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CASE STUDY

PUBLIC INNOVATION

DIGITAL TRANSFORMATION FOR THE CARE BLOCKS IN BOGOTÁ

BY EMMA MINER AND FRANCISCA M. ROJAS

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Digital Transformation for the Care Blocks in Bogotá

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Aerial photo of Bogotá via Unsplash

INTRODUCTION

In 2021, the Bloomberg Center for Public Innovation at Johns Hopkins University began a partnership with Mayor Claudia López of Bogotá, Colombia, to accelerate the city government's digital transformation by standing up and supporting an innovation team (i-team) focused specifically on digital innovation.[1]

The i-teams program was established in 2011 by Bloomberg Philanthropies to address complex city challenges by unlocking creativity from within governments and the communities they serve. Recognizing the pivotal role that data and digital technologies had played in local government responses to the COVID-19 pandemic that began in 2020, the Digital i-teams program sought to continue that progress by bringing together data scientists, civic designers, and experts to "leverage data and digital technologies to enhance public services and create new value for communities."[2] Innovation teams guide city staff and diverse stakeholders through an evidence-based process to tackle big problems, generate more ambitious responses, and test and adapt interventions until they produce impact.

Bogotá is Colombia's capital city with an estimated population of 8 million (2018).

This case study explores how Bogotá's Digital i-team, the Laboratorio de Innovación Pública de Bogotá (iBO), applied the i-teams' resident-centered innovation methodology to the implementation of a new policy prioritized by the mayor, called the System of Care Blocks (Sistema Distrital del Cuidado or SIDICU, in Spanish), an award-winning program addressing gender equity led by the Secretariat for Women's Affairs. It documents how iBO and the Secretariat of Women's Affairs collaborated to improve the effectiveness of the System of Care Blocks for caregivers and service providers alike. The insights in this document are intended for city officials and practitioners that are interested in understanding public innovation and the role of digital tools in service delivery.

Among the 4 million women in Bogotá, 3.6 million carry out unpaid care work, and 1.2 million do so full-time.[3] To address this high burden of unpaid care labor, the city government integrated a wide range of social services in one convenient space, known as the Care Block. The Bogotá i-team contributed to improving data collection and management for the Care Blocks by considering solutions that adapted to the characteristics and needs of caregivers who

sought to access services. Using both digital and analog tools to more effectively register their personal information and attendance to services, the i-team developed four prototypes based on women's trust in the Care Block program and their desire to belong to a community of caregivers.

Guided by the Bloomberg Center for Public Innovation at Johns Hopkins University over 18 months, iBO's rigorous application of the innovation methodology led them to explore a city challenge from multiple perspectives and to co-create solutions with caregivers, public servants, technology experts, and civic designers, to name a few. The team's empathetic listening was what led the team to design an experience, rather than just a digital tool, that directly responded to the needs of caregivers, service providers, and public institutions. The narrative that follows introduces the public innovation methodology utilized by the Bogotá i-team and illustrates their support of the System of Care Blocks in collaboration with the Secretariat for Women's Affairs.

THE SYSTEM OF CARE BLOCKS IN BOGOTÁ

In Bogotá, 30 percent of women are unpaid, full-time caregivers who spend an average of seven hours each day caring for children, the elderly, people with disabilities, or their otherwise high-needs loved ones. Of these 1.2 million women, 33 percent report having no free time, 20 percent have been diagnosed with an untreated chronic illness, and nearly 90 percent are low-income. To "recognize the role of care and caregivers, redistribute care more equitably between men and women, and reduce the time women dedicate to care," the Care Blocks program integrates into one location numerous free services provided by 13 city entities.[4] The Care Blocks provide caretakers with the time and space to tend to their own wellbeing — whether that is taking a water aerobics class, creating their first resume, or getting legal counseling — while their child goes to daycare and their elderly father takes a stretching class (Images 1-8). These services promote personal development, improved psychosocial health, income generation, and political participation not only for female caregivers, but for all community members served.

THE BOGOTÁ PUBLIC INNOVATION LAB METHODOLOGY

The Care Blocks have been successful in attracting caretakers; over 260,000 women have accessed services as of July 2023.[5] While city staff at the Secretariat for Women's Affairs knew that many people were accessing services at the Care


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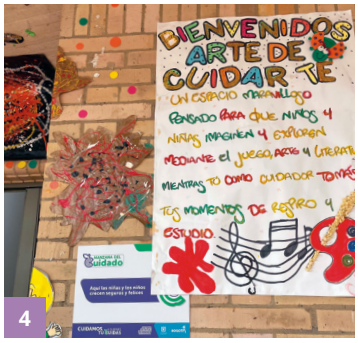

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1 A menu of services offered to caretakers at the Bosa neighborhood Care Block

2 Sewing class

3 Laundry facilities

4 A childcare center that promotes the "Art of Caring"

5 A mobile library and reading group for the children of caretakers

6 A meditation class

Photos courtesy of Emma Miner

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7 Bicycle school for women

8 Swimming class

Photos courtesy of Emma Miner

Blocks, they proactively recognized that they needed to know more about the beneficiaries so they could best design new and improved data-informed services and make policy decisions that reflect caregivers' evolving needs. In August 2022, the Secretariat for Women's Affairs leveraged iBO's resident-centered and data-driven approach to public problems and tasked them with the challenge of improving the way in which the Care Blocks collected, registered, and compiled caregivers' personal information.

iBO approached this challenge in a rigorous manner by applying the design-based innovation techniques developed by the i-teams program, known as the Path to Innovation (Figure 1), along with components of the Double Diamond design process, which they adapted into a six-phase innovation methodology (Figure 2).[6] In this approach, Phases 1 to 3 seek to understand the problem, Phases 4 and 5 focus on prototyping solutions, and Phase 6 delivers solutions to the implementing entity. The underlying skills and methods that support the application of public innovation are human-centered design, systemic thinking, behavioral science, agility, digital product development, and data-driven decisions.[7] To fulfill these key competencies, the iBO team included experts in public administration, international cooperation, law, economics, systems design, user experience, anthropology, human rights, information technology, communications, and graphic design.

