



STRENGTHENING CLIMATE-RESILIENT HOSPITAL BED CAPACITY & EMERGENCY PREPAREDNESS AT COMMUNITY LEVEL

Policy Brief

Name of Indicator: Number of hospital beds per 100,000 inhabitants
Field of Application: Governance

This policy brief is part of the ClimEmpower policy recommendations, available from climempower.eu. It translates evidence and project findings into practical guidance for regional and local policymakers seeking to strengthen resilience to climate and other systemic disruptions. It focuses on hospital bed capacity and the ability of health systems to keep functioning during heatwaves, floods, wildfires and other extreme events.

The main recommendation is to strengthen climate-resilient hospital bed capacity and emergency preparedness through integrated planning at community level. This means linking capacity assessments with climate risk scenarios, demographic vulnerability and seasonal demand, so that beds are sufficient in number, accessible, adequately staffed and operational during climate-related shocks.

Hospital Capacity & Emergency Preparedness



Key Challenges

- Extreme events cause sudden surges in hospital admissions
- Capacity planning based on average demand does not account for extreme scenarios
- Healthcare infrastructure is itself exposed to power failures, overheating and flooding



Good Practices

- Climate shelters in retrofitted public buildings with cooling and backup energy
- Resilient energy, cooling and flood protection for healthcare facilities
- Real-time monitoring of occupancy and surge capacity use



Priority policy actions

- 🌿 **Integrate climate risk into hospital capacity planning**
Incorporate climate risk scenarios into planning frameworks, including projections for heatwaves, wildfire smoke, floods and energy disruptions, through vulnerability mapping and surge-demand modelling.
- 🌿 **Develop surge capacity solutions and climate shelters**
Retrofit public buildings such as schools and community centres as climate shelters equipped with cooling, air filtration, backup energy and accessibility features.
- 🌿 **Improve climate resilience of healthcare infrastructure**
Invest in resilient energy systems, efficient cooling and ventilation, flood protection measures and redundant communication systems.
- 🌿 **Strengthen emergency preparedness and multi-level coordination**
Reinforce coordination between hospitals, local governments, civil protection and public health agencies through alert systems, referral pathways and training exercises.
- 🌿 **Monitor health system performance during extreme events**
Track hospital occupancy, emergency admissions and use of surge capacity and shelters to support real-time response and long-term policy evaluation.

Implementation Roadmap

1

Phase 1 — Risk assessment and system mapping

Assess climate risks affecting healthcare infrastructure, and use vulnerability mapping and surge-demand modelling to identify the groups most at risk and the resulting capacity gaps.

2

Phase 2 — Capacity planning and infrastructure adaptation

Develop investment plans to strengthen hospital capacity, upgrade healthcare facilities and identify public buildings suitable for conversion into climate shelters.

3

Phase 3 — Emergency preparedness and operational integration

Establish emergency protocols and coordination mechanisms linking hospitals, primary care, shelters and civil protection, supported by training and simulation exercises.

4

Phase 4 — Monitoring, evaluation and adaptive management

Track health system performance during extreme events and use the data to improve capacity planning, preparedness strategies and infrastructure investment.

Funding

European Regional Development Fund (ERDF)

Can finance hospital resilience, cooling, flood protection and climate shelter retrofits.

EU4Health Programme

Can strengthen health system preparedness and crisis response capacity.

National Recovery and Resilience Plans

Can fund resilient healthcare infrastructure and emergency preparedness measures.

Horizon Europe

Can fund modelling tools and pilots for climate-resilient health systems.

National climate adaptation financing

Can further support hospital resilience and public health preparedness.



Conclusion

Strengthening climate-resilient hospital capacity reduces mortality and health impacts during extreme events and improves the protection of vulnerable groups.

It also relieves pressure on emergency departments and increases the efficiency of health systems by shifting from reactive to preventive approaches, while resilient and energy-efficient infrastructure lowers long-term operational costs.