

# H.O.P.E.

## Policy Recommendations



**HOPE**

Responding to Heatwaves  
in Older People Ecosystem



# Overview

- 1. Directive for local governing bodies to develop a heat wave emergency plan**
- 2. European framework for municipal heat strategies: the 3H approach (Habitat, Housing, Health)**
- 3. A European framework for municipal heat strategies: the 3H approach (Habitat, Housing, Health)**
- 4. Organising an annual Heat Action Day (June 2nd)**
- 5. Increasing awareness**
- 6. Occupational health caregivers, a potential blind spot**
- 7. Mandatory blinds**
- 8. Code red**
- 9. Open Protection Centres for Older Adults**
- 10. Emergency heat shelter**
- 11. Heat Emergency for Older Adults**
- 12. Providing (social) monitoring of (vulnerable) older adults during heatwaves**
- 13. Providing access to green urban social spaces**
- 14. White rooftops**

# Preface

**Climate change** has caused heatwaves to become more frequent and intense, posing serious public health risks, particularly for older adults. With 20.6% of the EU population aged 65+ in 2020, and the number of individuals over 80 projected to increase, safeguarding this vulnerable demographic from heat-related health issues is an urgent priority. While various EU member states have introduced measures such as heat warning systems and building adaptations, these efforts often fail to address the **critical social and healthcare dimensions of heatwave preparedness**.

To **effectively mitigate the impacts of extreme heat**, a more integrated and holistic approach is needed—one that combines practical education, caregiver training, and enhanced support for social and healthcare organizations. In addition, promoting cross-border collaboration and knowledge-sharing at the local, regional, national, and European levels will be essential in tackling this growing challenge.

The following policy recommendations, developed by a coalition of key stakeholders led the City of Rotterdam including the University of Applied Sciences of Rotterdam, ISRAA Treviso Care Provider (Italy), Santa Casa da Misericórdia da Amadora (Portugal), the Social Cooperative of Cyclades Altera Vita (Greece, and the European Local Inclusion and Social Network ELISAN, offer **strategies** for local, regional, national and European authorities to better address heat risks faced by older adults.

These **recommendations** emphasize the need to improve communication, enhance emergency preparedness, and foster collaboration across sectors. These solutions may inspire communities to more effectively protect vulnerable populations and build resilience to the increasing challenges posed by extreme heat in the years ahead.

# 1.Improving communications during heatwaves

## **Problem:**

Inadequate communication during heatwaves exacerbates the risks and impacts of these extreme weather events, leading to preventable health crises and increased vulnerability among affected populations. Despite the serious health threats posed by heatwaves, communication efforts often fall short in effectively disseminating timely, accurate, and actionable information to the public. Deficiencies in communication strategies include lack of timely warning systems, insufficient public awareness, limited accessibility of information (especially when accessibility is limited for the vulnerable), and inadequate collaboration among relevant stakeholders.

## **Solution:**

Addressing the inadequacies in communication during heatwaves requires a comprehensive approach that involves improving warning systems, enhancing public awareness, increasing the accessibility of information and tailoring it to the target group, and strengthening collaboration among stakeholders. By addressing these challenges, communities and individuals can better prepare for and respond to heatwave events, ultimately reducing the health impacts.

## **Responsible for (initiating) this policy:**

Improved communication requires action on various levels of government and collaboration with various sectors, including medical-social institutes and public transport companies. National governments are responsible for developing a heat coding system for heat events that can be activated when certain biometeorological indicators are reached. A heat coding system includes a crisis plan that will be activated during extreme heat events, see e.g. “Policy Recommendation: code red[Mv] ”. The responsibility of monitoring and signalling biometeorological indicators lies with the national meteorological services.

When the national government activates the crisis plan for extreme heat it is essential to inform the public quickly. Warning texts, similar to warning texts that are issued during toxic smoke development, can be issued by the national security departments. In most countries, the infrastructure to send warning texts is already in place. If not, collaboration should be sought with telecom providers. Warning texts should provide information on risks, behavioural adjustments, and access to additional information.

Additionally, apart from crisis communication, effective communication is essential to increase preparedness and resilience before the actual event. Communication should be targeted at high-risk individuals and communities and requires collaboration between regional government, local government and sectors that are either responsible for vulnerable populations (e.g. elderly care homes, mental health services) or present an elevated risk of heat complications (e.g. public transport sector).

### **Challenges:**

A timely warning system could have the opposite effect if people do not perceive any danger, leading to devaluation of the warning system. It will be difficult to mobilize the care sector and other social sectors, especially in countries that do not have a lot of experience with extreme heat, as they perceive other issues as more pressing. A lacking sense of urgency will be a barrier to collaboration and to the dedication of funding and resources.

Monitoring and quantifying health outcomes will be difficult, precisely because with effective communication the health effects are smaller - which will be an additional barrier to finding funding and resources (the prevention paradox).

### **Advantages:**

An adequate warning system is a relatively low-cost intervention (as a national warning system will already be present in most European countries) that will have maximum outreach. Ideally, this would also mobilize communities to check up on the vulnerable, e.g. people checking in on their elderly parents and/or neighbours. Socially isolated persons and elderly living at home present two risk groups who are hard to reach by official care services. Thus, informal care networks are essential to reach and monitor these groups during extreme heat events. This would possibly lower heat-related morbidity and mortality and unburden the care sector. Additionally, people would be more willing to accept advice from relatives or neighbours, as opposed to volunteers that they do not know and will not easily open up to.

The **vulnerable** would be more aware of heat-related risks and would know how to prepare for extreme heat. This would lead to increased self-reliance, unburdening of the care sector and possibly decreased morbidity and mortality. Research into prehabilitation has shown that tangible outcomes and autonomy can be great motivators to improve one's health. Presumably, the same will apply when preparing for heat-related health effects.

## Conclusion:

Addressing the inadequacies in communication during heatwaves requires a collaborative approach that involves improving warning systems, increasing the accessibility of information, and strengthening collaboration among stakeholders. A successful communication strategy will help individuals and communities to prepare for and respond to heatwave events, reducing heat-related morbidity and mortality, increasing self-reliance, unburdening the care sector and ultimately improve resilience to extreme heat.

## Some examples of communication strategies include:

1. The Government of France can send warning messages through mobile providers in exceptional situations, including information to reduce heat impact. This is one part of the French 'National Adaptation Strategy for Heatwaves'. For more information you can click this [link](#) (information in French).

2. Various cities and regions in the USA have launched some form of a 'check up on your neighbours' campaign, to motivate individuals to check up on the vulnerable in their communities during a heatwave. Examples include [Portland](#) and the [International Federation of Red Cross \(IFRC\)](#).

3. The University of California - Los Angeles (UCLA) has published [recommendations](#) to communicate heat risks to the elderly, based on experiences in the Los Angeles region. They suggest using targeted communications, e.g. switching the word "senior" for "resident of ..." and using alternative forms of communication such as comedy shows.

**Keywords:** heat waves, extreme heat, policy, communications, warning systems, resilient communities



## 2. Directive for local governing bodies to develop a heat wave emergency plan

### **Problem:**

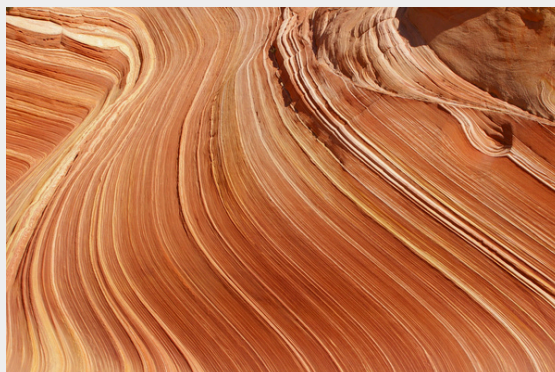
Heat waves are becoming more frequent and intense due to climate change, and they can have serious health impacts, particularly on vulnerable populations such as the elderly, children, and those with chronic health conditions. Without a heat wave emergency plan in place, communities may not be adequately prepared to respond to these events, which can lead to heat-related illnesses, hospitalizations, and even deaths. Many countries have developed national heat action plans, but implementation by local governments and organisations remains a point of concern.

### **Solution:**

Require local governing bodies (i.e. municipalities) to develop and implement a comprehensive heat wave emergency plan that can help prevent or mitigate the negative impacts of extreme heat on their community. Local governments are already developing these plans, but not always and not every one of them does.

