

# Health System Resilience

## For Care, With Care

We're a family of world-class professionals in 50 countries who span a multitude of disciplines – from scientists and engineers to architects and technologists to doctors and registered nurses. **Our diversity is global, but our approach is local**, reflecting the distinct nature of the healthcare ecosystem.

More than ever, we appreciate the hard work, sacrifice and dedication of the medical profession in ensuring the health and safety of our communities. **We live here too, and our goal is to bring the very best solutions to our healthcare clients, so they can bring their very best to the patients and families counting on them.**

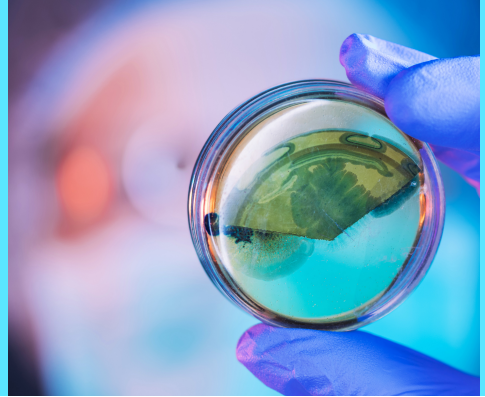
## The Challenge

The coronavirus disease 2019 (COVID-19) outbreak has strained health systems worldwide. The pandemic response has revealed widespread challenges that healthcare providers are facing in the areas of emergency response and management. The most notable impediments are related to the lack of cohesively integrated local, regional and national emergency response protocols; non-adaptive healthcare infrastructure; deficient emergency funding and medical supplies; and missing emergency coordination and communication mechanisms.

## Our Approach

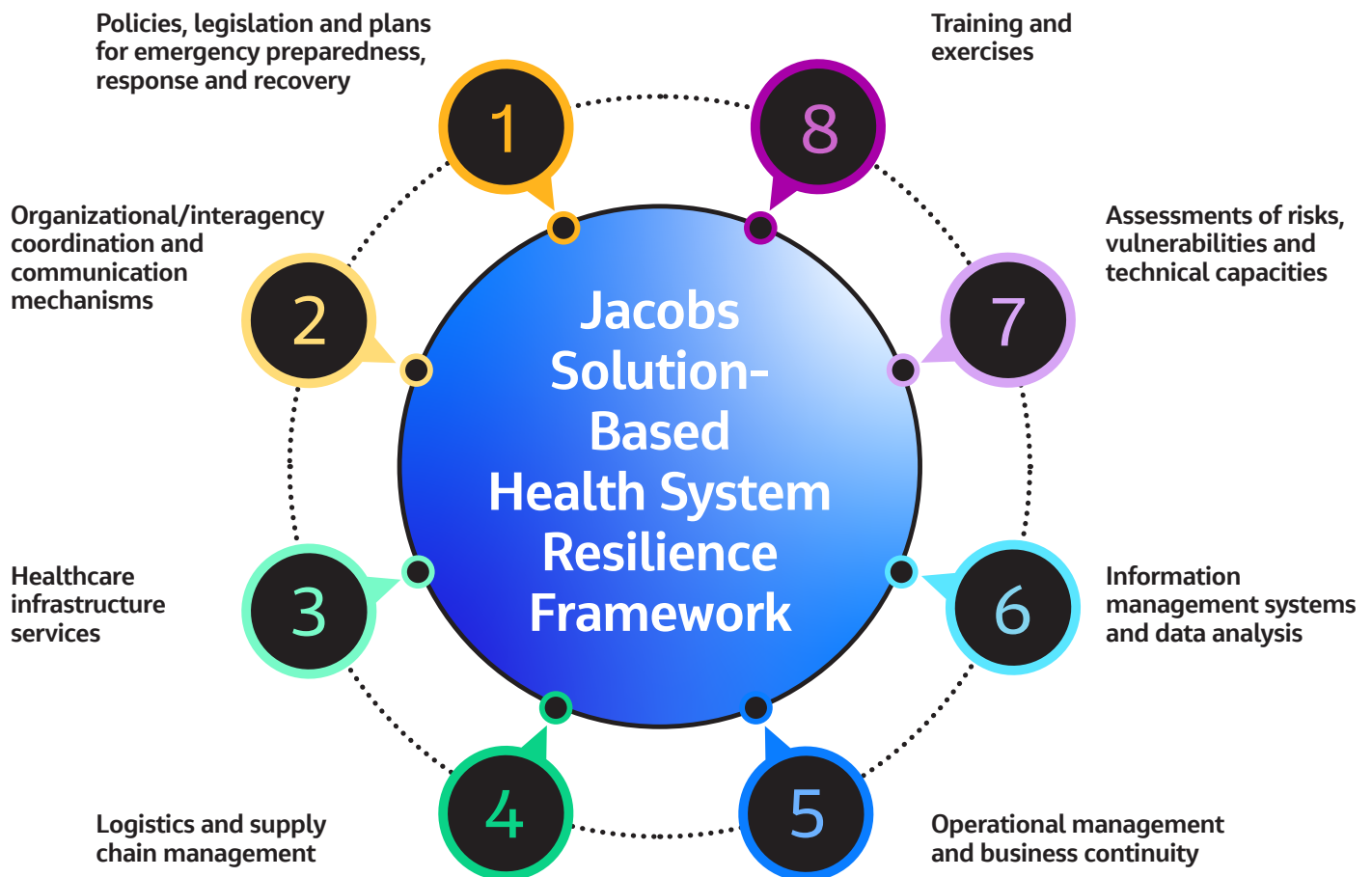
**Challenging today, reinventing tomorrow**, we collaborate with our clients to create and maintain resilient health systems that are capable of absorbing, adapting, anticipating and transforming when exposed to external threats. We have had the privilege of partnering with more than half of the *U.S. News & World Report* Top 100 Hospitals and would like to **help you in addressing the challenges you face today, and your patient care needs of tomorrow.**

