

# Digital



ELOGROUP

# Health Report

Pursuing the **most valuable opportunities** to improve healthcare in Brazil





# Executive Summary

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# OVERVIEW

Supplementary Health System provides a wide range of opportunities – boosted by the new available technologies – but is structured on inadequate foundations. If no action is taken, there is the risk of a system collapse.

## IMPORTANT REMARKS

- Health is still seen from a treatment and damage control perspective instead of a preventive one;
  - The fee-for-service model is still predominant;
  - It is necessary to take a closer look at populational health, to enable the identification and allocation of specific profiles into adequate lines of care
- Patient experience is fragmented and could be enhanced with an omnichannel journey;
  - New technologies have not yet been fully integrated into the dynamics of care delivery;
  - Low level of data capturing and digitalization in healthcare organizations

## MOST VALUABLE OPPORTUNITIES

We have identified **10 major areas of opportunity**, later referred as the **Most Valuable Opportunities (MVOs)**, which were categorized into 3 areas:

### NEW HEALTHCARE MODELS

- 1

Guiding, retaining and engaging patients placed in appropriate lines of care
- 2

Multidisciplinary approach with partial digitalization of the healthcare team's journey.
- 3

Expansion and qualification of access to health
- 4

Pharmacies as hubs of care

### EFFICIENCY AND DIGITAL TRANSFORMATION

- 5

Relationship between service providers and payors
- 6

Process conformity and interpretation of standardized indicators for performance monitoring of health organizations
- 7

Optimization of the R&D process for new drugs and treatments with AI and other technologies

### DECENTRALIZATION OF CARE

- 8

Personalization of employees' health journey by HR departments
- 9

Growth of new home-based healthcare models for patient convenience and follow-up
- 10

Tech-enabled patient omnichannel experience



# Summary

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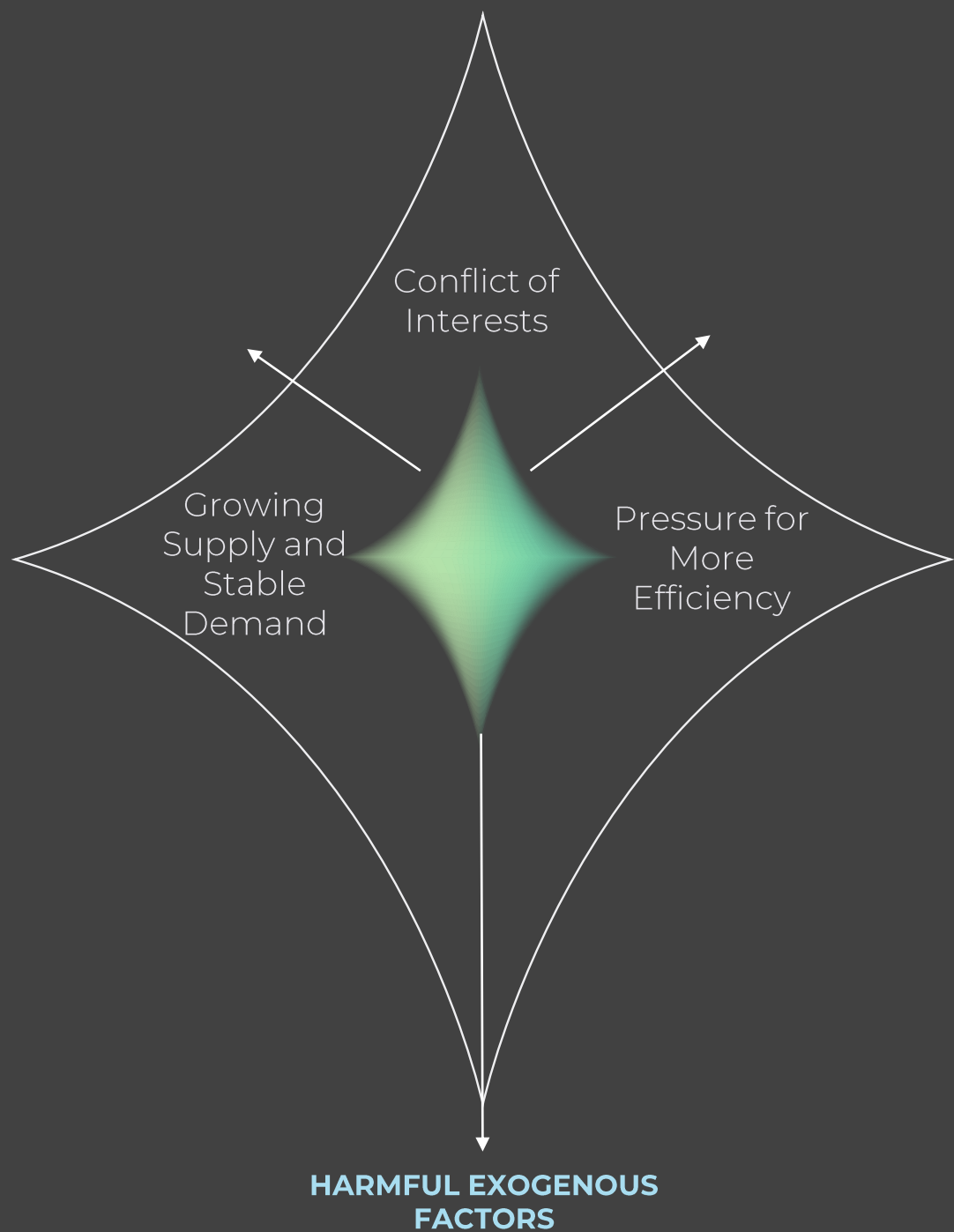


# Context

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# Supplementary Health System in Brazil is unsustainable in the long term



## Conflict of Interests

- ▶ The fee-for-service model drives some key stakeholders towards antagonistic interests.

## Growing Supply and Stable Demand

- ▶ Major health players have both consolidation and expansion strategies, despite the recent flat growth curve of the health plan beneficiary base.

## Pressure for More Efficiency

- ▶ With rising costs that cannot be passed on to consumers, providers and payors are pressured to prioritize immediate gains, instead of committing to medium and long-term goals.

## Harmful Exogenous Factors

- ▶ Population aging, devaluation of Brazilian Real and judicialization issues are some additional harmful factors that increase pressure on the system.

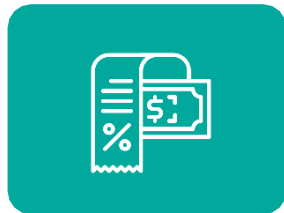


# In order to reform health care, we must redefine existing practices and structures

## THE STATUS QUO:



**Treatment and Damage Control:** Patient’s journey is shaped by treating illness and minimizing risks and adverse effects after a diagnosis. There is mostly a reactive response.



**Focus on Volume:** Service providers have their revenue directly associated with the volume of services. The quality of outcomes does not directly affect remuneration.



**Limited Care Sites:** Care delivery is mostly restricted to health units, such as hospitals, labs, clinics etc.

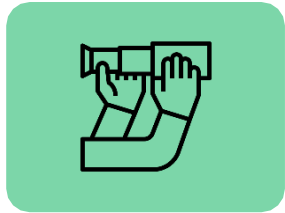


**Information Scarcity and Disconnection:** With limited care sites, data is collected and analyzed in an irregular and uncoordinated manner. Patients’ health is seen in “pictures”, without an evolutionary development.



**Disconnected and Suboptimized Care:** Typically, provided care is not connected to previous history. It relies primarily on the most recent diagnosis and does not entail monitoring or preventive mindset.

## FOUNDATIONAL TRENDS:



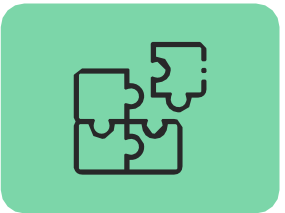
**Anticipation and Prevention:** Patients’ journeys are guided by risk prevention and anticipation as well as medical needs. Primary Care is no longer a nice-to-have service.



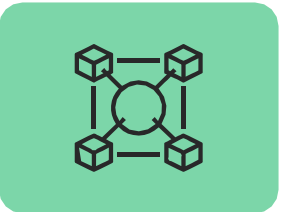
**Focus on Value Creation:** Service providers have their revenue, reputation and profitability linked to the quality and cost-effectiveness of the attained outcomes.



**Healthcare Everywhere:** Omnichannel experience with multiple care sites, including patients’ residences, high-traffic locations and even remote regions.



**Information Enrichment:** With more sites and new technologies such as smart devices, wearables and self-tests, health data is more diverse and routinely updated.

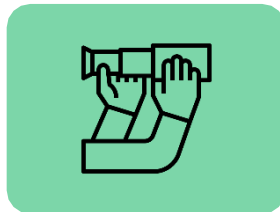


**Personalized and Integrated Care:** Through populational management, patients are inserted and engaged in lines of care which are continuous and appropriate.



In order to unleash foundational trends, four major value drivers must be triggered

FOUNDATIONAL TRENDS:



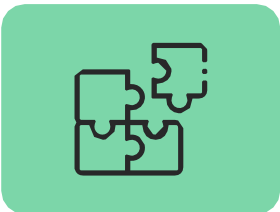
Anticipation and Prevention



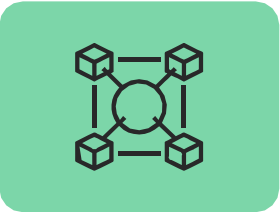
Focus on Value Creation



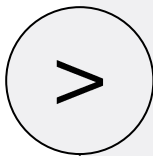
Healthcare Everywhere



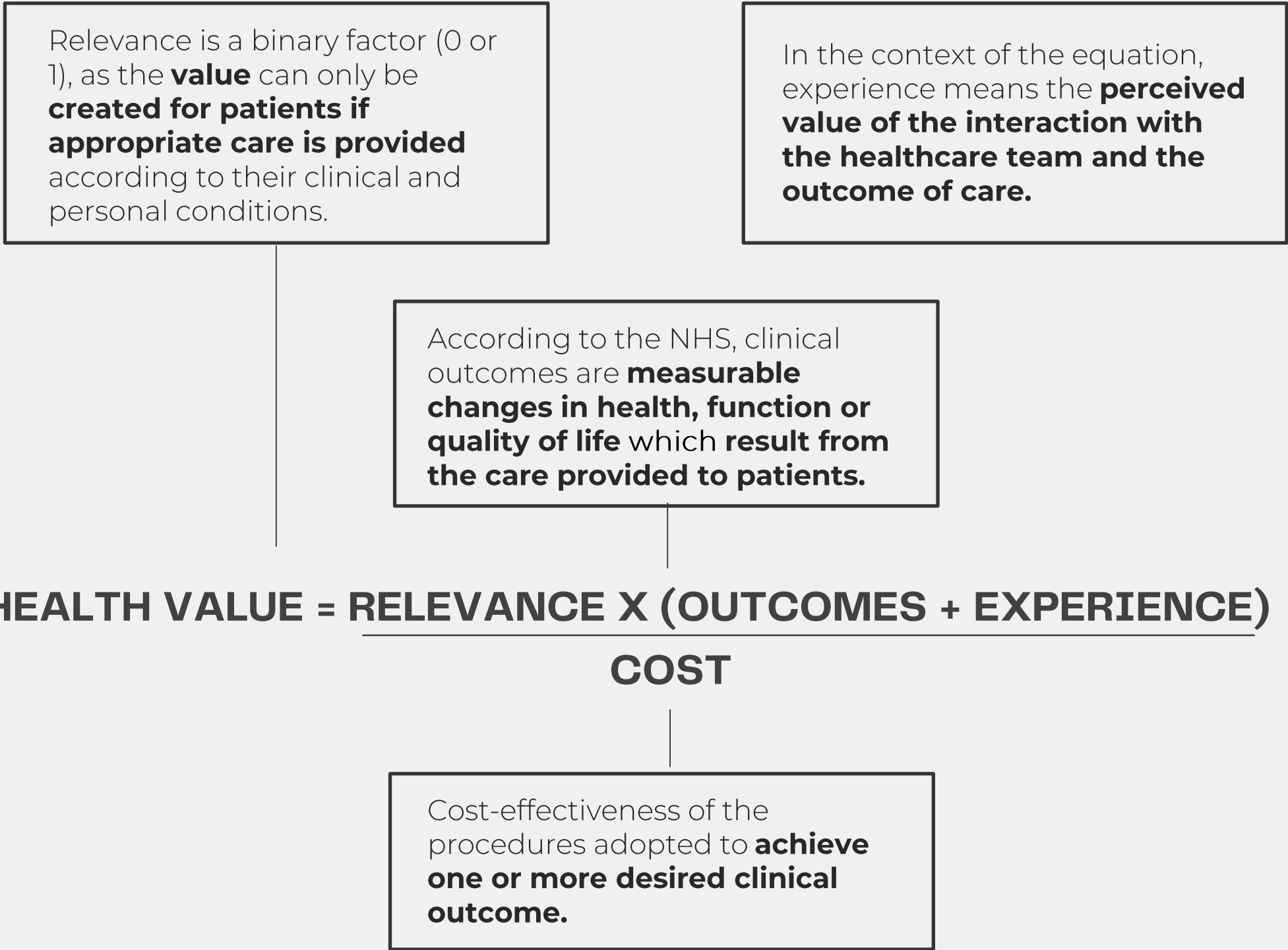
Information Enrichment



Personalized and Integrated Care



HEALTH VALUE IS REPRESENTED BY THE FOLLOWING EQUATION

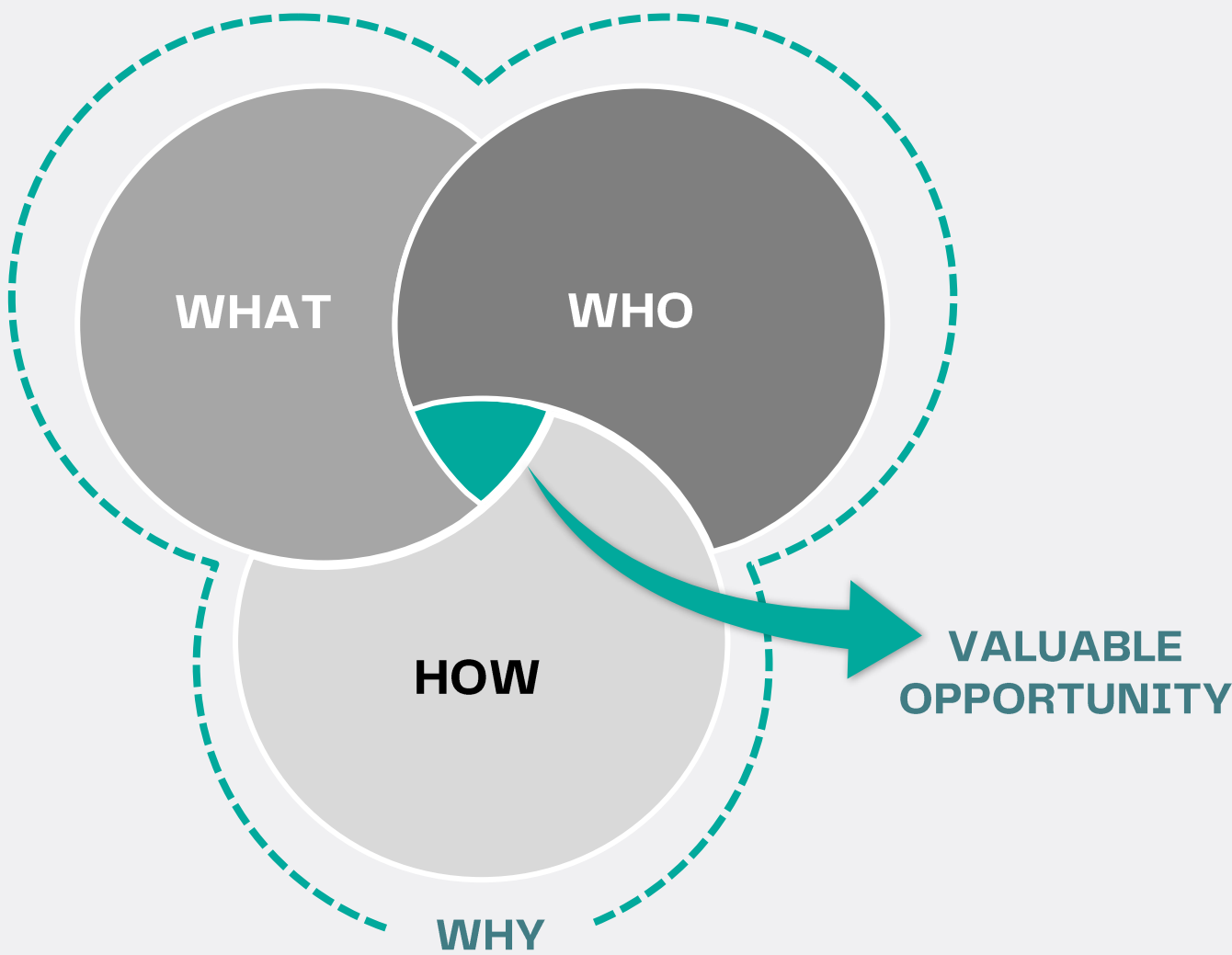




When these drivers are triggered within the right context, they shed light on Valuable Opportunities

DEFINITION:

A **Valuable Opportunity** occurs when one or more triggers can be applied in a given context to unlock present or future value to health system stakeholders.



**WHAT**

What is the challenge?  
What is the vision for the future?



**WHO**

Who are the actors involved and what are their roles?



**HOW**

Is there an actionable way to resolve the issue in question?



**WHY**

Why is the opportunity relevant and what is its potential for impact?





# Authors

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## WHO ARE WE?

A **benchmark report** in the healthcare sector, with inputs from **multiple ecosystem stakeholders** and with descriptions of the **Most Valuable Opportunities** for digital health application.



Aggir is an independent VC firm focused on digital health. The fund invests predominantly in startups operating in Brazil. .

With a world-class network of investors and connections within the healthcare sector, Aggir was founded to be the partner of choice of Brazilian healthtech entrepreneurs with the core mission of improving healthcare in Brazil.



A platform which aims at transforming businesses through combining competencies, which encompasses Technology, Analytics and Management, so that businesses can become strategically digital whilst unleashing the potential of transforming people and organizations

**+30**  
**INTERVIEWS**  
with multidisciplinary  
leaders

Medical Doctors  
Hospitals  
Labs and Clinics  
Payors  
Suppliers and Manufacturers  
Distributors  
Investors





WHO ARE WE?



