USE OF CONTAINERS FOR TEMPORARY EMERGENCY STORAGE: TIPS TO MITIGATE TEMPERATURE AND HUMIDITY

Photo credit: GHSC-PSM/Scott Dubin

During emergencies, backloading multiple months of medicines and other public health commodities as close to patients as possible can minimize supply chain disruption and maintain patient access. Backloading often requires additional temporary storage for the significant increase in supply. Shipping containers can be used to fill these short-term storage capacity needs.

Note that temperature-sensitive commodities should not be stored in shipping containers.

Here are some tips for temperature control and humidity mitigation when using shipping.

PARK CONTAINERS IN DRY, COOL PLACES WHEREVER POSSIBLE

- Containers should be placed on elevated ground and ideally in an area with positive drainage. Positive drainage is created when an area is graded so that water collects and flows to a lower elevation away from buildings and structures.
- Utilize natural shade to the extent possible. Containers in the direct heat of the sun during mid-day can rise 20˚C or more.
- Containers—whether set on cinder blocks, pressure-treated wood, or other—should be kept level to ensure safe practices and maximum product condition and lifespan.
- We are not recommending temperature controlled product to be stored in containers. Rotate stock that does not have these constraints.

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PEST CONTROL PROTOCOLS

- Positive drainage areas (noted above) also prevent pests and rodents from gathering near the container. Keep the container located as far away from standing water as possible.
- Keep plants, brush, and debris away from exterior container walls.

OUTFIT CONTAINERS WITH VENTILATION EQUIPMENT AND REFLECTIVE PAINT

- Inexpensive turbine fans mitigate excessive levels of heat, dust build-up, moisture, carbon dioxide levels and other air pollutants and require no power to operate.
- A small screen vent placed near the bottom of the container at the door end, combined with a turbine fan at the top of the opposite wall, will enable continuous air flow.
- Convection fans work via forced convection, resulting in increased air velocity. Faster moving air can remove heat at a faster pace.
- High quality, solar-reflective paint can be applied to containers to lower the surface temperature by about 3-6°C. If specialized reflective paint is unavailable, white paints typically reflect 80% of visible light and can help mitigate heat. Painting the exterior of a 20ft container will require 20 liters of paint, or 35 liters for a 40ft shipping container. If containers are included during the product procurement process, reflective or white paint can be a required container specification.