

Checklists to assess vulnerabilities in health care facilities in the context of climate change

The WHO publication *Checklists to Assess vulnerabilities in Health Care Facilities in the Context of Climate Change*, along with other checklists, is available on the WHO website at www.who.int/publications/i/item/checklists-vulnerabilities-health-care-facilities-climate-change.

SEA-LEVEL RISE

Checklist for assessing climate hazards

ARE THESE AREAS IMPACTED?					
X Current observed impacts O Possible impacts with changed conditions					
CLIMATE HAZARD TYPE	IS HAZARD OR EXPOSURE PRESENT? Yes/No	Health workforce	WASH and health care waste	Energy services	Infrastructure, technologies, products, processes
Flood					
Storm					
Sea-level rise					
Drought					
Heatwave					
Wildfire					
Cold wave					

SEA-LEVEL RISE: checklist for assessing vulnerabilities

WORKFORCE	Vulnerability level		
	High	Medium	Low
High: unprepared; unable to respond (Higher risk)	High	Medium	Low
Medium: basic or incomplete preparation; low level of response (Medium risk)			
Low: prepared; able to respond (Lower risk)			
Is the health workforce,			
<i>(Human resources)</i>			
aware of the potential risks of sea-level rise to the health care facility and to themselves?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
equipped with with a programme for assistance for mental health, injuries, medical treatment, etc.)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
protected from impacts of storm surges?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
equipped with an emergency plan to protect health workers from multiple biological and chemical hazards?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
provided with full personal protective equipment, especially, for clean-up crews (including waterproof safety boots, goggles, work gloves and masks)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>(Capacity development)</i>			
equipped with knowledge, experience, training and resources to manage risks and to be prepared to address actions to reduce impacts from sea-level rise?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
prepared and able to implement risk reduction actions and recover better than before the event?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
trained on public health climate change issues related to effects of sea-level rise on human health?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
trained to manage hazardous chemicals in emergency situations?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
engaged in the development of plans and responses to sea-level rise and storm surge risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
prepared and able to implement risk reduction actions for protecting themselves?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
prepared with a contingency plan for storm surges and floods?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
trained to maintain correct level of water safety, quality control and treatment supplies, in both routine and sea-level rise related events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
trained in multihazard assessments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
trained to an appropriate standard to maintain the correct level of safety of electrical power supply, in both routine and emergency/disaster situations?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
trained to detect posttraumatic stress disorder among staff to take prompt action?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>(Communication and awareness raising)</i>			
provided with an established information system for managing occupational safety and health in emergency situations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
regularly participating in community disaster planning committees to: improve knowledge on how to reduce risks, be prepared and respond to sea-level rise risks, and recover better than before through adaptation measures?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
aware of contingency plans for accessing and leaving the facility during flood, erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

and storm surge emergencies, and health workforce transportation?			
provided with a contingency plan for continuing to provide services at other facilities or in communities (primary health care), if necessary?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
prepared with clear messaging about water and food safety during and after a storm surge event?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
informed on how to reduce risks and vulnerabilities to flood and storm surge events resulting from sea-level rise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

WATER, SANITATION AND HEALTH CARE WASTE	Vulnerability level		
High: unprepared; unable to respond (Higher risk)	High	Medium	Low
Medium: basic or incomplete preparation; low level of response (Medium risk)			
Low: prepared; able to respond (Lower risk)			

Does the health care facility,

(Monitoring and assessment)

have an updated assessment plan to map risks to the water and sanitation infrastructure in place to identify where services could be disrupted from sea-level rise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
regularly assess its sanitation system for any possible damage from sea-level rise impacts?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have an evaluation system to monitor its water system or supply before, during and after a storm surge event?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a contingency plan for monitoring and reducing contaminant concentrations in the facility's water supply system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
regularly verify safety conditions and proper functioning of all elements of the water distribution system as early action for sea-level rise (e.g. storage tanks, cisterns, valves, pipes and connections, and water disinfection)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a water quality monitoring plan for human consumption?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Risk management)