### **Responsible for (initiating) this policy:**

The EU could issue a directive to its member states that specifies that their local governments must develop a heat wave emergency plan. The implementation and maintenance of the plan lies with local government, i.e. the municipality while at the national level it requires these municipalities to develop the plan. It does not, at the national level, specify precisely what these plans must contain. The local government is free to develop it according to their own insights.



**Challenges:**

Guidelines might be required for the development of these emergency plans. This will help ensure that no important aspects will be omitted. Developing a directive that is effective and feasible requires engagement with stakeholders, including local governing bodies, community organizations, healthcare providers, emergency services, and residents. Ensuring that all stakeholders are involved in the development process can be challenging, particularly if there are conflicting opinions or interests. Furthermore, developing and implementing a heat wave emergency plan requires resources, including funding, staff time, and expertise. It is important to consider how these resources will be allocated and ensure that they are sufficient to support the development and implementation of the plan. Once the heat wave emergency plan is implemented, it is important to monitor and evaluate its effectiveness to ensure that it is achieving its intended outcomes. This requires ongoing data collection and analysis, which requires further resources and expertise.

**Advantages:**

A national directive can help to standardize the development and implementation of heat wave emergency plans across the country. This can help to ensure that all communities have access to the same level of support and resources, regardless of their location or size. A national directive can also facilitate coordination between different levels of government, agencies, and organizations involved in responding to heat waves. This could ensure that resources are allocated efficiently and that responses are coordinated and effective. The expertise of national-level agencies and organisations is available to provide guidance and support for local governments in developing and implementing heat wave emergency plans, to help ensure that plans are based on the best available science and evidence.

**Conclusion:**

A directive to have local governments develop heat wave emergency plans ensures that a plan will become available and that they can draw on expertise from other government agencies. Furthermore, coordination and standardization amongst these heat plans is an added advantage.





# 3. A European framework for municipal heat strategies: the 3H approach (Habitat, Housing, Health)

## **Problem:**

As the European climate is changing and heat waves are becoming more frequent and intense, various municipalities, regions or countries are developing local heat action plans. This decentralised development of heat action plans may lead to inefficiency and inequality in emergency response per municipality.

The WHO estimates that heat claims over 175,000 lives in the European region annually, yet heat is generally not regarded as a serious threat. For example, the Netherlands Environmental Assessment Agency (Planbureau voor de Leefomgeving, PBL) has evaluated the climate adaptation and mitigation strategy of the Dutch government and found that heat represents the climate risk with the largest impact and largest probability. Simultaneously, heat mitigation and adaptation strategies are relatively underdeveloped, compared to strategies for flooding risks for example, making heat a blind spot.

Furthermore, the health effects of heat remain underestimated and local governments are currently generally unprepared for extreme heat events. For example, governments and healthcare professionals have little knowledge on the health effects of heat and have not identified vulnerable people or populations. Heat is barely considered in urban planning and many areas lack ample shady spots and green spaces, leading to the Urban Heat Island (UHI) effect. Finally, because of global warming, temperatures are rising leaving areas that were historically colder at risk. Housing in these areas was built to reduce cold impact and will require adjustments to provide a comfortable living environment during heat waves.

## **Solution:**

To bring uniformity and encourage the development of heat action strategies, a European Framework for local and regional heat strategies called the 'Habitat, Housing, Health' (3H) approach could provide guidance and will prevent "reinventing the wheel" in separate governments.

'Health' focuses on interventions targeted towards vulnerable populations, for example requiring care organisations to adopt a heat protocol, providing access to public cooling centres and identifying elderly and isolated people, and interventions towards 'comfort', for example providing information on sleep hygiene during extreme heat.

**Responsible for (initiating) this policy:**

The EU could issue a directive to its member states that specifies that their local governments must develop a heat action plan. The implementation and maintenance of the plan lies with the municipality, while at the national level it requires these municipalities to develop the plan. It does not, at the national level, specify precisely what these plans must contain. The local government is free to develop it according to their own insights.

The EU supports regional climate change adaptation initiatives through the [Pathways2Resilience](#) initiative, which aims to support EU regions, cities and local authorities in their efforts to build resilience against the impacts of climate change. Pathways2resilience is coordinated by EIT Climate-KIC, Europe's largest public-private innovation partnership focused on climate innovation to mitigate and adapt to climate change. The initiative will foster cross-regional learning, collaboration, mentoring and capacity building, and provide funding.

**Challenges:**

On a European level, the major challenge will be to contextualize the 3H approach to a European Framework. The framework should be generic enough to be relevant to European countries with different demographics, governmental structures, healthcare and social security systems and climate patterns, while also being specific enough to provide practical guidance.

On the municipal level, the multidisciplinary nature of this problem requires engagement with stakeholders, including community organizations, healthcare providers, emergency services, housing corporations, and the public transport sector. Ensuring that all stakeholders are involved in the development process can be challenging, particularly if there are conflicting opinions or interests.

Currently, there is a discrepancy between theoretical frameworks developed nationally and implementation of those frameworks locally. Increased collaboration between various levels of government and additional focus on implementation on a national level might help avert this challenge.

Developing and implementing a heat action plan requires resources, including funding, staff time, and expertise. It is important to consider how these resources will be allocated and ensure that they are sufficient to support the development and implementation of the plan.

Once the heat action plan is being implemented, it is important to monitor and evaluate its effectiveness to ensure that it is achieving its intended outcomes. This requires ongoing data collection and analysis, which requires further resources and expertise.

**Advantages:**

A European framework for municipal heat adaptation and anticipation strategies has various advantages. First, it will lead to more uniform strategies and facilitates knowledge sharing. Secondly, using a validated framework will increase resource efficiency and might remove some barriers of acquiring funding. The threefold approach has several benefits: reducing the health burden of extreme heat, improving resilience of communities, and fostering inclusive policies. On European level it encourages industries to innovate on heat resilience, e.g. in residential construction, warning systems or clothing that cools.

**Conclusion:**

In conclusion, the 3H approach offers a practical and collaborative framework to increase heat resilience and preparedness across local governments, leveraging best practices to reduce the heat impact on urban environments. By focusing on habitat, housing, and health, the three-pronged approach integrates and promotes interventions at different areas and levels, maximizing impact. Implementing this strategy at the local level, with national oversight, promotes collaboration, knowledge-sharing, and resource efficiency.

Read more about the 3H approach [here](#).



# 4. Organising an annual Heat Action Day (June 2nd)

## **Problem:**

Heat waves often go underestimated in their health impact compared to more visibly destructive natural disasters like hurricanes, earthquakes, or floods. Despite their less dramatic appearance, heat waves pose severe health risks and are more deadly than the previously mentioned natural disasters.

Factors contributing to the underestimation of heat waves' health effects include invisibility of the threat, gradual onset, and misconception of heat as a minor and temporary issue. Furthermore, the changing climate puts regions at risk of extreme heat that were previously not affected, leaving citizens, health care workers and policymakers unprepared to deal with the risks of extreme heat.

## **Solution:**

Organise a “Heat Action Day”: an annual day for raising global awareness of heat risks and sharing simple ways to stay safe in our warming climate. By recognising the significant health risks posed by heat waves and providing practical and simple behavioural changes, individuals and communities can better protect themselves from this often-underestimated natural disaster. Participating in a Heat Action Day can take shape locally.

## **Responsible for (initiating) this policy:**

Heat Action Day is organised by The International Federation of Red Cross and Red Crescent Societies (IFRC) in collaboration with other NGO's such as the American Red Cross. It is a global, annual campaign that takes place on June 2nd. Heat Action Day is part of a larger initiative to provide awareness, education and resources on heat risks, adaptation, and mitigation measures. The IFRC partners with “National Societies”: the local branches of the IFRC. In all member states of the European Union, a local branch of the IFRC is active.

A European Framework can guide national and local governments on partnerships with NGO's and lessons learned from the Heat Action Day organised by the IFRC.

