"Weather the storm": Protecting Hospital Radiology Equipment And Data During Climate Change

Ghanwa Khawaja DO[1], Mirza Baig MD [1], Daniel Edelman MD [2], Brian Tung MD [1], Perry Gerard MD MBA FACR [2], Gary Cohen MD [1] Jared Meshekow MD[1]
[1] Temple University Hospital, Philadelphia, PA; [2] Westchester Medical Center, Valhalla, NY

Background

Protecting hospital radiology equipment and data during climate change is a critical consideration, as extreme weather events and changing environmental conditions can pose significant risks to both the physical infrastructure and the digital assets of healthcare facilities. Hospitals experience a surge in patient admissions during climate-related disasters like heat waves, wildfires, and hurricanes. The increased demand for medical equipment during these crises can strain hospital resources and infrastructure.
Functionality and reliability of medical equipment can be compromised during climate change

Methods

- Investment in resilient infrastructure
- Addressing the risk of climate related disasters such as hurricanes or wildfires
- Proactive planning of timely confidential data transmission for image interpretation in case of power outage
- Address the impact of climate change on radiology equipment by raising awareness
- Advocacy for policies that prioritize equipment protection
- Assess and update these measures to adapt to climate related risks

Results

Climate vulnerability assessment

Risks

1. Assess rates of hurricanes
2. Assess rates of flooding
3. Extreme temperature variation

Investment

1. Back-up power for radiology equipment
2. Elevated/flood proof rooms
3. Comprehensive disaster recovery plan

Conclusion

Addressing the impacts of climate change on hospital equipment is crucial for safeguarding patient care and ensuring the resilience of healthcare systems in the face of environmental challenges. Preventive measures as well as implementation of a structured plan in case of a natural disaster is essential to the survival of radiology equipment and data. Protecting hospital radiology equipment and data during climate change requires a multi-faceted approach that starts with climate vulnerability assessment. Stratification of risk followed by infrastructure improvements is critical in ensuring radiological equipment safety. Disaster preparedness and sustainability efforts are of great importance in this context. This warrants robust cybersecurity measures for data confidentiality. By taking proactive steps, hospitals can better safeguard their critical assets and provide essential medical services even in the face of climate-related challenges.

References

- Heye, Tobias, et al. "The Energy Consumption of Radiology: Energy- and Cost-Saving Opportunities for CT and MRI Operation." Radiology 295.3: 2020, pp. 593–605.
- Schoen, J., & Marrero-Gonzalez, A. (2021, April 13). *Climate change and radiology*. American College of Radiology.
- Salas, Renee N., et al. "Adding a Climate Lens to Health Policy in the United States: Commentary Explores How Health Care Policy Makers Can Integrate a Climate Lens as They Develop Health System Interventions." Health Affairs, 39.12: 2020, pp. 2063–2070.