what they do) at home. Note that some of these actions could require some cost and/or modification to the building or property. Presenters are therefore encouraged to continue the above discussion (Slide 13) about the importance of identifying what audience members CAN do into their discussion of this slide. Presenters may also choose to omit this slide if the actions listed are not feasible for their audience members.

KEY TALKING POINTS:

1. Here we will be talking about some additional actions that you can take to help stay cool at home. Note that these options may require some cost and/or modification to the building or property.
2. It is important to note that not everyone has the same opportunities for taking these actions. For example, people who live in apartments or who rent homes typically can't make modifications to the building. If the actions on the previous slide resonate more with you, that's ok. Remember that each and every action has value. For this reason, it is less important that any one person be able to take every action and more important that they are able to take some actions.
3. Here are the examples:

a. Close blinds or use heat reducing window film or blackout curtains
b. Insulate water heater with a "tank cover"
c. Apply door and window weather proofing
d. Add shade awnings on windows, balconies, and patios
e. Run AC or evaporative cooler
f. Install door sweeps
g. Use an outward facing window fan on the warm side of the building to blow hot air out, and use an inward facing fan on the cool side of the building to draw cool air in.

ADDITIONAL (OPTIONAL) INFORMATION:

How effective are closing curtains/blinds, using heat reducing window film, or using blackout curtains? Closing even regular (drapery) curtains with white-plastic backings can reduce heat gain (i.e., the increase in thermal energy of a space, object, or structure as it absorbs solar radiation) by 33%. The effectiveness of heat reducing window film will vary depending on the size of the window glazing area, the window orientation, the building orientation, the climate, and whether the window has interior insulation. For more information, visit Energy Saver (US Department of Energy):
https://www.energy.gov/energysaver/energy-efficient-window-coverings

How effective is insulating a water heater with a "tank cover"? Insulating a water heater with a "tank cover" can reduce standby heat losses by 25-45% while saving about 7-16% in water heating costs. For some households, the money saved in water heating costs can mean that the insulation is paid for in about a year. For more information, visit Energy Saver (US Department of Energy):
https://www.energy.gov/energysaver/do-it-yourself-savings-project-insulate-water-heater-tank

How effective is door and window weather proofing (including door sweeps)? Caulking and weatherstripping are two simple and effective air-sealing techniques that can help keep a house cool by preventing hot outside air from coming in and preventing cool inside air from going out. Door sweeps installed at the base of an exterior facing door can serve as one air-sealing technique. Usually, the need for and potential effectiveness of weatherproofing are determined by an energy assessor or weatherization expert that tests the home for air tightness. If there are leaks, caulking is typically used to seal cracks and openings between stationary house components, such as around doors and window frames. Weatherstripping is typically used to seal the space around house components that move, such as doors and operable windows. A bonus to weather proofing is that it lowers heating and cooling costs. For more information, visit Energy Saver (US Department of Energy): https://www.energy.gov/energysaver/air-sealing-your-home

How effective is running AC or an evaporative cooler? Evaporative coolers (also known as "swamp coolers") work best in low-humidity areas. This is because they work by passing outdoor air over water-saturated pads where the water then evaporates, reducing the air temperature by 15°-40°F before it enters the home. While there are many types and sizes of evaporative coolers, even a small portable one installed in a window can reduce the temperature of the room by 5°-15°F. For more information, visit Energy Saver (US Department of Energy): https://www.energy.gov/energysaver/evaporative-coolers

How effective are shade awnings at keeping a house cool? Shade awnings can reduce solar heat gain (i.e., the increase in thermal energy of a space, object, or structure as it absorbs solar radiation) in the summer by up to 65% on south-facing windows and 77% on west-facing windows. For more information, visit Energy Saver (US Department of Energy):
https://www.energy.gov/energysaver/energy-efficient-window-coverings

How effective is using an outward facing window fan on the warm side of a building and an inward facing fan on the cool side of the building? This question is difficult to answer as the effectiveness will vary in relation to environmental variables (e.g., temperature, humidity), the capacity of the fan to move air, and the size of the room it is in.

NOTES:

SLIDE 17: Staying Cool: What to Do (Higher Cost)

PURPOSE: To introduce audience members to some ways to stay cool by modifying their actions (i.e., what they do) at home. Note that these actions could require significant cost and/or greater modification to the building or property. Presenters are therefore encouraged to continue the above discussion (Slide 13) about the importance of identifying what audience members CAN do into their discussion of this slide. Presenters may also choose to omit this slide if the actions listed are not feasible for their audience members.