## **Challenges:**

There are several challenges to organising a successful awareness campaign. The first barrier is the complexity of climate change, including rising temperatures and the body's reaction to heat stress. The messaging should be adapted to the general public. This leads to the second challenge, which is that annual, global campaigns target a diverse audience. Finally, scepticism and denial of climate change is a barrier, as annual awareness campaigns will not be effective and might even be counterproductive to the climate change deniers. Other challenges include:

1. **Timing:** the awareness day should be planned before the largest heat impact is expected. However, the timing of the risks of extreme heat differs per region and year. Therefore, a choice should be made whether to organise a heat awareness day on the same date annually and globally, or to change dates depending on expected weather events.
2. **Weather** variability: the unpredictable nature of weather and climate changes can affect the timing and relevance of the campaign. Extreme heat events may not align with the planned awareness day, potentially diminishing its immediate impact.
3. **Behavioural change:** it has been shown that providing information, rarely leads to behavioural change and other factors should be considered to lead to long-term behavioural adjustments.
4. **Measuring impacts:** measuring the impact of awareness activities on public behaviour and health outcomes is complex. Not being able to measure impact might be a barrier to acquiring resources.
5. **Acquiring resources:** Securing funding and resources for an annual awareness day requires substantial effort and competition with other public health initiatives.

## **Advantages:**

A successful **Heat Action Day** will increase awareness and will allow communities and individuals to understand and better protect themselves and the vulnerable from the health impacts of extreme heat. Advantages of collaborating with the IFRC:

1. **Existing local networks:** because the IFRC collaborates with National Societies, local networks are already present, which are very valuable to maximize outreach.
2. **Existing resources:** the IFRC has ample resources: e.g. promotional materials in various languages, guidance materials for professionals and research reports.
3. **Reputation/goodwill:** the IFRC has considerable goodwill, which makes them a valuable and reliable partner in providing health information.

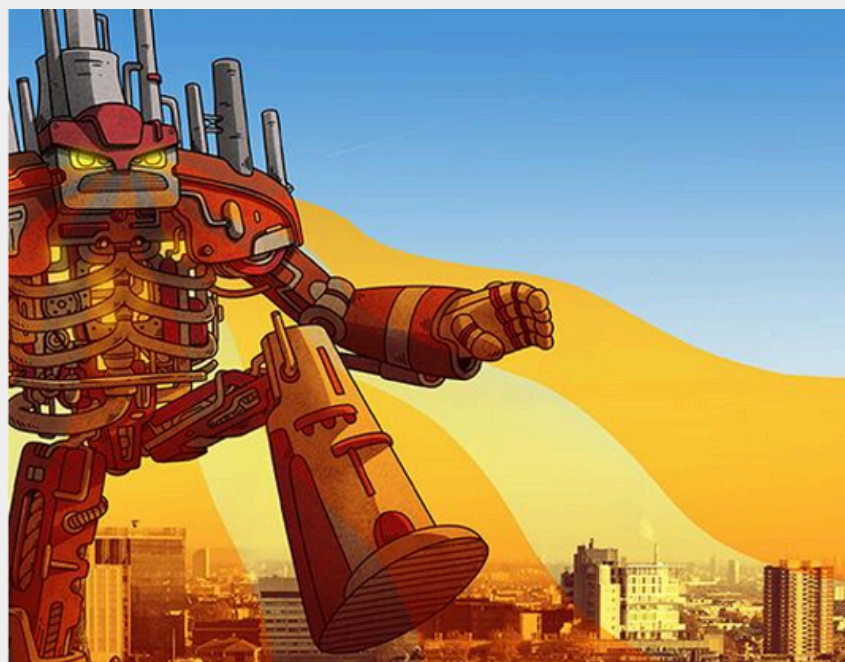
**Conclusion:**

Extreme heat is more deadly than natural disasters such as hurricanes and earthquakes but are unjustly regarded as minor, simple and temporary, earning it the name “the silent killer”. To increase awareness of the risks of heat, provide simple directions to reduce health impacts, and increase comfort, a Heat Action Day can be organised. Several challenges exist including timing of the campaign, weather variability, measuring impacts and acquiring resources.

In order to overcome these challenges, it is recommended to collaborate with existing NGOs because of their goodwill and resources (e.g. existing local networks).

*A successful Heat Action Day will increase awareness and will allow communities and individuals to understand and better protect themselves and the vulnerable from the health impacts of extreme heat.*

Read more about the IFRCs [Heat Action Day](#)



# 5. Increasing awareness

## **Problem:**

Heat waves often go underestimated in their health impact compared to more visibly destructive natural disasters like hurricanes, earthquakes, or floods. Despite their less dramatic appearance, heat waves pose severe health risks and are more deadly than the previously mentioned natural disasters.

Factors contributing to the underestimation of heat waves' health effects include invisibility of the threat, gradual onset, misconception of heat as a minor and temporary issue, differentiation in impact, perception and coping e.g. between men and women, and own responsibility (behaviour). Furthermore, the changing climate puts regions at risk of extreme heat that were previously not affected, leaving citizens, health care workers, and policymakers unprepared to deal with the risks of extreme heat.

## **Solution:**

Awareness and education campaigns to educate the public about the dangers of heat waves and the importance of heat wave preparedness. By recognizing the significant health risks posed by heat waves and taking proactive measures to address them, individuals and communities can better protect themselves from this often-underestimated natural disaster. Additionally, professionals in the healthcare, educational, housing, public transport, and social services sectors should be educated and trained on the dangers of heat, the risk factors that lead to vulnerability to heat, the signs and symptoms of heat-related illnesses, and the appropriate course of action to take to reduce the health burden of extremely hot weather.

## **Responsible for (initiating) this policy:**

An integral approach would be best. A national campaign to reach the highest number of people, supplemented by local campaigns targeted at vulnerable populations. Local campaigns could be executed in collaboration with public health organisations, the care sector, and the municipality. Other social sectors (homeless, well-being, housing, nurseries) should get involved as well. To ensure integral and collaborative awareness campaigns, heat-impacted communities and decision-makers (e.g. older people and management of healthcare institutions) should be engaged in developing and implementing communication strategies. Moreover, campaigns should use feasible tactics and prioritise trusted messenger networks (e.g. home care nurses, primary care physicians). In addition, responsibilities should be distributed amongst national government, which should focus on general communication campaigns targeting the general public, and the local government, which should focus on tailored communication campaigns to high-risk groups.

A **European framework** should function as a source of inspiration, including challenges and lessons learned from local and national campaigns.

**Challenges:**

There are several challenges related to heat being perceived as a minor issue and to the diversity of the risk groups. First, campaigns could be interpreted as patronising, and it will be hard to create a sense of urgency. Conversely, there may be a limited understanding of vulnerability, where people at risk, e.g. the socially isolated, vulnerable elderly, and mentally ill, underestimate their health risks. Inaccurate risk perception causes underestimation of susceptibility to heat-related illnesses and has been shown to be a barrier to take adaptative measures despite high levels of awareness of heat risks.

Therefore, the main challenge will be to target and tailor the awareness campaigns towards the various risk groups. Additionally, the diversity of the target groups demands diverse awareness campaigns, using various mediums. Finally, the misidentification of heat as a minor issue presents a barrier to finding funding and resources, especially in countries and regions that have little experience with extreme heat and heat waves.

**Advantages:**

A successful awareness and education campaign will allow communities and individuals to understand and better protect themselves and the vulnerable from the health impacts of extreme heat. This will lead to long-term increased self-sufficiency on the individual and community level.

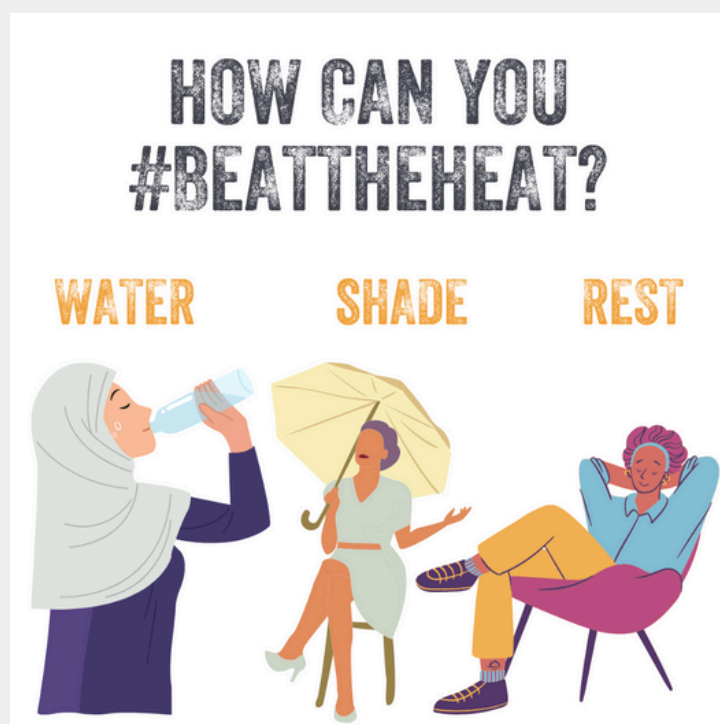


## Conclusion:

A successful awareness and education campaign can reduce the health impacts of extreme heat, by increasing self-sufficiency on the individual and community level. However, there are two potential threats caused by the misidentification of heat as a minor issue: awareness campaigns may be regarded as patronising and inaccurate risk perception may block adaptive measures. Overcoming these threats requires tailored, targeted (and best-tested) communication strategies.