**Renato Ferreira**  
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Stanford University



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University of  
Edinburgh



**Davi Almeida**  
Partner



**Otávio Vianna**



**Eduardo Menezes**



**Marcos Portugal**





# Methodology

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METHODOLOGY OVERVIEW



OBJECTIVE

Build a report draft and determine its main objectives	Understand the framework and content of previous reports	Determine and outline the content of our report Refine the timeline	Explain the rationale behind format and content	Map out perceptions of key individuals regarding opportunities and challenges within the healthcare sector	Compare and contrast hypotheses with qualitative and quantitative evidence obtained through primary and secondary research.	Prioritize and detail the main opportunities within the healthcare sector
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ACTIVITIES

Brainstorming, discussion and structuring of the report draft	Analysing exemplary reports related, or not, to healthcare in Brazil and worldwide  Mapping out and discussing about framework and content of previous reports	Elaborating the Digital Health Report text structure, breaking it down into blocks and estimated granularity levels  Constructing methodology for capturing and analyzing opportunities and challenges	Defining and formatting the report rationale as well as potential opportunities and challenges	Conducting interviews with key references and managers within the healthcare value chain	Conducting complementary interviews with technical references and leaders at a tactical level  Searching for qualitative and quantitative evidence for hypothesis testing	Structuring presentation content and opportunity areas
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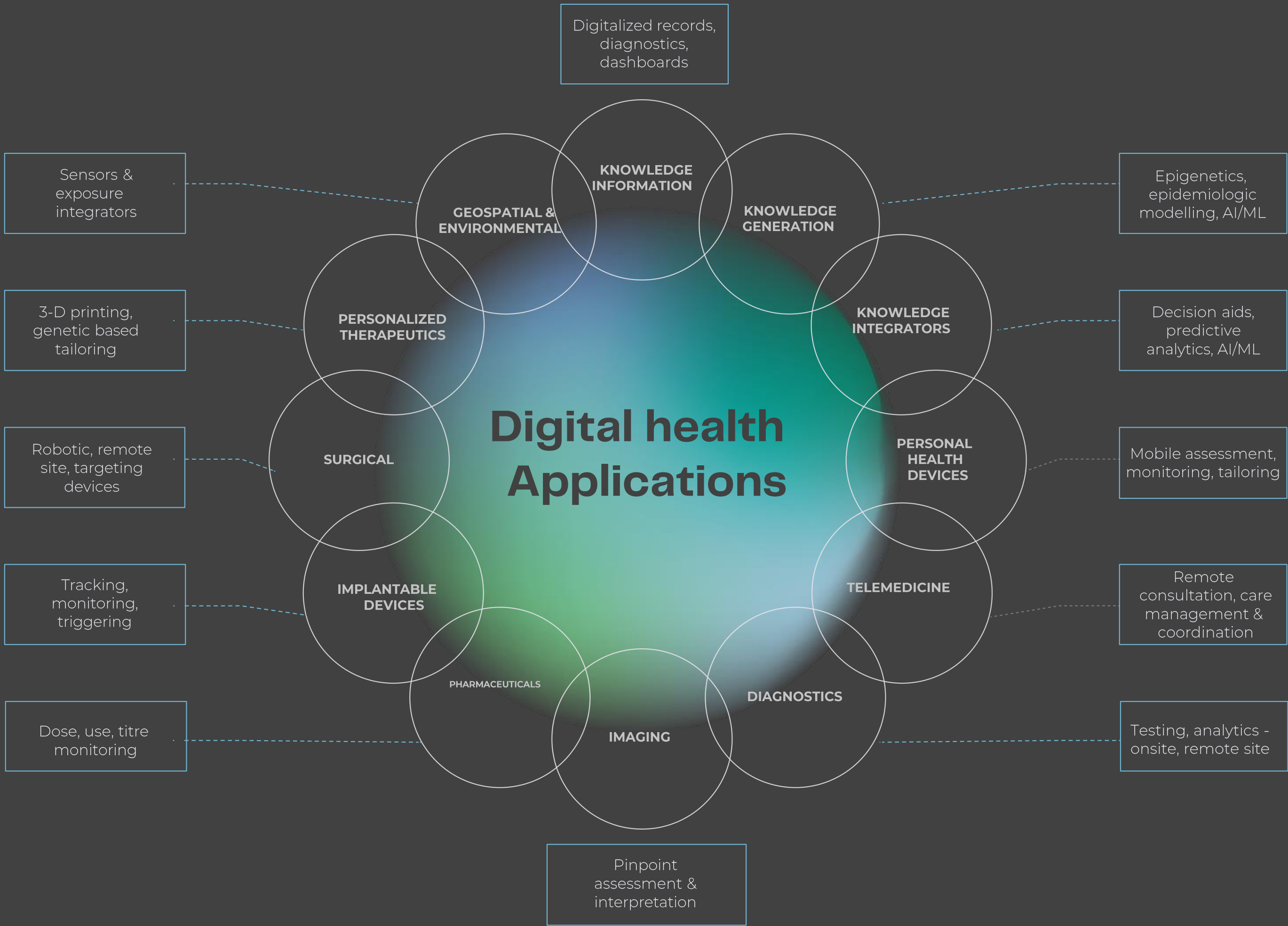
# Digital Health & Venture Capital

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WHAT IS DIGITAL HEALTH?

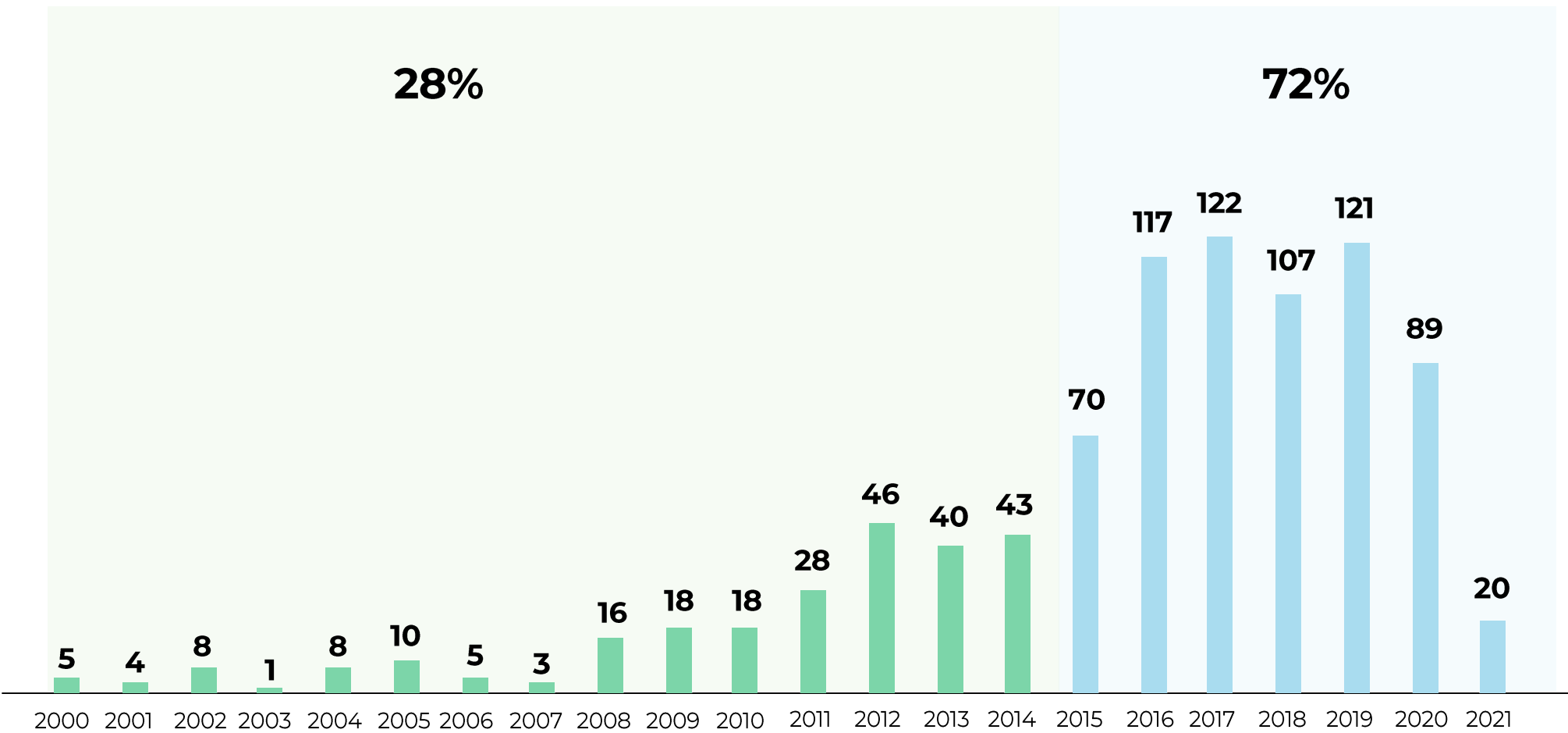
'Digital Health' combines digital, technological and scientific breakthroughs with health care, aiming at reducing inefficiencies in care delivery, improving access and quality, reducing costs and making treatments more personalized and accurate



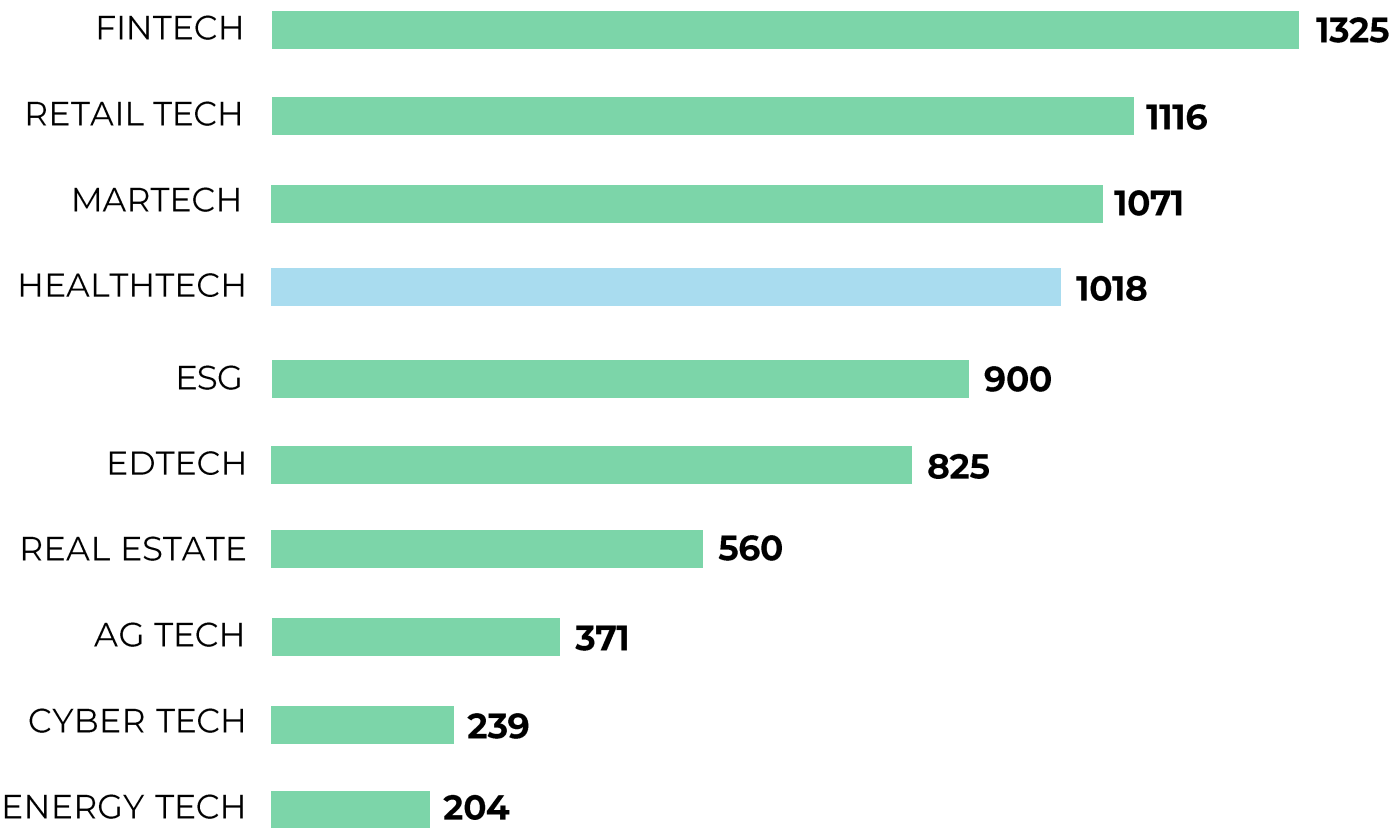


Healthtech market is in full swing in Brazil – with the highest number of startups after Fintech and Retail/Consumer (most of them founded in recent years)

Number of healthtechs founded in Brazil per year



Number of startups in Brazil per sector

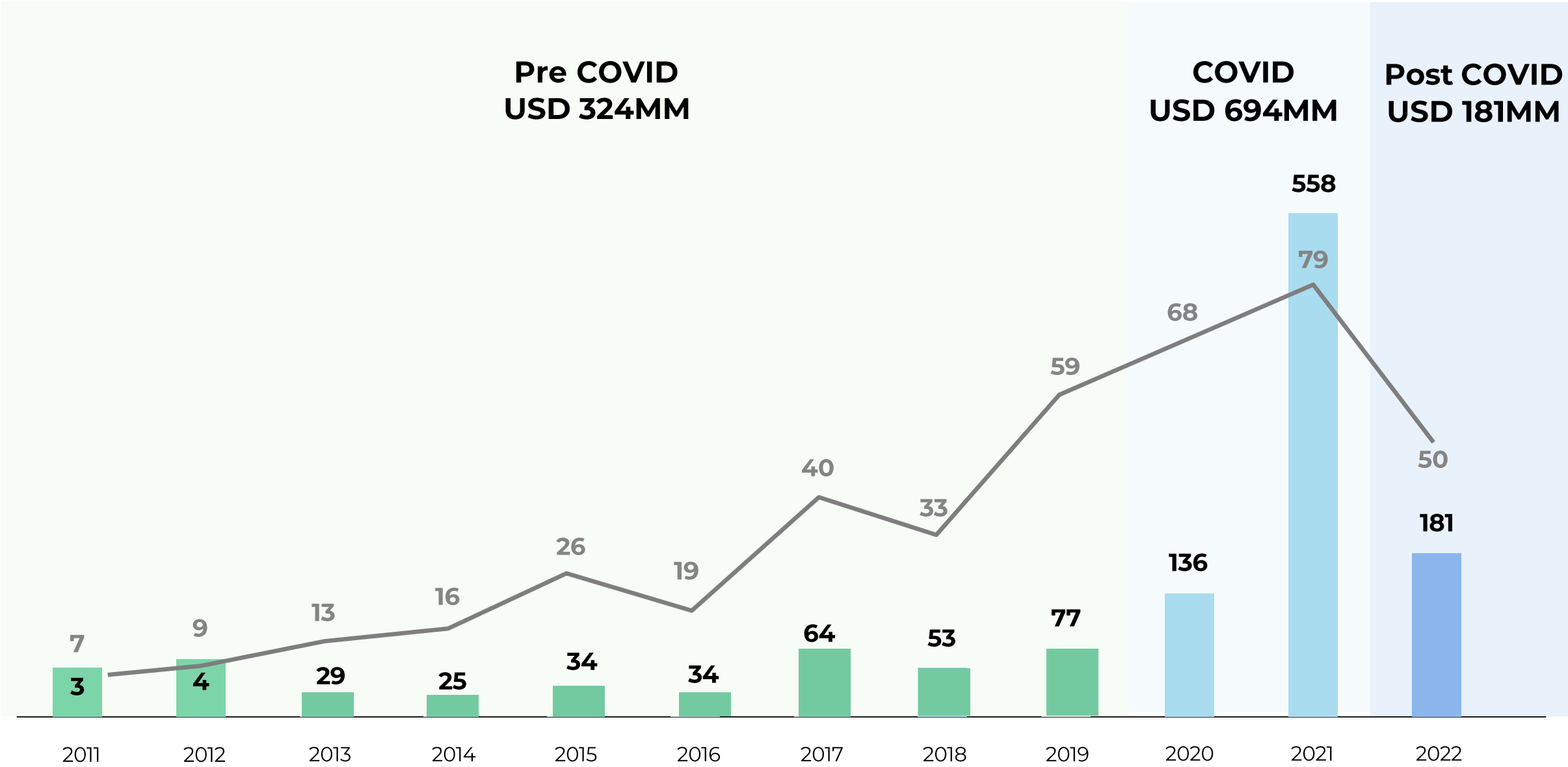




Interest rate drop to the lowest historical level + new technologies after COVID-19 led to unprecedented growth in the healthtech sector

Funding and # of deals  
in the healthtech sector  
in Brazil

Funding  
USD MM — Deals

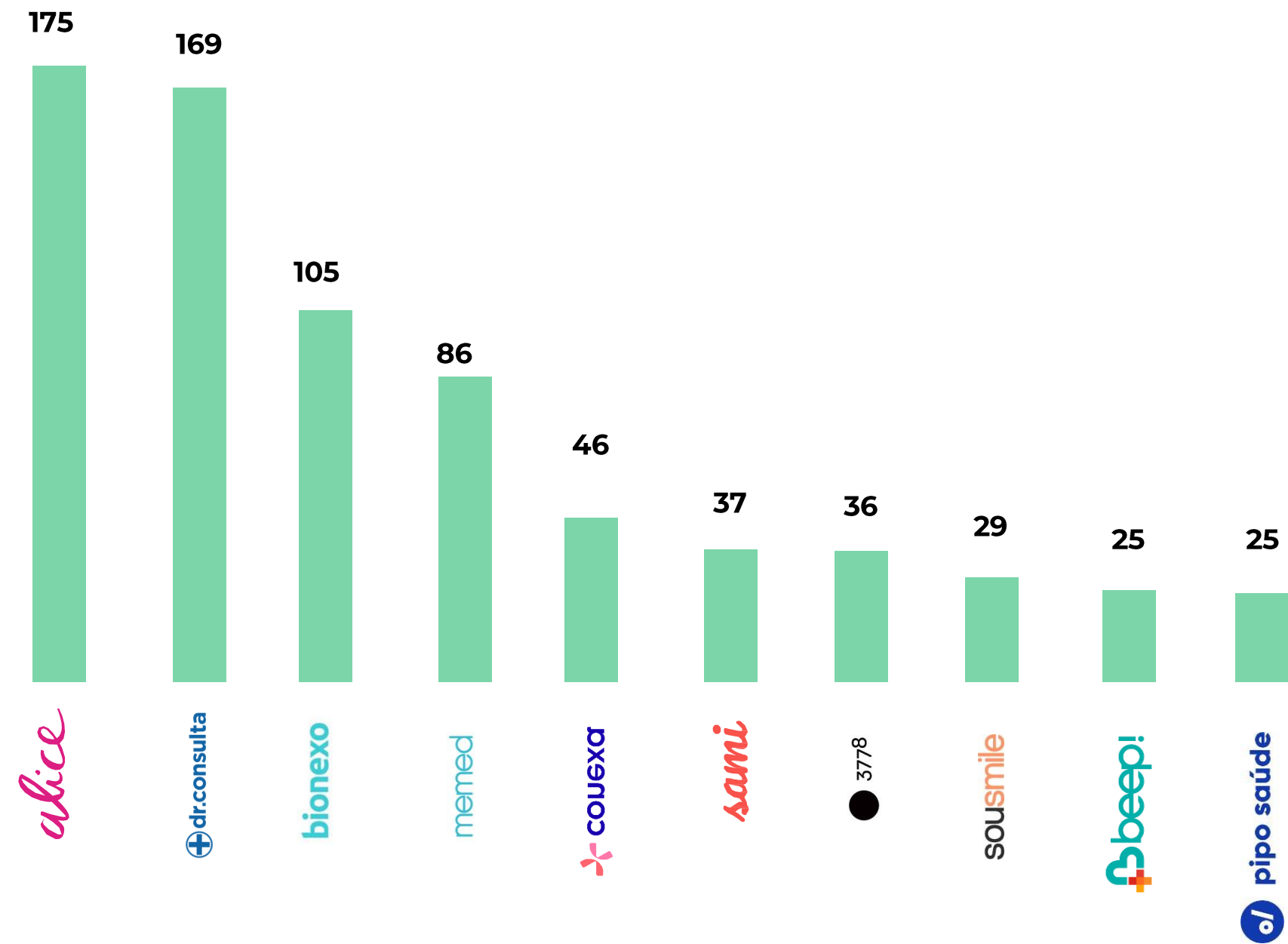


Source: Distrito (2022). Note: Data from 2022 includes only three quarters



As the healthtech sector became a new hot spot, Brazilian startups not only braved the storm created by the pandemic, but also received significant funding