KEY TALKING POINTS:

1. Here are some final actions that you can take to help stay cool at home. Not that these options will require higher cost and/or greater modifications to the building or property.
2. Like we discussed during the previous slides, not everyone has the same opportunities for taking these actions. For example, people who live in apartments or who rent homes typically can't make modifications to the building or property. If the actions on the previous slides resonate more with you, that's okay. Remember that each and every action has value. For this reason, it is less important that any one person be able to take every action and more important that they are able to take some actions.
3. Here are the examples:
   a. Install storm windows
   b. Install insulation
   c. Install a cool roof
   d. Install hard flooring
   e. Plant vegetation, especially on the South or West side of the building
   f. Create cool walls

I don't know how to answer that question What do I do? Someone asked what cool roofs are. Tell them: A cool roof has a special coating or color that reflects more sunlight (solar energy). This reduces the amount of heat that is absorbed. Cool roofs are also sometimes referred to as white roofs.

Someone asked what cool walls are. Tell them: Cool walls have an exterior coating or color that reflects sunlight (solar energy). This reduces the amount of heat that is absorbed.

ADDITIONAL (OPTIONAL) INFORMATION:

How effective are storm windows? Storm windows reflect radiant heat 35% better than clear glass windows. Storm windows also tend to be better sealed and can reduce overall home air leakage by 10% or more. There is also a potential economic benefit to storm windows in that they can save a household 10-30% on cooling and heating costs. For more information, visit Energy Saver (US Department of Energy): https://www.energy.gov/energysaver/storm-windows

How effective is insulation? The effectiveness of insulation depends on its resistance to thermal heat flow, or its R-value. The R-value depends on the type of insulation as well as its thickness and density. The higher the R-value, the greater the insulating effectiveness. For more information, visit Energy Saver (US Department of Energy):
https://www.energy.gov/energysaver/insulation

How effective are cool roofs and cool walls? The higher the roof temperature, the harder AC must work to keep the inside of a building cool. Cool roofs can substantially reduce the roof surface temperature, sometimes by up to 100°F, corresponding to as much as a 15% reduction in annual AC use. The heat mitigation benefits and annual energy savings of cool walls are comparable to those yielded by cool roofs. For more information, visit Energy Saver (US Department of Energy):
https://www.energy.gov/energysaver/articles/roofs-can-be-totally-cool.

How effective is planting vegetation? The effectiveness of planting vegetation to keep a house cool varies (e.g., depending on the location, vegetation type, etc.). However, planting well-placed trees to shade your home can cool the surrounding air temperatures by as much as 6°F and can save up to 25% on energy costs. For more information, visit Energy Saver (US Department of Energy):
https://www.energy.gov/energysaver/landscaping-shade.

NOTES:

SLIDE 18: Staying Cool: Where to Go

PURPOSE: To introduce audience members to ways for staying cool by modifying where they go. Presenters are encouraged to continue the above discussion (Slide 13) about the importance of identifying what audience members CAN do into their discussion of this slide.

KEY TALKING POINTS:

1. Modifying where you go can help you stay cool, for example:
   a. If you can, go to an air-conditioned place, for example: cooling centers ("Cool Zones"), shopping malls, libraries, coffee shops, and swimming pools.
   b. If you must be outdoors:
      i. Move into the shade if possible (including at the beach!)
      ii. Pace yourself and take breaks
      iii. Know that a child in a stroller can easily overheat

ADDITIONAL (OPTIONAL) INFORMATION:

What is a cooling center and are there any in San Diego County? A cooling center is a public, indoor, air-conditioned facility (often a library, community or senior center, school, or shopping mall) where anyone can go to cool off during hot summer days. Cooling centers are open to everyone and there is no cost. In San Diego County, the county libraries serve as cooling centers (called "Cool Zones"), and they are typically open between June 1st and October 31st. More information (including hours and locations) is available here: https://www.sandiegocounty.gov/hhsa/programs/ais/cool_zones/.

Why is it dangerous for people (especially children and pets) to be in hot cars? The internal temperature of a car can reach over 134°F very quickly when the outside air temperature exceeds 86°F. The temperature rise can be especially dramatic on clear, sunny days where the sun reaches the car directly. When body temperature reaches 107°F or higher, cells become damaged and internal organs begin to shut down. High temperatures inside a car can therefore be quite dangerous, especially for children and pets because they overheat more quickly than adults. **NOTE:** Many people think that "cracking" car windows (i.e., opening them slightly) can lower the temperature inside a car. However, cracking car windows does not prevent the temperature from rising inside the car.