**Some examples of awareness and education campaigns** include:

1. **Seville**, a city in the south of Spain, has started naming its heatwaves, similar to how hurricanes are named.
2. The **city of Rotterdam**, the Netherlands, has asked Theaterwerkplaats voor Ouwe Rotten (Theatre Workshop for old-timers) to develop an interactive play. In the short and refreshing performance "Hot huh!" five elderly people discuss what they do when it gets very hot. The performance is a good starting point to engage the elderly in conversation about simple and effective things they themselves can do against the risks of extreme heat.
3. **The International Federation of Red Cross and Red Crescent Societies (IFRC)** organizes "Heat Action Day" on June 2nd to increase awareness, using the hashtag #BeatTheHeat.
4. **In Oregon** "Heat Week 2022" was organized in collaboration with NGOs, corporations and various health departments to commemorate the extreme heat event that took place the year before (2021). The Heat Week was kicked off with a memorial to those that lost their lives during the heat wave.



# 6. Occupational Health caregivers: a potential blind spot

## **Problem:**

Heat waves pose significant health risks, particularly to vulnerable populations such as the elderly, children, and those with pre-existing health conditions. Social workers and health professionals play a crucial role in mitigating these risks by providing care, support, and essential services to those affected. However, in the process of attending to the needs of their clients, these professionals often overlook their own vulnerability to heat-related illnesses. This oversight can lead to decreased effectiveness in their roles and increased personal health risks.

Currently, most member states have not incorporated heat at work into their occupational safety and health (OSH) legislation.

## **Solution:**

Official occupation health and safety policies during periods of extreme heat should be developed and implemented at the national level. Branches can tailor these guidelines to fit their specific needs. Some employees will be at higher risk than others, depending on personal or work-related factors. For example, older employees or those with chronic illnesses will be at higher risk of developing heat-related illnesses. Similarly, outdoor workers are at higher risk and require different guidelines from indoor workers.

Furthermore, the work environment should be improved to reduce potential health impacts (e.g. creating enough access to shade). Increased awareness has a role depending on the industry. One could expect social and health workers to be aware of the dangers of heat, while in other industries increasing awareness might prove to be a successful strategy. However, the social and health workers can be stimulated and facilitated to better look after themselves as well.

Finally, work activities should be altered to reduce the health impacts of heat, for example by adding additional drink breaks. Trade unions can help employees so they can stand together.

**Responsible for (initiating) this policy:**

Prime responsibility for initiating and enforcing this policy lies with the national occupational health and safety department. Healthcare and social service organisations should be responsible for developing guidelines tailored to the needs of employees in their industry. Depending on the member state, the board of directors of the individual healthcare institutions and social service organisations are responsible for quality, safety, and continuity of care within their organisation.

The EU has a legislative role through the “European Framework Directive on Safety and Health at Work” which guarantees a standard of minimum safety and health requirements throughout member states. Additionally, this OSH framework directive provides tools and resources for member states and employers.

**Challenges:**

Various challenges exist, mostly depending on the current state of the healthcare and social services sector. For example, many countries are facing rising healthcare costs, making acquiring funding a significant challenge. Similarly, staff shortages will be a barrier to implementing effective guidelines. Furthermore, cultural and behavioural norms present a challenge that will be difficult to overcome. Social workers and healthcare workers are generally very dedicated to patient care, being used to put the needs of the patient first and temporarily disregarding one's own needs. This will be a barrier to ensuring compliance.

When these challenges are overcome, various advantages exist. Most directly implementing heatwave guidelines will enhance worker health and safety, by preventing heat-related illness. Additionally, improved worker performance and (long-term) productivity will improve quality of care and reduce strain on resources. Improved quality of care will lead to better client outcomes, thereby improving public health by reducing the health burden of employees and clients.

Furthermore, when employees feel supported and cared for, this will increase work morale and might even enhance employee retention.

## Conclusion:

In summary, heatwaves present a significant health risk, particularly for vulnerable populations, necessitating the crucial intervention of social workers and health professionals. However, these professionals often neglect their own vulnerability to heat-related illnesses, diminishing their effectiveness and increasing their personal health risks. Developing and implementing heat-specific occupational health and safety legislation tailored to specific work environments can mitigate these risks. The primary responsibility for these initiatives lies with national occupational health and safety departments, supported by healthcare and social service organisations, and guided by EU frameworks.

Addressing the challenges of limited funding, staff shortages, and cultural norms is essential for successful implementation. Overcoming these barriers can lead to significant advantages, including enhanced worker health and safety, improved performance and productivity, better client outcomes, and increased morale and employee retention. Ultimately, effective heatwave guidelines will improve public health, economic loss and the quality of care provided by social workers and health professionals.

## Examples of heat-specific OSH interventions include:

1. **Technical solutions** such as providing vehicles with air-conditioned closed cabins; providing air cooling or air conditioning and adequate ventilation; and using tools intended to minimise manual strain.
2. **Organisational measures** such as: relaxing formal dress codes, adapting working hours to avoid times of the day or year with high temperatures and UV exposure; and ensuring workers are not working alone.
3. **Protective clothing and equipment:** provide personal protective equipment and apply active or passive cooling methods during rest breaks, e.g. ice packs or moving to a cool environment.

Read more about the guidance for heat at work developed by the European Agency for Safety and Health at Work [here](#).



# 7 Mandatory blinds

## **Problem:**

Homes for older adults and other buildings with vulnerable people inside are at risk of overheating during heat waves. This can cause discomfort, dehydration, and heat-related illnesses, which can be life-threatening for elderly people and those with pre-existing health conditions. Some of these buildings have blinds installed, but a lot of buildings susceptible to overheating remain.

## **Solution:**

The most effective way to prevent sunlight from heating up a building is to prevent the sunlight from reaching the inside of the building, and preferably the outside as well. Shades/blinds are a highly effective way of accomplishing this goal. A resolution to install shades or blinds on buildings that do not currently have them where at-risk people live is a relatively simple and cost-effective measure.

## **Responsible for (initiating) this policy:**

The national government is responsible for passing the required legislation. The regulatory bodies that oversee the construction of new buildings and inspect existing buildings would be responsible for enforcing it. In the Netherlands, the Building Code was recently (2022) updated with additional demands to reduce overheating of buildings. This is however only for newly built homes and other buildings.

## **Challenges:**

Installing blinds on many buildings is very costly and will likely need to be subsidised by the government. However, the cost of installing blinds is likely to be much lower than the cost of treating heat-related illnesses or deaths. For larger buildings with many people, the blinds are often individually operated which makes them prone to user error. People can leave the shades down during a storm which causes damage to the system. The effectiveness of the shades is reduced when some people do not or cannot put the blinds down when they should, causing their apartment to heat up. This heat then warms the other apartments within the building. The best way is to coordinate the shades so that they all go up or down in unison automatically. This removes user preference however which is user un-friendly but also reduces the amount of damage caused by improper use.

**Advantages:**

Preventing overheating of buildings is key to reducing all sorts of heat related health problems. The costs of installing blinds likely far outweigh the costs of hospital admissions and other care related costs. Furthermore, shades are far more effective at preventing heat-up of a building than climate control measures inside the building (such as air conditioning) is at removing the heat. The installed shades can therefore reduce the use of air conditioning which reduces energy usage. Lastly, shades improve the living conditions inside the building which is more comfortable for people to live in and to work (care givers!) in.

**Conclusion:**

Making blinds mandatory for homes for older adults, and other buildings with vulnerable people inside is a simple and effective solution to prevent overheating during heat waves. This recommendation can help to save lives, improve comfort, and reduce energy consumption. While there may be some challenges to implementing this recommendation, the benefits far outweigh the costs.



# 8. A national crisis response policy to extreme heat

## **Problem:**

Heat waves are becoming more frequent and intense due to climate change, and they can have serious health impacts, particularly on vulnerable populations such as the elderly, children, and those with chronic health conditions. Most countries do not have a heat wave emergency plan in place, which can lead to delayed response, lack of collaboration, heat-related illnesses, hospitalizations, and even deaths.