**Jacobs** Challenging today.  
Reinventing tomorrow.



When it comes to emergency preparedness and response challenges, **we'll provide our best care so you can provide yours.**

Jacobs' Health System Resilience framework is organized into **eight solutions-based core competencies** – based on World Health Organization guidance – to help you meet today's unique healthcare challenges head-on.





## 1 Development and implementation of legal frameworks, action plans and operational manuals.

- Jacobs conducted a Pandemic Preparedness & All-Hazards Needs Assessment for Mercy Health System to enhance and transform Mercy's current emergency preparedness and response capabilities including creating an emergency preparedness and response plan for pathogens with pandemic potential.
- Our emergency management planning with a Nationally Ranked Academic Medical Center was successfully deployed during the COVID-19 pandemic, with rapid conversion of the facility in response to patient surge.

## 2 Internal and external coordination to improve emergency response and access to resources.

- As a trusted partner to the Federal Emergency Management Agency (FEMA), Jacobs developed a web-based Disaster Assistance Resource Tool (DART) that provides real-time information on disaster-related data.
- DART enables timely and effective communication and collaboration with partners for all types of disaster events and maintains data security and confidentiality.

## 3 Facility planning, design, program and construction management, and commissioning.

- Ranked No. 1 in Health Care facilities by *Engineering News-Record*, Jacobs designs and constructs state-of-the-art healthcare facilities, from entire hospital campus developments to community healthcare resources, primary care clinics and laboratories.
- Jacobs conducted facility condition assessments for a total of 3.7 million square feet of space across twenty-four buildings for twelve individual hospitals and clinics within the Allina Health network as well as at their Abbot Northwestern Main Hospital Campus.

## 4 Emergency logistics services and supply chain activities.

- Through our work with the U.S. Department of Defense, Cooperative Threat Reduction Program, Jacobs has established an extensive network of international suppliers, with coordinated shipping and value added tax exemptions that meet ITAR and customs requirements.
- Jacobs developed the facility logistics strategy for the new Dunedin Hospital in New Zealand to supply and distribute all clinical and non-clinical items across the new health campus.

## 5 Continuity of operations support to deliver basic healthcare and emergency-specific services.

- Under FEMA's Public Assistance Technical Assistance and Individual Assistance Services contracts, Jacobs augments mass care capacity and supports state and local governments with emergency sheltering and food services, and the rebuilding of infrastructure and public facilities to maintain business continuity.
- Jacobs provided staff augmentation for Stanford Health Care in California and performed life-cycle analysis to improve operational efficiency and reduce costs.

## 6 Digital solutions for data analysis, predictive analytics, cybersecurity and surveillance.

- Jacobs designed an Internet of Things (IoT), early warning, legionella water quality monitoring solution for the Mid-West Veterans Health Administration Hospital.
- We help healthcare providers optimize processes and services by deploying predictive analytics and simulations for patient flow patterns, staff utilization rates and space usage.

## 7 Risk and vulnerability assessments and technical studies.

- Jacobs works with clients to perform risk and vulnerability assessments and "What If" exercises to help prepare for biological events or unplanned activities. Minimizing "unknowns" supports the development of more resilient health systems and strengthens preparedness and response.
- With consideration to the needs of all stakeholders and facility users, Jacobs provided security, risk management and critical infrastructure advice for the Royal Adelaide Hospital in Australia.

