

FPH Climate & Health Conference – What can we do?
22nd September 2022, Online

Responding to the impact of climate change
in urban areas in Argentina



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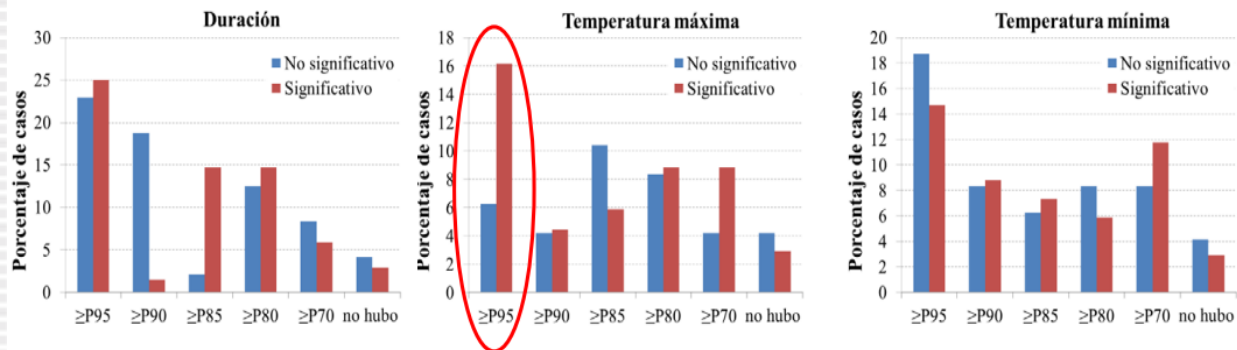
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Climate impacts on health in urban populations requires an interdisciplinary and intersectoral approach

Mortality risk during heat waves in the summer 2013-2014 in 18 provinces of Argentina : Ecological study

Mortality risk by duration and severity of heat wave



Analysis of mortality associated with low temperatures in the Argentine Republic in the period 2005-2015

TABLA 1. Ciudades bajo estudio, número de olas de frío y principales estadísticos de defunciones (2005-2015).

Ciudad (Provincia)	Población	P10 †	P10 ‡	Nro de OF ‖	Media de muertes diarias durante el semestre frío						
					Total	Varones	Mujeres	0-64 años	65 y más años	Cardiovasculares	Respiratorias
CABA	2 890 151	12,7	4	11	116,3	61,7	54,6	28,8	87,6	39,1	25,5
San Fernando del Valle de Catamarca (Catamarca)	159 703	16,4	1,5	4	3,9	2	1,9	1,2	2,6	1,2	0,7
Resistencia (Chaco)	390 874	16,2	3,6	4	8,6	4,1	4,5	3,3	5,3	1,8	1,2
Comodoro Rivadavia (Chubut)	109 123	7,5	-0,4	8	2,8	1,2	1,6	0,9	1,9	0,7	0,5
Córdoba (Córdoba)	1 329 604	14	2,2	3	33	16,3	16,6	9,5	23,5	14	4,5
Corrientes (Corrientes)	358 223	16,3	5,4	8	7,9	4,1	3,8	3,1	4,8	1,8	1,2
Paraná (Entre Ríos)	339 930	13,4	3,4	5	8,3	4,3	4	2,5	5,8	2,4	1
Formosa (Formosa)	234 354	17	6,7	12	5,6	2,6	3	2,5	3,1	1,4	0,7
San Salvador de Jujuy (Jujuy)	317 880	14,9	3	6	6,2	3,3	2,9	2,4	3,8	1,1	0,8
Santa Rosa (La Pampa)	117 721	10,9	-1,6	3	2,6	1,4	1,3	0,7	1,9	0,9	0,5
La Rioja (La Rioja)	180 995	16	2	6	3,3	1,8	1,5	1,3	2,1	0,8	0,6
Mendoza (Mendoza)	1 086 633	11,7	-0,2	4	22,1	10,8	11,2	5,6	16,5	7,1	2,8
Posadas (Misiones)	324 756	16,9	6,5	12	6,3	3,5	2,9	3,8	2,5	1,6	1
Neuquén (Neuquén)	362 673	9,5	-2,9	2	5,3	2,8	2,5	1,9	3,4	1,2	0,6
Bariloche (Río Negro)	133 500	4,3	-6,1	3	1,7	0,8	0,9	0,5	1,2	0,4	0,1
Salta (Salta)	536 113	13,6	-0,2	2	10,2	4,8	5,4	3,8	6,4	2,4	1,8
San Juan (San Juan)	441 477	13	-1,7	5	10,3	5,1	5,2	3	7,3	2,7	2,3
San Luis (San Luis)	204 019	12,5	1	6	3,6	1,7	1,9	1,1	2,5	1,2	0,6
Rosario (Santa Fe)	1 350 860	13	0,3	3	36,3	17,9	18,4	8,6	27,7	10,9	5,1
Santiago del Estero (Santiago del Estero)	409 404	16,5	0,5	2	8,9	4,2	4,7	3	5,9	2	1,7
San Miguel de Tucumán (Tucumán)	994 553	15	4,3	6	19,8	9,7	10,1	6,3	13,5	4,6	3,6