## **Solution:**

After the extreme heat wave of 2003, where approximately 15,000 people died, France implemented a crisis response policy. A heat coding system is used, including 'code yellow', 'code orange' and 'code red'. When the French national meteorological services proclaim, 'code red', an emergency plan is initiated coordinated by the ministry of health in cooperation with local governments, NGOs, and health care, transportation, housing, events, sports, and social services sectors. Since 2023, this crisis response policy is part of a larger national adaptation strategy to heat.

## **Responsible for (initiating) this policy:**

This policy should be developed and implemented by the national government. The regional and local governments should develop, implement, and maintain crisis response policies based on their regions' or municipalities' specific situation.

Regional governments are responsible for initiating 'le plan bleu', the crisis response plan developed for medical-social institutes during extreme heat waves, while the care sector (including curative care, long-term care, elderly care and childcare sectors) is responsible for executing 'le plan bleu'.

A European framework on a national crisis response policy can aid national governments without experience with extreme heat to develop a national crisis response strategy. Furthermore, a European framework should encourage sharing knowledge, experiences, and resources, reducing redundancy in developing adequate crisis response policies.

## **Challenges:**

The main challenge will be to create a sense of urgency. Heat is generally underestimated, even in France, the development of a heat wave emergency plan was only initiated after the huge loss of life in 2003. Most countries have not experienced extreme heat waves but will be at risk for them in the future. This is a barrier to acquiring the necessary resources, including funding and staff time, for a sound emergency plan.

Furthermore, a successful national crisis response policy requires collaboration and preparedness amongst various sectors. Intensive stakeholder management will be vital to create a sense of urgency and responsibility amongst all sectors, especially sectors with conflicting interests, e.g., the events or sports sectors.

## Advantages:

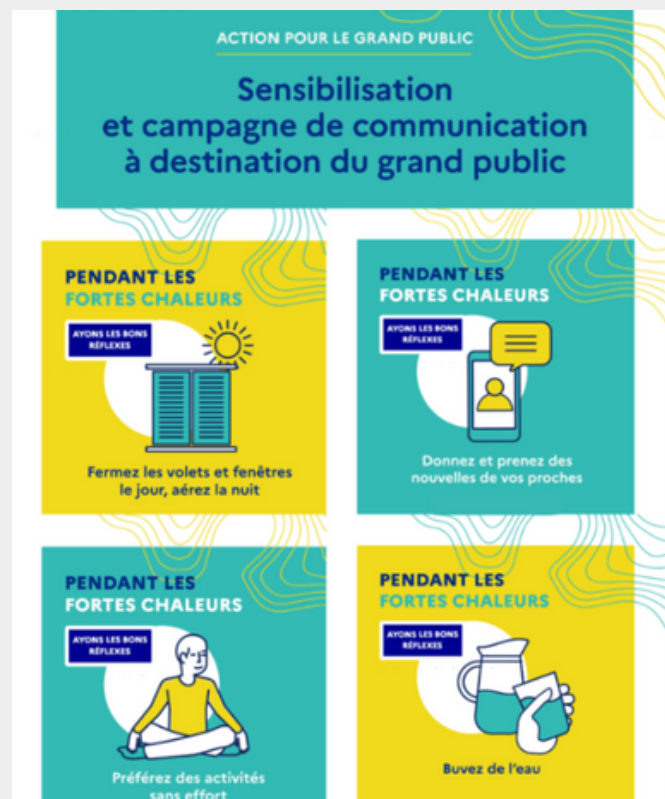
A national crisis response policy for extreme heat will lead to a unified approach amongst different regions and efficient resource allocation. During extreme heat waves, initiatives such as categorizing heat waves, which are being trialed by the national meteorological institute, can speed up emergency responses by signaling to government, employers, and individuals that heat resilience measures should be implemented. This will improve health outcomes, preventing heat-related illnesses and overloading acute care during a heat wave, protecting vulnerable populations and increasing medical preparedness. Other advantages, such as economic, include reduced health care costs.

## Conclusion:

In conclusion, establishing a European framework for a national crisis response policy to extreme heat can enhance regional and local resilience and reduce the health and economic burden of extreme heat. By fostering coordination and knowledge and resource sharing among member states, such a framework can ensure a consistent and effective response to heat-related emergencies. Ultimately, a unified European approach to extreme heat not only mitigates immediate risks but also strengthens long-term resilience against the growing challenges posed by the changing European climate.

## Some examples include:

- France has developed a national crisis response policy “Vagues de chaleur: un plan national pour anticiper” that has four main goals: reduce impact on daily life, continuity of essential public services, continuity of economic activity, protect the natural environment. Read more [here](#) (in French).
- Energy Cities is a learning community of local governments in 30 European countries that aim to share knowledge and resources on the energy transition, improving resilience and efficient use of resources. A similar network could be developed for national governments.





# 9. Open Protection Centres for the Elderly (K.A.P.I.)

## **Problem:**

Heat waves are becoming more frequent and intense due to climate change, and they can have serious health consequences, especially for vulnerable populations such as the elderly, children and people with chronic health problems. Most countries do not have a heat wave emergency plan, which can lead to delayed response, lack of cooperation, heat-related illnesses, hospitalisations and even deaths.

## **Solution:**

The purpose of KAPIs (Open Centres for the Protection of the Elderly) is the prevention of psychological and social problems of the elderly, the cooperation of society as a whole and a special body for the problems of the elderly and health prevention. In Greece, KAPIs were established in 1984 on the legislative initiative of the Ministry of Health and Welfare. The KAPIs gradually developed through local government organisations and expanded throughout the country, so that now more than 900 centres are active.

## **Responsible for (initiating) this policy:**

In Greece, all municipalities have their own KAPI.

The Open Protection Centres for the Elderly of the Legal Entities of the Municipalities of Greece work with modern principles so that the elderly remain in the familiar environment of community, family, neighbourhood, and friends as equal and active members of society, avoiding closed institutional care and social exclusion. The preservation of the traditions and morals of the country and the dynamic presence of the elderly in local life, are characteristic innovative components of KAPIs.

The strong impact of KAPIs on the elderly is formed through the daily care services to the elderly which are:

- Medical primary care
- Nursing care
- Social work in themselves and in their immediate environment
- Physical therapy services
- Emotional and psychological support
- Referral to services
- Organised entertainment, with excursions, meetings, watching theatre performances, visits and guided tours to museums and cultural sites
- Spa programmes and summer camps
- Educational programmes on topics related to the elderly
- Health education programmes
- Operation of self-activity groups, depending on the interests of the elderly, such as choir, gymnastics, dance, theatre, crafts, etc.
- Mortuary operation

**Challenges:**

Adequate funding for collaboration between state and local organisations.

**Benefits:**

KAPIs are broadly focused on:

- 1.Extra-Institutional Protection of the elderly, through the provision of medical, mental, and social protection.
- 2.Defence of their social rights.
- 3.Organisation of the elderly for information, raising awareness, and mobilising it for issues concerning the municipality, with the aim of the active participation of the elderly.
- 4.Addressing and predicting biological, psychological and social problems of the elderly, so they remain equal and active members of society.
- 5.Creating social life through the implementation of cultural, educational and special programs for the elderly.
- 6.Raising awareness of the wider society and the development of cooperation with social and other agencies for the problems and needs of the elderly, as well as
- 7.Investigation of issues related to the problems faced by the "third" age.

**Conclusion:**

Today, KAPIs have dynamically entered the life of the local society of the country's municipalities and have established their presence in the social and cultural life not only of the elderly but also of the broader society. The cooperation between government agencies and local organizations makes it easy, in a national-level prevention policy for heat waves and in emergency situations, such as very high temperatures, for the elderly to stay in an air-conditioned protected area.

**Some examples include:**

- [Regulation of the Operation of the Open Protection Centers for the Elderly of the Municipality of Kifissia \(in Greek\)](#)
- [Event of the KAPI of the Municipality of Thessaloniki for Mother's Day \(in Greek\)](#)



# 10. Emergency heat shelter

## **Problem:**

The last decades have shown a trend towards warmer weather in Europe. This means heat waves will occur more frequently and for longer periods. This causes problems for people susceptible to heat-related-illness (old, very young, pregnant) and those unable to find some form of shelter from the heat. Lonely older adults and the immobile are especially vulnerable. In Portland, Oregon in the USA during the summer of 2021, a heat wave lasted for approximately two weeks. An estimated 1408 people died as a result of health problems caused by prolonged heat exposure. It is plausible that such heat waves might happen in the EU. Preparedness is warranted.