have a mechanism to protect freshwater sources around the facility from all types of contamination, including saline intrusion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a safe water and wastewater management system for sea-level rise impacts, including standing water near the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
store waste in a safe place to avoid release in case of flooding?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
store hazardous chemical, radioactive and biological waste in a safe place and on a level above the ground floor?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a schedule for emptying latrines regularly and in advance of flooding from high tides to avoid overflows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have safe waste disposal of debris after a high tide event?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have an established safe management approach for health care waste transport (including hazardous waste) during and after a flood event due to sea-level rise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
provide appropriate covers for water storage tanks to prevent damage, water contamination and saline water intrusion in case of flooding related to sea-level rise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have nonreturn valves installed in water supply pipes to prevent backflows, in case of flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
build waste pits to withstand flood events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

have onsite water purification equipment to provide safe drinking water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>(Health and safety regulation)</i>			
have an alternative water source to supply the facility?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a water safety plan in place, in case of water contamination?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a mechanism or regulation to carry out sanitary inspections of water supply, and when necessary, establish a temporary ban on use, until improvements are made?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a contingency plan to ensure effective and timely delivery of safe water during floods and emergencies over the short- and mid-term?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a coordinated cross-sectoral water management plan to protect local or alternative water sources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ENERGY	Vulnerability level		
	High	Medium	Low
High: unprepared; unable to respond (Higher risk)			
Medium: basic or incomplete preparation; low level of response (Medium risk)			
Low: prepared; able to respond (Lower risk)			

Does the health care facility,

(Monitoring and assessment)

regularly assess its energy system to ensure that it can cope with sea-level rise events (including flooding)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have an emergency backup generator (including fuel, where relevant) that is able to cover at least all critical service areas and equipment during and after the event?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
periodically check the emergency backup generator (including fuel, where relevant)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
assess whether renewable energy (if available, such as solar) is sufficient to power critical equipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Risk management)

have a secure place to protect the backup generator (e.g. an elevated place; including fuel or battery storage, where relevant) from damage?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have appliance thermometers in the refrigerator and freezer to determine if food, vaccines and other essential refrigeration-dependent medical supplies are safe?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have adequate daylight to ensure proper visibility during power outage?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have power-operated doors that can be opened manually to permit exit in case of power failure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a safety backup for telecommunication and information systems (e.g. via cloud and satellite)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a clear guidance to alert staff on safety measures (e.g. never restore power when the power is off, until a professional inspects and ensures the integrity of the electrical system; do not use electrical equipment that has been exposed to flood waters until checked by an electrician; unless power is off, never enter flooded areas or touch electrical equipment if the ground is wet)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Health and safety regulation)

have an emergency plan for power outages in the short- and long-term (before, during and after a sea-level rise flood event)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
work with energy utility agencies to prevent suspension of electricity services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a management plan for intermittent energy supplies or system failure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

have a plan or regulation to determine ways to reduce overall energy use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have an emergency plan to ensure availability of adequate lighting, communication and information systems, as well as refrigeration and sterilization equipment during a flood?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

INFRASTRUCTURE, TECHNOLOGIES, PRODUCTS AND PROCESSES	Vulnerability level		
High: unprepared; unable to respond (Higher risk)	High	Medium	Low
Medium: basic or incomplete preparation; low level of response (Medium risk)			
Low: prepared; able to respond (Lower risk)			

Does the health care facility,

(Adaptation of current systems and infrastructures)

provide health workforce training to cover climate change risks and responses regarding sea-level rise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a monitoring and early warning system integrated with other areas to manage and reduce risks from storm surges and floods related to sea-level rise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have knowledge, experience (considering previous damages) and resources (including human, material, financial, supplies chain and logistics) to manage risks from sea-level rise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
work with the local government to support vulnerable local populations to actively participate in risk reduction management, policy making, planning and implementation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
map the facility's location relative to sea-level rise hazards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
assess the performance and vulnerabilities of each critical part of the facility (structural and nonstructural elements) that can be affected by sea-level rise hazards?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a plan for assessing vulnerable public infrastructure along the coastal area of the health facility (e.g. transit systems and roads, water and sewage systems, energy infrastructure, alternative route for other health care facilities, logistics and supply chain for medical and laboratorial supplies, drinking water, food and other supplies)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
in their annual planning consider how climate risks may change in future?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have resources available to adopt risk reduction measures to the facility and its infrastructure, technologies, products and processes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
regularly update these assessments, considering emerging scientific information?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a schedule to inspect the facility regularly, both internally and externally, for signs of deterioration (e.g. broken plaster, cracks, corrosion, or sinking structural elements) to avoid or reduce sea-level rise impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
evaluate the condition and safety of structural and nonstructural elements impacts resulting from previous exposure to sea-level rise event?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have evaluation tools (e.g. forms) to check and identify damages and the minimum needs in terms of health workers, medical supplies and other essential supplies and services to ensure that operational care service functions continue during and after a storm surge event?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have funding to protect the facility and vulnerable assets from sea-level rise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have an evacuation plan to transfer critical medical, laboratorial and administration equipment to another health care facility or to a safety storage or location in a storm surge emergency situation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

