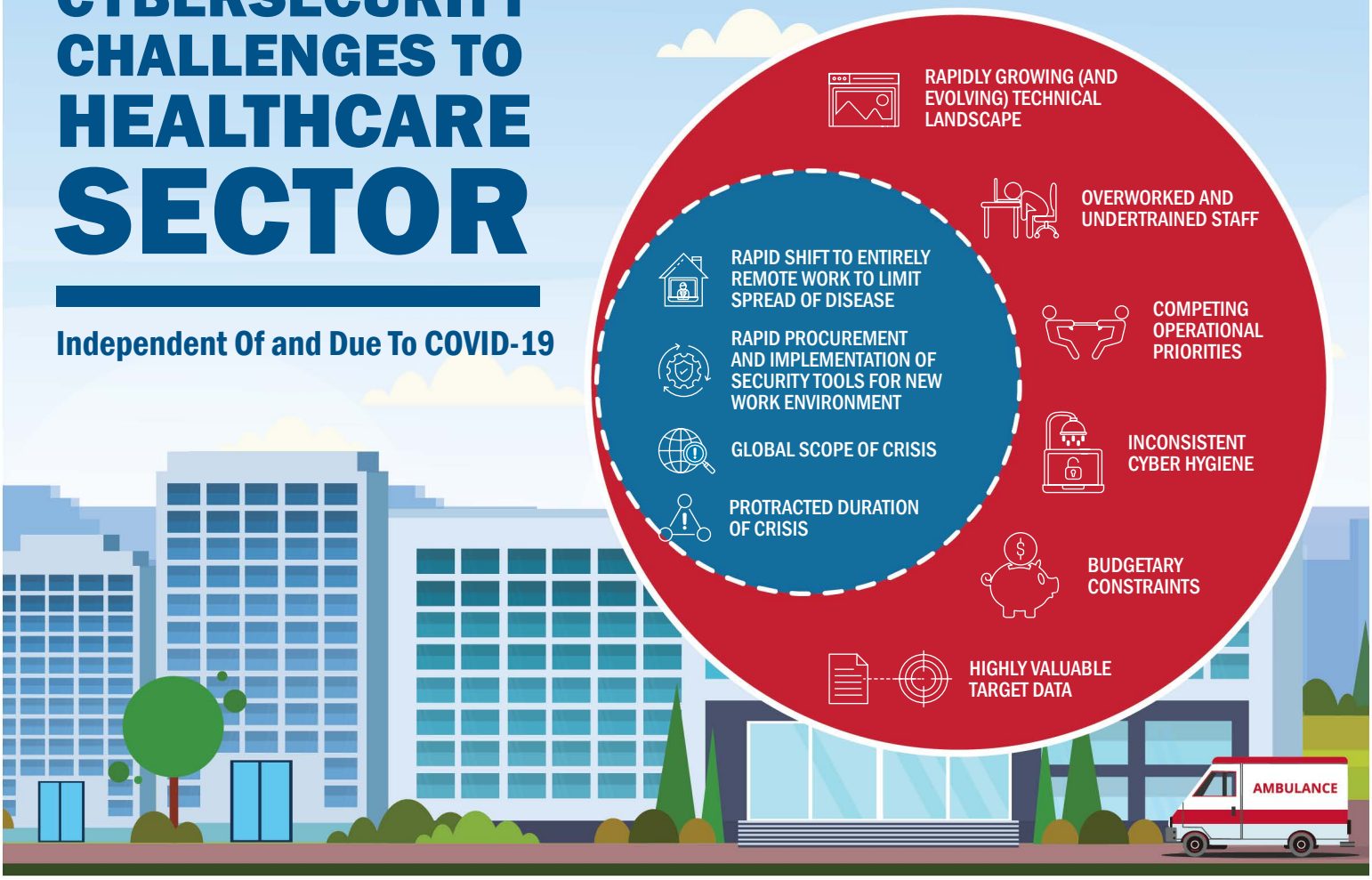
CYBERSECURITY CHALLENGES TO HEALTHCARE SECTOR

Independent Of and Due To COVID-19

INDEPENDENT OF COVID-19 | DUE TO COVID-19



RAPIDLY GROWING (AND EVOLVING) TECHNICAL LANDSCAPE

- Internet-connected medical devices have been developed and widely deployed, without proper privacy and security measures in place
- Proliferation of unregulated mobile apps that leverage PHI/PII but do not secure it

OVERWORKED AND UNDERTRAINED STAFF

- Many healthcare personnel are undertrained on cybersecurity
- Even with good training, environmental factors affect practitioners' security-related behaviors more than intention

COMPETING OPERATIONAL PRIORITIES

- Operational needs often prioritize speed and information sharing over information security
- Business and compliance requirements result in large-scale data portability needs

INCONSISTENT CYBER HYGIENE

- Stand-alone technologies are being digitized and integrated with other systems, creating interoperability dependencies, network segmentation risks, and other cybersecurity challenges
- Legacy systems, no longer supported by their manufacturers, cannot incorporate the latest security updates, thereby introducing permanent vulnerabilities into organizations' networks

BUDGETARY CONSTRAINTS

- Organizations are spending a vast majority of limited IT budgets on acquisition, implementation, and adoption of technical solutions with few resources left to secure and maintain their networks
- Many HPH organizations don't have internal IT or security teams and outsource the capabilities or conduct activities ad hoc without having anyone internal who is accountable for security

HIGHLY VALUABLE TARGET DATA

- PHI is estimated to be worth 10-20 times the value of credit card data on the Dark Web, and is sought after by criminals and nation-states alike
- Credentials enable repeated, and continuous expansion across targeted systems, providing multiple avenues for malicious actors to inflict damage
- Biomedical and pharmaceutical research and development data is the backbone of a nearly $160 billion industry

RAPID SHIFT TO ENTIRELY REMOTE WORK TO LIMIT SPREAD OF DISEASE

- Increased likelihood of misconfigured cloud environments, remote work technologies
- Minimal training for remote workers
- Lack of distributed/remote system recovery plans
- Lack of endpoint protection due to overreliance on network security

RAPID PROCUREMENT AND IMPLEMENTATION OF SECURITY TOOLS FOR NEW WORK ENVIRONMENT

- Increased likelihood of misconfiguration or botched security tool deployments
- Lack of maintenance and sustainment plan for new technology

GLOBAL SCOPE OF CRISIS

- Effective response requires coordinating with other nation states—including geopolitical adversaries and nontraditional partners
- Risks and consequences evolve over time through chain reactions
- Fewer options for aid or support

PROTRACTED DURATION OF CRISIS

- Continued uncertainty of long-term crisis compounds societal and individual stressors, increasing susceptibility to social engineering
- Economic consequences increase individual financial need

[1] Jalali, Mohammad S., Bruckes, Maike, Westmattelmann, Daniel, Schewe, Gerhard. "Why Employees (Still) Click on Phishing Links: Investigation in Hospitals," National Institutes of Health, National Center for Biotechnology Information, and National Library of Medicine (2020) | [2] A literature review of the state of cybersecurity in healthcare found that organizations were spending up to 95% of their budgets on implementation and adoption and less than 5% on security. | [3] Eric Decker and Julie Chua, "Health Industry Cybersecurity Practices: Managing Threats and Protecting Patients," Health and Human Services, Department of Homeland Security, and National Institute of Standards and Technology (2018).