## **Solution:**

Local authorities are recommended to implement a plan to provide emergency heat shelter. During a prolonged heat wave, buildings such as libraries, churches, supermarkets, etc. can be used by people to shelter from the heat. These buildings are normally used by their respective business or occupant but can temporarily open a limited area of the building to the public to provide shelter. Other options could include bunkers. In the Netherlands, several bunkers from the second world war still exist and have the unique property of a very stable indoor climate due to their construction with a large stony mass that buffers any outside temperature changes.

## **Responsible for (initiating) this policy:**

This plan should be developed, maintained, and implemented by the local or regional government. They have the best insight into the local resources that are available and should be the local spokesperson.

## **Challenges:**

There needs to be adequate capacity for every heat refugee and the locations need to be within a reasonable distance. As for the building, the temperature difference inside the building must not differ too much (+/- 5 degrees Celsius) from the outside to prevent too many and too sudden temperature changes. Transportation to the heat shelter must not be prohibitive, i.e. it needs to be available, close-by, affordable and the temperature difference inside the vehicle must not differ too much from the outside temperature. In case of too many people seeking shelter, choices must be made regarding whom will be allowed in. As houses can be overheated for duration, people at risk may need to shelter overnight. To keep people busy, some form of activity must be provided. In addition, the regular business activities of the building will be disturbed, and this may require some form of financial compensation to persuade businesses to provide their building for shelter. Lastly, a team monitoring and coordinating the crisis would also be needed and kept up to date on training.

**Advantages:**

The health benefits to those susceptible to heat are obvious as they will not be exposed. This can prevent a significant amount of sickness and mortality. When compared to the costs of hospital admissions, the financial costs associated with this plan are relatively small and suggest a positive balance to implement these measures.

**Conclusion:**

To provide shelter from heat in the future, where longer and more frequent heat waves are a real possibility, it would be prudent to develop a plan within local governments for emergency heat shelter. In practical terms this would mean to agree upon with several businesses and/or institutions to have them provide their building for shelter during a set of predetermined conditions. A crisis team within that local government to coordinate these actions and monitor the proceedings would be a necessary part of this.

An example of a successful emergency heat shelter strategy is the “[Climate Shelters Network](#)” employed by the city government of Barcelona. The city of Barcelona has created a network of more than 350 climate shelters divided over the city. Most are open year-round and used for cooling in the summer and heating in the winter. Instead of converting existing locations or even building new emergency shelters, existing locations are used as is, for example public parks, libraries, and swimming pools. Therefore, the climate shelters are well-known to the citizens of Barcelona and close in proximity. Furthermore, the climate shelters provide more than just relief from the heat, namely social and recreational activities such as reading. This makes the climate shelters pleasant to visit, instead of a necessary place of refuge. The city of Valencia as well is implementing its [roadmap to the establishment of a network of climate shelters](#) in order to protect its citizens from the extreme heat.



# 11. Heat Emergency for the elderly

## **Problem:**

Heat waves are a complex challenge that can hardly be addressed by single institutions. Nevertheless, in many European contexts, public organisations dealing with supporting citizens, especially older people, lack a holistic and integrated approach.

## **Solution:**

In order to provide effective services to the elderly during heat waves, an interesting approach is one based on structured collaboration between the municipality and key stakeholders at the local level. The development of an approach enhancing collaboration could entail the inclusion in a local ecosystem dedicated to supporting the older people during heat waves of various organisations such as - voluntary associations, nursing homes, public organisations dealing with security (e.g. local police). The collaboration between these actors, led by the municipality, could be translated into a memorandum of understanding regulating in detail the contribution each of the mentioned organisations can offer. Concretely, this approach could lead to the following services for senior citizens:

- Air-conditioned physical locations available to citizens during the warmer months;
- Transport service for socially and geographically isolated citizens;
- Meal provision service adapted to the climatic condition;
- Information campaign to guide senior citizens in coping with heat waves.

## **Responsible for (initiating) this policy:**

The organisation that should initiate this policy is the local municipality. It usually benefits from the trust of the citizens and is in the institutional position to coordinate the various stakeholders.

## **Challenges:**

To be effective, the presence of third sector organisations that can support citizens in cooperation with public authorities is necessary. In peripheral contexts, implementation may be difficult. Moreover, inclusion of 'hard to reach' citizens, i.e. isolated and without a support network, is difficult even with the proposed approach. There is a risk that these citizens will not be able to access the services that the local integrated policy could offer.

Finally, in order to reach citizens over 65 years old in terms of communication, it is suggested to use appropriate information channels such as press and local television. Communication through official municipal channels is not sufficient.

## Advantages:

Senior citizens could have an increased offer of services dedicated to them, economically sustainable thanks to the role played by third sector organisations. In addition, this approach likely reduces adverse effects related to heat waves through the provision of air-conditioned places, transport, and meals. Lastly, social isolation of older citizens is likely to be decreased.

## Conclusion:

The proposed approach has a high degree of replicability in different European contexts, although the presence of third sector organisations willing to collaborate is an essential element.

A concrete example of this approach is the 'Heat emergency' project promoted by the Municipality of Treviso.



**CITTÀ DI TREVISO**

**ISRAA**  
Istituto per Servizi di Ricovero e Assistenza agli Anziani

# EMERGENZA CALDO 2019

Dal 17 Giugno al 28 Settembre sono disponibili i Centri di Servizi per Anziani dell'ISRAA dotati di aria condizionata, per l'ospitalità diurna di persone **con più di 65 anni**.

**CASA ALBERGO "SALCE"**  
Viale III Armata, 4 - Treviso

**RESIDENZA "ROSA ZALIVANI"**  
Viale IV Novembre, 27 - Treviso

**RESIDENZA PER ANZIANI "CITTÀ DI TREVISO"**  
Via N. Di Fulvio, 2 - Treviso

**RESIDENZA "MENEGAZZI"**  
Via Noalese, 40 - Treviso

La disponibilità complessiva è per 22 accessi diurni **dalle 09.00 alle 18.00**.

La richiesta di accesso diurno va fatta dalle 09.00 alle 18.00 telefonando al **numero 0422 - 414750**, indicando la sede residenziale prescelta tra le 4 indicate.

**PASTI**  
C'è la possibilità di pranzare presso la Residenza. Il pasto deve essere prenotato con 2 giorni di anticipo direttamente presso le portinerie delle residenze. **Il costo del pasto giornaliero è di € 7,00.**

**TRASPORTO**  
per l'eventuale servizio di trasporto GRATUITO, telefonare con preavviso di 4 giorni al **numero verde gratuito 800-685090** del "Progetto Stacco" di Volontarinsieme CSV Treviso (il servizio potrà essere garantito in base alla disponibilità di volontari).

**NOTA BENE**  
Le persone devono essere lucide, deambulanti e autonome, anche nell'eventuale assunzione di farmaci. Qualora la disponibilità delle singole sedi venga superata, le persone saranno inviate presso le altre sedi con posti disponibili.

Giuseppe Starnes - Grafica in Rete

# 12. Providing (social) monitoring of (vulnerable) older adults during heatwaves

## **Problem:**

An aging population is a growing reality in Europe, with individuals aged 65 and over projected to represent 30% of the population in Western Europe by 2050. By December 2024, this demographic already constitutes 20% of the population. Portugal, alongside Italy—home countries of two Hope Project partners—have one of the highest aging indices in the European Union, with nearly two elderly individuals for every young person.

In Portugal, 40% of individuals aged 80 and older lived alone in 2021, with 55% of all solitary households comprising elderly individuals. These figures place Portugal as the fourth highest in the European Union for elderly living alone. Such conditions amplify vulnerability, particularly during crises like heatwaves, making innovative, technology-driven solutions imperative.

With over 2.5 million people aged 65 or older and an annual growth rate of 2% in this demographic since 2019, effective strategies are essential to their well-being.

This demographic shift, coupled with rising average temperatures and the increasing recurrence of heatwaves, poses significant challenges. As example, the 2003 heatwave caused 15,000 additional deaths in France, highlighting the vulnerability of the elderly to extreme climatic conditions. Heatwaves, once episodic, have become recurrent due to global warming, justifying the necessity for caregivers and elderly to acquire the knowledge and resources to adapt effectively.