What follows is a description of how iBO's innovation methodology considers and prioritizes stakeholders' perspectives in every step of this process, from user-research for understanding the problem to ideation and testing prototypes.

Figure 1: The Path to Innovation

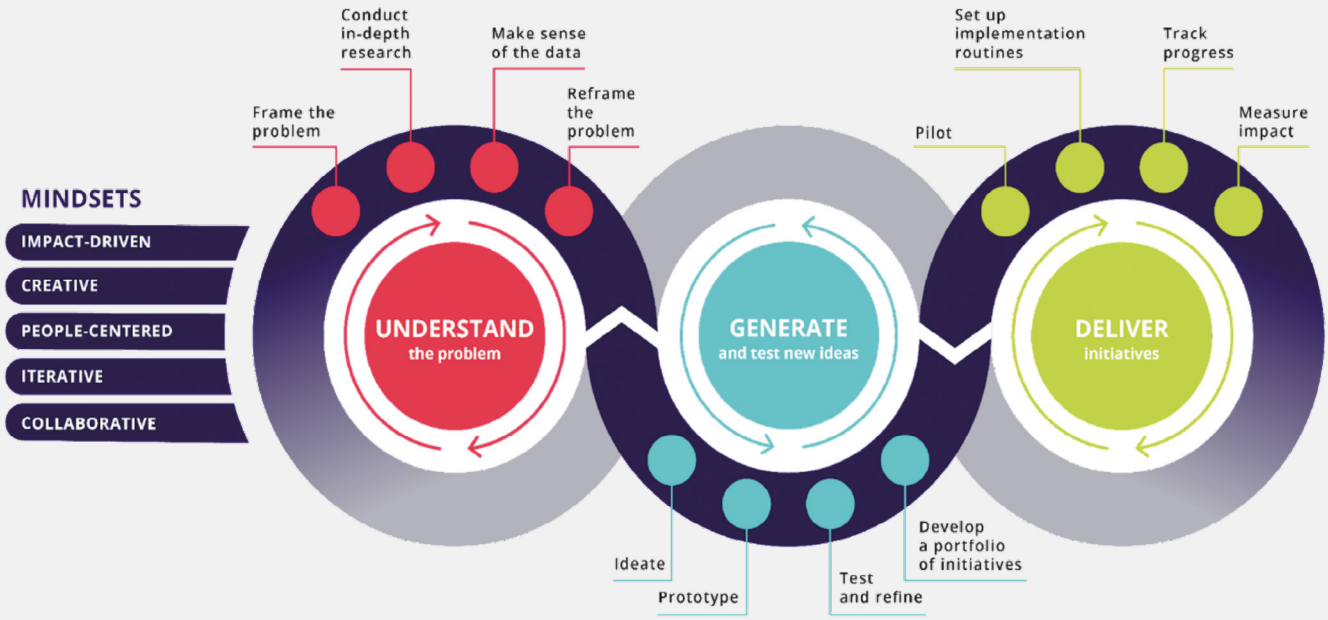
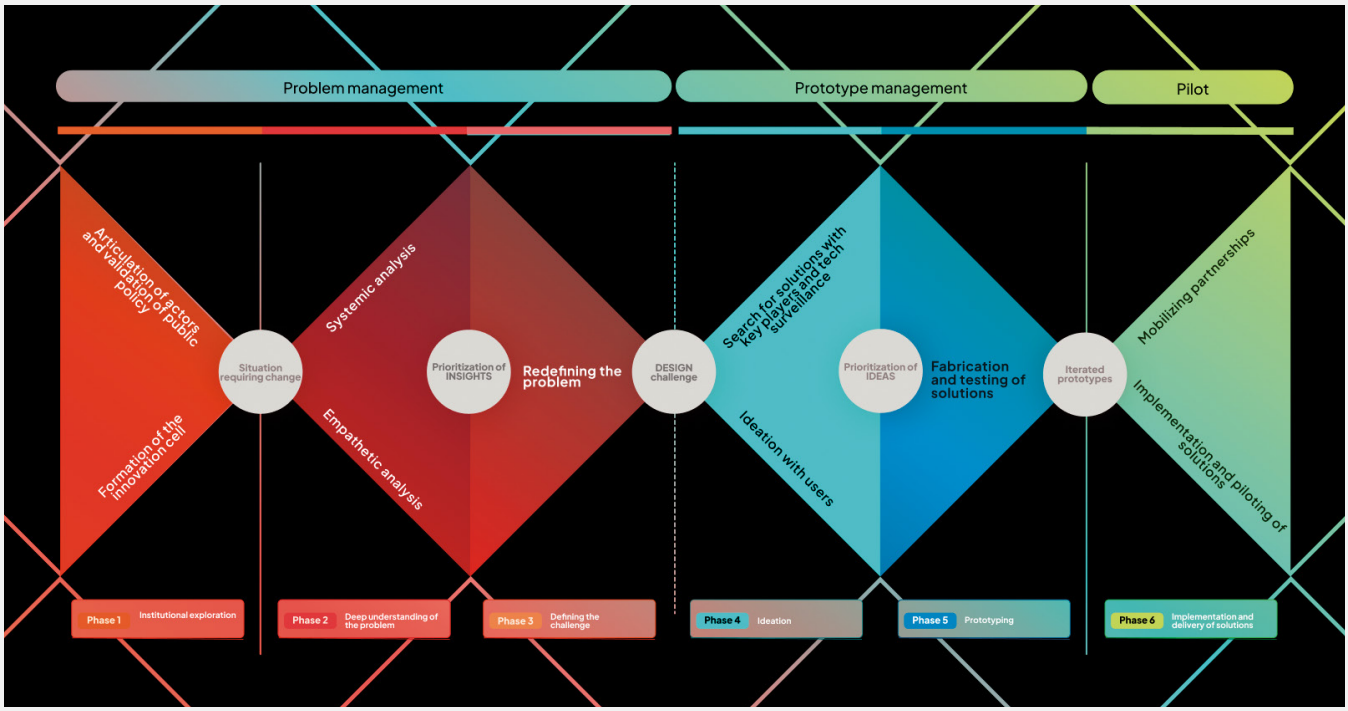