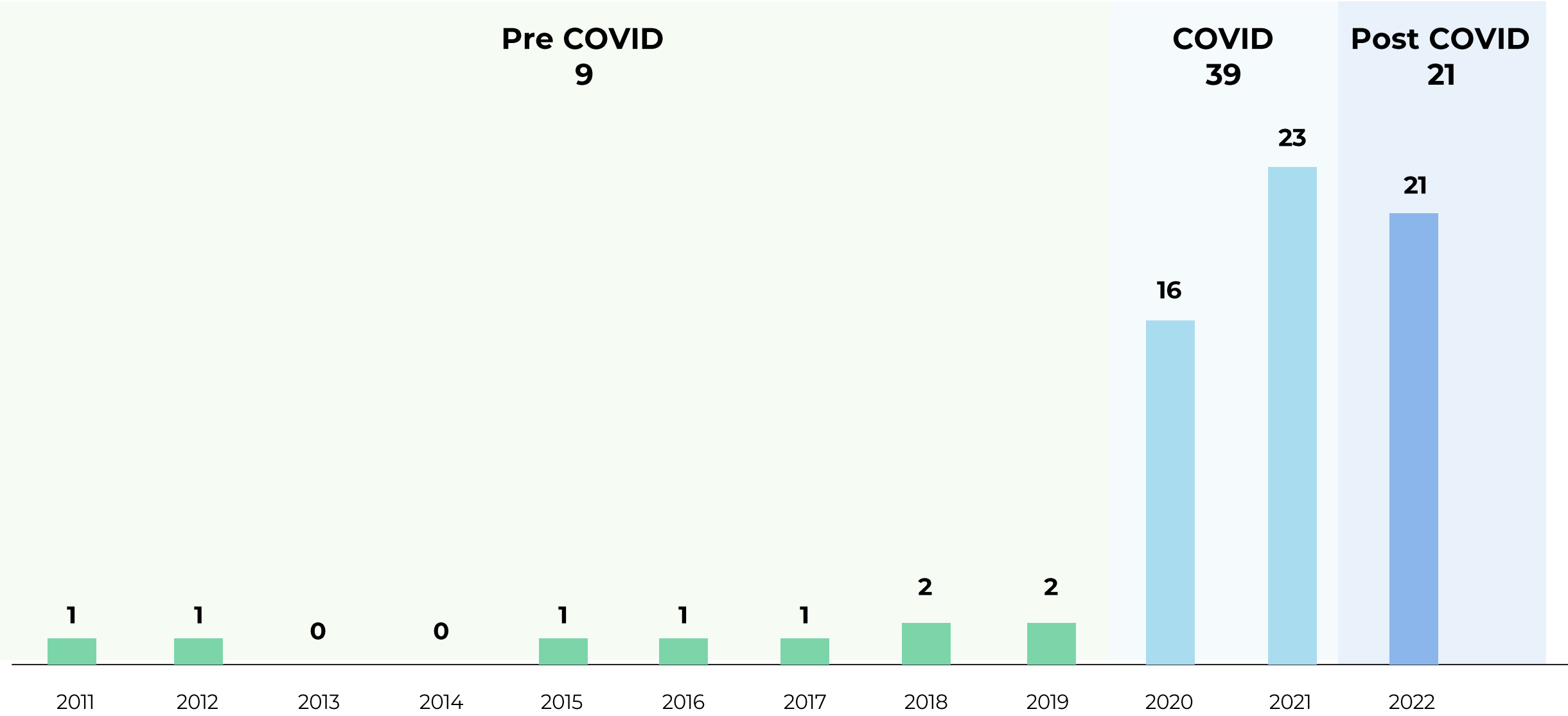
Top 10 Brazilian Healthtechs  
by total funding amount  
(USD MM)





# Intense M&A activity emphasizes numerous exit opportunities in the healthtech sector

Number of Health Tech M&As in Brazil

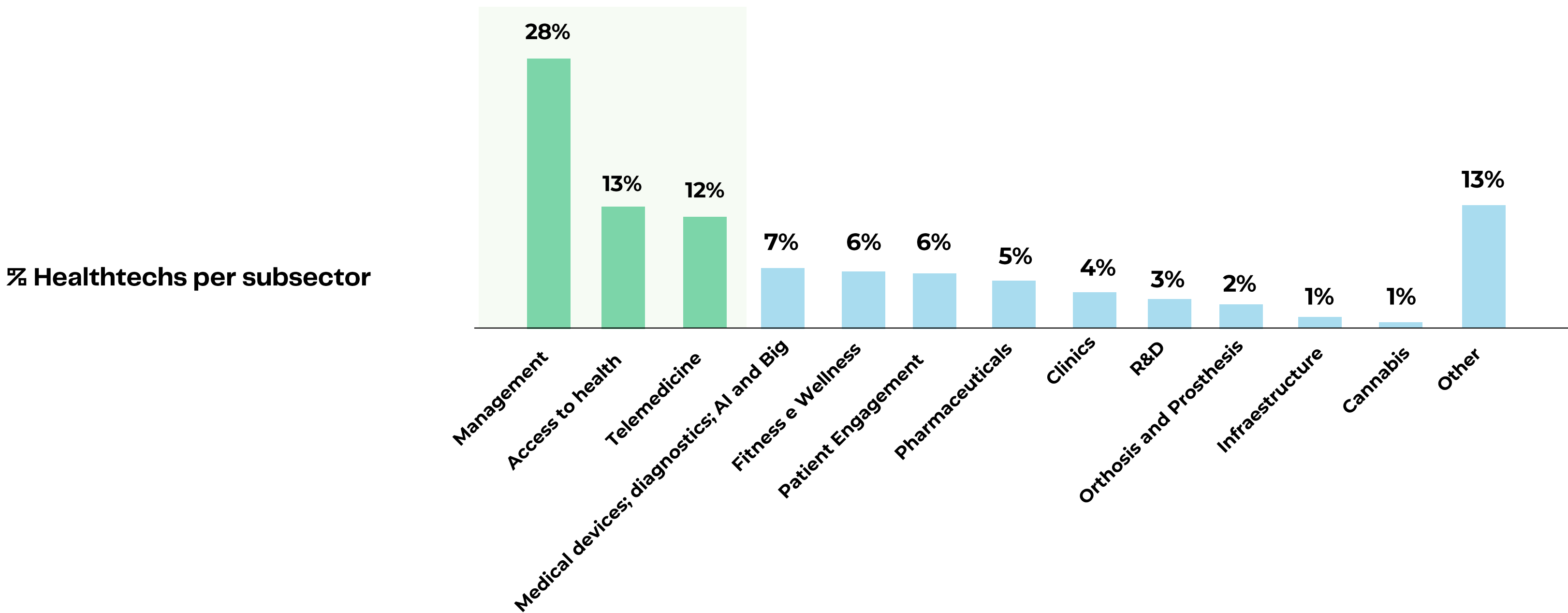


Most prominent acquirers

Company	Acquisitions
 Afva EDUCAÇÃO TECNOLOGIA SAÚDE	▶ 11
 bionexo	▶ 4
 RD RaioDrogasil S.A.	▶ 4
 SALUX INFORMATIZAÇÃO EM SAÚDE	▶ 3



Management, Access to Health and Telemedicine continue to be the largest health subsectors in terms of number of startups, reflecting the Brazilian healthcare system major challenges





# Most Valuable Opportunities (MVOs)

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# MOST VALUABLE OPPORTUNITIES

## NEW HEALTHCARE MODELS

- 1 Guiding, retaining and engaging patients in appropriate lines of care
- 2 Multidisciplinary approach with partial digitalization of healthcare teams' journeys
- 3 Expansion and qualification of access to health
- 4 Pharmacies as hubs of care

## EFFICIENCY AND DIGITAL TRANSFORMATION

- 5 Relationship between service providers and payors
- 6 Process conformity and interpretation of standardized indicators for performance monitoring within health organizations
- 7 Optimization of the R&D process for new drugs and treatments with AI and other technologies

## DECENTRALIZATION OF CARE

- 8 Personalization of employees' health journey by HR departments
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# New Healthcare Models

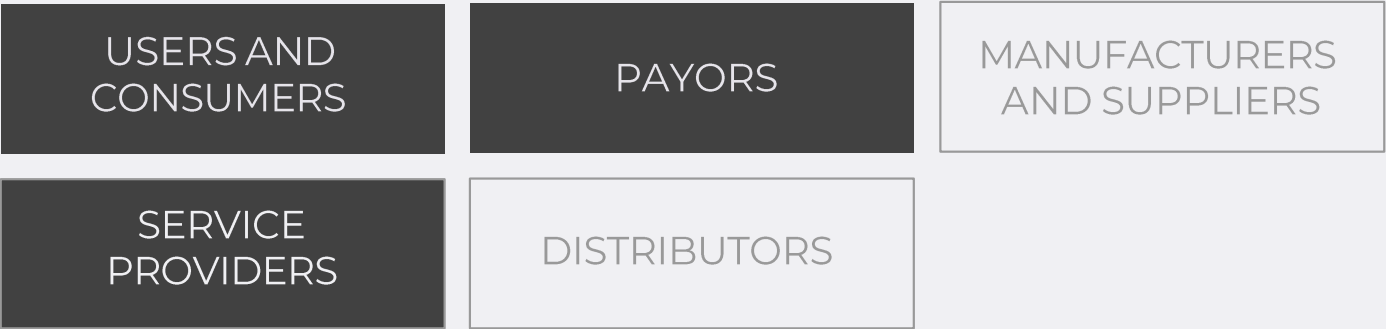
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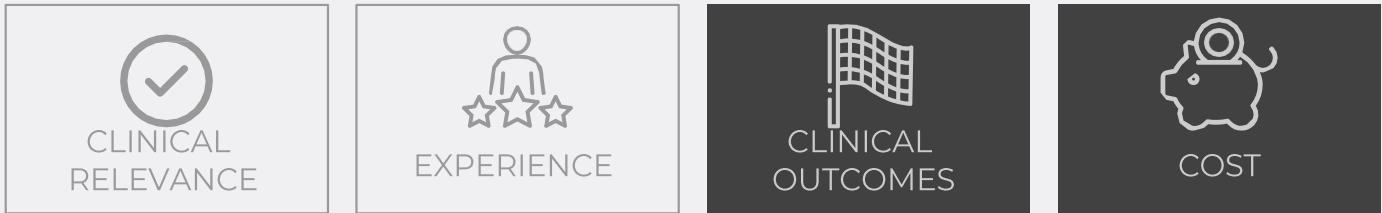


# Guiding, retaining and engaging patients in appropriate lines of care

## Stakeholders

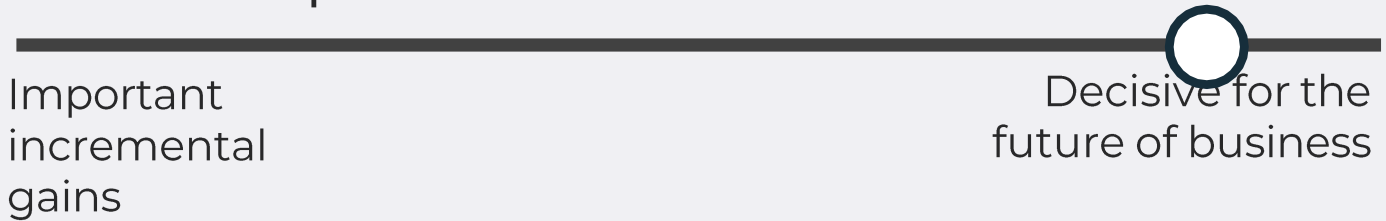


## Value Drivers



## Potential for Change:

### Potential Impact



### Horizon of Impact

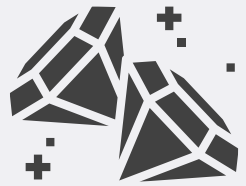




# Guiding, retaining and engaging patients in appropriate lines of care



## 1 Description



The search for care coordination has become a reality. First, because of the strategies of groups that provide various services and products through health platforms. Likewise, due to an emphasis on Value-Based Medicine, which shifts the focus from treatment to prevention. It is, therefore, necessary to insert and navigate patients in appropriate lines of care. Those are processes orchestrated in a standardized and scalable way, which allow a continuous flow of information (transformed into data) and cost predictability.

## 2 Major Pain Points



**Root Causes:** Historically, service providers and insurers have focused on treating and containing diseases through diagnostics and treatment instead of using a preemptive approach. Such an approach occurs in lines of care which stimulate primary care, self-care, prevention and monitoring by multidisciplinary teams.

**Pains related to affected stakeholders:**

**Service Providers** – They face difficulties in identifying and engaging patients in the current operating model, which means loss of opportunities for “navigated revenue” (in-house care) and suboptimal delivery of value;

**Beneficiary** – Initiates and often does not continue with their follow-up or treatment;

**Insurer & Operator** – If the patient is not monitored continuously and preventively, there tends to be an increase in loss ratios.

## 3 Risks and Barriers



- **Technology and Operations** | Currently, processes related to registration, scheduling, diagnostic and triage are not integrated or computerized even by major players within the sector, thus, representing a barrier in the approach used by lines of care;
- **Culture and Training** | Health professionals were trained in a treatment-centered logic. Therefore, they have a formative and behavioral gap that can be decisive in the provision of care;
- **Culture and Engagement** | Beneficiaries themselves are not familiar with the logic of anticipation and prevention. Therefore, convincing and engaging them could become a challenge;
- **Business** | Pressured by tight or decreasing margins, both service providers and insurers may be resistant to experimentation and investments with medium and long-term returns.

## 4 Key Findings



Service providers will have designed lines of care according to the life stage and clinical profile of their patient base, considering:

- the definition of channels and strategies to identify, instruct and navigate patients;
- the training of health squads oriented to lines of care (not just to certain medical specialties); and
- building pleasant and omnichannel patient journeys and integrating technologies to ensure adequate capture and flow of health information.



# Guiding, retaining and engaging patients in appropriate lines of care

Healthcare organizations realized that they should offer patients a continuum of care in accordance with their clinical situation and life stage (pregnancy, nutrition education, work routine, etc.) with standardized processes and protocols as well as the best experience to improve engagement and retention.

Management and monitoring tools are critical to the implementation of these lines of care. They are based on an intelligent analysis of patients' health and well-being in order to segment their journey and engage multidisciplinary health teams. Each patient should have their journey monitored, integrated and assessed by a care hub.

As more patients are shuttled through lines of care, additional inputs are captured by the Single Source of Truth (SSOT), providing evidence for potential redesign of journeys.

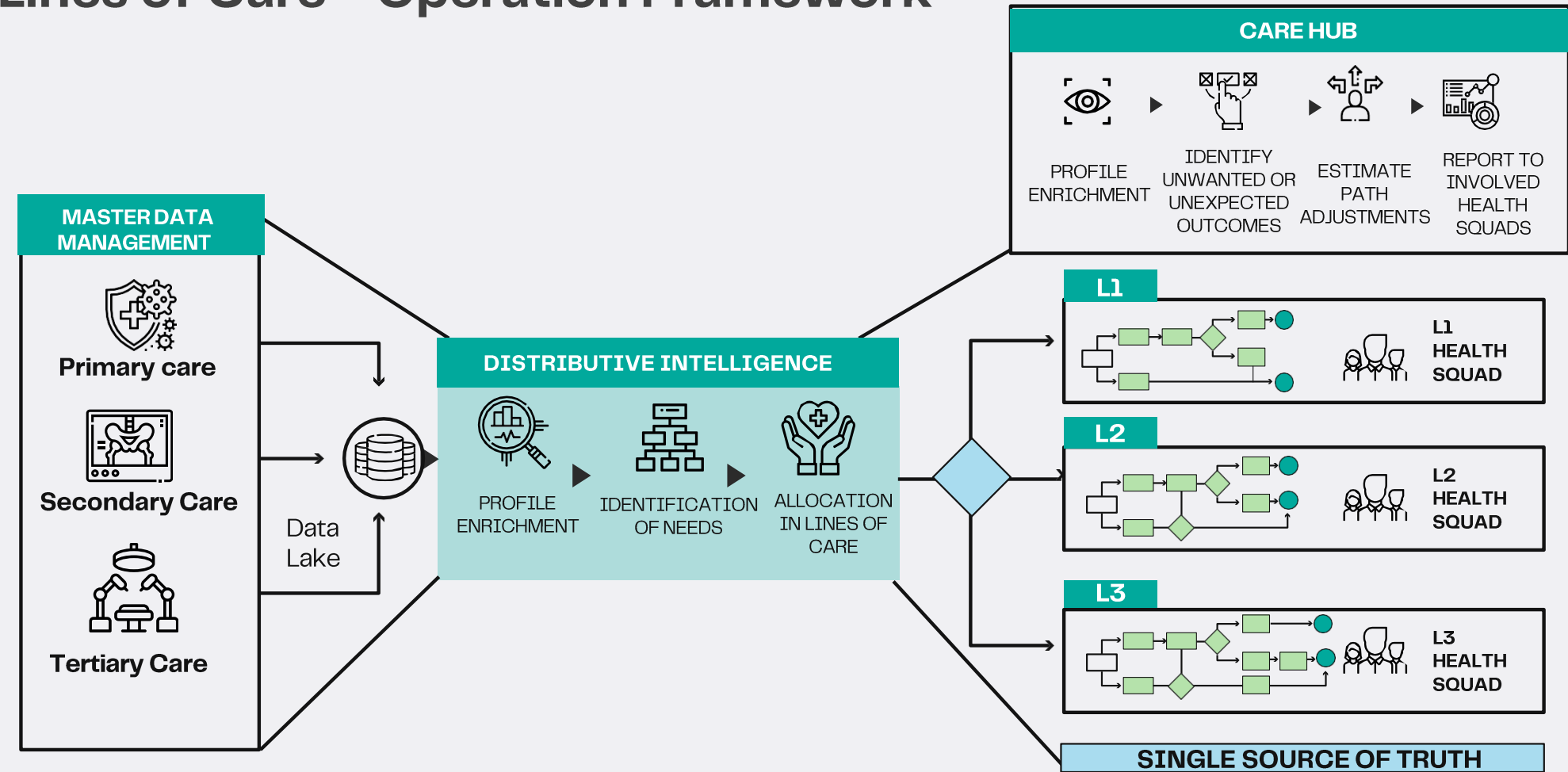


## Context

NefroClínicas intends to address the lack of data integration and analysis for preemptive identification of stages of kidney disease and for resource allocation

As the name suggests, Nefroclínicas offers specialized assistance to patients with chronic kidney disease from the initial stage of treatment and throughout the entire line of care, including nutrition, nursing, and psychotherapy services.

## Lines of Care – Operation Framework



## Value Proposition

NefroClínicas follows a standard process:

1. Patient's past records are analyzed; then, categorized according to the stage of kidney disease (3, 4, or 5) for predictive monitoring;
2. If classified into one of such stages, patients are monitored closely for preemptive treatment, thus, preventing disease aggravation;
3. Digital omnichannel interfaces facilitate interaction between patient and health staff, furthering an 'active management' approach;
4. Promotion of at-home peritoneal dialysis to patients (when appropriate); therefore, decreasing late-stage hospitalizations, treatment costs and loss ratios.