Integrating technology into elderly care focuses on essential solutions, such as IoT and remote monitoring devices, to better meet the increasing needs of the elderly when isolation becomes a greater concern.

## **Solution:**

### **1. Dissemination of Information in Key Community Spaces**

- Distribute educational materials (e.g., posters, flyers, leaflets) in high-traffic areas frequented by seniors (cafes, grocery stores, and tobacconists; pharmacies and health centres; churches and cult places; public transportation) with heatwave-specific tips and preventive measures, ensuring messages are clear and culturally appropriate.

### **2. Integration of Digital Tools**

Use SMS alerts to notify seniors about upcoming heatwaves and provide concise advice. Pair this with wearable health monitoring devices to track vital metrics such as hydration and heart rate, sending automated alerts to caregivers if irregularities are detected. Foster peer-to-peer community networks for sharing information and best practices, while engaging younger individuals to support seniors, strengthening intergenerational solidarity and social cohesion.

### 3. Partnerships with Local Businesses

- Develop a collaborative framework where local businesses play a pivotal role in both community health promotion and economic dynamization. Create engaging short videos that combine health guidance—such as tips for managing heatwaves—with local business promotions, fostering community awareness and providing businesses with advertising opportunities through social responsibility. Distribute these videos through business networks, increasing reach and building trust. This dual approach strengthens intergenerational solidarity, enriches local commerce, and creates a sustainable partnership with municipalities and local institutions.

### 4. Targeted Outreach in Residential Areas

- Place information at building entrances, in mailboxes, and near waste collection areas to reach isolated individuals, ensuring the accessibility of materials for those with limited mobility or literacy challenges.

### 5. Leveraging Existing Community Infrastructure

- Expand the contingency efforts of organisations such as the Municipal Council and local NGOs, integrating new channels and stakeholders.

### 6. Data-Driven Policy Development

- Use anonymised data from health monitoring devices to inform public health strategies. This data can support predictive modelling, optimise resource allocation, and improve response plans for future health crises.

### Responsible for (initiating) this policy:

The municipalities in cooperation with local organisations such as NGO's are positioned to lead this initiative, building on their established network, and on the ongoing preventive educational actions and initiatives to foster local development. These entities can further integrate local stakeholders—community organisations, businesses, and social and health professionals—into the framework. Coordination with civil protection and public health agencies will ensure alignment and amplify the initiative's impact.

### Challenges:

- Health Literacy Gaps: Many older adults may struggle with understanding complex health-related messages, necessitating clear, simple, and culturally sensitive communication.
- Digital Divide: Limited digital literacy and access among seniors could hinder engagement with SMS or video-based initiatives.
- Weakened Social Networks: Urbanisation and societal changes have diminished traditional neighbourly interactions, complicating peer-support mechanisms.
- Multigenerational Engagement: Encouraging active participation from younger demographics in supporting the elderly is critical but requires tailored strategies.
- Message Adaptation: Communicating effectively with diverse elderly populations across urban and rural contexts demands adaptable approaches.



## Advantages:

- **Community Engagement:** The initiative leverages robust community networks, particularly strong in Southern European cultures, to enhance social support systems.
- **Cost-Efficiency:** Utilising existing spaces and social infrastructures minimises costs, negating the need for significant new investments.
- **Scalability and Adaptability:** The framework can be adapted to address other public health emergencies, such as extreme cold or severe storms.
- **Economic Synergies:** Partnering with local businesses not only supports the community but also fosters mutually beneficial economic relationships. Video campaigns provide advertising opportunities for local businesses while contributing to health initiatives, creating a win-win scenario.
- **Social Solidarity:** Encouraging intergenerational cooperation reduces social isolation among the elderly while promoting a culture of shared responsibility.
- **Community Engagement:** The initiative leverages robust community networks, particularly prevalent in Southern European cultures, to enhance social support systems. By fostering engagement, it empowers local populations to collaborate effectively in supporting the elderly.
- **Integration of Technology for Health Monitoring:** The incorporation of wearable devices facilitates real-time tracking of vital health metrics, such as hydration and heart rate. This technological integration enables timely interventions through automated caregiver alerts, enhancing the safety and well-being of the elderly.
- **Institutional Collaboration and Governance:** Engagement with municipalities and institutions, such as social and healthcare providers, establishes a robust governance framework that ensures seamless coordination. These partnerships serve as pivotal hubs for resource allocation, monitoring, and community mobilisation, reinforcing the initiative's sustainability and impact.

## Conclusion:

Addressing the intersection of aging populations and rising temperatures demands scalable, inclusive strategies that integrate community networks, integrated digital tools (remote health monitoring, IoT, SMS communication, digital signage) and business partnerships. The proposed measures enhance resilience not only for the elderly but also for broader communities, fostering solidarity and preparedness. By promoting awareness, enabling local collaborations, and empowering peer-based support systems, this initiative presents a replicable model for tackling diverse climate and health challenges, creating robust framework for other large scale emergency situations for elders.



# 13. Providing access to green urban social spaces

## **Problem:**

European cities are experiencing rising temperatures caused by global climate change and local circumstances. The Urban Heat Island (UHI) effect refers to the phenomenon where urban areas become significantly warmer than surrounding rural areas. The UHI effect is primarily caused by human activities and urban infrastructure, such as:

1. Use of heat-absorbing materials: Buildings, roads, and other infrastructure often use materials like asphalt and concrete that absorb and retain heat. Heat-absorbing materials contribute to increased temperatures during the daytime, but the major problem is that they will also emit their retained heat during the cooler nights, increasing night-time temperatures.
2. Lack of Vegetation: Urban areas typically have less vegetation and green spaces, reducing natural cooling through shade and evapotranspiration.
3. Waste Heat: Air conditioning, industrial processes, and vehicular emissions contribute additional heat.
4. Building Density: High density of buildings traps heat and reduces air circulation.

Therefore, the UHI effect exacerbates the heat-related risks for vulnerable populations and reduces living comfort for all urban residents. Additionally, the poorest neighbourhoods are often also the warmest neighbourhoods, meaning the economically disadvantaged are at higher risk of developing heat-related illnesses.

The UHI effect will potentially have the largest impact in cities that have historically had colder climates and have been built to withstand cold and preserve heat. During extreme heat events, adaptive responses of the body (e.g. sweating) may be insufficient, especially if adaptive responses are reduced, as they are in the elderly. Therefore, access to cooling environments is essential to reduce heat-related illness.

## **Solution:**

All citizens, especially vulnerable individuals, should have access to green urban social spaces close to their home. Green urban social spaces have multiple benefits:

1. Temperatures are lower than in the surrounding environment due to shade provided by green canopies, evapotranspiration by various greenery and increased air circulation.
2. Additionally, water-based cooling interventions may provide extra relief. For example, access to fountains, little water streams. NB Avoid misting stations as they have the risk of spreading Legionella, which is dangerous for this vulnerable group.
3. The presence of urban green spaces can encourage positive social interactions and foster social cohesion. This is especially beneficial when considering that being socially isolated is a risk factor for heat-related illnesses.

To make these spaces accessible to the elderly, they should be within close proximity, for example within 200-300 meters of their home. Moreover, the route to it should provide some comfort (e.g. shade) or transport should be available.

Advisors, designers and policy makers on city management and spatial planning should include decreasing the UHI effect and access to green urban social spaces into policy goals.

### **Responsible for (initiating) this policy:**

Responsibility for initiating this policy lies with city management at the local level. The EU can support the municipalities by encouraging the transfer of knowledge, resources, and best practices. Collaboration should be sought with different departments, e.g. spatial planning, recreation, and prevention to find the win-wins and share knowledge and resources.

Additionally, collaborations with the local elderly themselves, grass-roots movements, universities, and vocational educational institutions should be sought, as they have a lot of knowledge on this subject.