Figure 2: iBO's methodology for innovation



Phase 1: Institutional Exploration

Research shows that deeply engaging stakeholders improves the sustainability of solutions by increasing stakeholders' self-efficacy and sense of ownership of the problem and solutions.[8,9,10] To fully understand the Secretariat for Women's Affairs challenge in collecting and managing information to improve the delivery of Care Blocks services, iBO recognized that they first had to identify who would be impacted by having access to more robust beneficiary data. First, iBO held an internal workshop with information system experts and leaders from the Secretariat for Women's Affairs to identify key stakeholders. During this session, participants mapped stakeholders based on their level of interest and the extent to which they had previously been taken into account by the Care Blocks program. Identifying these stakeholders would also subsequently allow iBO to identify who to speak with to learn more about the challenge and potential solutions.

Phase 2: Deep Understanding of the Problem

In order to map all the factors related to the challenge of data collection and management within the Care Blocks, iBO conducted observations, interviews, and workshops with the Care Blocks Director, Care Block coordinators, service providers, and beneficiaries starting in September 2022. This phase of field research involved

9 The iBO team

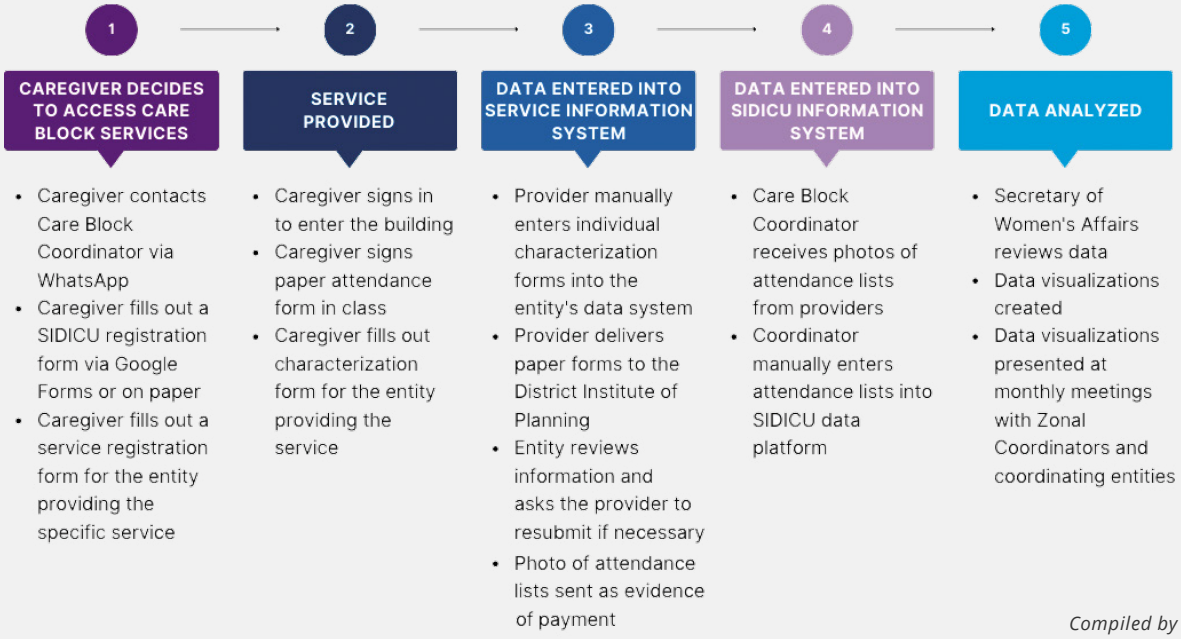
Photo courtesy of iBO

12 site visits to Care Blocks; 32 in-depth interviews with service providers, Care Block coordinators, and zonal coordinators; and 20 non-participant observations. With these stakeholder insights, iBO was able to develop a robust data path that clearly displayed opportunities for deploying innovative solutions (Figure 3).

