

A close-up photograph of a woman with a shaved head, smiling warmly. She is wearing a grey t-shirt and is seated in what appears to be a hospital bed or a clinical setting. The background is softly blurred, showing medical equipment and a window. The overall tone is positive and hopeful.

# Transforming Cancer Patient Support: Innovation in Patient Navigation and EHR Integration

An NCI Small Business Innovation and Research study in collaboration with Georgetown Lombardi Comprehensive Cancer Center, an NCI-designated cancer center

# Call for change

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## 1. Increasing Complexity of Cancer Care

The landscape of cancer care has evolved dramatically in recent years, with treatments becoming more specialized and personalized. As medical advancements grow more complex, patients and caregivers are faced with an overwhelming amount of information to digest. This can create mental and cognitive burdens, making it difficult to understand treatment options, manage appointments, and follow care plans. Traditional navigation methods often fall short in addressing these complexities, highlighting the urgent need for improved patient navigation systems that offer real-time, personalized guidance.

## 2. Barriers to Effective Communication

Effective communication between patients, caregivers, and healthcare providers is critical for successful outcomes in cancer care. However, communication breakdowns frequently occur due to the sheer volume of information shared during consultations, language barriers, and the emotional toll of a cancer diagnosis. These barriers hinder patients' ability to make informed decisions and maintain active involvement in their care. Enhanced navigation tools are needed to bridge these gaps, ensuring clear, consistent, and timely communication between all parties.

## 3. Patient and Caregiver Burden

Cancer treatment places significant physical, emotional, and logistical strain on both patients and caregivers. Managing appointments, medication schedules, and complex treatment protocols can be overwhelming, especially for those dealing with the emotional aspects of the diagnosis. Traditional patient navigation systems often lack the functionality needed to ease these burdens. There is a growing need for responsive, digital navigation tools that streamline care coordination and reduce the cognitive load on both patients and caregivers.

## 4. Health Professional Workload

Healthcare professionals, already facing high workloads, must also navigate administrative tasks that take time away from direct patient care. Coordinating cancer treatment across various departments, specialists, and care teams adds to the complexity. Current systems often require manual processes, contributing to inefficiencies in care delivery. Implementing integrated patient navigation solutions that seamlessly align with electronic health records (EHRs) can relieve some of this administrative burden, enabling healthcare teams to focus more on delivering quality care.





# Reducing Cognitive Burdens in Cancer Care

To address the complexities and burdens faced by cancer patients, caregivers, and healthcare professionals, GMG ArcData collaborated with the Georgetown Lombardi Comprehensive Cancer Center by conducting comprehensive research into the pain points experienced during cancer care, particularly focusing on communication gaps, logistical challenges, and the overwhelming volume of information patients and caregivers must manage. Through surveys, interviews, and focus groups with patients, caregivers, and healthcare providers, we identified key areas where patient navigation systems needed improvement—particularly in simplifying communication, streamlining care coordination, and providing real-time, tailored guidance.

Based on these insights, we designed the PatientNav App, a HIPAA-compliant, EHR-integrated tool that directly addresses the core challenges identified in our research. The app features patient assessment and care workflow integration, allowing for seamless communication between patients and their healthcare teams, and provides real-time patient education to reduce the mental and cognitive burdens on users. The design process involved iterative testing with key stakeholders, including patients, caregivers, and medical professionals, ensuring that the tool was both user-friendly and clinically relevant. Our research culminated in a clinical trial to validate the app's effectiveness, with findings published in the peer-reviewed [BMC Digital Health journal](#).

# About GMG ArcData LLC

Since its inception in 2019, GMG ArcData, an SBA certified service disabled veteran and minority-owned small, disadvantaged business (SDVOSB), helps government, commercial, and not-for-profit clients accomplish their goals by providing innovative solutions and evidence-based advisory services through applying software engineering, data analytics, first principles-based problem-solving, and user-centered design principles to enhance decision-making, performance, and organizational situational awareness. GMG ArcData is led by hands-on principals with MD, PhD, and PMP and over 65 years of combined experience in the private and public sectors and the military. The company is HIPAA and 42 CFR compliant.