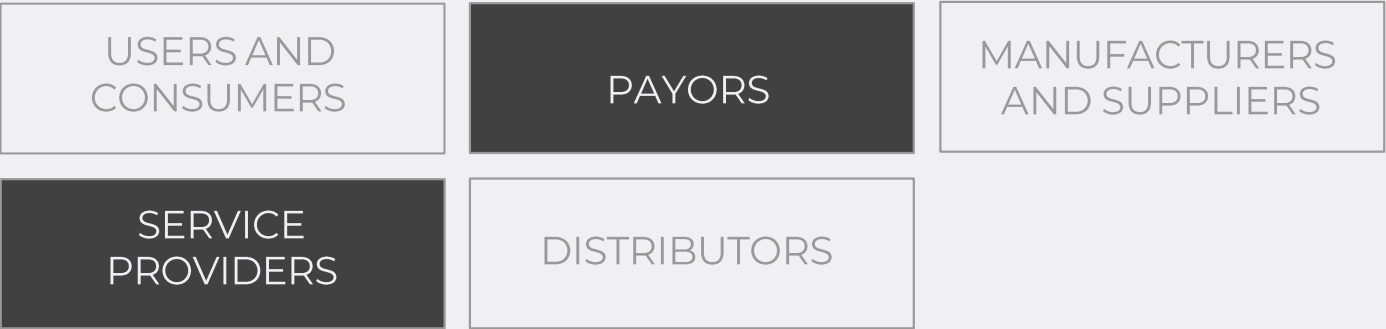
Results so far are encouraging, with substantial reduction in demand for clinical tests, consistency in decision-making and further recommendations on peritoneal dialysis to a significant portion of patients.



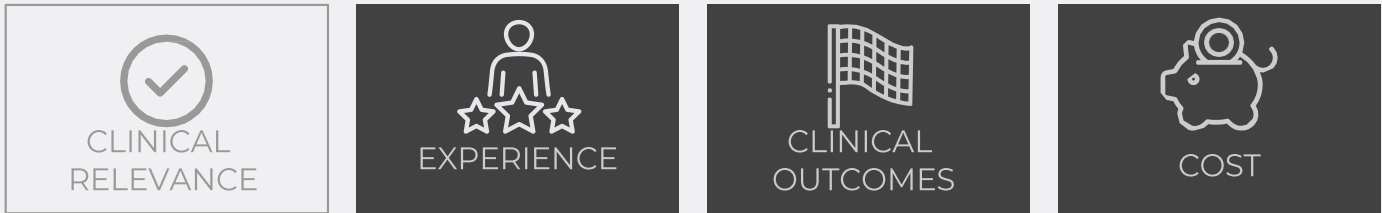


# Multidisciplinary approach with partial digitalization of healthcare teams' journeys

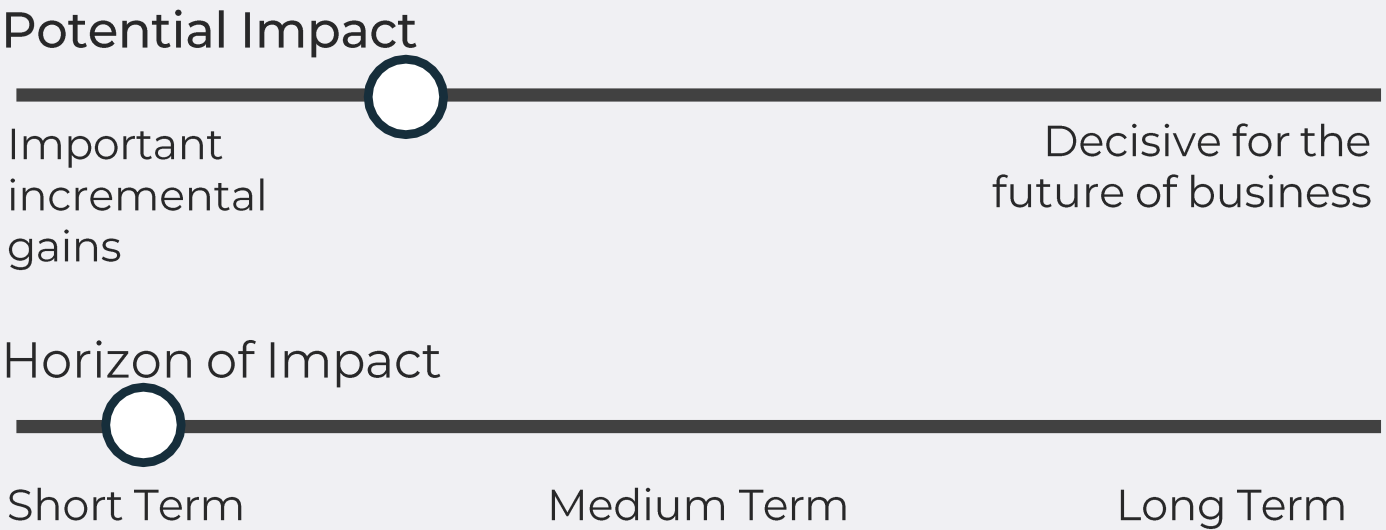
## Stakeholders



## Value Drivers



## Potential for Change:

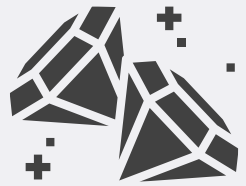




# Multidisciplinary approach with partial digitalization of the healthcare team's journey



## 1 Description



With the rise of value-based models and the demand for quality clinical outcomes, service providers are redesigning health teams' journeys, reinforcing the need for multidisciplinary care, including the work of nurses, nutritionists, psychologists and other professionals. Moreover, they are in search of (partial) digitalization opportunities, with the aim of eliminating repetitive and low added-value tasks as well as promoting team decision-making.

## 2 Major Pain Points



**Root Cause:** The healthcare team journey has an intermediate degree of digitization with few technological solutions that engage other players - alongside doctors - in patient monitoring, interaction and guidance.

**Pains related to affected stakeholders:**

**Insurer and Broker (Payors)** | Need to incorporate the eventual inefficiency of the service provider into their prices;

**Healthcare Team** | Lacks technologies that enable follow-ups along patients' journeys.

## 3 Risks and Barriers



**Technology** | A relevant part of the VO consists of creating interoperable systems and processes to get a continuous view of the process;

**Market and Culture** | Both suppliers and contractors are accustomed to discussing solutions through the lens of a physician, and not seeing the journey of the healthcare team as a whole;

**Market** | Given the financial pressure, providers prioritize contracting solutions with quantifiable results and quicker returns, which requires entrepreneurs to adequately select related pains.

## 4 Key Findings



By redesigning the processes associated with the healthcare team journey, healthcare providers will be able to improve outcome indicators in parallel with efficiency gains. To this end, it will be necessary to revisit the processes and rethink health teams' performances by adopting a multidisciplinary approach to care, optimizing the physicians' time and involving other professionals along the way.

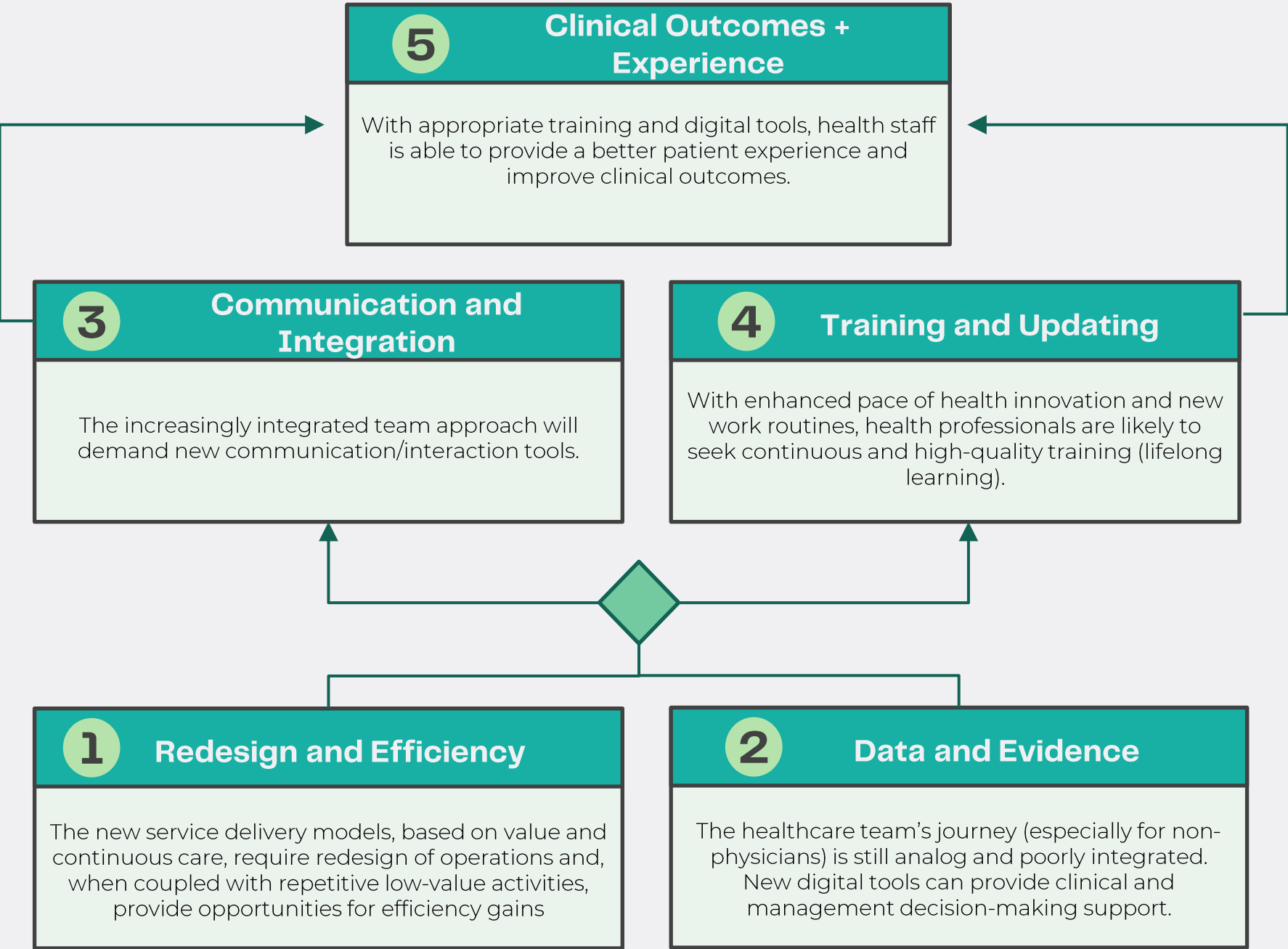


# Multidisciplinary approach with partial digitalization of healthcare teams' journeys

The simplification and digitalization of multidisciplinary health teams' journeys are based on the redesign of current operations, data enrichment and integration.



## Multidisciplinary Approach Foundations



## Context

With a long-term view and the aim of providing high-quality training and best-class tools to their healthcare professionals, hospitals will recommend and/or hire certain startups to address specific issues related to the team's activities and, consequently, provide a better patient experience.

## Value Proposition

Below we present a non-exhaustive list of startups that can help hospitals in this endeavor:

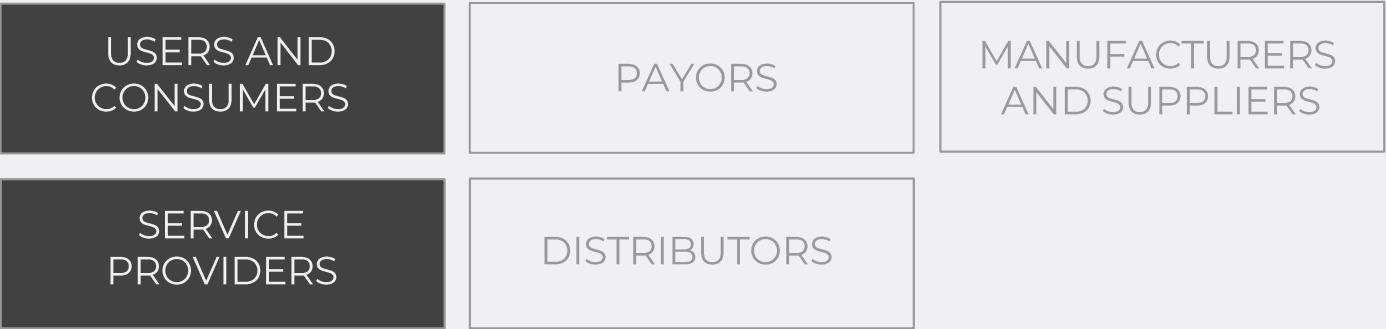
- **PEBMED (clinical decision-making):** PEBMED offers a rich medicine electronic portal with content focused on physicians and also developed Whitebook and Nursebook, clinical decision apps with 9k+ pieces of content in multiple specialty areas.
- **Medway and Jaleko (education and lifelong learning):** both Jaleko and Medway are online course platforms for health professionals. Jaleko focuses on medical students, while Medway offers medical residency preparatory courses. Medway is on its way to become the lifelong partner of medical doctors with a broader range of contents and state-of-the-art continuing education.
- **WeCancer (patient navigation and staff communication):** provides an end-to-end care platform to digitize the journey of cancer patients, with features such as: (i) schedule assistant (chemotherapy sessions, appointments etc.); (ii) symptom reports; and (iii) online chat between patients and health staff.



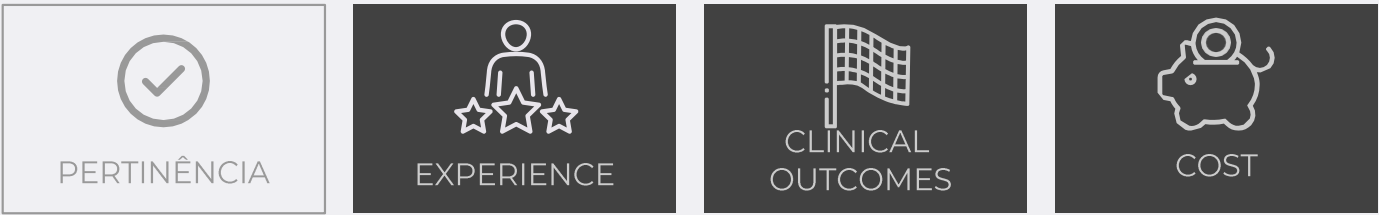


# Expansion and qualification of access to health

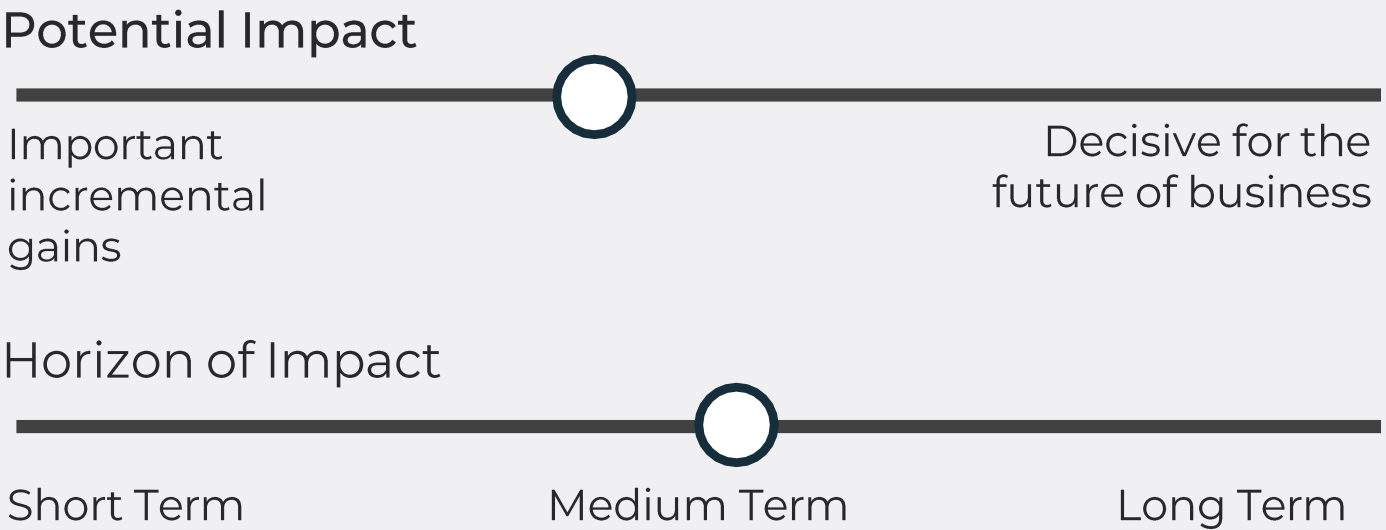
## Stakeholders



## Value Drivers



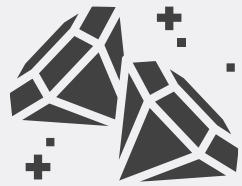
## Potential for Change:





# Expansion and qualification of access to health

## 1 Description



Since only 25.6% of Brazilians have private health plans (ANS, 2022), almost  $\frac{3}{4}$  of the population depend on SUS and/or alternative options to obtain access to healthcare. Also, only 10% of those who depend on SUS and 5% of those who have medical assistance consider healthcare in Brazil to be good or excellent (ANAHP, 2022). It is, therefore, crucial to expand and qualify access to healthcare, both through the digitization of SUS and the diversification of private alternatives

## 2 Major Pain Points



Root causes: (i) SUS has a unique capacity to produce data, but is not able to systematically transform them into hypotheses and quality information; (ii) despite its scope, SUS has limited budget. It has faced a 77% reduction in its investment capacity from 2013 to 2022.

Pains related to affected stakeholders:

- **Users and Consumers** | Impacted by long lines and extensive waiting time for tests, consultations and surgeries;
- **Users and Consumers** | Health plans are expensive for most Brazilian people or companies.

## 3 Risks and Barriers



- **Political Incentives** | Historically, many initiatives to digitalize Public Health were momentaneous or punctual efforts and did not have a long-term impartial agenda;
- **Lack of Resources** | With limited funds, digitalization engagement (with medium term potential impacts) may not be prioritized over short-term initiatives;
- **Financial Viability** | Given the need to offer competitive prices to consumers, many players struggle to provide good quality services and build scalable products;
- **Technology** | Part of the low-income population is not quite familiar with digital solutions.

## 4 Key Findings



Expanding and qualifying access to health is an arduous mission. Therefore, it is necessary to explore opportunities in two fields: digitalization of SUS and maturation of Supplementary Health services.

On the one hand, to SUS, it is key to integrate data into the 3 spheres. On the other hand, private sector can offer some benchmarking models vis-à-vis the application of the 4 value drivers in Health.

As to Supplementary Health Services, it is necessary to mature solutions that have already been introduced, such as health accounts and discount cards. Such solutions should be combined with new offers to be made available by players such as digital banks, pharmacy chains and medical service marketplaces.