Mapping the path of Bogotá Care Blocks beneficiary and program data revealed a high level of complexity in which sensitive information moved through multiple service providers and platforms. Furthermore, each coordinating entity requested different information and used a separate data management platform that did not link to any other entity's database. Representatives from key entities met with zonal coordinators monthly to make strategic decisions for the System of Care Blocks, but interoperability challenges between each entity's data management platform and the absence of data disaggregated by beneficiaries constrained the Care Blocks administrators' capacity to make data-driven decisions on behalf of improving service offerings and delivery.

Prior to accessing Care Block services, beneficiaries were asked to complete registration forms either in person or via a Google Form sent by the coordinator of each Care Block. Coordinators received roughly 500 requests from potential beneficiaries each week, so it could take up to two months for the registration forms and class schedules to be sent to caretakers interested in accessing Care Block services. Once the beneficiary arrived at the Care Block, they had to sign a

Figure 3: Care Blocks data path as of September 2022



Compiled by Emma Miner

10 Care Blocks attendance paper records stored at the District Institute of Planning, 2022

Photo courtesy of iBO

paper entry registration form. In classes, the service provider helped each attendee complete a paper characterization form, which included 35-42 variables. The form included sensitive questions, and beneficiaries did not always feel comfortable truthfully answering these with the instructor, or the instructor may complete the form on behalf of the caretaker, making assumptions about how the beneficiary would answer without asking the question. Beneficiaries were then asked to sign a paper attendance list that repeated some of the questions asked in the characterization form and included sensitive information that was visible to all attendees.

At the end of the week, the service provider had to manually input all the characterization forms and attendance lists into Google Forms. During the research phase, iBO found that this process was time-consuming and prone to gathering incomplete or incorrect data. In September 2022, providers reported spending an average of five hours each week collecting beneficiary data and six hours consolidating the data. Since providers are paid per service provided, this process led to providers spending several hours of unpaid labor each day on activities related to capturing and recording beneficiary information.

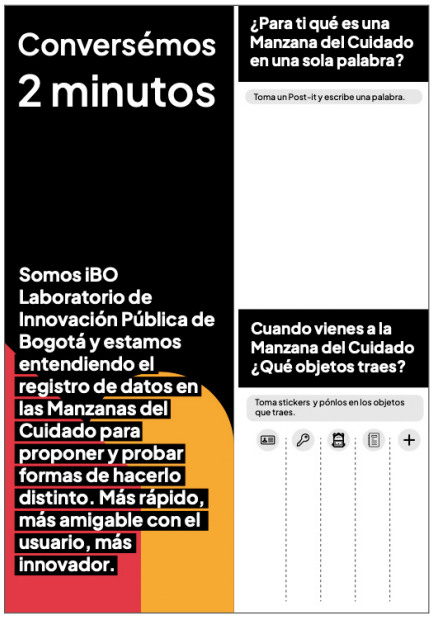
The Care Block coordinator also had to register the total number of attendees per class on a separate platform. iBO determined that, on average, coordinators spent additional hours of unpaid overtime labor each day on activities related to capturing and recording data used by the zonal coordinator to monitor the flow of people in the Care Blocks. Zonal coordinators also had to consolidate and organize this data. Finally, the physical attendance lists had to be delivered weekly to the District Institute of Planning (Image 10), and if any errors were detected, the provider had to fill out and resubmit a new form so it could be filed.

Phase 3: Defining the Challenge

The activities conducted in Phases 1 and 2 provided iBO with key insights about the process of registering and managing information about the beneficiaries of the Care Blocks, including that the data systems of each district entity were not interoperable, and the entities were delivering valued services but were struggling to collect associated data. During a workshop with information systems leaders for the Care Blocks program and the Secretariat for Women's Affairs, a participant noted that "the entities do not have it in their DNA to share information, much less sensitive information; this is a huge challenge in terms of interoperability." With this knowledge, iBO identified the challenge as improving the user experience (for caregivers and service providers) of providing and collecting information in the Care Blocks to generate analyzable data and support improved decision-making around service provision.