have established procedures for safely procuring, transporting and storing medical supplies (medical devices, pharmaceuticals, vaccines, laboratorial supplies, parenteral nutrition and blood supplies, and other essential health care supplies)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have established procedures for safely procuring, transporting and storing bottled water and food supplies during an emergency?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have an effective emergency risk communication plan to reduce risks and impacts for health workers and patients?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a contingency plan in place for safe and efficient personnel evacuation (including health staff and patients) before, during and following a flooding or a storm surge?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a clear and consistent mechanism for secure evacuation of health workers and patients?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have evacuation routes above flood elevation?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a plan to transfer critical equipment and medical supplies to another facility or to a safe storage?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
implement anti-mosquito breeding measures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have walls protected and insulated against moisture and mold?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have machine rooms resistant to storm surge damage?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have water-resistant interior construction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ensure removal of equipment and power supplies from basements and ground floor level to avoid damage from flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a coordinated mechanism across the health sector in different levels of government, to manage the response and risks of public health emergencies and disasters (including sharing of resources and supplies, transferring of patients, and health workforce support)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
estimate the possible risks and losses, and adapt to reduce impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>(Promotion of new systems and technologies)</i>			
have an information system between the health sector and meteorological services to communicate about storm surge hazards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have electronic patient health records to make available to other receiving health care facilities in case of evacuation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have implemented measures to respond to sea-level rise scenarios and threats (e.g. seawater pump stations, floodplain mapping, assessing future sea-level rise impacts)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have mitigation measures in place to respond to sea-level rise scenarios and threats identified, including engineering, planning, as well as preparedness solutions for the facility and community surroundings (e.g. stormwater pump stations, floodplain mapping, assessing future climate change impacts)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>(Sustainability of health care facility operations)</i>			
review building code design baselines against sea-level rise to assess the risks, impacts and possible loss?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have adaptive governance capacity regarding evaluation and measures for risk identification, risk reduction and response to sea-level rise conditions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have established partnerships between the facility, community and local authorities to reduce vulnerabilities in the surrounding areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have health care coalitions and partnerships with local health care providers for strategic decision-making on health services and clinical resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a route for public transportation which is likely to remain operational during or immediately following a flood event?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have salt-resistant trees and plants?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have trees planted in a secure place that will not block access to the facility or fall on the building in case of land erosion or wave actions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

have a secure storage for hazardous chemicals to avoid their damage or release during an event?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
undertake risk assessments of the supply chain for essential medical and nonmedical products?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have secure access to essential backup services such as sterilization, laundry and cleaning services, via multiple agreements with different facilities to maintain functioning of critical services during or immediately following an event?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have secure access to essential backup food sources via multiple agreements with different vendors and through cooperative agreements with other facilities to maintain functioning of critical services during or immediately following an event?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a coordinated plan with municipal health department heads to ensure appropriate preparations for ongoing sea-level rise?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a postflood recovery plan related to sea-level rise for the entire infrastructure (structural and nonstructural elements) of the facility (e.g. clearance, removal and disposal of debris; demolition of critically damaged, or repair of less damaged, structural elements; reposition of equipment and furniture; reassessment of risks)?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have a plan to consider relocating the facility?*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**For further details see Hospital Safety Index (Reference 2 in the Checklist Guidance).*

For WASH and health care waste details see WASH FIT (Reference 3 in the Checklist Guidance).

