Reimagining Health Care Delivery in the Communities We Serve

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Editor's note: This issue, we welcome a new column from the Center for Health Care Innovation at Penn Medicine Lancaster General Health. The center opened four years ago with the mission to develop, test, and implement new strategies to reimagine health care delivery. This article offers an introduction to the program; subsequent columns will provide more detail and share lessons learned and updates regarding project progress.

INTRODUCTION

At its most basic, human-centered design means creating a product or service by prioritizing the user's needs and experiences, and keeping this mindset every step of the way. Design thinking may be a strategic approach or a philosophy, but for those at the Center for Health Care Innovation (CHCI) at Penn Medicine Lancaster General Health, it means being able to use creativity to better solve health care problems, particularly from the patient perspective.

CHCI holds as its edict that health and health care delivery can be reimagined within the communities being served. No matter the issue, this includes a commitment to study problems intimately and approach them through principles of human-centered design while caring deeply about the implementation of solutions that work.

This introduction to CHCI at LG Health will outline the methodology used at the center and the integration of design thinking, including how this model is employed in the signature Innovation Accelerator Program.

APPROACH AND TOOLS: THE DOUBLE DIAMOND

As an eight-member department, CHCI at LG Health is four years old and modeled after the successful Penn Medicine Center for Health Care Innovation in Philadelphia. Both groups approach innovative problem-solving using the same foundational perspective: significant improvements to patient health, clinician experience, and care delivery require experimentation to be developed quickly and at low cost. Only when high-impact solutions are discovered and demonstrated should they be scaled or more broadly integrated.

The human-centered-design framework applies an iterative and agile approach to care delivery called the Double Diamond (see Fig. 1). Through this framework, solutions are continually refined and improved. The Double Diamond comprises four parts that alternate between *divergent* thinking or actions and *convergent* thinking or actions. The former involves intentionally broadening one's perspective to include as many ideas as possible, while the latter entails synthesizing information and making decisions to narrow down those ideas.

The first stage of the initial process phase involves focusing on problem definition in an attempt to understand which solutions might work. "Discovery" is an attempt to learn as much as possible about the problem space and includes a contextual inquiry — an ethnographic method involving the observation and analysis of patients, providers, and care teams in action within the working environment. This phase may include having the innovator experience the process firsthand, which among other things will help the team develop a sense of empathy to uncover patient and care team needs.

The second stage of the initial phase, called "Define," is an opportunity to hone in on the problem and its causes. Journey maps help connect the dots between discoveries from the first stage; fictional users — called *personas* — which are created from the data gathered on their needs, behavior, and preferences, give innovators a locus around which solutions can be designed.

The Discovery and Define stages culminate in defining the needle — or metric — that needs to move. This is an important activity in the process because it allows the innovation team to identify what they are trying to change, as well as to further define metrics, the measure of which will determine whether solutions are safe and effective, and ultimately, worthwhile.