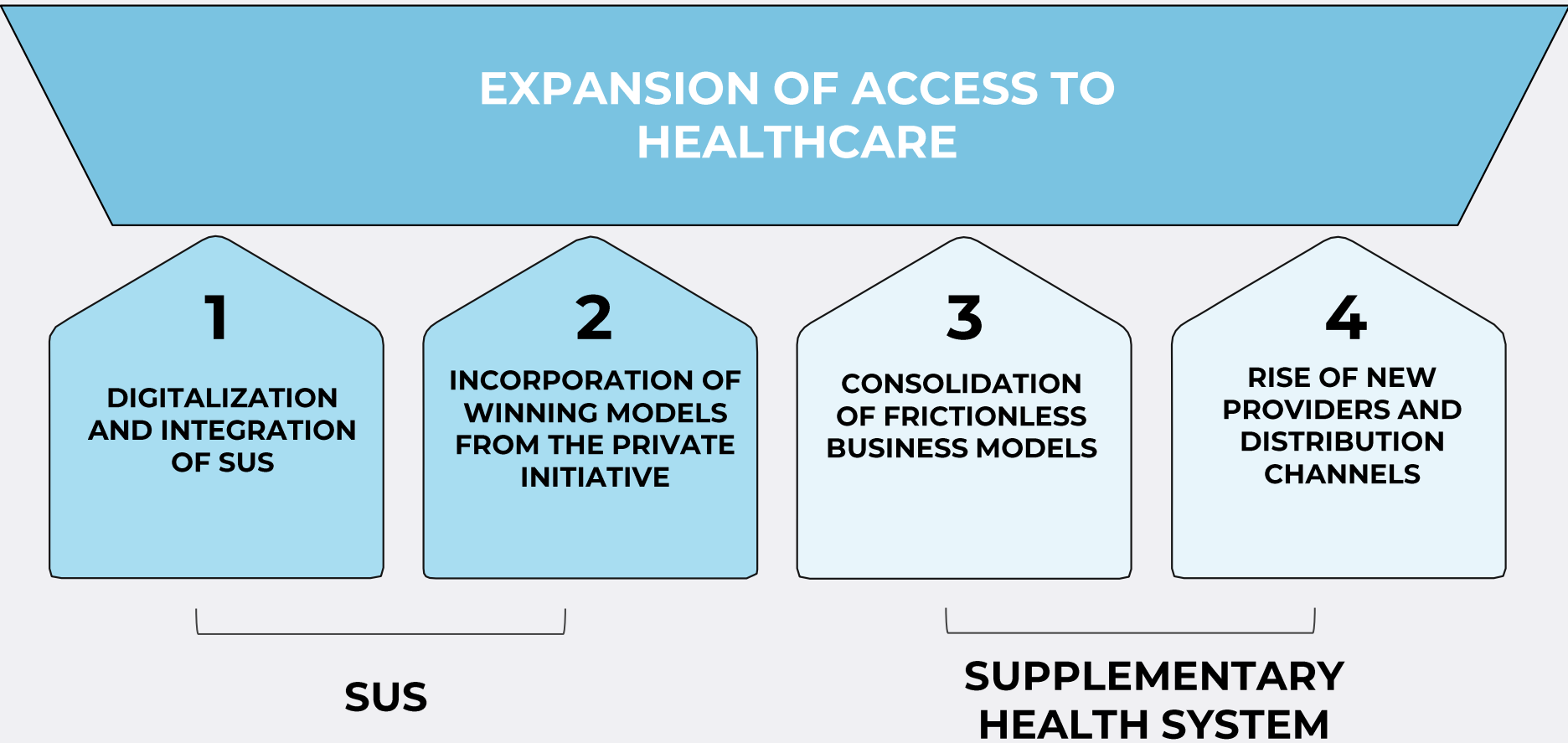


# Expansion and qualification of access to health

In order to strengthen and qualify access to healthcare via SUS, it is critical (1) to digitalize its network of services and processes and (2) to explore management models that have proven to be winners in the private sector (with appropriate adaptations).

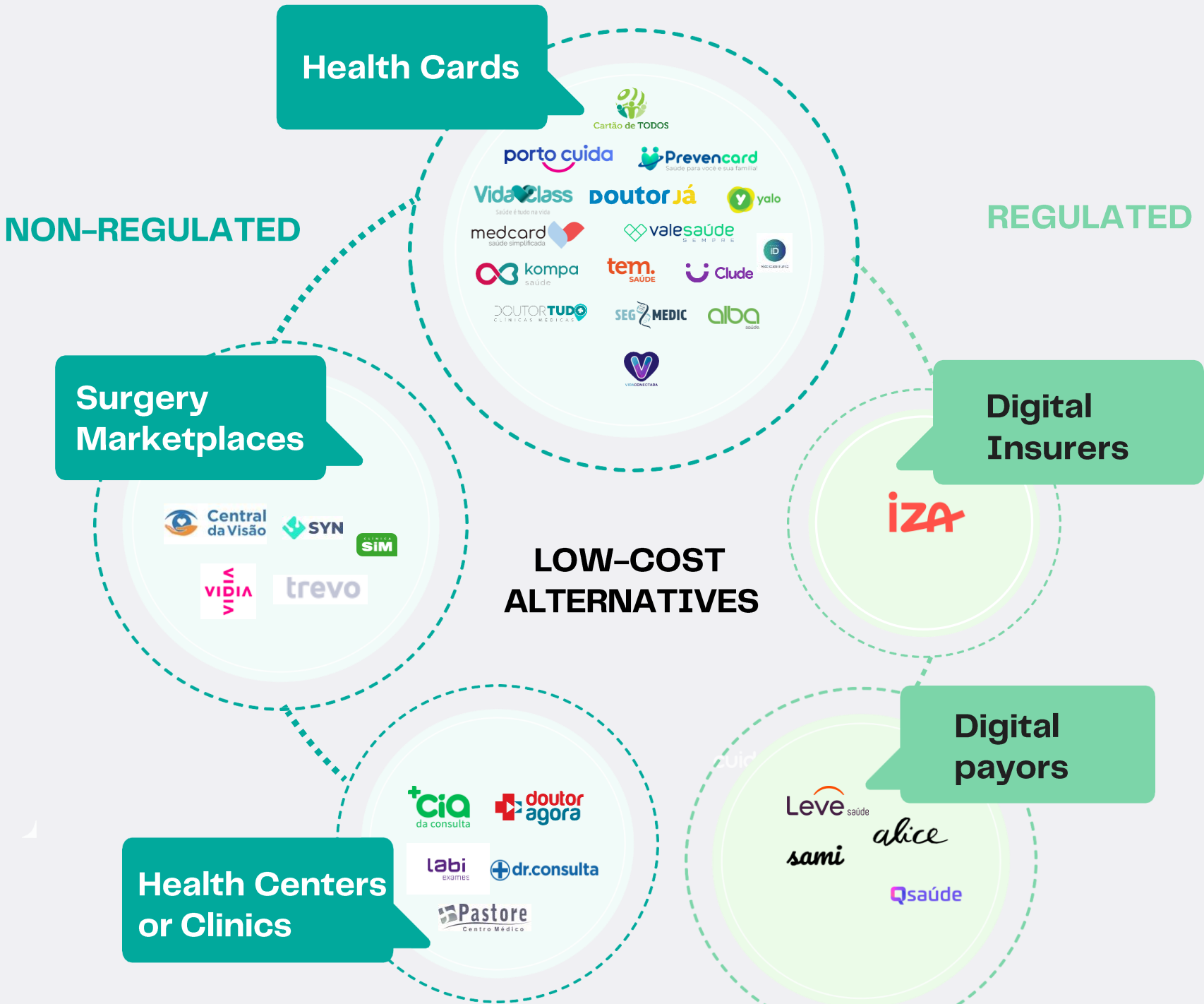
A kind of “natural selection” of frictionless models is also taking place. Those models are geared towards cost-effectiveness and successful outcomes as well as geared towards granting the general population access to tests, appointments and general care. In addition to (3) specialized players, such as health centers and discount cards, (4) new entrants such as digital banks and pharmacy chains - which position themselves as “orchestrators” (aggregating various solutions on the same platform), are exploring their potential to mobilize resources and partners to enrich their value proposition to consumers.

## 4 Avenues of Opportunity for Expanding and Qualifying Access to Health:



Considering that the qualification and expansion concerning access to health are relatively recent, it is worth highlighting the expansion of the supplementary health system through companies that provide a range of services. See illustration below. It is expected that in the coming years, winning practices and models will emerge.

Currently, companies are bundling their service offerings with complementary ones, thus forming a healthcare ecosystem.



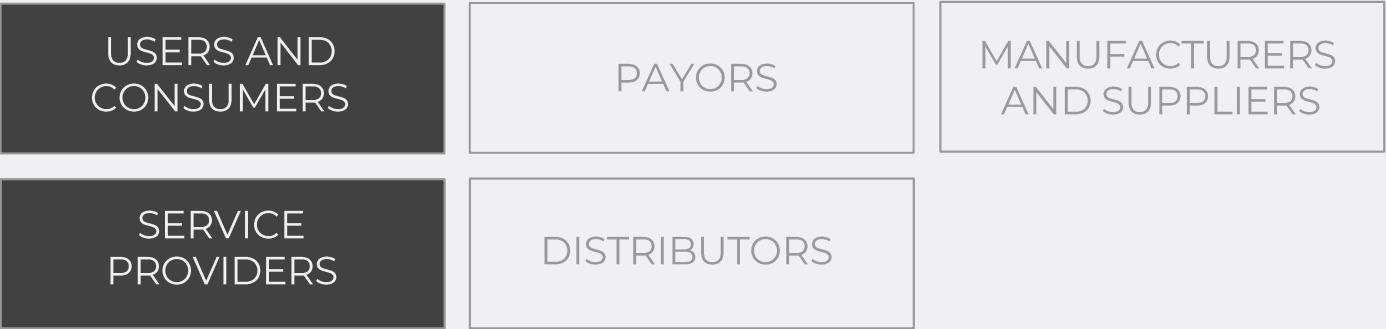
\*non-exhaustive list



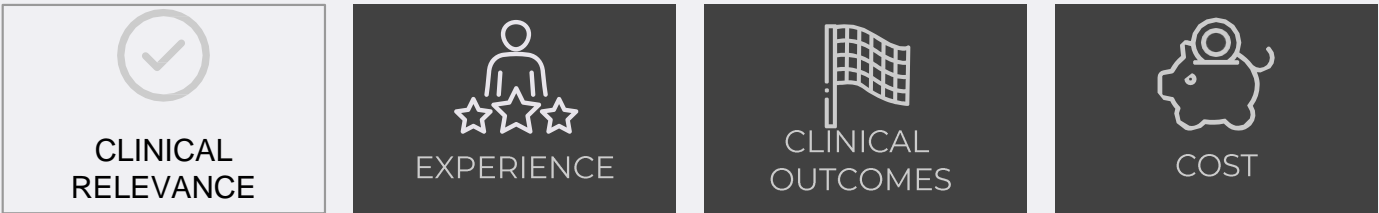


# Pharmacies as hubs of care

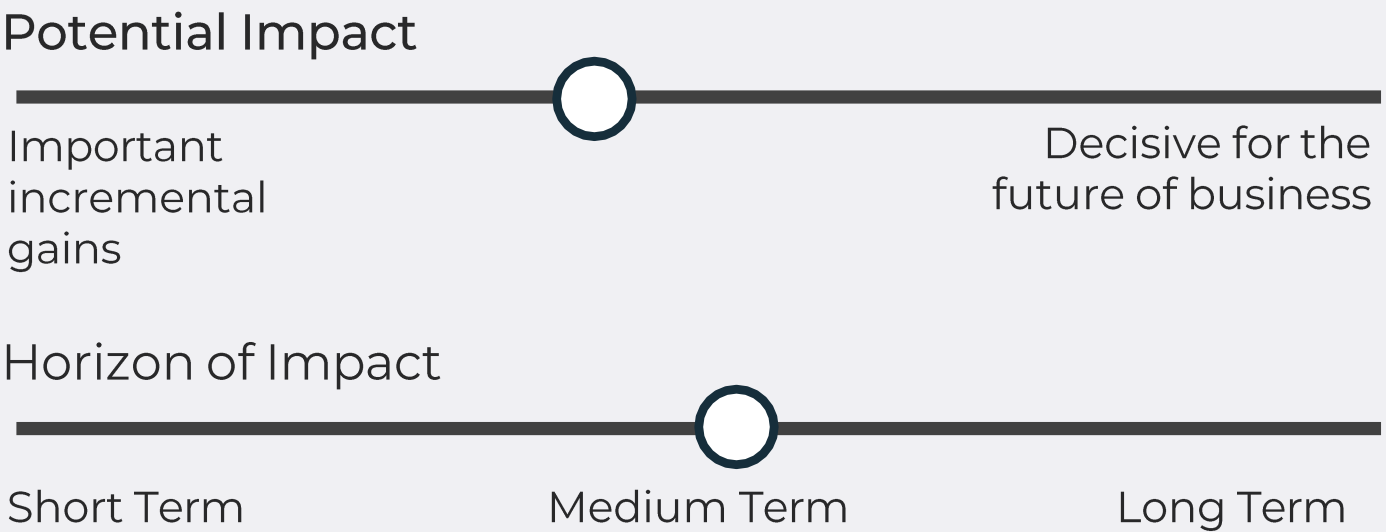
## Stakeholders



## Value Drivers



## Potential for Change:

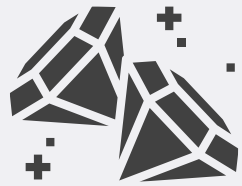




# Pharmacies as hubs of care



## 1 Description



With the shift from hospital-centric to prevention-focused health care, pharmaceutical retailers emerge as potential protagonists for primary and secondary care due to their reach and frequency of interaction with consumers. Thus, they are able to offer support on the recommendation and implementation of health and wellness programs as well as perform tests and exams of low or moderate complexity.

## 2 Major Pain Points



**Root Cause:** The prevention-focused health and wellness approach shifts pharmaceutical retailers from mere salespeople to proactive agents of health.

**Pains related to affected stakeholders:**

**Service Providers + Users and Consumers |** Difficulty guaranteeing continuity of the selected health care;

**Retail Pharmacies |** Work with tight margins, making new and complementary lines of care desirable.

## 3 Risks and Barriers



**Regulation |** Aspects of the new operating model depend on regulatory advances regarding official bodies such as ANVISA or national boards (e.g., CFM and CFF);

**Culture |** Consumers do not identify pharmacies as points-of-care yet, even though they have welcomed such a possibility during the pandemic;

**Business |** The complexity of repositioning is considerable since it involves adopting a new value proposition that is less focused on medication sales and more focused on health programs and tests.

## 4 Key Findings



Currently, the largest players have been progressively investing in digitalization in parallel to organic and inorganic expansions. Likewise, they have been working on business fronts and investment theses that expand their operations and move them from being mere suppliers of products to being hubs of care.

With the help of partnerships and analytics, pharmaceutical retailers, especially networks, will be able to:

- Develop wellness and health programs based on consumer profiles;
- Offer tests, vaccines and other means of care; and
- Recommend personalized products and solutions, from basic to more complex items

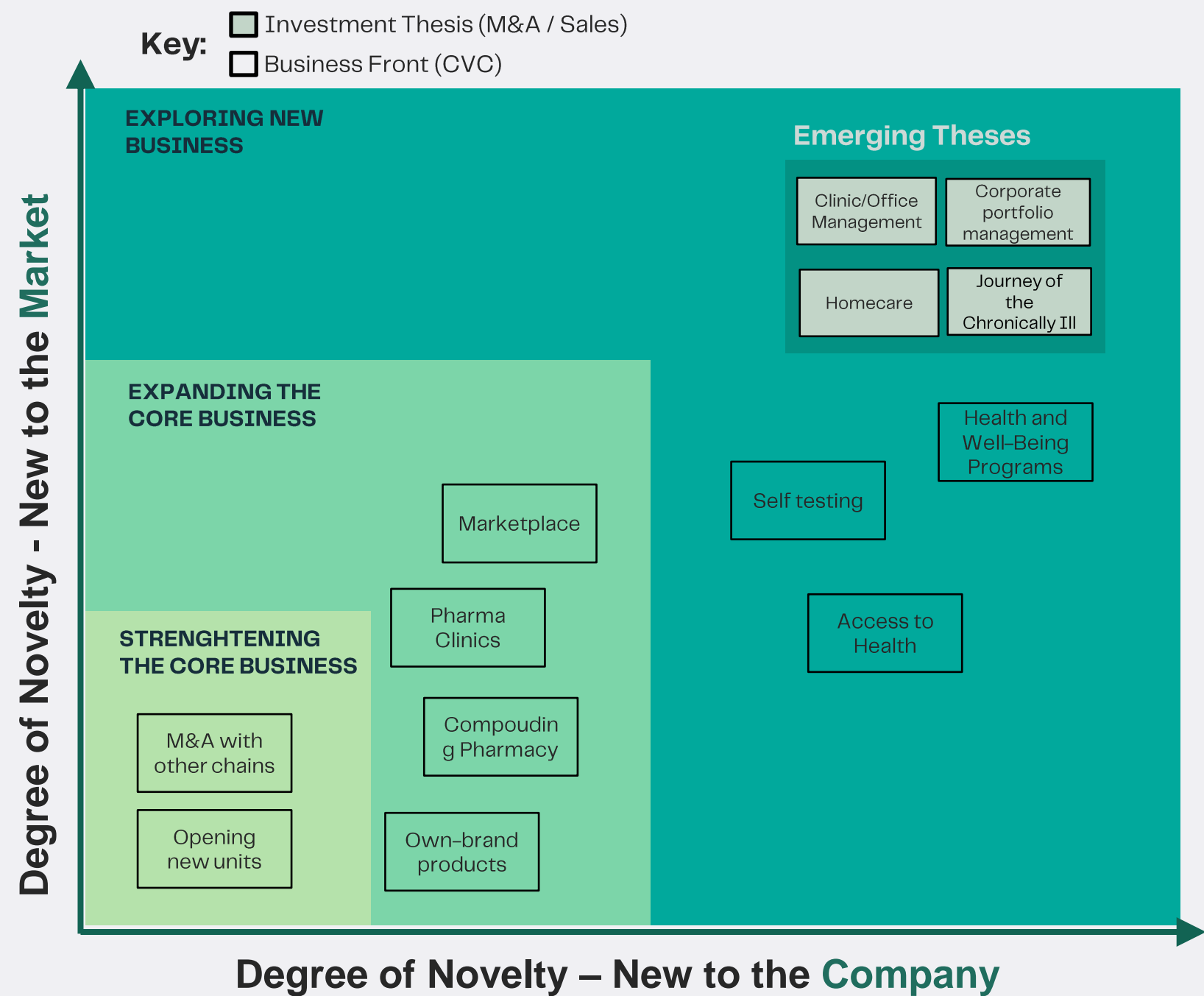


Pharmacies as hubs of care

The 5 largest pharmaceutical retail chains have 32% of the market share and present an accelerated pace of consolidation and expansion.

Classic growth strategies, such as M&A with other pharmacies chains and the opening of new units, still prevail. However, these players are willing to target new areas of opportunity, which are summarized below.

Retail Pharma – Top Growth Avenues



Context

Vitat was launched in 2021 by Raia Drogasil (RD), the largest Brazilian retail pharmaceutical chain, to be a key part of the company’s digital strategy.

Vitat is a health and well-being platform that addresses issues related to patient engagement and frequency of interaction, healthy choices, good nutrition, physical activity, quality sleep and adherence to prescribed treatments.

Value Proposition

Vitat app was initially launched with 25 free included programs to promote healthy eating, exercising, sleeping well and keeping mental and physical health.

After RD acquired other companies and integrated them with Vitat, It turned into a wellness and healthcare platform that offers and connects products, services and solutions through pre-defined health journeys.

Inside the super app there is a services marketplace, a collection of health and wellness programs and curated products from the RD marketplace.