## 8 Trainings and exercises for healthcare workers, teams and support staff.

- Jacobs has designed and implemented training programs and provided hands-on training in the medical, veterinary, laboratory diagnostics, biosafety and biosecurity, and disease surveillance fields.
- Our team has developed emergency response plans and table-top exercises that incorporate biological samples shipment and handling, disease surveillance, and coordination/collaboration among government and other stakeholders.

# Our Health System Resilience Champions

Our health system resilience specialists provide a broad depth of experience with services related to global health security, emergency management, disease detection and surveillance, business continuity, supply chain stability, information management, training and exercises, and facility design and construction to help you build resilient health systems in an agile, scalable and sustainable manner.



## **Nino Kharashvili, MD, MBA, PMP**

Nino is a healthcare expert specializing in health system resiliency, including global health security, health system preparedness and strengthening, and program metrics and evaluation. She has partnered with health care agencies and organizations around the world to develop and implement health systems strengthening and resiliency projects based on the finding of simulation exercises, including developing recommendations, emergency response plans and implementation pathways. Nino has also designed and implemented numerous emergency exercises aimed at improving preparedness and response to a potential public health emergency, including national and multi-sectoral response capacity, resource challenges and constraints, and communication strategies.



## **Nina Wollman**

Nina serves as Jacobs' Global Health Market Director, overseeing the solutions and technology areas of Health System Governance, Health Infrastructure and Health Operations Advisory. She leads an international team providing end-to-end solutions to complex challenges that span the management, operational hierarchy and project lifecycle throughout the entire health delivery system. Nina has consulted with a wide range of clients including Stanford Health Care, the MD Anderson Cancer Center, Adventist HealthCare, the University of Colorado Hospital system, and the Children's Hospital of Orange County.



## **Matthew Holmes, ARB, RIBA**

Matthew is a chartered UK and French Registered Architect who leads Jacobs' Global Health Infrastructure practice. After completing the Centre Hospitalier Universitaire de Clermont-Ferrand in France, Matthew relocated to Australia in 2011 where he has been instrumental in leading the Jacobs healthcare advisory and design services teams across a wide range of project typologies. His more recent projects support the delivery of healthcare services in rural locations across Australia, New Zealand and Kiribati and the planning of major tertiary facilities. With a goal of redefining what's possible, Matthew's current research focus is on the sustainable delivery of healthcare services.



## **Bruce Rainey, MHA**

Bruce is a highly experienced executive in healthcare facilities operations, as well as construction at single and multi-facility organizations within the federal, county, and private not-for-profit arenas. Bruce is data driven, with a system-wide analytical view of operations and engages teams in best practices and value-added activities while driving to the lowest possible responsible cost. Most recently, Bruce spent his expertise and time moving forward Scripps Health's 12-year, \$2.6B master plan for new construction system-wide.



## **Megan Ellis, MSPH, CBCP**

As Jacobs' Global Lead for Emergency Management and Business Continuity, Megan works with diverse teams in complex organizations through plan development, training, and activations for private, public and government entities to include both natural disasters and manmade events. Leaning on her vast experience, she identifies vulnerabilities that she exploits in exercises to highlight areas needing mitigation. During the SARS-CoV-2 Pandemic (COVID-19), she helped develop pandemic preparedness plans for hospital systems, and serves in the Emergency Operation Center for the San Diego County Office of Emergency Services as their Business Liaison Lead.



## **Janice Stanton, RN, MBA**

Janice is a Registered Nurse with 36 years of clinical and healthcare consulting experience. She has provided strategic, operational, and facility planning services to more than 100 hospitals and healthcare systems in the United States and Canada. Janice is certified as a Lean Six Sigma Black Belt and provides first-hand knowledge of operations and departmental workflows to guide key stakeholders' discussions. Her goal is to assist clinicians in developing efficient workflows, optimal functional adjacencies, and department configurations that support performance excellence and lean operations.

## **Global Contacts**

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## **About Jacobs**

At Jacobs, we're challenging today to reinvent tomorrow by solving the world's most critical problems for thriving cities, resilient environments, mission-critical outcomes, operational advancement, scientific discovery and cutting-edge manufacturing, turning abstract ideas into realities that transform the world for good. With \$13 billion in revenue and a talent force of more than 55,000, Jacobs provides a full spectrum of professional services including consulting, technical, scientific and project delivery for the government and private sector.