NOTES:

SLIDE 19: Activity

PURPOSE: **This activity is designed to help audience members learn what cooling centers (or "Cool Zones") are in or nearest to their neighborhoods. Presenters may choose to ask audience members only to discuss the activity in small groups or also to share what they discussed with the broader audience. Note that this activity is optional. Presenters are also encouraged to create their own questions as part of this activity (or their own activities at other points in the presentation) that they know will resonate strongly with their audiences.**

KEY TALKING POINTS:

1. Find a partner or break into small groups with someone who has a smartphone.
2. Go to the San Diego "Cool Zones" site: https://www.sandiegocounty.gov/hhsa/programs/ais/cool_zones/
3. Click on the link to the interactive map to find the cooling centers (or "Cool Zones") closest to your neighborhood.
4. Discuss:
   a. How close is the nearest cooling center to your neighborhood?
   b. How easy/difficult would it be for people in your neighborhood to get there?
   c. Do you think you would go there and/or share this information with someone else (why or why not)?

NOTES:

SLIDE 20: Staying Cool: How to Get There

PURPOSE: **To introduce audience members to ways to stay cool by modifying how they go places. Presenters are encouraged to continue the above discussion (Slide 13) about the importance of identifying what audience members CAN do into their discussion of this slide.**

KEY TALKING POINTS:

1. Modifying how you get someplace can help you stay cool.
2. If you travel by car:
   a. Minimize time sitting in hot cars (put a towel on the seat to avoid burns)
   b. Do not leave children or pets in hot cars (remember to check the back seat!)
   c. Use sunshades in windows when parked
3. If you use public transportation:
   a. Look for a shady route to the bus stop
   b. Consider using an umbrella for shade or a handheld fan
   c. Remember to bring extra water (more than you need!)

NOTES:

SLIDE 21: What About Caring for Others?

PURPOSE: **To let audiences know that some of the best ways to help others prevent heat illnesses is to share what they know (and what they have learned here) and to check in on them.**

KEY TALKING POINTS:

1. Share what you know! Word-of-mouth is a great way to spread awareness about heat risk prevention, and the recommendations for staying informed, staying hydrated, and staying cool apply to everyone.
2. Check in on neighbors and loved ones! When it's warm outside, make a call or stop by to make sure the people you care about are staying informed, staying hydrated, and staying cool.

NOTES:

SLIDE 22: What About Caring for Pets?

PURPOSE: **To offer tips to audience members for preventing heat illnesses among pets, using the example of dogs.**

KEY TALKING POINTS:

1. Here are some tips for preventing heat illnesses in pets. Many of these tips are specifically for dogs, though some may apply to other types of pets as well.
   a. Touch the ground: if it's too hot for your hand, it's too hot for your pets
   b. Limit exercise: go in the morning or evening when it's cooler
   c. Bring water: enough for you AND your pet
   d. Keep them cool: indoors (e.g., use a cooling vest) and outdoors (e.g., provide shade)
   e. Be cautious: senior and overweight dogs may overheat more quickly
   f. Be aware: humidity also affects pets
   g. Be prepared: have a plan for cooling your dog in a power outage
   h. Remember: never leave your pets in the car—cracking a window does not help on a hot day!

NOTES:

SLIDE 23: Summary

PURPOSE: **To reinforce the objectives of this module by highlighting the key takeaways.**

KEY TALKING POINTS:

1. There are three keys to preventing heat illnesses:
   a. Staying informed, for example by:
      i. Connecting with NWS online or via social media
      ii. Signing up for emergency alerts
      iii. Downloading emergency apps
      iv. Tuning into local news media
      v. Connecting with others / word of mouth
   b. Staying hydrated, for example by drinking water and sports drinks (i.e., no sugary drinks or alcoholic drinks)
   c. Staying cool, for example by modifying what you wear, what you do, and where go you go, and how you get there
2. Remember that on hot days it's also important to care for others and pets.

NOTES:

SLIDE 24-26: Module 4 Templates

PURPOSE: **These Module 4 slide templates are included so that presenters can add additional information into the presentation that they consider important for audiences to know. If a presenter needs more templates, they can simply copy those provided here.**

NOTES: