GLOBAL DIGITAL HEALTH 2023 – THEMATIC REPORT

Digital Health in U.S. Health Systems

GALEN GROWTH | FINN PARTNERS

Foreword

Digital health and AI have become a critical aspect of patient care in the 21st century, enabling the patient relationship and care delivery to start long before anyone sets foot in a health care clinic, and to continue long after the patient has returned home. With the ongoing pandemic, we have seen the urgent need met by digital health to keep patients and providers connected while maintaining social distancing and keeping infected patients out of crowded waiting rooms. However, even before the pandemic, the healthcare industry was already recognizing the value of digital health technologies in improving patient outcomes and reducing healthcare costs.

At UC Davis Health, we have been at the forefront of using digital health and AI to improve healthcare delivery for our patients since the 1990's, with one of the first telehealth programs anywhere. Our goal now is to utilize technology to provide the best possible care, and we believe that digital health is a crucial tool in achieving that goal. Digital health encompasses a wide range of technologies and applications that enable healthcare providers to provide care remotely, monitor patient health remotely, provide physician-to-physician expertise remotely, and use vast amounts of data to make informed decisions about patient care.

One of the most significant benefits of digital health and AI is allowing patients to access healthcare from the comfort of their own homes. This is especially important for patients who live in rural or remote areas, who cannot afford to take time away from their hourly employment, who have mobility issues or transportation limitations, or who are immunocompromised and at high risk for infection. With digital health, patients can receive care from a provider without leaving their home, saving time and money, increasing convenience, and reducing the risk of exposure to infection. Digital health also allows us to take experts who are in short supply, such as pediatric sub-specialists, and support an entire region via telehealth.

Digital health and AI also enables providers to monitor a patient's health remotely, allowing for earlier detection of issues and faster intervention. For example, wearable devices can monitor a patient's vital signs and alert healthcare providers if there are any changes that require attention. This early detection can help prevent complications and improve patient outcomes. It also improves communication between providers and patients by allowing patients to use digital tools to access their medical records, schedule appointments, and better manage their health. This improved communication can also help prevent medical errors, as patients can provide more accurate information about their medical history and symptoms.

We're working to make the most of digital health as a crucial tool to improve healthcare delivery and patient outcomes, while working to contain cost and improve patient convenience. Digital health is also helping us close equity gaps and deepen patient relationships. As healthcare providers, we must embrace digital health and leverage its power to provide the best possible care to our patients. At UC Davis Health, we are committed to continuing our efforts to develop and implement innovative technologies that will benefit our patients and improve healthcare delivery.

David Lubarsky
CEO

Ashish Atreja
CIO and CDHO

UC Davis Health

TLDR

31%
Partnerships

In 2022, **31% of all global partnerships with Digital Health ventures founded in the United States were built with U.S. Health Systems and hospitals** – more partnerships than any other industry vertical engaged with Digital Health.

10
Health Systems

Galen Growth has recorded more than 1,400 partnerships globally between Digital Health ventures and Health systems in the United States since 2012, with only **10 Health Systems recording a Digital Health portfolio larger than 15 ventures.** More than 560 hospitals and Health Systems are active, but only the top **65 most active Health Systems are accountable for 50%** of all recorded partnerships.

2.1x
Portfolio Size

Across the U.S., there is a **2.1x difference in the Digital Health portfolio size between the most active Health Systems and the largest Health Systems.** While the largest Health Systems focus on partnerships in infrastructure improvement and treatment, the most active systems are partnering more in diagnosis and have a higher share of digital tools for research (incl. clinical trials). **Neither group has significant activity in Digital Health tools for Prevention and Wellness.**

69%
Clinical Evidence

Among the ventures that are partnering with U.S. Health Systems, ventures focused on **Research & Clinical Trials take the top strategic area spot, with 69% of the ventures having Evidence Signal > 40, indicating significant Clinical Evidence.** Ventures in the strategic areas of Diagnosis and Treatment captured 40% and 36% shared, respectively.

30%
Oncology

Oncology takes the top position across the therapeutic areas, with **more than 30% of U.S. Health System partnering with ventures in this area.** Cardiovascular Diseases was in second place, with 20%. Looking across the top 25 most active Health Systems, the top 13 therapeutic areas were represented in more than half of the Digital Health portfolios.

Why an analysis of U.S. Health Systems and Hospital activities in Digital Health?

In the United States, the 417 Health Systems[1] that include nearly 3,500 hospitals, and more than 1,600 independent hospitals are a fundamental component in the delivery of healthcare in the country and a major contributor to health outcomes, as was proven during the recent pandemic.

The Covid-19 pandemic demonstrated the critical importance of an effective and efficient Health System and hospital network. It accelerated decisions to include Digital Health in the day-to-day operations, e.g. telehealth, and has changed consumer/patient expectations. Legacies of the pandemic are plentiful, but all contribute to the rising costs of delivering healthcare.

Over 50% of Health Systems are reputed to be struggling financially, impacted by the rapidly rising cost of labor and shrinking HCP workforce. Meanwhile, demand from consumers and patients continues to rise. Health systems and hospitals are now making difficult decisions about their healthcare delivery capabilities and seeking technology solutions to increase productivity, build capacity while retaining high standards of care.

Digital Health is and will be critical to the success of their quest.

Fifteen distinct Health Systems in the United States have signed partnerships with General Catalyst, a venture capital firm with a broad portfolio of Digital Health ventures, demonstrating that they are eager to adopt Digital Health innovation. Such partnerships are focused on a symbiotic relationship, allowing General Catalysts' portfolio health companies a chance to develop, pilot or scale their health tech offerings[2].