Multicentric and interdisciplinary studies that investigate the relationship between climate and health in urban areas of Argentina

Secretaría de Salud

Ministerio de Salud y Desarrollo Social
Presidencia de la Nación



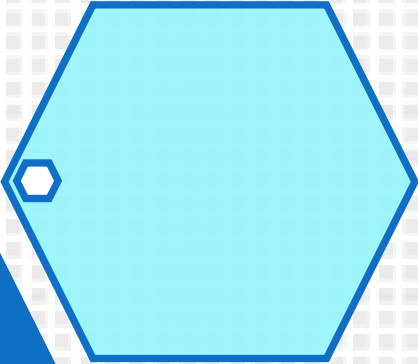
Facultad de Ciencias de la Salud

- Mortality risk during heat waves in the summer 2013-2014 in 18 provinces of Argentina: Ecological study
- Analysis of mortality associated with low temperatures in the Argentine Republic in the period 2005-2015



Health Ministry,
Universities
UNLaM, UBA
UNER, National
Meteorological
Service

Social science,
atmospheric
science,
environmental
science



https://www.smn.gob.ar/sistema_temp_extremas_calor



2013-2014 summer was particularly hot.

3 heat wave events were recorded:

HW in December reached 16 provinces and Buenos Aires City (CABA)

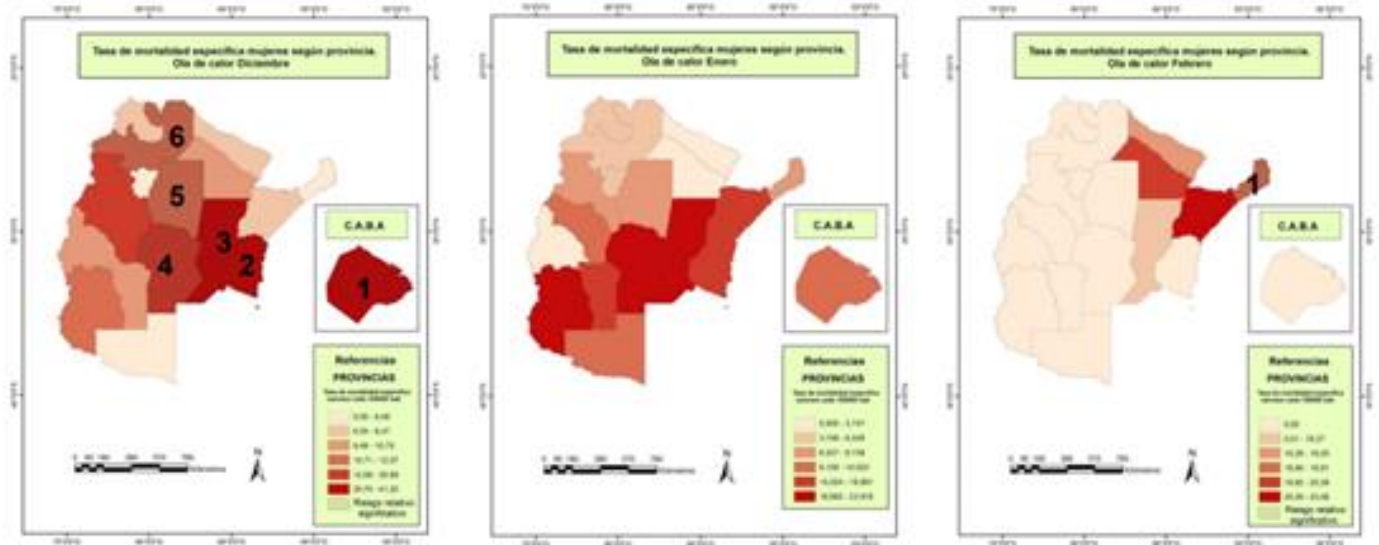
HW in January reached 14 provinces and CABA,