The app has shown some impressive metrics since its launching:

- 50M visits during the year through its apps or sites, social media and podcast (2Q22);
- 900K unique users for Vitat 220+ free integral health programs (1Q22)





# Efficiency and Digital Transformation



Relationship between service providers and payors



Process conformity and interpretation of standardized indicators for performance monitoring of health organizations



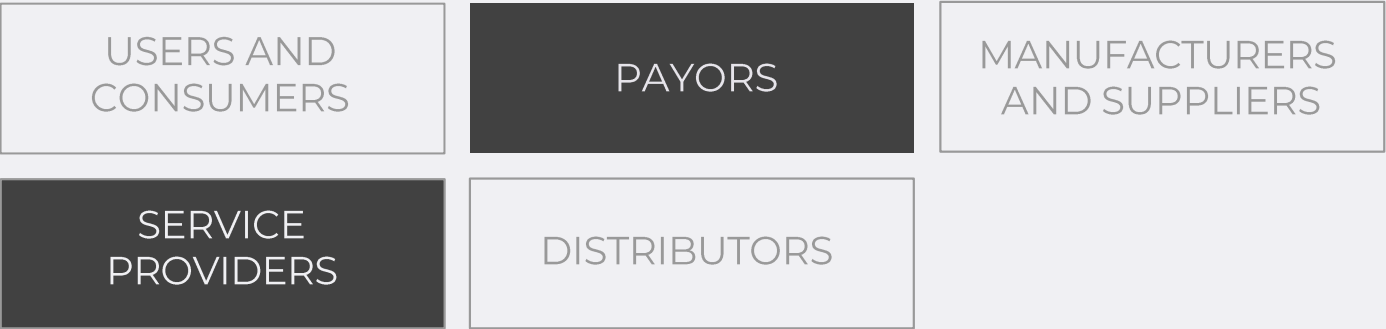
Optimization of the R&D process for new drugs and treatments with AI and other technologies



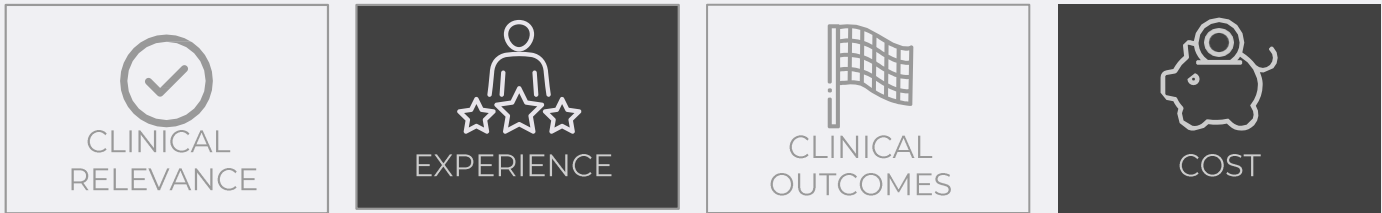


# Relationship between service providers and payors

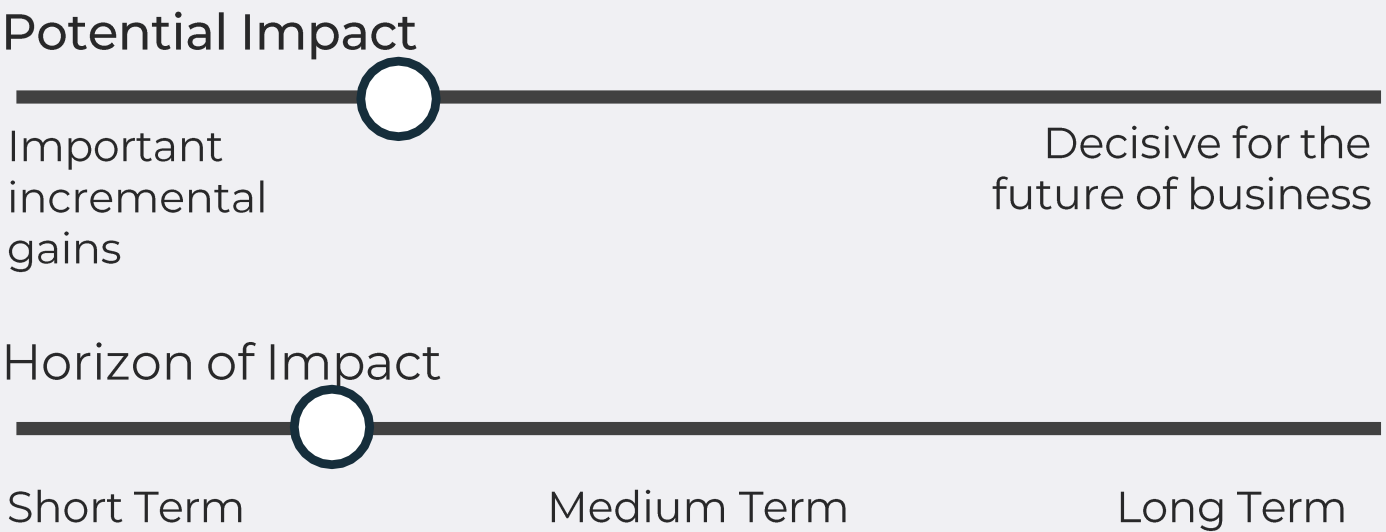
## Stakeholders



## Value Drivers



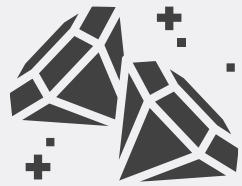
## Potential for Change:





# Relationship between service providers and payors

## 1 Description



Collaboration and transparency are critical pillars within emerging risk-sharing models. Current interface processes between providers and payors are suboptimized and fee-for-service models reinforce a conflicting view between these stakeholders. Also, data associated with patient navigation and clinical outcome - which should be the basis of a collaborative agenda of joint strategies and actions - are unavailable or not shared due to a lack of alignment between the parties.

## 2 Major Pain Points



**Root Cause:** Historically, service providers and payors have had conflicting interests. While the former were paid for the services provided (volume-based), the latter had their margins directly related to claims and use of health system. Even though payers had previously postponed the problem by adjusting plan prices and passing on the cost to their customers, this is no longer a viable solution.

**Pains related to affected stakeholders:**

**Payor** | Does not have elements to compare different service providers. It is hard to implement value-based models and incentives arising from volume-based models. They tend to inflate prescriptions and procedures;

**Beneficiary** | Miscommunication between intermediary and service provider is passed over to the consumer, resulting in cancellation of surgical procedures and delays, among other concerns;

**Service Provider** | Performance disruptors include communication challenges with payers, billing disallowance and poor flow of patient data.

## 3 Risks and Barriers

**Technology** | As the patient journey has not yet been fully digitalized, integrated or coordinated across most providers, there is limited data for modeling new pricing and service delivery arrangements;

**Culture** | As they have cultivated different interests over time, payers and providers tend to resist sharing data and evaluating joint activities;

**Adaptability** | As there are limited resources to accurately model risk-sharing agreements, it will be necessary to agree on adjustments to the terms and conditions as personal data are collected.

## 4 Key Findings



By working together in a collaborative agenda that combines cost-effectiveness and clinical outcome, providers and payers will be able to redesign interface processes to ensure fluidity, efficiency, data sharing and to implement new remuneration models as well as care journeys.

In this new scenario, there should be synergies for corporate or commercial partnerships so these stakeholders can jointly act as health platforms based on value creation through the lens of care and prevention.



# Relationship between service providers and payors

Unlocking a collaborative agenda between insurers and service providers with emphasis on value drivers will encourage parties to create value and mitigate waste and inefficiencies. We propose a non-exhaustive agenda with possible efforts to strengthen mutually beneficial relations as follows.

## Collaborative Agenda

	CLINICAL RELEVANCE	CLINICAL OUTCOME	EXPERIENCE	COST	IMPLEMENTATION TIME
Implement mechanisms and strategies to control fraud				✓	ST
Ensure authorization process			✓		ST
Combine efforts to educate and guide patients		✓	✓	✓	ST
Revisit interface procedures to simplify, eliminate or automate activities				✓	ST
Clearly establish SLAs for interface procedures		✓		✓	ST
Co-construct; iterate and agree upon Value Based Models	✓	✓			ST
Collaboratively (re)structure lines of care	✓	✓		✓	MT
Integrate channels for scheduling, assistance and patient care		✓		✓	LT
Share and discuss benchmarks for outcomes and relevance	✓	✓			LT



## Context

During the Covid-19 pandemic, SulAmérica created a Fast Track program to obtain real time information regarding available hospital beds in its accredited hospitals network. These partner hospitals would be connected to SulAmérica digital services with the purpose of reinforcing the decision-making on where its beneficiaries could be allocated after virtual appointments and, as a result, improve patients' experience and clinical outcome.

## Value Proposition

CM Tecnologia has an integration platform to connect health organizations and reduce ERP as well as to provide a seamless experience to patients by integrating systems using APIs and tools for process automation.

The startup was engaged by SulAmérica to integrate the company telemedicine platform with hospital management systems in order to increase assertiveness on the allocation of patients who required hospitalization or more complex medical care.

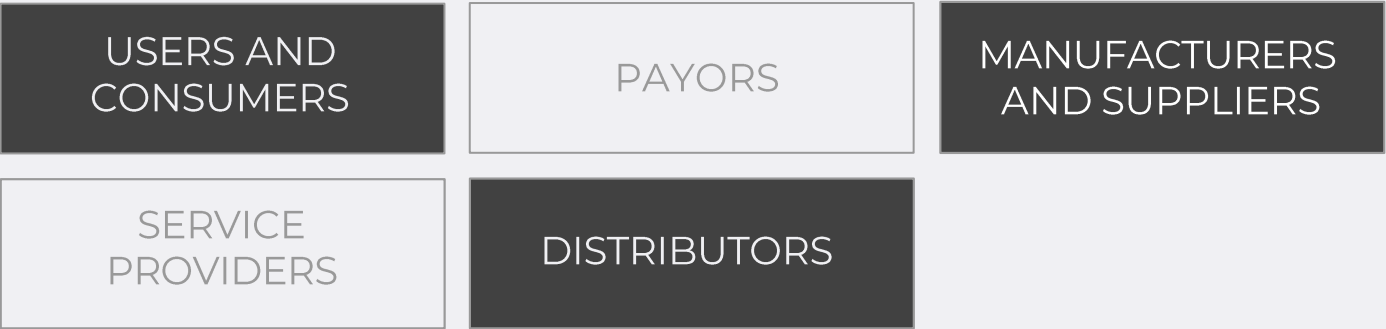
This is clearly a win-win scope of work with a great potential to unlock financial and commercial benefits for both SulAmérica and its providers, as SulAmérica considered eligibility prior to recommending the patient. In addition, once their systems are connected, the parties are able to explore other synergies and opportunities to improve information flow and transparency.



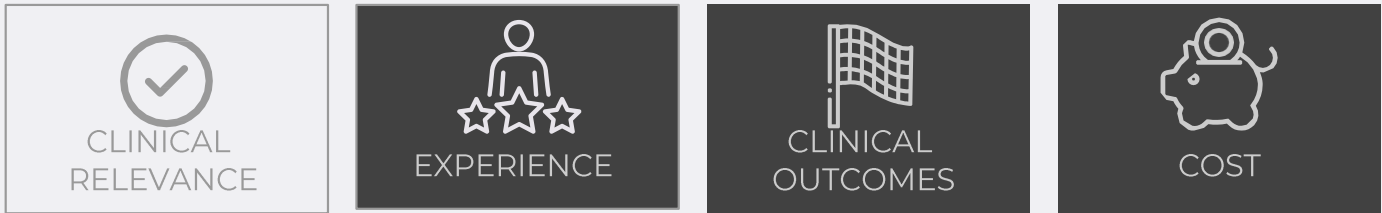


Process conformity and interpretation of standardized indicators for performance monitoring of health organizations

Stakeholders



Value Drivers



Potential for Change:

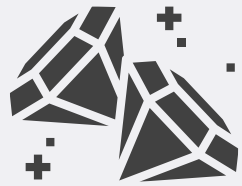




# Process conformity and interpretation of standardized indicators for performance monitoring of health organizations



## 1 Description



Following an international trend, large local healthcare players are going through a phase of service consolidation and expansion. This process involves an inorganic growth strategy based on the acquisition of smaller players. It leads to a scenario with business units having different processes and indicators, making it difficult to monitor and compare such units and identify local or generalized inefficiencies.

## 2 Major Pain Points



**Root Causes:** (i) The aggressive M&A strategy by large healthcare groups brings together and clashes different management systems and methodologies, rendering healthcare facilities hardly comparable and (ii) in general, such providers still have a low level of maturity in operations management and do not explicitly define the design of their journeys, lines of care and processes.

**Pains related to affected stakeholders:**

**Service Providers** | Pressured by their shareholders and/or creditors to pursue economies of scale and exploit opportunities of efficiency gains;

**Payor** | Struggles to compare efficiency and clinical outcomes of providers and as a result struggles to implement value based models (VBM).

## 3 Risks and Barriers

**Technology** | A relevant part of the VO is to make systems and processes interoperable in order to get a continuous and broad view of the organizations;

**Collaboration** | If the standardization and monitoring of the aforementioned processes do not result in the sharing of performance data with payors, it will remain difficult to implement VBMs;

**Market** | Each provider tends to have a specific way of evaluating operations and performance, which can make comparisons between healthcare facilities a challenging task.

## 4 Key Findings

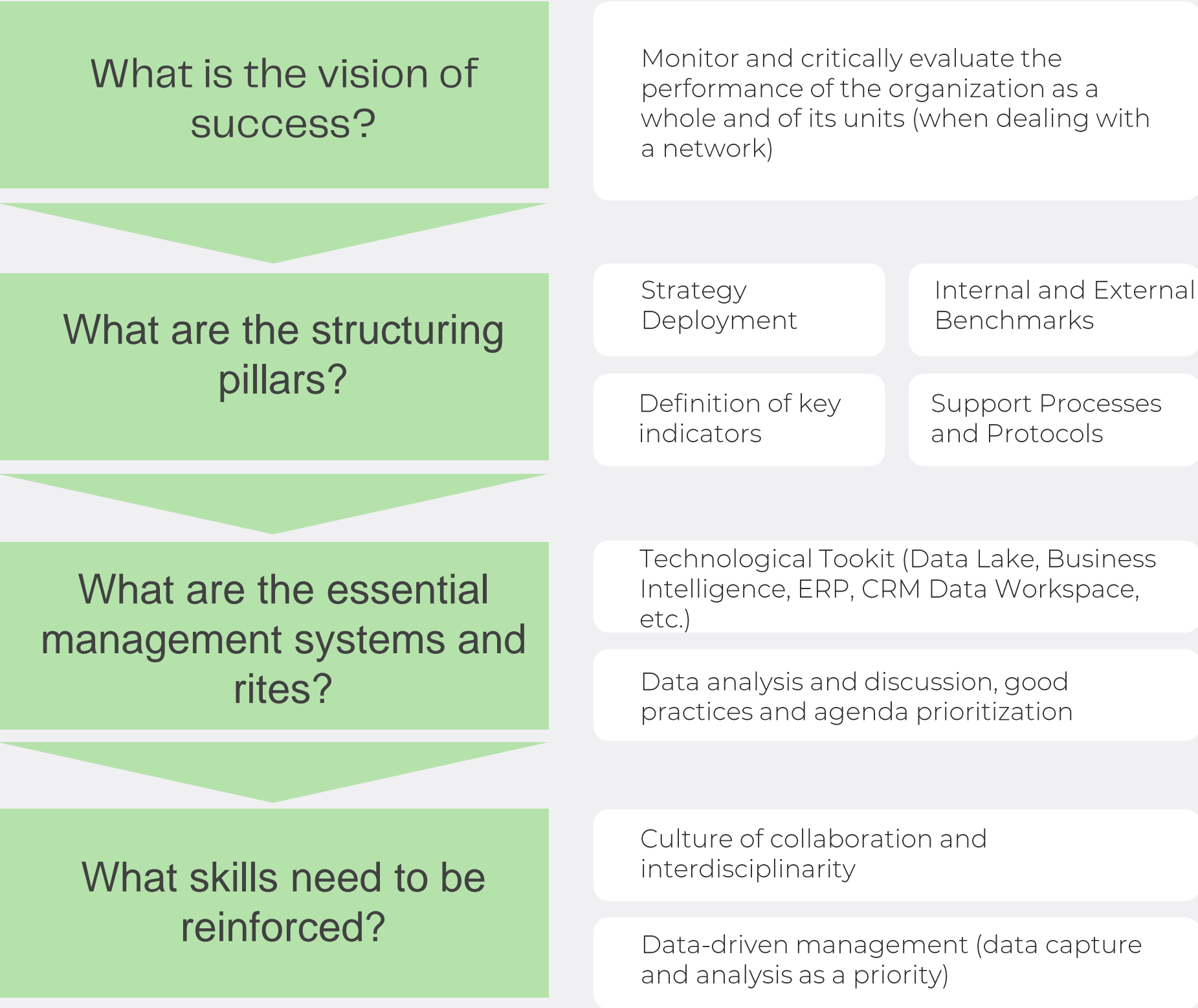


Large provider groups will have their processes and lines of care standardized. Moreover, the evaluation criteria used in their health units are based on the target audience and scope of operation. Besides, performance indicators will point to opportunities for gains in efficiency (cost-effectiveness) and/or efficacy (clinical outcome).

To this end, there will be partial or full interoperability of systems and real-time monitoring of a number of variables. Consequently, the implementation of command centers will be of great assistance.



Process conformity and interpretation of standardized indicators for performance monitoring of health organizations



Context

Dasa has a strong culture of challenging operational inefficiencies, delays and poor communication within hospitals. Such inefficiencies are caused by inadequate systemic integration and performance data.

UpFlux developed a process mining platform that uses AI to dynamically monitor process conformity medical protocols regarding patient journeys and general workflow in order to identify and address inefficiencies.

Value Proposition

UpFlux’s platform was integrated with Dasa’s systems in Hospital Santa Paula to monitor and manage stroke protocol. The solution promoted the fast-tracking of patient allocation within the hospital by automating what was originally a manual process of data verification and analysis.

After partnering, Dasa and Upflux have witnessed quantifiable benefits, including a 50% increase in efficiency in case-by-case analysis.

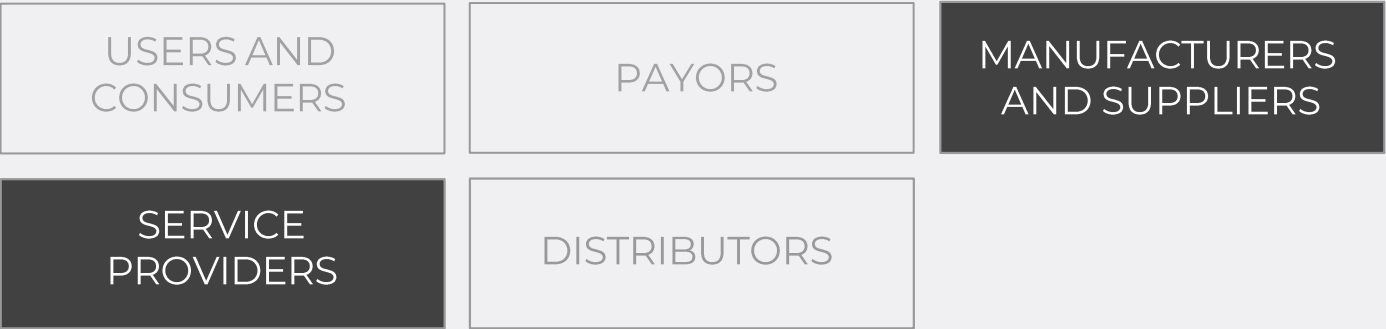
In practical terms, Hospital Santa Paula developed a more reliable stroke management protocol, which is key to expedite stroke workup. Such a protocol resulted in fewer complications and better prognosis for patients.