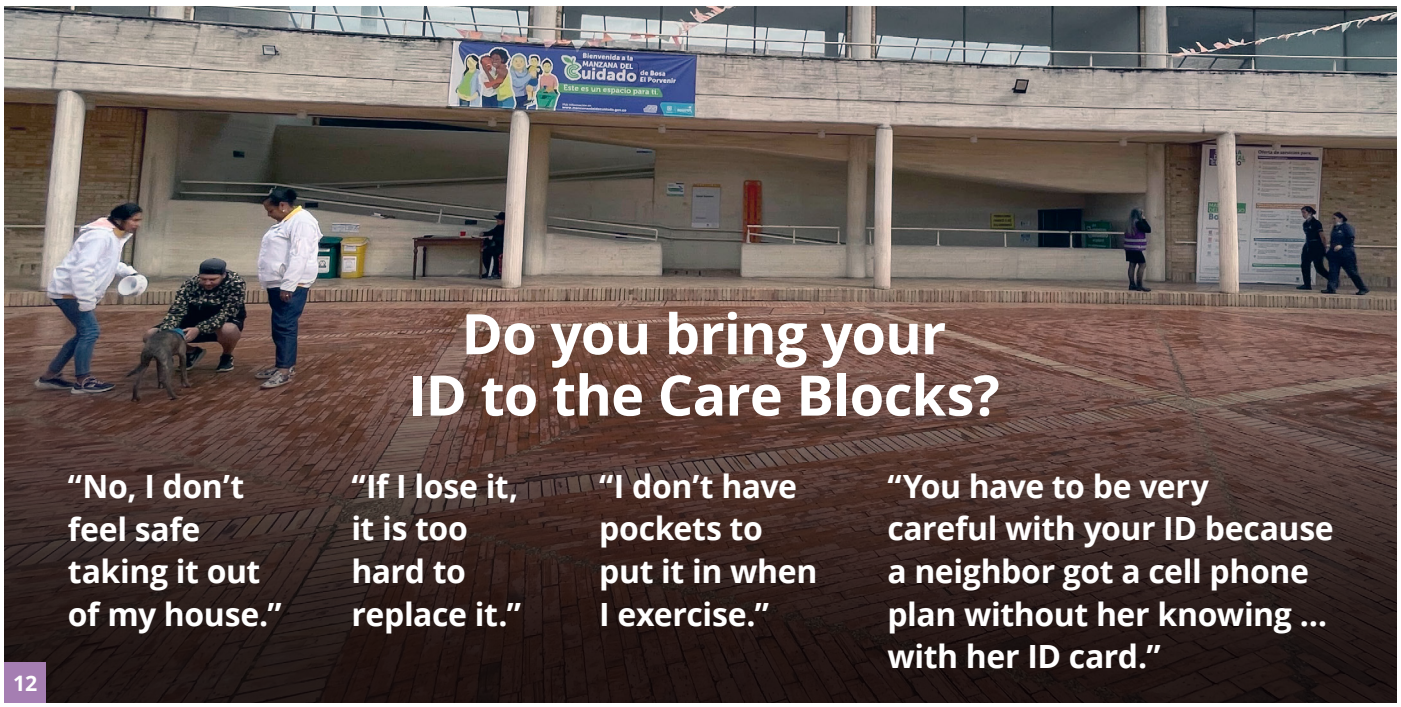
Phase 4: Ideation

In October 2022, iBO engaged caregivers, service providers, and coordinators, along with data experts, to generate creative ideas from the perspective of a user who is responsible for collecting and delivering data related to providing services at the Care Blocks. This phase involved four ideation workshops with 125 caregivers, 25 ideation exercises with service providers, and two ideation workshops with public servants and technology experts. iBO also visited Care Blocks to engage in conversations with caregivers to solicit their ideas on how to improve the information collection component of service delivery (Image 11).



11 iBO engaging beneficiaries at a Care Block with interactive polls and brief conversations

Images courtesy of iBO



12 Reasons provided by beneficiaries for not bringing their government-issued identification (ID) card to the Care Blocks

Photo courtesy of iBO, translation from Spanish to English by Emma Miner

Large, visually appealing, and interactive signs welcomed caregivers at the entrance of two Care Blocks to encourage women to share their opinions. These conversations revealed that women felt extremely happy and grateful for the services they were participating in at the Care Blocks and felt a powerful desire to be able to show their neighbors, friends, and families that they belonged to a community of like-minded caregivers. Therefore, the challenge expanded beyond enabling the efficient collection and usage of high-quality data to also encompass how to build beneficiaries' sense of belonging to a community of caretakers as a way to generate trust so that they could feel comfortable sharing accurate information with Care Blocks.

Initially, identification card (ID) scanners appeared to offer a pragmatic solution for collecting beneficiary data. They are easy to install, allow caretakers to register for each service within seconds by scanning their government-issued IDs, and leverage a source of information that all beneficiaries already have. However, iBO's conversations with caregivers revealed that this solution would not be appropriate for this target population, since most women did not take their IDs to the Care Blocks (Image 12).

Instead of identifying solutions that appear appropriate at first glance or are successful in other contexts, iBO's user-centered methodology took into consideration the caregivers' input to generate a variety of ideas that went beyond

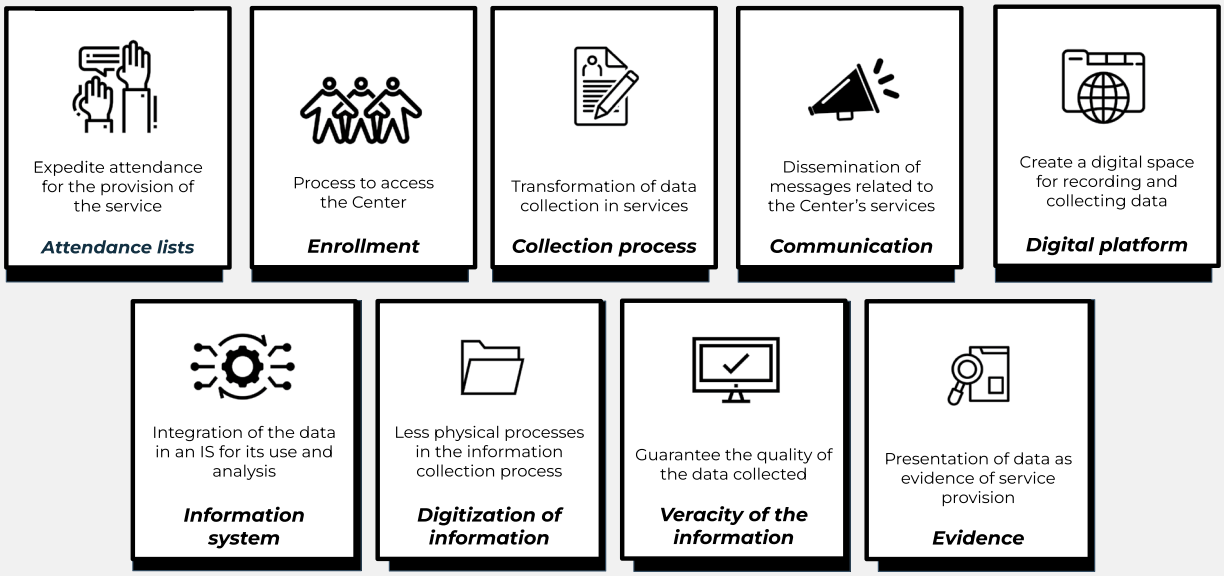
pre-existing solutions. iBO's collaborative ideation effort with stakeholders generated 92 unique ideas that were compiled into an ideation reservoir. The iBO team then synthesized the proposed ideas into 10 categories (Figure 4). This approach ensured that solutions responded to users' specific needs and that public funds were not dedicated to scaling ineffective solutions.