SEA-LEVEL RISE: checklist for assessing impacts

HEALTH WORKFORCE		
Level of impact		
MAJOR	MODERATE	MINOR
<input type="checkbox"/> Increased risk of indoor mold growth from excess dampness, with impacts on respiratory disease <input type="checkbox"/> Health professionals not able to arrive or depart from the health care facility <input type="checkbox"/> Loss of work capacity <input type="checkbox"/> Increased demand for health care due to infectious and noncommunicable diseases (renal effects, cardiovascular diseases, respiratory diseases) and injuries (electrical shocks, chemical exposure) <input type="checkbox"/> Cessation of several programmes or services with possible overflow of patients to other locations	<input type="checkbox"/> Possible increased risk of infectious diseases for the health workforce from water and health care waste contamination <input type="checkbox"/> High water salinity leading to increased risk of hypertension in the health workforce <input type="checkbox"/> Minor injuries to health workers requiring short-term medical treatment <input type="checkbox"/> Significantly reduced performance capacity needing additional support (local, regional or national) <input type="checkbox"/> Restrictions to provide health care services and programmes <input type="checkbox"/> Increased work overload resulting in stress	<input type="checkbox"/> Reduction of health workforce functions <input type="checkbox"/> Service delivery and programme delays <input type="checkbox"/> Minor injuries to health workers not requiring immediate medical treatment

WASH AND HEALTH CARE WASTE		
Level of impact		
MAJOR	MODERATE	MINOR
<ul style="list-style-type: none"> <input type="checkbox"/> Permanent damage to water, wastewater and sewage infrastructure systems <input type="checkbox"/> Increased saltwater intrusion into aquifers, resulting in increased salinity of groundwater basins and well water <input type="checkbox"/> Water contamination <input type="checkbox"/> No access to drinking water <input type="checkbox"/> Leakage from septic tanks, sewer systems and instability of storage tanks and pipes <input type="checkbox"/> Increased corrosion of the water and wastewater drainage system <input type="checkbox"/> Possible contamination of medical devices, instruments and equipment <input type="checkbox"/> Risk of environmental contamination by biological and chemical hazards <input type="checkbox"/> Loss of water pumping and treatment systems 	<ul style="list-style-type: none"> <input type="checkbox"/> Saltwater intrusion in water and wastewater containment systems leading to reduced capacity for water treatment and distribution <input type="checkbox"/> Limited access to water for drinking and cooking <input type="checkbox"/> Reduced volume of stored freshwater <input type="checkbox"/> Reduced capacity to provide disinfection or sterilization processes and hygiene services <input type="checkbox"/> Surface water ingress into septic tanks leading to overflow of effluents into streams, rivers and oceans <input type="checkbox"/> Risk of sharps containers and specific biological and medical waste bins lost or damaged 	<ul style="list-style-type: none"> <input type="checkbox"/> Increased water and wastewater management and repairs due to inundation or erosion <input type="checkbox"/> Shortage of safe water <input type="checkbox"/> Damage to alternative emergency water sources <input type="checkbox"/> Reduced capacity to provide safe cleaning services (floor, toilets, patient rooms, emergency room and other rooms of the facility) <input type="checkbox"/> Reduced capacity to use laundry and dishwashing machines <input type="checkbox"/> Possible damage to emergency water sources

ENERGY		
Level of impact		
MAJOR	MODERATE	MINOR
<ul style="list-style-type: none"> <input type="checkbox"/> Damage to power lines causing outage <input type="checkbox"/> Power failures <input type="checkbox"/> Shutdown of cold storage systems <input type="checkbox"/> Interruption of health care services which require electricity such as dialysis, oxygen therapy, diagnostic equipment <input type="checkbox"/> Disruption of internal and external communication and information systems <input type="checkbox"/> Disruption of the fuel supply chain 	<ul style="list-style-type: none"> <input type="checkbox"/> Disruption of electricity generation and delivery <input type="checkbox"/> Reduced capacity to follow boil water advisories <input type="checkbox"/> Possible damage to emergency generator or other sources of energy <input type="checkbox"/> Reduced capacity to provide critical health care service deliveries such as dialysis, oxygen therapy, diagnosis equipment <input type="checkbox"/> Patients need to be transferred to other locations <input type="checkbox"/> Loss of vaccines, laboratorial supplies, drugs, pharmaceuticals, milk, parenteral nutrition and blood supplies, and other essential refrigeration-dependent medical supplies 	<ul style="list-style-type: none"> <input type="checkbox"/> Temporary power supply interruption <input type="checkbox"/> Possible delay in restarting power, thereby affecting health care <input type="checkbox"/> Reduced capacity to provide cleaning services that need electricity (laundry, dishwashing machines) <input type="checkbox"/> No ambient cooling <input type="checkbox"/> Loss of food or difficulty in providing food refrigeration Reduced capacity to provide disinfection services that need electricity