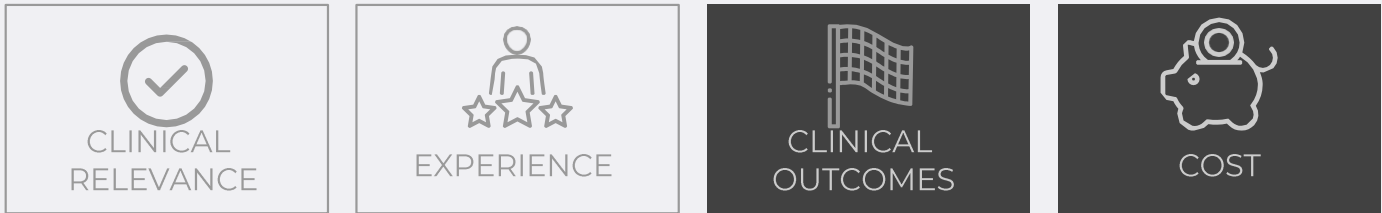


# Optimization of the R&D process for new drugs and treatments with AI and other technologies

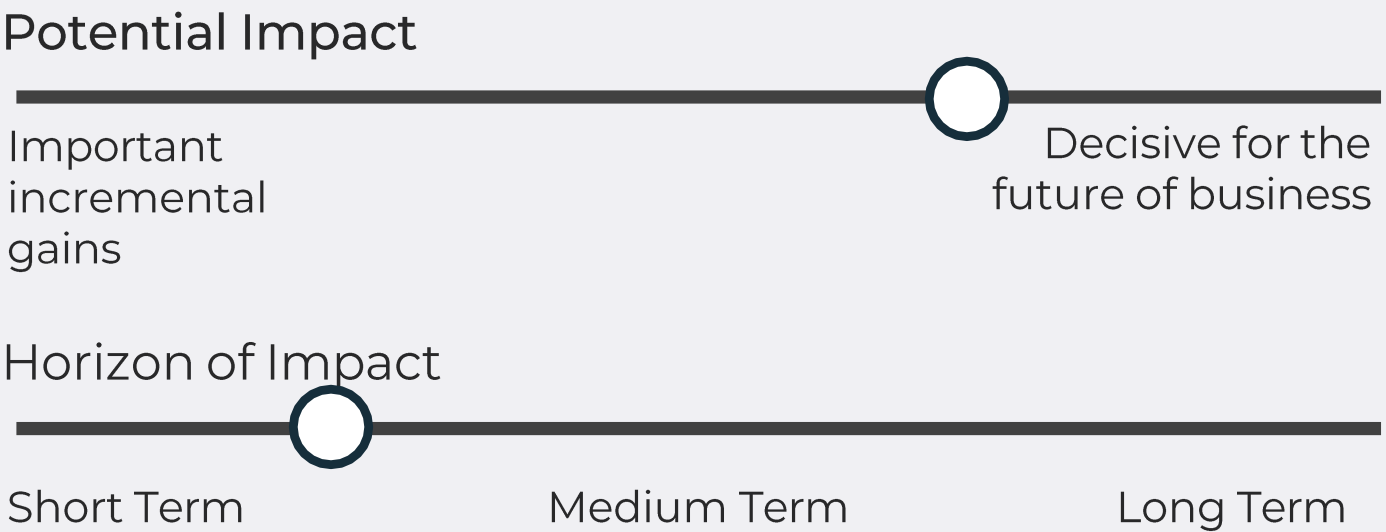
## Stakeholders



## Value Drivers



## Potential for Change:





# Optimization of the R&D process for new drugs and treatments with AI and other technologies

## 1 Description



Previously, biopharmaceutical companies were mainly focused on drugs for Primary Care (distributed in retail pharma stores) but, with the consolidation of the generics industry, these companies were forced to target new markets. Many companies turned to specialty pharmaceuticals, including biotechnologies, gene therapies etc. There is a need for innovative drugs specifically developed for certain therapeutic areas. Most likely, those drugs will make a substantial impact on existing treatments. In addition, given the high R&D costs and timing, new technologies that bring celerity, efficiency or assertiveness to the processes of research, development and outcome analysis can be extremely valuable.

## 2 Major Pain Points



Root Cause: New market circumstances led the biopharmaceutical industry towards diversifying its drug portfolio and turning to new therapeutic areas where certain enabling technologies represent a significant competitive advantage.

Pains related to affected stakeholders:

**Biopharmaceutics** | Require shortening of the R&D cycle without compromising the clinical strictness required by regulatory agencies;

**Patient** | Drugs adherent to clinical conditions are usually expensive or unavailable;

**Biotechs** | Have difficulties in scaling solutions and approving them according to the rules of regulatory agencies.

## 3 Risks and Barriers



**Business** | Platform design and scope still outline an early effort – e.g., whether the platform will be oriented towards lines of care, innovative or other drivers.

**Culture** | Educating and engaging employees in the new modus operandi will also be necessary.

**Collaboration Management** | It will be necessary to evolve not only structuring platforms but also collaboration processes with external partners.

**Marketing & Sales** | Pricing models and risk sharing will have to be defined and refined over time.

## 4 Key Findings



There are 3 capabilities biopharmaceuticals should excel:

- **Anticipate the Future:** With the rise of digital technologies and the personalization of care, biopharmaceuticals are revisiting their differentiation and performance strategies, outlining relevant R&D in search of sustainable competitive advantage.
- **Reinterpret the Present:** To solidify a vision for the future, it is necessary to revisit operating models to equally reflect appropriate strategic positioning and explore opportunities for collaboration and digitization.
- **Question the Past:** The strategy and the new operating model will require rethinking previous assumptions that extend from the validation of drugs and treatments to the launching of solutions to the market.



MOST VALUABLE OPPORTUNITIES (MVOs)

Optimization of the R&D process for new drugs and treatments with AI and other technologies

Each core capability involves 3 competencies as the framework shows below :

Pharmaceuticals Capabilities Tree

 Anticipate the Future	<b>Comprehend:</b> Biopharmaceuticals are shifting their market position to become providers of personalized and affordable solutions. In practice, this means organizing their portfolio around specific illnesses, enabling technologies or lines of care.
	<b>Unfold:</b> For this purpose, it is necessary to break it down into R&D assumptions and match them to innovation breakthroughs.
	<b>Originate:</b> If biopharmaceuticals aim to offer customized and accessible solutions, it is necessary to structure the origin funnel to capture internal and external business opportunities linked to the designed premises.
 Reinterpret the Present	<b>Re-design:</b> Empowered by digital technologies, biopharmaceuticals are revisiting their operating model in search of opportunities to shorten drug and treatment development cycles and tackle efficiency gaps in their value chain.
	<b>Agree On:</b> The new operating model for biopharmaceuticals assumes collaboration and co-creation of value with partners, which requires the redesign of models for sharing clinical data, iteration and remuneration.
	<b>Digitalize:</b> After redesigning operations, technologies are developed to accelerate, automate and optimize R&D and the supply chain
 Question the Past	<b>Navigate:</b> Having partnering stakeholders as a model, biopharmaceuticals must go beyond effective communication: they need to guide ('navigate') regulators, R&D partners, and patients through procedures, protocols, and practices of interests, investing in interoperability and data security.
	<b>Leverage:</b> It is also necessary to activate the physical and technological platforms, as well as use commercial and regulatory expertise to leverage and scale solutions.
	<b>Engage:</b> The key to maximizing success in launching new solutions is to 'naturalize' sales, adopting a "pulled" rather than "pushed" approach. Relevant strategies include delivering personalized content, consulting support and interacting with patients and doctors.



Context

Suddenly, in December 2019, the novel coronavirus disease shocked the world. Later, millions of lives were lost due to the pandemic.

On March 17, Pfizer, alongside BioNtech, signed a letter of intent with the World Health Organization

According to Pfizer, the challenge was to successfully run complex research and develop an effective vaccine before the end of 2020.

Value Proposition

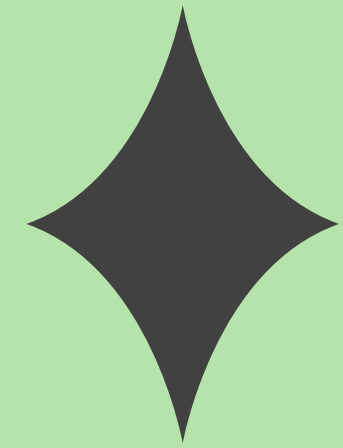
Aiming at beating the challenge, Pfizer innovated across the healthcare value chain through improvements in clinical outcomes, faster development and distribution of medication and investment in therapeutic innovation.

Some of the efforts and technology tools used throughout the project lifecycle included:

- 1. **Cloud-based technology**, shared documentation across remote sites.
- 2. **Industry-first operations center**, enabled for prediction and adjustment in real time.
- 3. **Augmented Reality**, enabled for remote diagnosis and equipment repairing.
- 4. **Supercomputing**, reduced computation time by 80-90%.
- 5. **Machine learning**, improved safety monitoring and compliance abilities.

On December 2020, Margaret Keenan, 90 years old, became the first person in the world to be given the Pfizer Covid-19 jab as part of a mass vaccination programme.





# Decentralization of Care



Personalization of employees' health journey by HR departments



Growth of new home-based healthcare models for patient convenience and follow-up



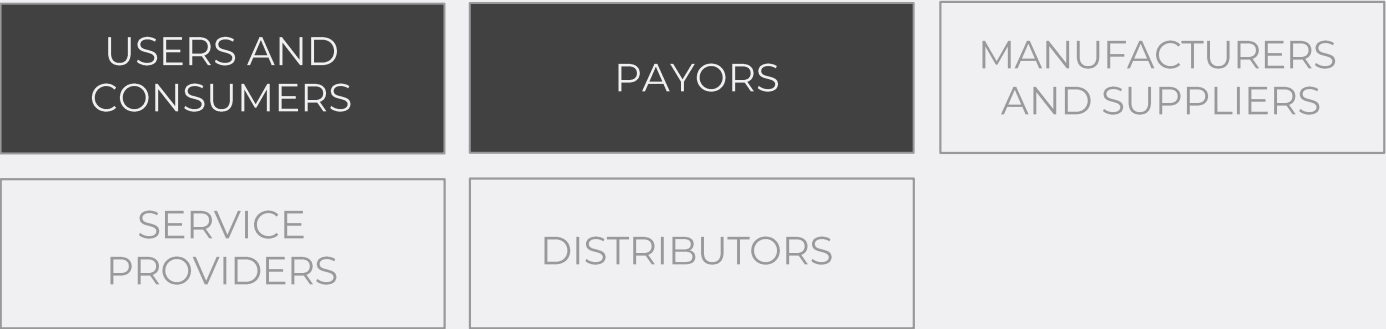
Tech-enabled patient omnichannel experience



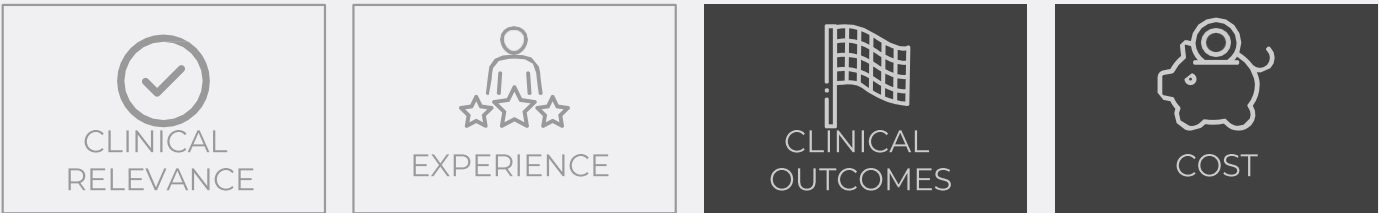


# Personalization of employees' health journey by HR departments

## Stakeholders



## Value Drivers



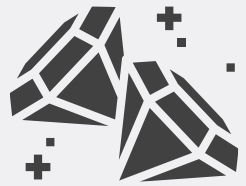
## Potential for Change:





# Personalization of employees' health journey by HR departments

## 1 Description



Companies have realized that understanding their population profile would bring several benefits both from a financial point of view (with potential improvement in accident rate, productivity and absenteeism indicators) as well as from an employee quality of life perspective, with solutions that meet their needs, ranging from primary care to mental health and well-being. Besides, there is a movement underway to model an employee health journey, which will be supported by players such as insurers, brokers, and health techs.

## 2 Major Pain Points



**Root Causes:** The HR department of the contracting companies: (1) allocate between 15 and 30% of their budget to employee benefits and have little margin to deal with the rising price of health plans and other associated benefits; and (2) fail to mitigate productivity losses, absenteeism rates and leave rates because health and welfare programs have not proven to be effective.

**Pains related to affected stakeholders:**

**Beneficiary** – Sees little value in health plans and related benefits, either by seeing them as poorly adhered to or limited or by not knowing how to take advantage of them;

**Broker** - Has difficulty proving and communicating the value of health products and programs contracted. There is a lack of robust databases for contractors in order to define such programs;

**Insurer** - Cannot control medical-hospital cost variation and do not have price margins to pass on to client companies.

## 3 Risks and Barriers



**Culture** - Beneficiaries associate the quality of care to be received with the size of the network of service providers and brands included – a vision still hospital-centric;

**Engagement and Communication** - Reaching additional beneficiaries (children and spouses) is a challenge. This is making the employees themselves aware of the importance of participating in corporate health and wellness programs;

**Finance** - HR offers a large variety; however, they still face a restrictive budget. Startups will need to demonstrate convincing ROI to ensure service adoption.

## 4 Key Findings



HR departments will optimize spending on employee benefits, as they select solutions adherent to the profile of their population and build, together with brokers, insurers and/or healthtechs, health and wellness journeys for their employees. In order for this scenario to be in place, it will be necessary to explore occupational and other relevant data to characterize the population and distribute employees into pertinent lines of care.



# Personalization of employees' health journeys by HR departments

By gathering and consolidating health data from employees, HR departments have a clearer picture on the populational health of the company's employee base.

As a result, companies put themselves in a good position to contract adherent health and wellness solutions, establish KPIs on life quality and allocate certain groups of employees into specific lines of care.

Thus, the co-construction of this journey with partners, such as insurers, brokers, service providers and healthtechs, should be a priority in their agenda.



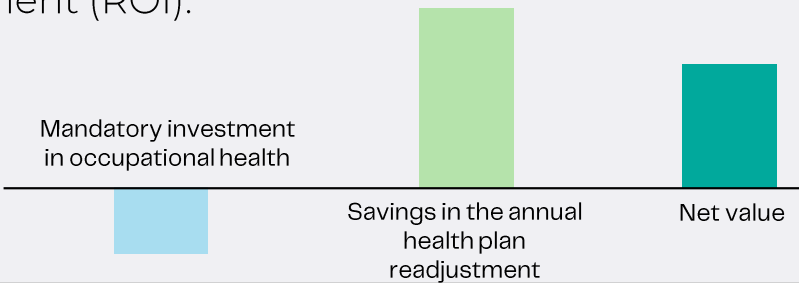
## Context

Historically, HR departments have inadequate data collection and management systems that cause inefficient adoption of medical services and other benefits for employees.

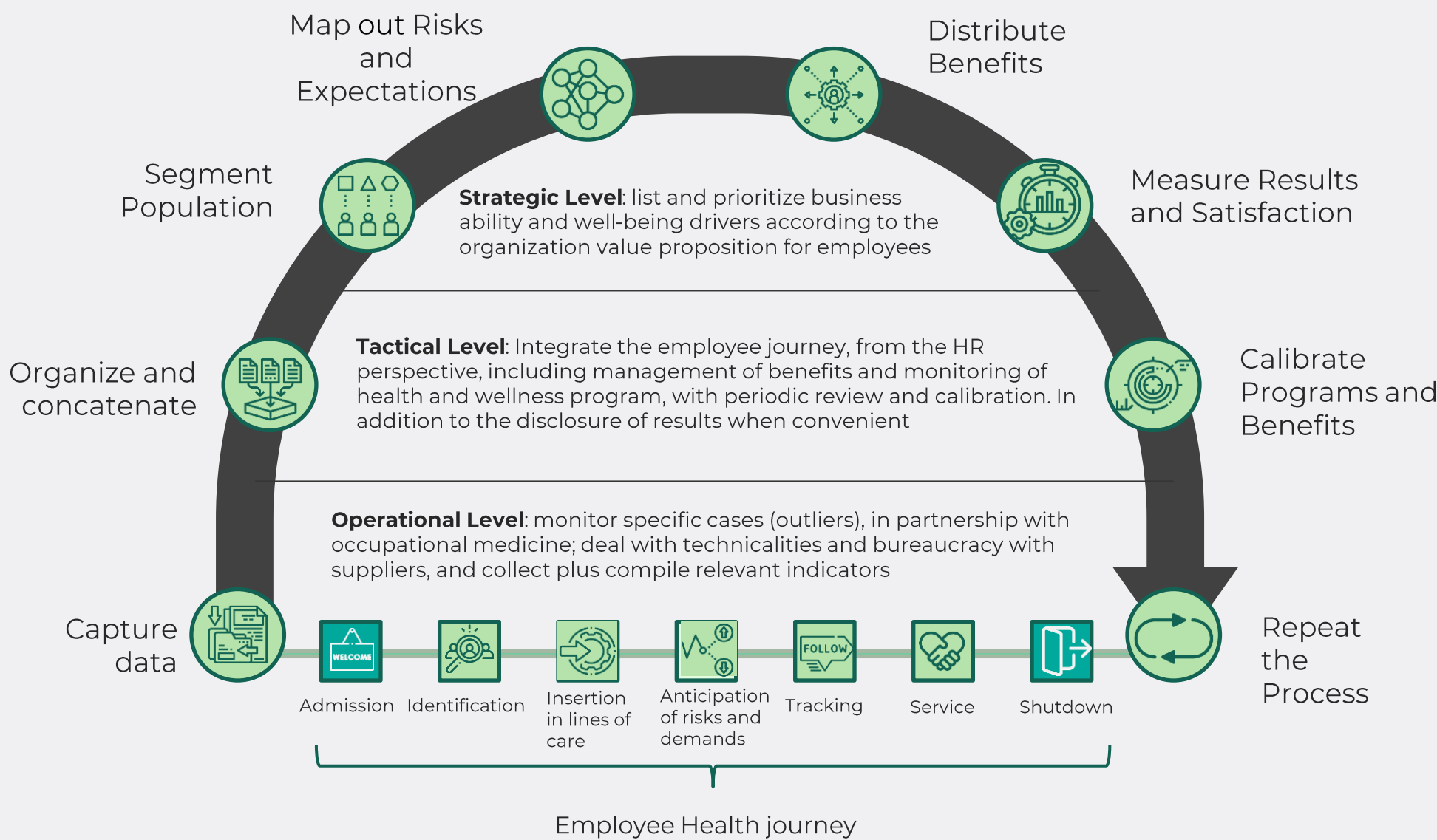
Taking into consideration that Salú facilitates the entire occupational health process and collects valuable health information to provide accurate inputs on populational health, Olist hired Salú, expecting to receive specific information on employees' profiles and on how to allocate each populational group into adequate lines of care, so it could control loss ratio in a more efficient fashion.