A systematic selection process followed in which ideas that received the highest reach, impact, confidence, and effort (RICE) scores were prioritized for prototyping.[11] iBO selected the RICE prioritization method due to its comprehensive criteria that best fit the Care Blocks challenge.

Phase 5: Prototyping

The translation of ideas into tangible solutions to refine and validate service designs is central to the innovation process. Starting in 2023, the iBO team constructed low-fidelity paper and digital prototypes for prioritized ideas in four critical areas of the data path: enrollment, attendance, digital data consumption, and connection to the Care Blocks information system. The pros and cons for each prototype were considered based on existing evidence for the solution and stakeholder feedback to select one prototype for each of the four categories. This process bridged both lived

Figure 4. iBO synthesized and mapped stakeholder ideas to address the Care Blocks data collection and management challenges.

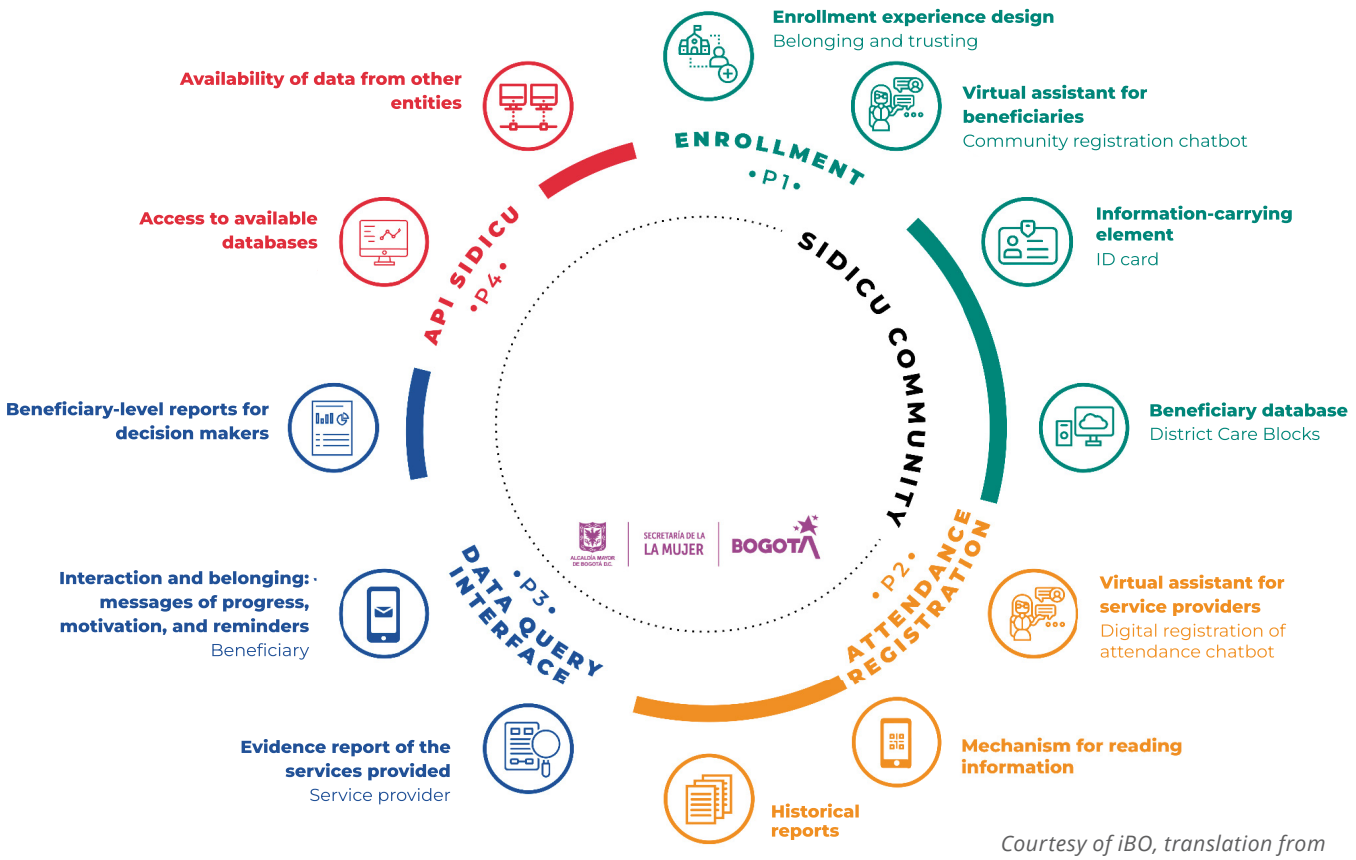


Courtesy of iBO, translation from Spanish to English by Emma Miner

experience and technical expertise, emphasizing iBO's commitment to engaging multiple key stakeholders throughout the innovation process.

