

**The Russell Berrie Galilee Diabetes SPHERE**  
at the Azrieli Faculty of Medicine, Bar-Ilan University  
Transforming the health and well-being of the Galilee of Israel through an integrated  
transdisciplinary approach to Diabetes

SPHERE - **S**ocial **P**recision-medicine **H**ealth **E**quity **R**esearch **E**ndeavour – is a transdisciplinary research and implementation convergence of biological, medical, and social scientists and humanities for the advancement of health in the face of the challenge of diabetes in the Galilee. Mortality rates from diabetes in Israel vary on regional and demographic basis, however residents in the Galilee have higher morbidity and mortality rates from diabetes and its complications than the national average and any other region of Israel. The goals of SPHERE are to impact the diabetes landscape by (1) reducing existing diabetes disparities between the Galilee population and the general Israeli population, (2) developing new models, paradigms, scientific and health discoveries and best practices for diabetes care that are applicable to social peripheries worldwide. Furthermore, research on the effects of Social Determinants of Health (SDoH) on diabetes care in Israel will be expanded with a spotlight on the many diverse populations of the Galilee.

SPHERE's scientific program and design stem from **four foundational pillars** outlining the disease pathway of diabetes:

- ▶ **Prevent** - Developing new and sustainable strategies to identify risk and prevent population groups from becoming diabetic through a transdisciplinary approach harnessing knowledge from fields such as public health, biomedicine, psychology, and sociology
- ▶ **Control** - New strategies to improve clinical management and mitigate complications by juxtaposing precision medicine with the social determinants of health
- ▶ **Care** - Developing an *Integrated Care Model*, which aligns and integrates, care systems, and the community to proactively address and improve all known, and to be determined, components of best practice diabetes care
- ▶ **Cure** - Basic and clinical science, which highly leverage specialized Galilee, community and Faculty opportunities and strengths, currently proposing to focus on Genetics in Population Isolates, Microbiome, and Islet biology

SPHERE also includes **two cross-cutting support arms**: its **Education**, and **Implementation and Integration centers**. These support not only the research conducted in SPHERE's four foundation pillars but also provide profession programs, building both the current and future workforce to meet the healthcare needs of the region and lead the health care system.

SPHERE also includes an infrastructure to support its activities including a biobank, clinical research organization (CRO), research development office, and unique data platform and data sharing infrastructures to assist with continuous translational communication and interaction.

SPHERE is designed to bridge academic medical research with community healthcare and well-being. Both the impact and partnership approaches of the SPHERE were inspired by the United Nations Sustainable Development Goals (SDGs). We also identified impact targets relating to research, care delivery and social return on investment (SROI), taking into consideration not only the traditional academic metrics but also measurable and proven impact of interventions on care delivery as well as social, economic and environmental aspects.

## **Q&A:**

**Why the Galilee?** Increased prevalence of diabetes in the region, the lack of health security felt by residents, the unique established Faculty led Galilee eco-system, and the presence of specific genetic population isolates.

**What are the bottom-line goals?** Reduce diabetes disparities between the Galilee population and the general Israeli population; develop new models and best practices for diabetes care that are applicable to communities in the periphery worldwide.

**How will this impact on the Faculty?** The Galilee Diabetes SPHERE will become the leading and integrating flagship program for the Faculty's own dedication to community accountability in the Galilee and as a global example of resolving health inequities in the social periphery by integrating excellence in the academic activities of a Faculty of Medicine with partnership and responsibility to the community.

**What other institutions will be involved?** Affiliated Health Maintenance Organizations Clalit Health Services, Maccabi Health Care, Meuhedet, 6 affiliated hospitals – as well as Galilee partners including NGOs, municipalities, social services, community leadership and industry.

**Why is Education so important?** SPHERE provides a unique opportunity to substantially increase the education available in the Galilee for medical students, but also professional continuing education for family physicians, specialists and allied health professionals, and potentially, for the public at large.

**What is the “Implementation and Integration Center”?** It is the translation arm of the SPHERE's research activities, integrating relevant research results into the operations of the Israeli healthcare system. The aim is to reduce the time to successful implementation of relevant research.

**Will data be shared?** The infrastructure of the SPHERE aims to solve one of the biggest potential barriers, normally secure independent and interoperable access to data. A “biobank” and state of the art data sharing platform with the highest standards of privacy, security, and interoperability will be established.

**What is the anticipated budget and timeline?** The timeline is broken down by “Galilee,” “Israel,” and “Global” reach. Initial impact expected with development, within 2-3 years; major reach by 5-6 years. The 10-year strategic plan and budget is based on \$75 million, of which the Russell Berrie Foundation has committed to \$20 million, and Bar-Ilan University itself to \$17.5 million. The remaining \$37.5 million will be covered by co-funders as the SPHERE develops: the Israeli Ministry of Health, HMOs, municipalities, research grants, revenue-generating projects, and philanthropic support for individual projects and centers at various available levels of funding with appropriate donor recognition. Self-sustaining continuity will follow the ten year program.

**Will there be special attention to diabetes in pregnancy (gestational diabetes) and obesity/nutrition risk in young people?** Indeed, the very long consequences of diabetes in the setting

of pregnancy for the woman and neonates, children and adolescents - mandate and will receive special research and implementation emphasis.

**Who will lead SPHERE?** In addition to the Directors and Committees, SPHERE's Principal Investigators are a convergence of current Azrieli Faculty Principal Investigators (PIs), new recruits from Israel and abroad, PIs from the Israeli healthcare system and PIs from established Israeli institutions representing a wide range of scientific disciplines. The overall Director of SPHERE is Professor Naim Shehadeh, President of the Israel Diabetes Association and the Deputy Director is Dr. Sivan Spitzer-Shohat, Director of Education in Population Health at the Azrieli Faculty of Medicine of Bar-Ilan University in the Galilee. The Russell Berrie Foundation has committed substantial lead philanthropic financial support and partnership for SPHERE.

In summary, the Russell Berrie Galilee Diabetes SPHERE aims to change the face of diabetes in the Galilee: fewer people will become diabetic; fewer diabetic patients will deteriorate and suffer from complications; patients and their caregivers will obtain better integrated care and, ideally, new medical devices and medications that will assist in the identification and treatment of patients will be developed, and delivered in a timely as well as scientifically and socially intelligent manner where it most matters. The SPHERE approach will also serve as a model to renew and re-invent the approach to research and management of many infectious preventable and chronic communicable and non-communicable diseases and bring the highest standard of health to peripheral communities.