INFRASTRUCTURE, TECHNOLOGY, PRODUCTS AND PROCESSES		
Level of impact		
MAJOR	MODERATE	MINOR
<ul style="list-style-type: none"> <input type="checkbox"/> Infrastructure destruction (structural and nonstructural; full or parts of the facility) <input type="checkbox"/> Building collapse from coastal erosion and material corrosion <input type="checkbox"/> Increased water treatment (desalinization process) <input type="checkbox"/> Increased maintenance and repair of the facility building <input type="checkbox"/> Ongoing facility flooding during high tides <input type="checkbox"/> Blocked transport systems and flooded ambulance stations <input type="checkbox"/> Blocked building access <input type="checkbox"/> Damage to critical medical equipment <input type="checkbox"/> Damage to essential supplies (medications, treatments, medical devices, drugs, laboratorial supplies, pharmaceuticals, vaccines, blood, milk, nutritional supplies and other critical supplies) requiring prompt repositioning <input type="checkbox"/> Interruption in complex and emergency health care services (surgery, complex treatments, urgent care, blood banks, etc.) <input type="checkbox"/> Disruption of health care service delivery and operations, such as ambulatory, immunization, maternity room, pharmacy, medication for chronic diseases, and other primary services <input type="checkbox"/> Cessation of services or prolonged service disruption due to loss or damage <input type="checkbox"/> Interruption of supply chains <input type="checkbox"/> Damage to internal access systems (e.g. elevators, ramps, corridors, garage) <input type="checkbox"/> Increased costs of building maintenance <input type="checkbox"/> Damage to medical and administration equipment and furniture 	<ul style="list-style-type: none"> <input type="checkbox"/> Infrastructure damage (structural and nonstructural; full or parts of the facility) <input type="checkbox"/> Partial disruption of health care facility functions resulting from coastal erosion or corrosion <input type="checkbox"/> Disruption of the food chain due to saline intrusion in agriculture <input type="checkbox"/> Damage to road access <input type="checkbox"/> Difficulty in transporting patients due to damaged or disabled transportation systems <input type="checkbox"/> Reduced capacity to deliver health care services due to damage and reduced access to clinical, laboratorial and medical supplies <input type="checkbox"/> Temporary suspension of service deliveries <input type="checkbox"/> High demand for cleaning services for the entire facility building, after a flood event <input type="checkbox"/> Long-term effect on the environment needing external assistance/interventions <input type="checkbox"/> Increased costs from the water desalinization process <input type="checkbox"/> Possible replacement of sections of the health facility's building <input type="checkbox"/> Increased costs due to demand for repositioning of all damaged or lost medical equipment and devices <input type="checkbox"/> Increased demand for providing all necessary essential or critical supplies (medications, treatments, medical devices, drugs, laboratorial supplies, pharmaceuticals, vaccines, milk, parenteral nutritional and blood supplies, and other critical supplies) <input type="checkbox"/> Increased costs of recovery of infrastructure, postevent 	<ul style="list-style-type: none"> <input type="checkbox"/> Localized disruption of services with minor loss and damage <input type="checkbox"/> Increase in costs to maintain and repair the facility building and its assets <input type="checkbox"/> Damage or loss of documents and medical records <input type="checkbox"/> Minor impact on local operations without compromising health care services <input type="checkbox"/> Minimal impact on the supply chain <input type="checkbox"/> Short-term negative effect on the environment