The final prototypes included a system encompassing two WhatsApp-based chatbots, a customizable caregiver ID, and a database that disaggregates data at the beneficiary level (Figure 5). The first chatbot allows caregivers to register autonomously with the Care Blocks program by giving their personal information through a simple chat with closed questions and, in exchange, to receive a physical ID that allows them to show that they belong to a like-minded network (Images 12 and 13). Three features of this card enable trust: first, no sensitive information is visible on the card except for the caregiver's name; second, the QR code holding all of their enrollment data can only be read by an attendance chatbot; and third, no sensitive information is disclosed to the service provider during the attendance-taking process. To link the analog and digital solutions, the ID's QR code is used by service providers in the second prototype, in which

Figure 5. The final four prototypes developed by iBO with the Care Blocks



Courtesy of iBO, translation from Spanish to English by Emma Miner

providers register attendance and receive a certificate of completion by sending a picture of all IDs to another chatbot. Once submitted, information is available instantly in an interoperable database that allows all collaborating entities to better understand who is accessing the caregiver services so they can more effectively make critical decisions about programming. Even in large classes, this digital process takes less than 10 minutes, an improvement from the hours that providers used to spend uploading data each week with the previous data route. With this expedited attendance process, more time is available to providers for delivering services to caretakers.

Throughout the prototyping phase, iBO focused on the user experience for beneficiaries, service providers, coordinators, the Secretariat for Women's Affairs, and other entities to ensure that the solutions responded to each stakeholder group's expressed needs. To improve the user experience, iBO developed a robust theory of change that corresponded to the new data route, developed measurement and evaluation variables, and conducted workshops. Each prototype went through multiple iterations based on stakeholder feedback on various components of the prototypes including the avatar on the ID card, the language of the chatbot, and the effectiveness of the QR recognition. The workshops also sparked crucial conversations among the iBO team, including what beneficiary data service providers need to know to provide the highest-quality classes in balance with the need to protect sensitive information.

12 Attendance at a chatbot workshop with service providers

13 The front and back of a caregiver ID designed by iBO

Images courtesy of iBO

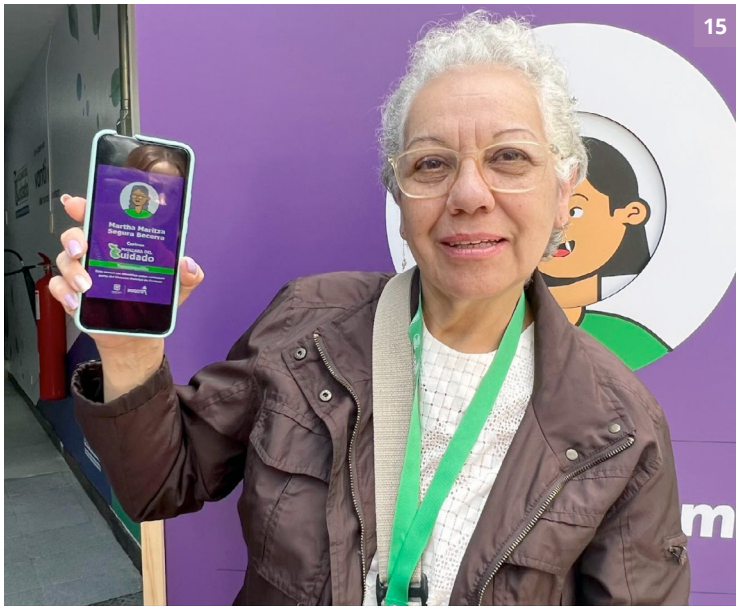
To further test the enrollment prototypes, iBO held massive promotional events at two Care Blocks. These events included speeches from Mayor López and senior officials from the Secretariat for Women's Affairs that emphasized the importance of Care Blocks (Image 14). To encourage caregivers to register, iBO constructed large, centrally located displays and placed staff throughout the Care Blocks to walk caregivers through the process. At these two events, a total of 689 caregivers were registered and received their personalized ID cards, and iBO was able to compile information on 45 key indicators while also getting real-time feedback on the enrollment process from beneficiaries. When asked, 86 percent of those registered gave the experience five stars, while another 13 percent rated it as four stars. The main takeaway of these events: caregivers were proud to create an ID that recognized their contributions to their families and communities (Image 15).

After multiple iterations, iBO tested the prototypes at three Care Blocks to determine how they function in different locations and services. The selected Care Blocks included a small Care Block, a new Care Block, and a large, established Care Block. While two of the Care Blocks had issued caregiver IDs, the large, established Care Center had not previously registered any women. This allowed iBO to test how the registration process functions without large-scale promotional events. iBO will continue to regularly meet with staff from the three Care Blocks and collect metrics to evaluate how the prototypes function in the field. Going forward, to compare effectiveness across services, the prototypes will be tested in other locations where the Secretariat for Women's Affairs provides services, including the District Network of Public Libraries and the District Institute of Recreation and Sports.