## Value Proposition

- The scope of work carried out by Salú and Olist can be summarized as follows:
1. Automated occupational healthcare processes and screening of employees, done through a management/integrated dashboard
  2. Automatically integrated LGPD-compliant data with insurers (including mapping out of chronic cases)
  3. A report on the structured health scenario that is discussed with insurers in order to control/limit readjustments
  4. After integrating Salú's solution, Olist was able to control price readjustments with insurer and decrease their loss ratio, resulting in overall lower cost for the company.
  5. In short, Salu supported Olist in transforming a mandatory expenditure (occupational health) into a 20x investment (ROI).



## The New Employee Health Journey

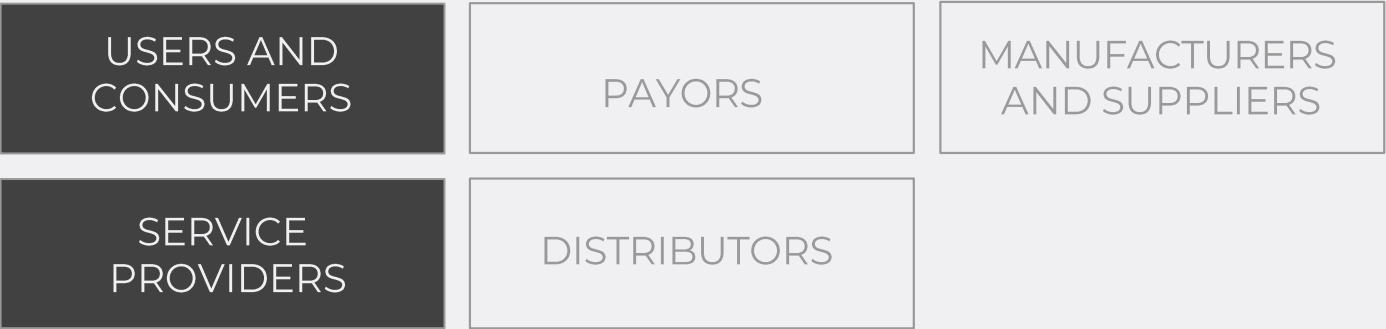




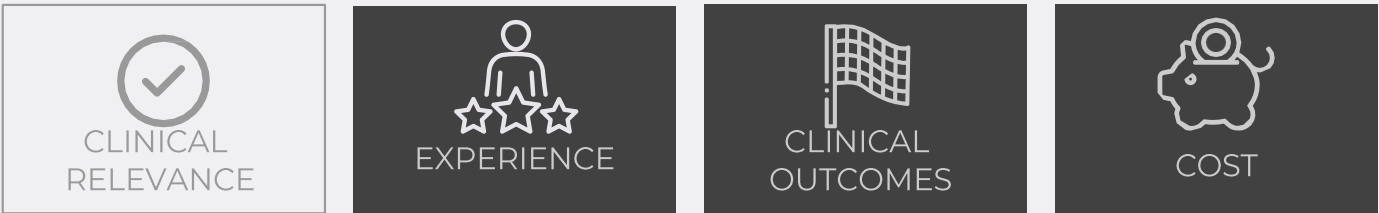


Growth of new home-based healthcare models for patient convenience and follow-up

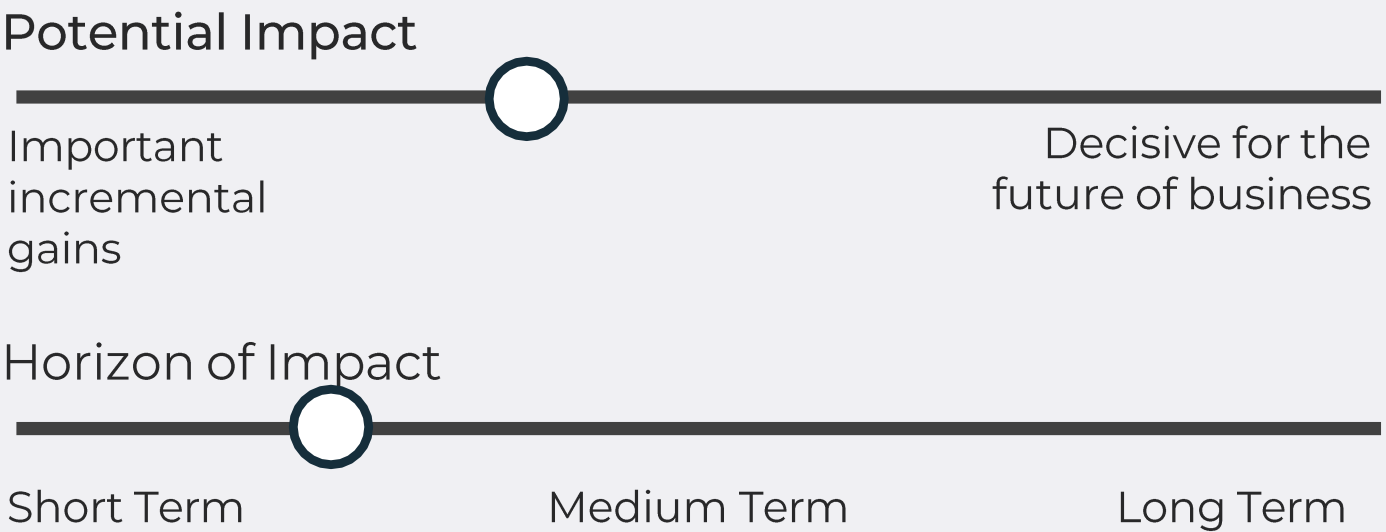
Stakeholders



Value Drivers

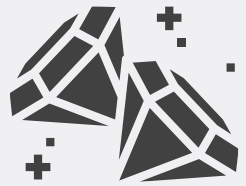


Potential for Change:



# Growth of new home-based healthcare models for patient convenience and follow-up

## 1 Description



New At-Home Healthcare business models enable monitoring, care and follow-up of patients at home, either remotely or in person. This means exploring opportunities such as reducing patient length of stay and the use of wearables to track patient data. The offering of at-home tests, vaccines and other forms of care will also provide greater convenience for the consumer.

## 2 Major Pain Points



**Root Cause:** The delivery of care has been moving from a hospital-centric model towards a patient-centric one by offering a more pleasant and holistic journey, including the possibility of establishing homes as primary sites of care. This can be seen as complementary to the Value-Based Medicine and risk-sharing discussions, in which high occupancy and use of an organization's resources does not ensure greater profitability;

**Pains related to affected stakeholders:**

**Beneficiary** - Follow-up is limited to the clinical-hospital environment, which generates inconvenience and hinders assistance;

**Service Provider** | Without continuous patient follow-up, it can be risky to speed the 'dehospitalization' process and challenging to anticipate conditions in a stage of aggravation.

## 3 Risks and Barriers



- **Culture** - Specifically in more delicate clinical situations, patients understand that going to health units means receiving the best available care at all times;
- **Technology** - Smart devices and wearables are in the process of becoming more accessible and accurate. Therefore, their role in at-home healthcare is still limited.

## 4 Key Findings



Providers will no longer consider the physical health unit as the only or preferred site of care and will consider patients' residences as a primary site of care either remote or on-site.

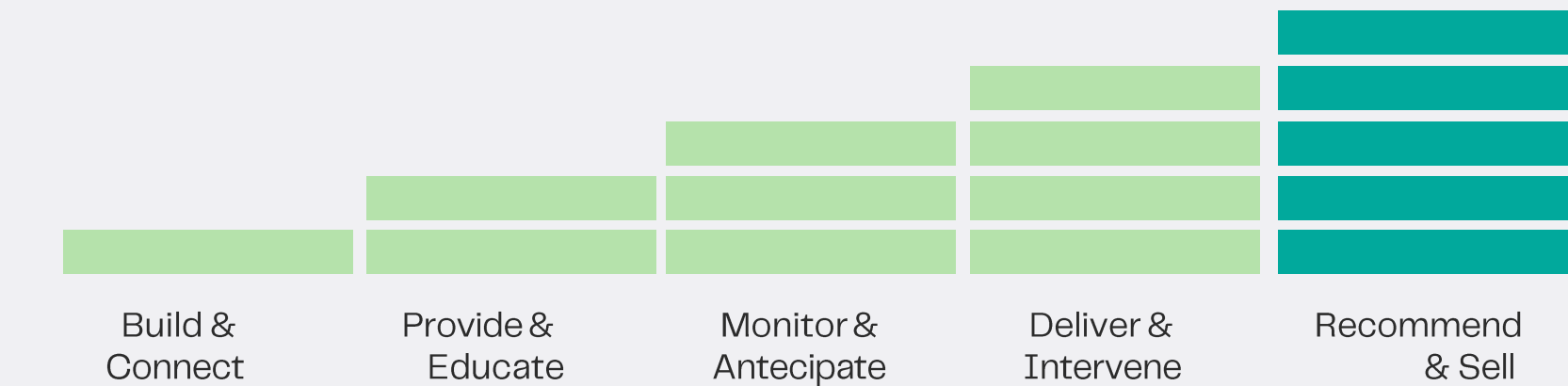
Smart and wearable devices will be explored as a source of health data. Health teams will conduct touchpoints as well as visits to certain patient profiles. They will also provide assisted or self-tests and exams performed in the convenience of a patient's home.



# Growth of new home-based healthcare models for patient convenience and follow-up

Making the patient's home an effective site of care means much more than offering teleconsultations or smart devices. It means the integration of at-home health solutions to a redesigned care ecosystem.

## 5-Step Home-Based Healthcare Framework



- 1) **Build & Connect:** Ensure that at-home solutions are embedded within patients' care journeys;
- 2) **Provide & Educate:** Provide the necessary resources for the patient to take advantage of the solutions offered;
- 3) **Monitor & Anticipate:** Continuously monitor patients from their homes and preemptively identify risks and needs;
- 4) **Deliver & Intervene:** Propose interventions, when convenient, to mitigate or improve patients' clinical conditions;
- 5) **Recommend & Sell:** Suggest and sell own or partners' additional solutions.



### Context

ISA Lab and Beep noticed that the fee for service model was not patient-centric and decided to offer home-based services with more convenient and competitive prices.

Isa Lab started out offering only at-home tests, driven initially by the onset of the COVID-19 pandemic and the desire for at-home COVID testing. They later expanded to offering vaccinations at home. Beep, in turn, started out offering at-home vaccinations and soon after expanded to offering at-home testing.

Both of them are willing to transform patients' residences into relevant sites of care. Their home services are not restricted to tests or vaccines, they encompass a wide range of services.

### Value Proposition

**Convenience.** Customers can choose the vaccine or test of their interest via the companies' websites or apps as well as schedule a visit to their own homes. The same applies to companies that need to provide tests to a number of employees, for instance. In this case, the services are administered in the office.

**Accessibility.** Most of the services are offered with very competitive prices, so this could also be an advantage for certain customers.

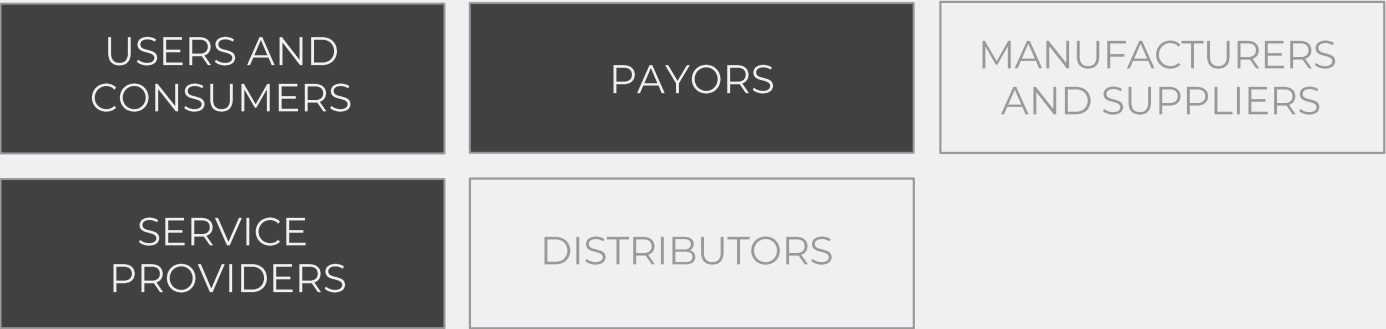
**Partnerships.** Other healthcare organizations, such as vertically integrated payors, can partner with these startups to address specific populations, according to geography, plan coverage etc.

As a result of their models, these companies have already served hundreds of thousands of customers, providing tests/vaccines and covering 100+ cities.

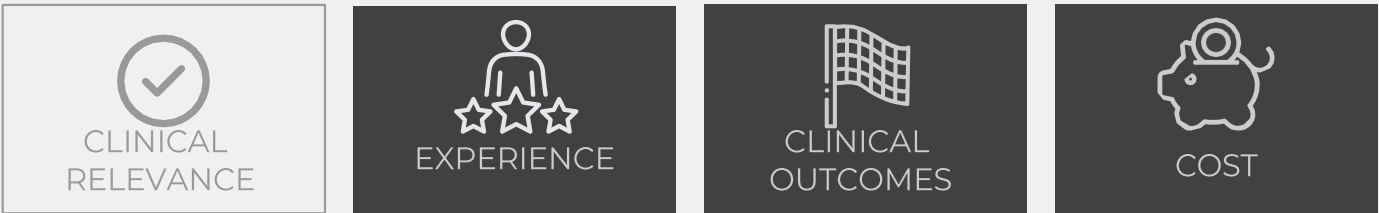
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# Tech-enabled patient omnichannel experience

## Stakeholders

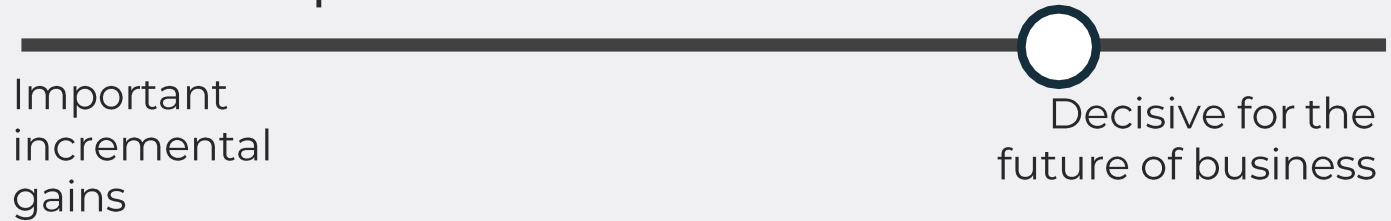


## Value Drivers



## Potential for Change:

### Potential Impact



### Horizon of Impact

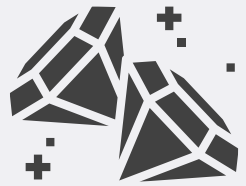




# Tech-enabled patient omnichannel experience



## 1 Description



In an attempt to offer a good experience, without giving up cost-effectiveness and adequate monitoring, service providers are redesigning patients journey, considering the use of enabling technologies (e.g., wearables, smart devices and chatbots) so that the delivery of care can be provided through various and complementary channels. This will consequently provide data regarding the evolution of patients' health and enable the creation of additional interaction triggers whenever convenient.

## 2 Major Pain Points



**Root Cause:** Currently, service providers find it difficult to monitor, retain and engage patients as their interaction is dependent on isolated events, such as tests and exams

**Pains related to affected stakeholders:**

**Service Provider** - If the care provided is based on resources obtained in isolated events, decision-making processes are limited by a partial view of patients' evolution;

**Payor** - In the hospital-centric model, insurers act as founder as its collaboration with providers is limited. Current patient journeys provide limited evidence regarding the evolution of the beneficiary's health;

**Patients** - During their journey, they may occasionally feel isolated and helpless.

## 3 Risks and Barriers



**Operations** - The application of enabling technologies does not guarantee an improvement in the outcome and may even replicate the inefficiency of face-to-face channels;

**Technology** - As long as systems that encompass technologies of interest are not integrated into a single platform, data will not constitute a robust healthcare record;

**Business** - Pressured by tight margins, both providers and payors may be resistant to investments with medium- and long-term returns.

## 4 Key Findings



In partnership with payors, providers will have redesigned the patient journey by exploring technologies to make it omnichannel and phygital, have a continuum of data and enable patient navigation within lines of care. Within those lines, there will be multiple patient profiles that will result in different strategies and channels. The early adoption of this new operation model may result in sustainable competitive advantage as long as devices become ultra-connected and with new technologies like 5G.

# Tech-enabled patient omnichannel experience



A phygital approach is critical for enhancing patient experience and shifting focus to Patient Centricity. Such an approach can help providers to offer an omnichannel experience, with multiple sites of care, thus enriching both convenience and engagement to the patient.

## The Healthcare Everywhere Backbone



### Context

Here is one example. Maria is pregnant and seeks medical assistance and support. She works at a firm that offers healthcare benefits including primary care support via telemedicine. Last but not least, Maria wants the delivery of her child to happen in São Paulo, at a trusted hospital that already has her data and that has monitored her pregnancy.

In short, Maria wishes a smooth gestational period with easy access to guidance regarding behavior, nutrition and facilitated contact with health professionals.

### Value Proposition

- In order to achieve her goal, Maria could be supported by 3 different companies:
- **Liti:** Offers advice from health professionals on maintaining a healthy lifestyle and an appropriate diet as well as continuous tech-enabled weight monitoring;
  - **Conexa:** Digital Health platform with multidisciplinary health professionals that can be used by Maria to promptly arrange a teleconsultation in case of any uneasiness or indisposition before an initial triage. Thus, she will have a more assertive decision on whether she should go to hospital.
  - **Maternity and Hospital Santa Joana:** Offers prenatal and natal care including planning, tests, appointments, childbirths and a line of care from beginning to end.

See below a summary of her gestational journey:

- |  |  |  |   |   |   |
|--|--|--|---|---|---|
| 1. Before conceiving, Maria uses <b>Liti's services to monitor her health and well-being</b> to ensure she has the right conditions for pregnancy. | 2. After conceiving, she informs <b>her employer that she may need Conexa's digital health services</b> , including a dedicated line of care for pregnant women. | 3. Maria then takes advantage of <b>personalised healthcare services</b> . | 4. As she approaches the due date for delivery, Maria <b>increases visits to Hospital Santa Joana and schedules more tests and appointments</b> . | 5. Once ready for delivery, Maria wishes to have her <b>trusted doctor along, a professional who would know her specific requests</b> . | 6. Maria feels satisfied with the <b>convenience and personalized experience</b> due to the use of <b>omnichannel tools</b> . |
|--|--|--|---|---|---|



# Conclusion

As illustrated by the **MVOs**, there are numerous viable solutions with high-impact potential to the Brazilian health system in the short, medium and long term. There is room for **large companies, public sector and startups to join forces to unlock value**. It is beyond doubt that it will take a joint effort by all health stakeholders so this powerful and actionable agenda be explored.

Private companies, especially large healthcare groups, should double their efforts to connect digital transformation initiatives with their business strategy.

Entrepreneurs should be mindful of the healthcare scenario and should build solutions driven by some of the value. Quantifying the value proposition at early stages is a significant nudge towards overcoming innovation resistance.

Regulators should be aware of their role in stimulating and supporting innovation. Success stories in Brazil and around the world, such as the creation of a fintech regulatory sandbox by the Central Bank, confirm the feasibility of this task.

Stakeholders in general should understand that healthcare is not a zero-sum game. Working collaboratively may seem counterintuitive, but the long-term benefits are clear.

Due to market dynamism and new technologies maturation, the topics addressed herein are “alive” and should be revisited and complemented from time to time.

Once again, **Aggir Ventures and EloGroup** reinforce their commitment to improving healthcare in Brazil!



**ELOGROUP**