



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' U.S. Defense Threat Reduction Agency's (DTRA's) Biological Threat Reduction Program work in Georgia helped to prepare the country for the COVID-19 outbreak, contributing to their tremendous success in addressing this public health crisis.
- 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 is the largest professional services provider to the biopharmaceutical industry, offering a full range of facility design and construction services for vaccine and drug manufacturing.

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 Kharaishvili, 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.



Matthew Holmes, ARB, RIBA

Matthew is a chartered UK and French Registered Architect who leads Jacobs' Global Healthcare solutions business. 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.



Dina Salvaggio, RN

Dina is a registered nurse with 30 years of experience as a healthcare operational specialist with a focus on emergency preparedness from a health system, group purchasing, consulting and clinical perspective. She supports complex hospitals and health systems undertaking business continuity, efficiencies and planning initiatives, while enhancing emergency preparedness processes and policies. Dina worked with federal and state agencies, vendors and hospital staff to coordinate critical supplies such as gas, generators, fans, food, clinical and cleansing supplies during a national weather-related crisis. She was also integral in identifying and coordinating highly-effective emergency teams until the crisis had passed.



Matt Talley, JD, PMP

Matt provides executive leadership as the client account manager for Jacobs' Federal Emergency Management Agency (FEMA) portfolio. He has extensive experience in emergency planning, response and recovery – especially related to policy. Since 2000, Matt has worked closely with FEMA in supporting high-level and politically sensitive disaster recovery operations throughout the U.S. and its island territories. He also served as one of the team members who helped develop and implement Guam's 2010 Catastrophic Typhoon Plan.



Issam Khalaf

Issam has served as the program executive for major healthcare programs in the U.S. and internationally. With more than 30 years of experience, he provides extensive knowledge and expertise in planning, programming, designing and supervising complex healthcare facility projects involving new construction and renovation work, including the Scripps Health campuses, Rideout Health Medical Center, Washington Hospital, and the Zuckerberg San Francisco General Hospital. Issam's approach is driven by the end in mind, focusing on safety, quality and the latest technology, with adaptable and flexible usage.



Kitts Christov

Kitts oversees client relations within Jacobs' People & Places Solutions line of business. She brings a strategic perspective to the healthcare market, applying an integrated, solutions-based approach to anticipate and address client needs. Kitts has a well-established tenure of building collaborative teams and in turn enabling rapid decision-making and complex problem-solving. By leaning on a diverse set of practitioner insights, Kitts and her teams can deliver innovative and connected solutions, generating highly effective results.

Global Contacts

Nino Kharaishvili, MD, MBA, PMP

Principal, Health System Resilience
Federal & Environmental Solutions
nino.kharaishvili@jacobs.com
O:+1.571.218.1105 | M:+1.703.508.7086

Matthew Holmes, ARB, RIBA

Principal, Global Director Healthcare
People & Places Solutions
matthew.holmes@jacobs.com
O:+61 7 3026 7595 | M:+61 412 835 660

www.jacobs.com



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.

Jacobs