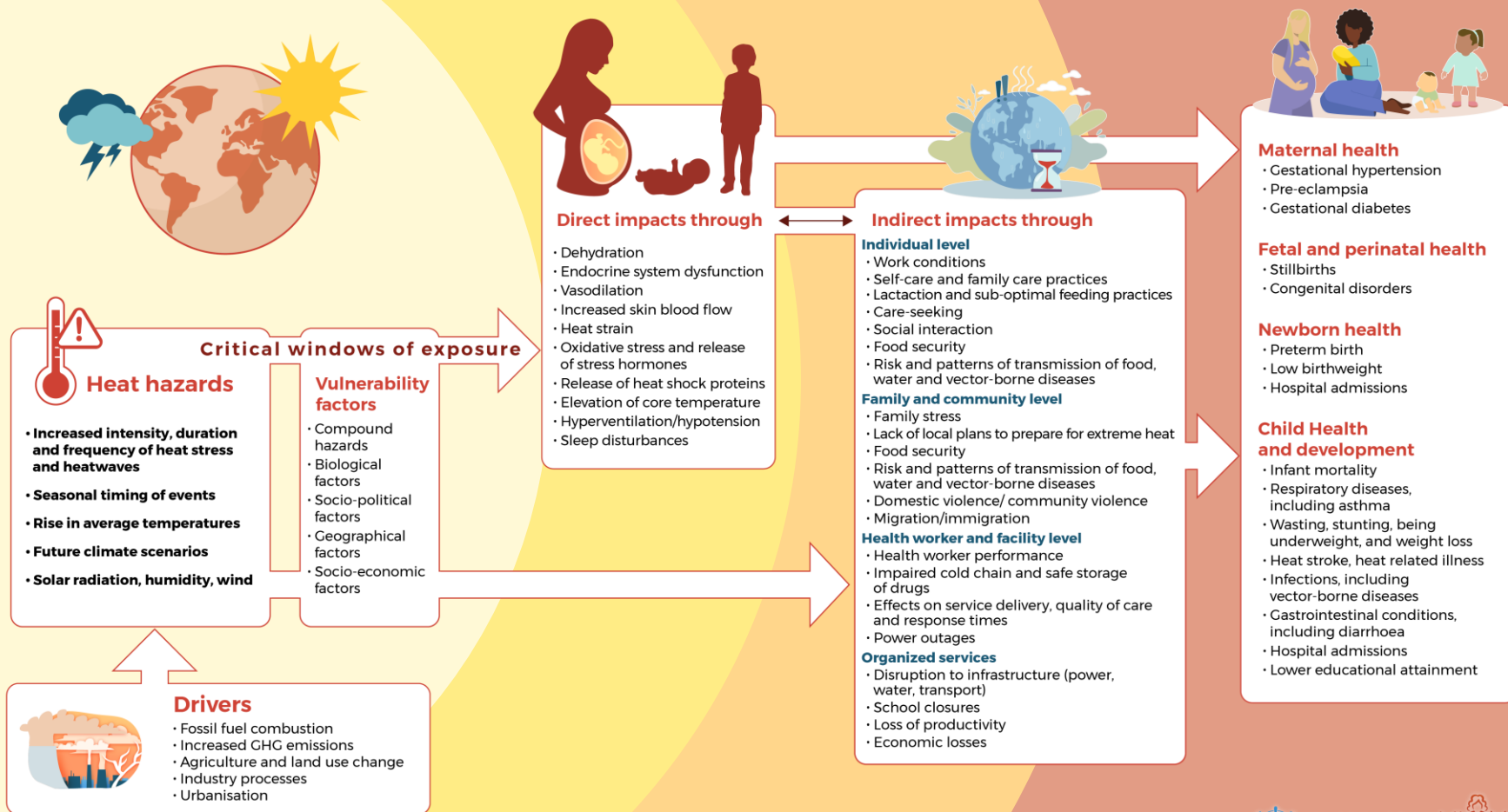


Conceptual framework

Extreme heat and maternal, newborn and child health



Additional information

Extreme heat and maternal, newborn and child health

Examples of vulnerability factors

- **Compound hazards**
(pollution, drought, wildfire, flash flood, and drought);
- **Biological factors**
(nutritional status, comorbidities, disabilities, etc...);
- **Geographical factors**
(urban/rural, greenspace, infrastructure, altitude, access to water, etc...);
- **Socio-political factors**
(complex emergencies, political stability, etc...);
- **Socio-economic factors**
(poverty, displacement, occupation, cultural practices and gender norms, education, security, equity and human rights).

Additional direct impacts

Maternal and Fetal/Perinatal health

- Dehydration
- Compromised placental development and function
- Elevation of core temperature
- Endocrine system dysfunction
- Vasodilation
- Increased skin blood flow
- Hyperventilation/hypotension
- Heat strain
- Oxidative stress and release of stress hormones
- Release of heat shock proteins
- Sleep disturbances
- Impaired cognition
- Lactation practices

Newborn health

- Elevation of core temperature
- Impaired heat exchanges
- Increased heat absorption rate (high ratio of surface area to mass)
- Dehydration
- Vasodilation
- Hypotension
- Hypernatremia
- Inefficient heat dissipation
- Oscillations in breathing patterns
- Impact on the autonomic nervous system
- Heat stress
- Sleep disturbances
- Dependency on others for cooling and hydration
- Lactation practices

Child Health

- Elevation of core temperature
- Impaired heat exchanges
- Increased heat absorption rate (high ratio of surface area to mass)
- Dehydration
- Vasodilation
- Hypotension
- Inefficient heat dissipation
- Small blood volume compared to body size
- Low sweating rate
- Activation of inflammatory response
- Heat stress
- Sleep disturbances
- Impaired cognition
- Dependency on others for cooling and hydration

Additional maternal health outcomes

- Antepartum and postpartum haemorrhage
- Mental health
- Infections, including vector-borne diseases
- Prelabour rupture of membranes
- Caesarean section
- Skin disorders
- Renal disease
- Maternal admissions
- Caesarean section rates

Additional newborn health outcomes

- Jaundice
- Infections, including vector-borne diseases
- INR alterations
- Sudden infant death syndrome (SIDS)

Additional child health outcomes

- Renal disease, including kidney stones
- Cardiovascular disease
- Unintentional injuries
- Allergy development
- Cardiovascular disease
- Violence against children

Sources

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- Chersich MF, Scorgie F, Filippi V, et al. Increasing global temperatures threaten gains in maternal and newborn health in Africa: A review of impacts and an adaptation framework. Int J Gynaecol Obstet. 2023;160(2):421-429.