HW in February reached 4 provinces.

Analysis of mortality during heat waves in 2013-2014 summer in Argentina

During the three heat waves the risk of dying increased significantly in 13 of the 19 jurisdictions analyzed and registered 1,877 excess deaths

Mortality rates for women by provinces



Mortality rates for 80 and over age group by provinces



La Ola de Calor sigue afectando al país

Con alerta roja la ola de calor llegó a Buenos Aires y Rosario. Este nivel solo se da en casos excepcionales de olas de calor, afecta a todo grupo de riesgo incluyendo personas saludables.



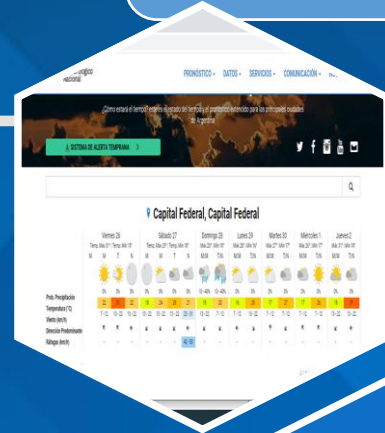
Increases in mortality by death causes during heat waves

Causes of death		CABA		Córdoba		E. Ríos	Mendoza		Misiones	Santa Fe	
		Dec.	Jan.	Dec.	Jan.	Dec.	Dec.	Jan.	Feb.	Dec.	Jan.
Diabetes mellitus	Deaths										29
	Rates										0,91
	RR										1,99
Cerebrovascular diseases	Deaths			59					46		
	Rates			1,69					3,92		
	RR			1,54					2,88		
Ischemic heart disease	Deaths	135		70	95			44	50		
	Rates	4,43		2,01	2,69			2,36	4,26		
	RR	1,62		1,83	1,84			1,82	1,85		
Chronic lower respiratory diseases	Deaths	21								26	17
	Rates	0,69								0,85	0,53
	RR	2,32								2,02	2,18
Kidney failure	Deaths	35									
	Rates	1,15									
	RR	2,28									
Pneumonia	Deaths	101	37		62	36	13			85	59
	Rates	3,32	1,21		1,76	2,78	0,71			2,77	1,85
	RR	2,20	1,54		1,58	1,76	3,18			2,03	1,71
Other forms of heart disease	Deaths	189									
	Rates	6,21									
	RR'	1,54									

Responding to the impact of climate change in urban areas in Argentina

Analysis of mortality associated with low temperatures in the Argentine Republic in the period 2005-2015

Generalized Additive Models modeling the relationship between extreme temperatures and mortality for 21 cities in Argentina in the period 2005-2015.



low temperatures are associated with general and specific mortality for cardiovascular and respiratory diseases

21 Argentine cities shows that the impact of low temperatures on mortality is verified after cold events, persisting for lags of 7 and 14 days.



impact of low temperatures on mortality is verified after cold events, persisting for lags of up to 14 days.