### **Challenges:**

The same challenges regarding the misinterpretation of health as a minor issue and the difficulty in quantifying the health effects of policy interventions exist here. Additional challenges include:

1. Unintended side effects: For example, increased access to nature in urban environments may increase the health burden of vector-borne diseases. Considerable ecological knowledge and planning is necessary to reduce these unintended side effects. For instance, Comune di Treviso develops a Plan against mosquitoes annually, which is implemented during spring to prevent the proliferation of mosquitoes in strategic zones of the city. This is done in collaboration with citizens, who can apply to the municipality to receive mosquito repellent tablets to be placed in their private sewer holes, for example.
2. Providing access to green urban social spaces. As discussed previously, the path citizens take from their home to green urban social spaces should be feasible for the elderly, including those with mobility issues, cognitive problems, and cardiovascular diseases. This requires complex logistical planning.
3. Maintenance and preservation of green urban social spaces is required to ensure safe and comfortable use for all residents and requires funding and resources. Collaboration with volunteers (e.g. residents) can help overcome this challenge. For example, during summer of 2024, 33 municipalities within the Province of Treviso, including the City of Treviso itself, joined the initiative “Ci sto? Affare fatica”, which aimed to improve and maintain public green spaces. To do so, 980 people between 14 and 19 years old contributed to the cleaning and maintenance of public greenery, by fixing 226 benches, cleaning 68 parks and gardens, and additionally cleaning walls, terraces, fences, etcetera. This has improved the accessibility of public spaces for all ages even if at a small scale, while also fostering community-building and intergenerational exchanges.
4. Spaces used as intended. To make sure that green urban social spaces provide a comfortable cooling environment for various social groups monitoring, evaluation, and adaptation (and enforcement) may be necessary.

## **Advantages:**

Creating urban green social spaces has various advantages:

1. Contributes to reducing the UHI effect, potentially reducing the heat-related health burden.
2. Provides access to cool environments to vulnerable populations, potentially reducing the heat-related health burden.
3. Many additional benefits besides the cooling effect: potentially increased social cohesion, mental health benefits, physical activity, increased climate resilience (i.e. by increasing biodiversity and improving resistance to flooding).

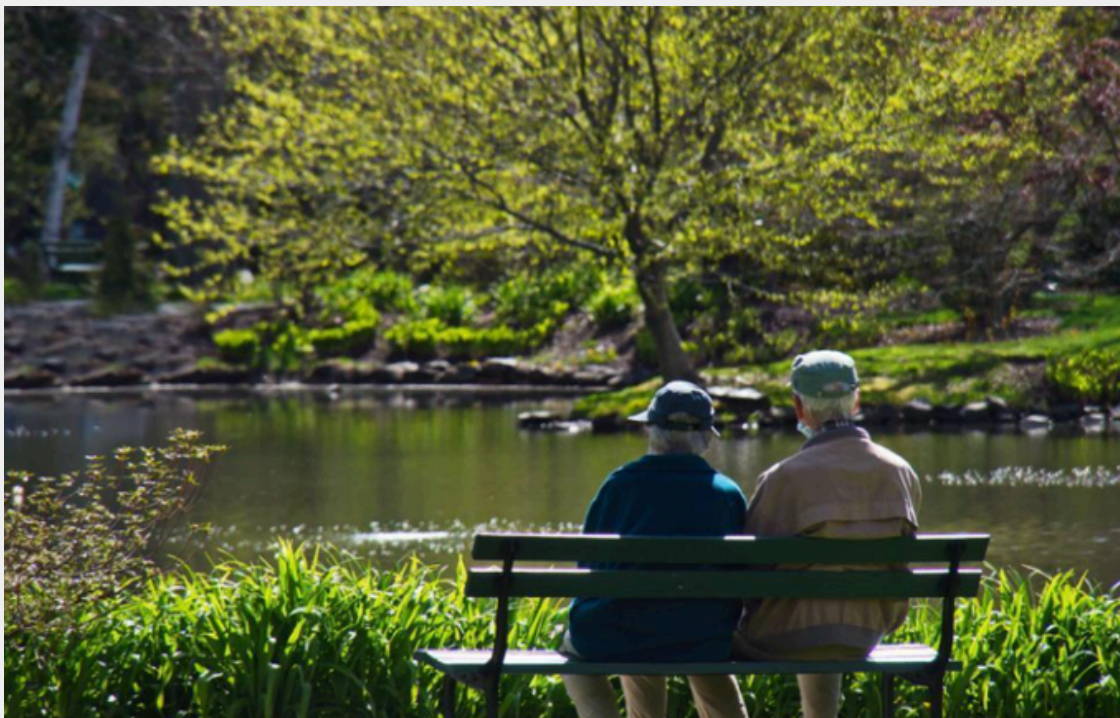
## **Conclusion:**

The creation of green urban social spaces is a multifaceted solution that can reduce the UHI effect, provide essential cooling environments, and enhance social cohesion. To ensure the effectiveness of this approach, urban planners and policymakers must ensure accessibility for vulnerable populations such as the elderly. Collaboration among various departments within city management, and other actors such as the elderly at stake, universities, and grassroots movements, are vital for overcoming challenges and implementing biodiverse, inclusive, and health-promoting green urban spaces.

Additional resources and examples include:

1. [Urban Nature Platform](#), a platform, developed in collaboration with Eurocities and International Council for Local Environmental Initiatives (ICLEI) Europe, which aims to provide guidance and knowledge to support of towns and cities in enhancing and restoring their urban nature and biodiversity.

[Gellerup New Nature Park](#), a green urban space project in a social housing estate neighbourhood in Aarhus, Denmark.



# 14. Heat reducing intervention for rooftops

## **Problem:**

Due to the global warming, heat waves will occur more frequently. Mortality and morbidity rates increase during heat waves, especially elderly living on their own with a low socially economic status are at risk. Acting on this growing problem and creating clear policy in local governments should decrease the adverse health effects of heat for the elderly. As elderly spend much time indoors and tend to stay at home during heat waves, it would be beneficial to lower indoor temperature.

## **Solution:**

Reduce heat in existing and new buildings, giving priority to buildings housing elderly. By preventing heat from entering the building, high indoor temperatures are less likely to be an issue, and therefore health risks due to prolonged exposure will reduce as well.

One way to prevent heat from entering, is to make rooftops more heat resistant. Some options to do so are better isolation, placing solar panels, and white rooftops. This recommendation focuses on white rooftops: it is the most cost-effective option of the three and there is evidence of its efficiency. Temperatures in urban areas will be decreased by an average of 0.6 degrees Celsius, with better results in hotter and sunnier areas. Some research shows that white rooftops could even decrease temperatures by 1.5 to 1.8 degrees Celsius. White rooftops will decrease heat absorption by reflecting sunlight. It is widely used in larger cities throughout the world with positive results. Although various articles state the positive effect, the effect could vary due to many factors.

## **Responsible for (initiating) this policy:**

Building owners and building managers would be responsible. However, local governments can encourage roof whitening with various measures, such as setting parameters in their policy when white roofs should be mandatory in new buildings.

## **Challenges:**

Since the effect of white rooftops is dependent on many factors, it is important to analyse the area before executing. The following aspects can interfere with the positive results of heat reduction:

- Building materials: The properties of building materials within the home, such as insulation and the colour of interior walls can impact the overall effect.
- Building design: Architectural features and the orientation of the building play a role in the interaction between roof and sunlight.
- Surrounding structures: The presence of tall buildings or structures in the immediate vicinity can reduce exposure to sunlight, diminishing the impact of white roofs.
- Maintenance and Contamination: The level of pollution and maintenance of the roof can affect its reflective properties.
- Seasonal Variations: The effect varies depending on the season and the angle of the sun throughout the day.
- Climate: In colder climates, the reflective effect of white roofs may lead to increasing heating needs.

**Advantages:**

In 2022, globally an estimated 62,862 deaths were the result of extremely high temperatures. Due to global warming, this number is likely to grow coming years. Besides the mortality of heat, morbidity is higher as well. Research shows that more emergency room admissions are seen during the heat, especially in the elderly. However, these numbers are reports of severe morbidity, it is likely that the overall morbidity is even higher but unrecorded. Due to the co-morbidity in many of the affected, doctors will likely record the disease progression under a different, existing health problem.

Heat reduction, such as the use of white rooftops, will contribute to the reduction of mortality and morbidity related to extreme heat. It will therefore improve the quality of life but will also reduce health costs.

White rooftops are very cost-effective. Compared to green rooftops, the cooling effect is more evident, and costs are lower. When executed at time of building, white rooftops are even more cost-effective compared to black rooftops.

**Conclusion:**

As white roofs have been used more often over the last years, more research and evidence of its effectiveness is becoming available. Creating white rooftops is an accessible, cost-effective measure to decrease heat and heat related morbidity and mortality in urban areas.





**“We don’t have planet B, but we still have HOPE”  
Marta Mattarucco ISRAA Treviso”**

**for further information :**

**<https://www.hope-heatwaves.eu/>**



Co-funded by  
the European Union

The European Commission's support for the production of this flyer does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.