The second phase includes the opportunity to experiment with ideas and pilot the solutions with the hope that solutions may demonstrate a potentially viable business model. This begins with "Ideation," during which brainstorming takes place, and subsequently leads to "Validation," during which ideas become action in a quick, low-cost, and low-barrier way. Experimentation cycles follow, the goal being to test and validate whether
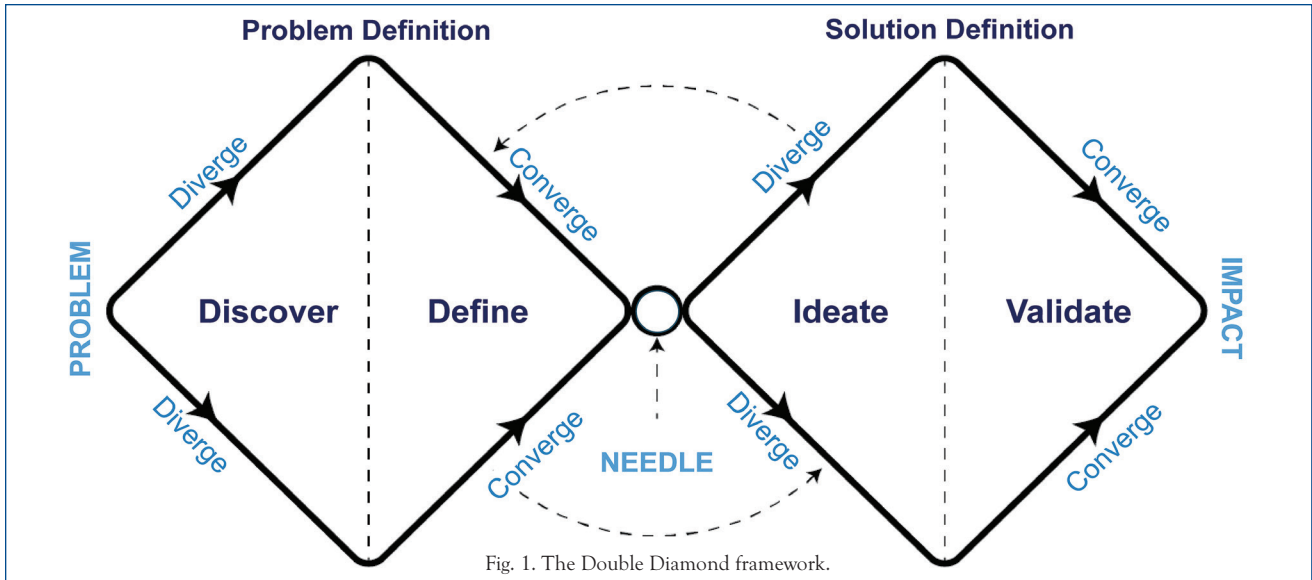
Fig. 1. The Double Diamond framework.

solutions work. Simulation of a product or service allows the innovation team to observe how a persona might encounter the solution in context. The context of each problem determines whether the team must revisit and utilize available tools and opportunities.

INNOVATION ACCELERATOR PROGRAM

CHCI at LG Health's signature Innovation Accelerator Program (IAP) supports staff from across LG Health in their efforts to develop, test, and implement new approaches to improve health care delivery and patient outcomes. Working closely with mentors from the Innovation Center, teams progress through three phases of work (see Fig. 2) with the goal of bringing successful innovations to scale. This is a year-and-a-half-plus-long program, beginning with an invitation to clinicians and nonclinicians that they submit a Request for Problem (RFP) application. Ideally problems will not come with ready-made solutions, but will have passionate champions who are deeply embedded in the problem space or engaged subject-matter experts. If accepted into the program, the CHCI team at LG Health will work as facilitators and mentors to help fast-track, or accelerate, solutions.

During Phase 1 of the IAP, the team focuses efforts on exploring the problem and its potential solutions. For about six months, they embark on activities that take them through all parts of the Double Diamond framework to help understand the problem space, rapidly test solutions, and gather evidence to move the needle. When they can show a

solution that might work, they present it to the health system's leadership for the opportunity to receive additional investment to help take the idea to scale.

Once graduated to Phase 2, teams move from conducting small experiments to testing on a larger scale. Teams are challenged in Phase 2 to demonstrate sustained impact and secure the resources and stakeholder support necessary to move solutions toward implementation. This phase usually takes about a year.

An example of an IAP project currently in Phase 2 is BP Pal, during which the CHCI team at LG Health will embark on a larger-scale pilot with two family practices and test certain escalation pathways. Champions Zachary Bricker, MSN, RN, manager of clinical quality; Michael Bredin, PA, Urgent Care; and Haley Fuller, patient education specialist, had already observed that 30% of LG Health's hypertensive patients were uncontrolled. That meant 21,000 patients were at increased risk of dying from heart attack or stroke. The CHCI team at LG Health helped determine a text-based monitoring solution to allow home blood pressure reporting and offer a high-impact opportunity to improve patient compliance and facilitate faster and better blood pressure management by providers.
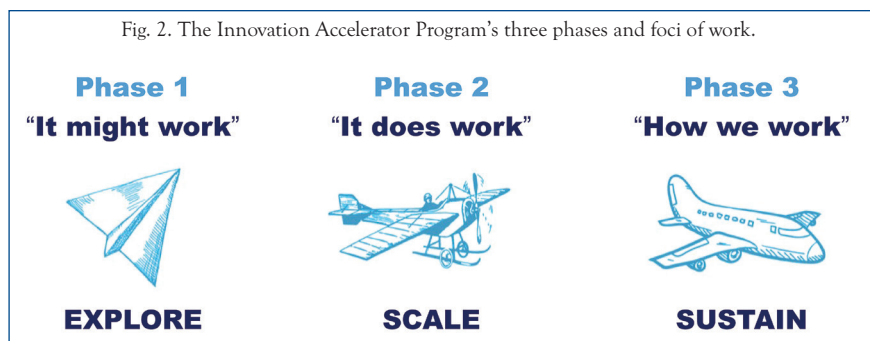
Fig. 2. The Innovation Accelerator Program's three phases and foci of work.