14 Mayor López receiving her caregiver ID at a registration event

15 A caregiver after creating her custom ID

Photos courtesy of iBO



Phase 6:
Delivery of Solutions

In the fall of 2023, iBO delivered the final prototype package to the Secretariat for Women's Affairs and other coordinating entities so they can implement the prototypes in all 20 existing Care Blocks, as well as future Blocks. This final package included extensive documentation of iBO's work and the specifications for the technologies and design information required to scale the solutions. To simplify the dissemination, iBO created a landing page where materials are grouped into four main categories: technical, communications, implementation recommendations, and guidance. This approach allows the numerous stakeholders involved in the implementation phase to easily access the materials that are most relevant to their needs.

- The technical folder includes all the information required to operate the digital tools, including the codes, databases, and access to platforms.
- The communications folder contains materials that can be edited by the Secretariat for future use.
- The implementation plan includes suggestions on which Care Blocks and services should be prioritized during delivery and recommendations on how to engage all stakeholder groups.
- The guidance folder includes the lessons that iBO learned during the process and documentation of the field tests.

The goal of the delivery phase is to provide the implementing organizations with all of the information required to advance the new data collection and management processes identified and prototyped through the application of iBO's innovation methodology.

CONCLUSION

How did the public innovation approach shift the way in which public servants address challenges in Bogotá? To answer this question, Emma Miner interviewed two members of Bogotá's Secretariat for Women's Affairs directly involved with the iBO partnership in the Care Blocks project. The purpose of these interviews was to understand the level of application and utility of the innovation concepts, tools, and methodologies used by iBO from the perspective of members of the implementing department.

Both participants emphasized that iBO added great value to the System of Care Blocks since the partnership addressed two challenges with one innovative

process — increasing a caregiver's sense of belonging and improving the program's digital data capacity. The public officials shared that the innovation methodology, and in particular the caregiver ID solution, unexpectedly achieved one of the Care Blocks' main goals: validating the importance of care work. One participant emphasized how this simple plastic card "becomes something symbolic, but that symbol begins to mobilize people," ultimately empowering women and transforming the perceived value of care work. In terms of digital transformation, the participants noted the crucial improvements in efficiency and interoperability, both of which enable the Secretariat for Women's Affairs to make data-driven decisions for future programming. The main value of the more efficient registration and attendance system was perceived to be the ability to spend more time providing services. One participant, a data expert, also shared that the new, interoperable database makes it easier "to see people in the data" as opposed to "just numbers."

In addition to the prototypes, the participants both appreciated iBO's commitment to engaging multiple stakeholders in order to deeply understand the Care Blocks challenge. During meetings with the Secretariat for Women's Affairs, one participant appreciated iBO's transparency and desire to identify the best solution instead of tackling a challenge with a predetermined solution. The other participant noted how useful iBO's engagement with caregivers and providers was, since it provided a more in-depth understanding of the data collection and management challenge that complemented and validated what the staff from the Secretariat for Women's Affairs saw from their perspective.

These two conversations also revealed that the Secretariat for Women's Affairs is eager to implement the prototypes. While one participant noted that they appreciated the value of prototyping and field testing, they felt a "time crunch to want to get things operating and on the ground." To address this concern, i-teams must clearly explain the value of each phase of the innovation methodology to implementing organizations and co-create a timeline that balances the need for a thorough process with the delivery of tangible results.

These conversations indicate that iBO's application of an innovation methodology is valuable to public servants in Bogotá, and iBO should continue to advance this systematic and empathetic approach to public innovation. Both participants believed that the insights and prototypes generated from this partnership should be applied citywide so that all public entities are empowered with the knowledge and resources needed to make user-informed, data-driven decisions.

ABOUT THE AUTHORS

Emma Miner earned a Master of Science in Public Health from the Bloomberg School of Public Health at Johns Hopkins University in 2023 where she focused on Social and Behavioral Interventions within the International Health Department. As a Bloomberg Center for Public Innovation Summer Scholar, she spent 10 weeks between June and August 2023 deeply embedded with the Laboratorio de Innovación Pública de Bogotá (iBO) i-team. Miner conducted participant observation during the testing and deployment of a digital registration service that allows caregivers to sign up and participate in the services offered at the Bogotá Care Blocks. That experience forms the basis of this case study.

Dr. Francisca M. Rojas, Academic Director at the Bloomberg Center for Public Innovation at Johns Hopkins, leverages over 20 years of experience to connect research with city hall practice and help leaders create better results for residents. Rojas is a graduate of the Massachusetts Institute of Technology, where she received a Ph.D. in Urban and Regional Planning and a Master of City Planning. She also completed a postdoctoral fellowship at Harvard University's Kennedy School of Government. Rojas is the supervisor and editor of this case study.

The Bloomberg Center for Public Innovation at Johns Hopkins University works to advance public sector innovation across the globe by marrying cutting-edge practice with world-class research to transform the culture of government, deliver exceptional results for residents, and inspire trust in public service. Launched in 2021 in partnership with Bloomberg Philanthropies and Johns Hopkins University, the Center is home to new and active programs like the Bloomberg Cities Network, Cities of Service, i-teams, and Innovation Training that help advance cities across the globe. The Center works with over 40 cities around the world on programs and initiatives that could improve the quality of life for more than 200 million people.

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