Early Warning System for extreme temperature events (SAT)

https://www.smn.gov.ar/sistema_temp_extremas_calor



What is the objective of the EWS-Extreme Temperatures?

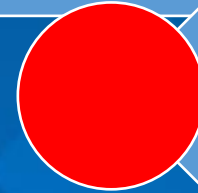
At a global level, there is strong evidence of health risks due to prolonged exposure to very high or very low temperatures.

The EWS-Extreme Temperatures is a tool that anticipates the population about extreme meteorological situations of temperatures and their possible effects on health and mortality.

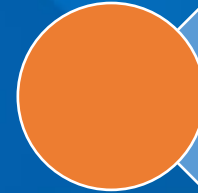
How are alert levels determined for hot events?

The thresholds to determine the occurrence of a heat event with extreme temperature are established based on the 90th Percentile (P90), both for maximum and minimum temperatures.

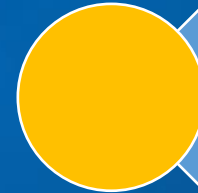
The EWS-Extreme Temperatures Heat was developed to work automatically using the data of the maximum and minimum temperatures recorded in the previous days and the forecasts for the following three days. Based on this information, the System issues the alert levels corresponding to each area



Red level: high to extreme health effect
Very dangerous. They can affect everyone, even healthy ones.



Orange level: moderate to high effect on health. They can be very dangerous, especially for risk groups.



Yellow level: mild to moderate health effect
They can be dangerous, especially for risk groups, such as boys and girls, people over 65, with chronic diseases.



Green level: no effect on health. No danger to the health of the population.

Olas de calor

Una ola de calor se define como un período excesivamente cálido en el cual las temperaturas máximas y mínimas superan, por lo menos durante 3 días consecutivos y en forma simultánea, ciertos valores que dependen de cada localidad.

Compartir en redes sociales     

A través del sistema de alertas tempranas por olas de calor y salud del Servicio Meteorológico Nacional se procura anticipar a la población, con la mayor antelación posible, situaciones meteorológicas extremas y sus posibles efectos en la salud.

Conocé si en tu localidad hay un alerta por olas de calor, los niveles de alerta y los efectos sobre tu salud

Servicio Meteorológico Nacional

¿Cómo podemos ayudarte?



Comunicado de Prensa

Recomendaciones para el cuidado de la salud durante eventos de frío extremo

Con el objetivo de evitar los posibles efectos sobre la salud de las bajas temperaturas extremas, el Ministerio de Salud de la Nación difunde una serie de recomendaciones para que la población tenga en cuenta.

Compartir en redes sociales     

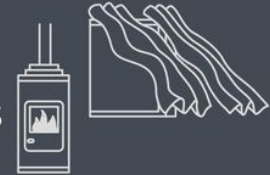
Publicado el martes 17 de mayo de 2022

How are alert levels determined for cold events? The thresholds to determine the occurrence of a cold event with extreme temperature are established based on the 10th Percentile (P10), both for maximum and minimum temperatures.

The EWS-Extreme Cold Temperatures was developed to work automatically using the data of the maximum and minimum temperatures recorded in previous days and the forecast for the following day. Based on this information, the System issues the alert levels corresponding to each area.

Cuidados para días de frío extremo. **Recomendaciones.**

Para cuidar tu salud durante días de frío extremo, seguí estas recomendaciones:



Argentina **salud**

Chesini Francisco, Fontán SG, González Morinigo EC, Herrera N, Savoy F, Skansi MM, de Titto EH. Analysis of mortality during heat waves in 2013-2014 summer in Argentina First Global Forum for Heat and Health 17-20 December 2018, Hong Kong

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Herrera, N., M.M. Skansi, M.A. Berón, C. Campetella, A. Cejas, J. Chasco, F. Chesini, E. de Titto, M. Gatto, M. Saucedo y M. Suaya, 2018: Sistema de Alerta Temprana por Olas de Calor y Salud (SAT-OCS). Nota Técnica SMN 2018-50.

<http://repositorio.smn.gob.ar/handle/20.500.12160/1839>

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