Phase 1	Phase 2	Phase 3
"It might work"	"It does work"	"How we work"
EXPLORE	SCALE	SUSTAIN

BP Pal is based on Penn Medicine Philadelphia's employee hypertension program, which demonstrated 90% of participants became controlled within three months. The LG Health project's executive sponsor is Dr. John Wood, executive medical director of LG Health's Community Care Collaborative and LG Health Physicians.

In Phase 3, leveraging knowledge and momentum from previous phases, teams work with stakeholders to secure the permanent infrastructure necessary for their intervention. Teams "graduate" when they achieve sustainable implementation at scale for their solution. An example of a project in this phase is Screen on Time, championed by Dr. Brian Young, medical director of transformation, and Paige V. Bagwell, manager of diagnostics outreach. The executive sponsor is Tara Casher, administrative director of GI and general surgery service lines.

These project champions had identified that the current colorectal cancer screening approach left thousands of patients unscreened for the third leading cause of cancer-related deaths. During the eight-month initial pilot of a text-based program, patients were prompted to make an active decision about scheduling colorectal cancer screening. Initial results showed the number of screenings increased from 72.8% to over 75%, surpassing the annual goal of 74.1%.

CHCI at LG Health will kick off its third cohort of IAP projects in early 2023 and will accept applications between September 6 and October 21, 2022. More details, including dates of information sessions and how applicants can get help defining their problem, are available at https://innovation.lghealth.org/iap-application.

SCALING EXISTING PROJECTS

CHCI at LG Health also scales projects that its innovation sibling in Philadelphia has already moved through the three IAP phases. BreatheBetterTogether (BBT) is one example.

In 2017, more than 3,000 patients with COPD were admitted to downtown Philadelphia Penn Medicine hospitals over 5,000 times, and 20% were readmitted within 30 days. The Philadelphia Innovation team created a hospital-to-home transition program for patients with COPD to implement personalized home-based interventions. In the pilot phase — in which more than 150 high-risk COPD patients participated — the introduction of BBT led to a 32% reduction in 30-day readmissions, and Penn Cavalry prevented 82% of readmissions. Together, these programs resulted in cost savings to the health system of approximately $10,000 per patient.

The CHCI team at LG Health is working to scale this program in Lancaster, implementing both English- and Spanish-language versions of the programs as well as an over-the-phone option for non-texting patients.

AD-HOC PROJECTS

CHCI at LG Health is approached throughout the year by different practice areas, teams, or Champions for innovation help and insight. For example, one project explored the missed opportunity around monitoring certain diabetes patient groups.

To better understand why continuous glucose monitor patients using Abbott's FreeStyle Libre mobile app were not sharing their glucose readings with their provider — often not even scanning the sensor inserted into their skin — the LG Health innovation team dove deep into the patient perspective and experience of the diabetes management process. Through patient observations, interviews, and studying quantitative data and market research, the team discovered that patients have challenges with the digital setup process, as well as sharing data with their provider's practice. Additionally, many patients do not scan because they do not remember to install a new sensor for various end-user reasons.

EXTERNAL STRATEGIC PARTNERSHIPS

Finally, CHCI at LG Health is involved in strategic partnerships with startups. Through existing relationships with companies that provide capital investment to startups in the health care space, CHCI at LG Health can help run pilot programs and implement companies' ready-to-go offerings. After thorough vetting, startups may be introduced to other LG Health stakeholders who may be interested in implementing their solutions.

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