In another first-of-its-kind study of Digital Health, the Galen Growth Research team takes the bold step in understanding the Digital Health ecosystem of Health Systems and hospitals in the U.S. and have built the baseline necessary to evaluating the effectiveness of their activities in Digital Health.

(1) American Hospital Association, 2022, Fast Facts | U.S. Health Systems and U.S. Hospitals

(2) Fierce Healthcare, Nov 2022: HLTH22: HCA Healthcare believes its partnerships, transformation agenda will fend off inflation, labor shortages

Scope

Galen Growth's data & research professionals collaborated with the FINN Partners Global Digital Health Group to:

- Take a snapshot of the Digital Health portfolios of Health Systems, hospitals and clinics in the United States.

- Uncover emerging market trends

- Identify areas of growth & innovation

- Look beyond funding to explore what's next in this critical sector

Digital health partnerships for the 10 largest Health Systems (by number of hospitals) as well as partnerships announced by any hospital within the Health System have been aggregated for the overview list of activity and strategic areas. Otherwise, in the analysis, each partnership has been considered at the entity level and has not been aggregated into the Health System.

The partnerships discussed are between Health Systems and Digital Health ventures, as defined in Galen Growth's Digital Health taxonomy on page 37 of this report, which is focused on the Health Systems value chain. FinTech ventures as well as other ventures along the Health Systems value chain that do not fit into the Galen Growth Digital Health taxonomy are not considered in the scope of this evaluation.

For this analysis, Galen Growth has aggregated information in the public domain, and therefore partnerships that have not been disclosed publicly have not been included.

Since 2017, Galen Growth's research & analysis has set the standard for unbiased Digital Health reporting, with strict analytical criteria applied to ensure consistency and accuracy. Corporates, investors and ventures rely on Galen Growth's research to help make clear-sighted decisions based on industry-best data.

Get the Data Behind the Report

This report is powered by data from HealthTech Alpha,

the world's leading platform for Digital Health private market data & intel.

Scan the QR code to access the data behind this report.

Data & Methodology

Source of Data

Unless otherwise stated, all data are exclusively sourced from Galen Growth's proprietary database **HealthTech Alpha™** – the global leading Digital Health intelligence and analytics on-demand platform. Presently, HealthTech Alpha tracks more than 300M datapoints and has a coverage exceeding 13,000 digital health ventures across the globe. For more information visit https://www.healthtechalpha.com/

Data Scope

This deep dive on Health Systems in the United States includes Health Systems, hospitals, and clinics within the United States. The venture and partnership analyses within the report considers ventures in the five key regions of Digital Health: Asia Pacific, the Middle East, western Europe, North America, and South America (key markets).

Digital Health partnerships for each Health System include those directly with the Health System as well as partnerships between a Digital Health venture and any hospital within the Health System.

The following scope of analysis criteria must be met in order for a venture to be included in this report:

- The venture was incorporated after 2002

- The venture has been qualified as being Digital Health i.a.w. Galen Growth's rigorous taxonomy - see slide 50

- The venture's geographic location is determined by its initial country of incorporation

- Venture funding includes all stages up to but excluding the exit event

- Subsidiaries of large corporations (e.g. Microsoft) are excluded

Methodology

Analytics presented in this report are Galen Growth's proprietary algorithms and are explained on page 51.

Contents

The Intersection of Health Systems and Digital Health

Focus Areas for Digital Health in Health Systems and Hospitals

Health systems have the opportunity to support patients across the three sections of the Patient Journey: Prevention/Wellness, Diagnosis, and Treatment & Adherence. In addition, Health Systems have the opportunity to improve infrastructure by implementing Digital Health systems and using its tools to support the staff. The last strategic area, Research, is significant for future healthcare development. This report uses Galen Growth's rigorous Digital Health Taxonomy* to categorize the Digital Health ventures.

Patient Journey

Prevention/Wellness	Diagnosis	Treatment & Adherence
Corporate Health	Health / Symptom Checker	Disease Management
Consumer Education	On-Demand Lab Tests	Remote Monitoring Devices
Wellness Apps	Teleconsultation	Digital Therapeutics
Wearables	Remote Diagnostic Devices	Care Coordination
Omics Related Applications	Medical Imaging	Medication Management
Health Information Platform	Diagnosis Tools	
	Omics Related Diagnosis	

Infrastructure	Research
Hospital	Bioinformatics
Prescriptive Analytics	Drug Discovery
Triage	Omics Related Research
Physician Networks	Decentralized Clinical Trials
HCP Education	Clinical Trial Matching
Patient Health Forums	Data Collection Tools

*Note: For further information on the full Taxonomy, refer to slide 37

Two Different Approaches: Largest vs. Most Active Health Systems

Across the U.S., there is a significant difference in not only portfolio size, but also in the strategic areas when comparing the Digital Health activities of the most active Health Systems (by number of Digital Health partnerships) to the largest Health Systems (by number of hospitals). While the largest Health Systems prioritize infrastructure improvement and treatment using digital solutions, the most active participants are partnering more in diagnosis and have a higher share of digital tools for research (incl. clinical trials). Neither group shows significant activity in Digital Health tools for Prevention and Wellness.

Comparison of Strategic Areas by Median Number of Partnerships

Legend: ■ Prevention / Wellness ■ Diagnosis ■ Treatment & Adherence ■ Infrastructure ■ Research

Top 10 largest Health Systems: 0, 2.5, 3, 3, 1.5
Top 10 most active Health Systems: 1, 10, 5, 6.5, 5
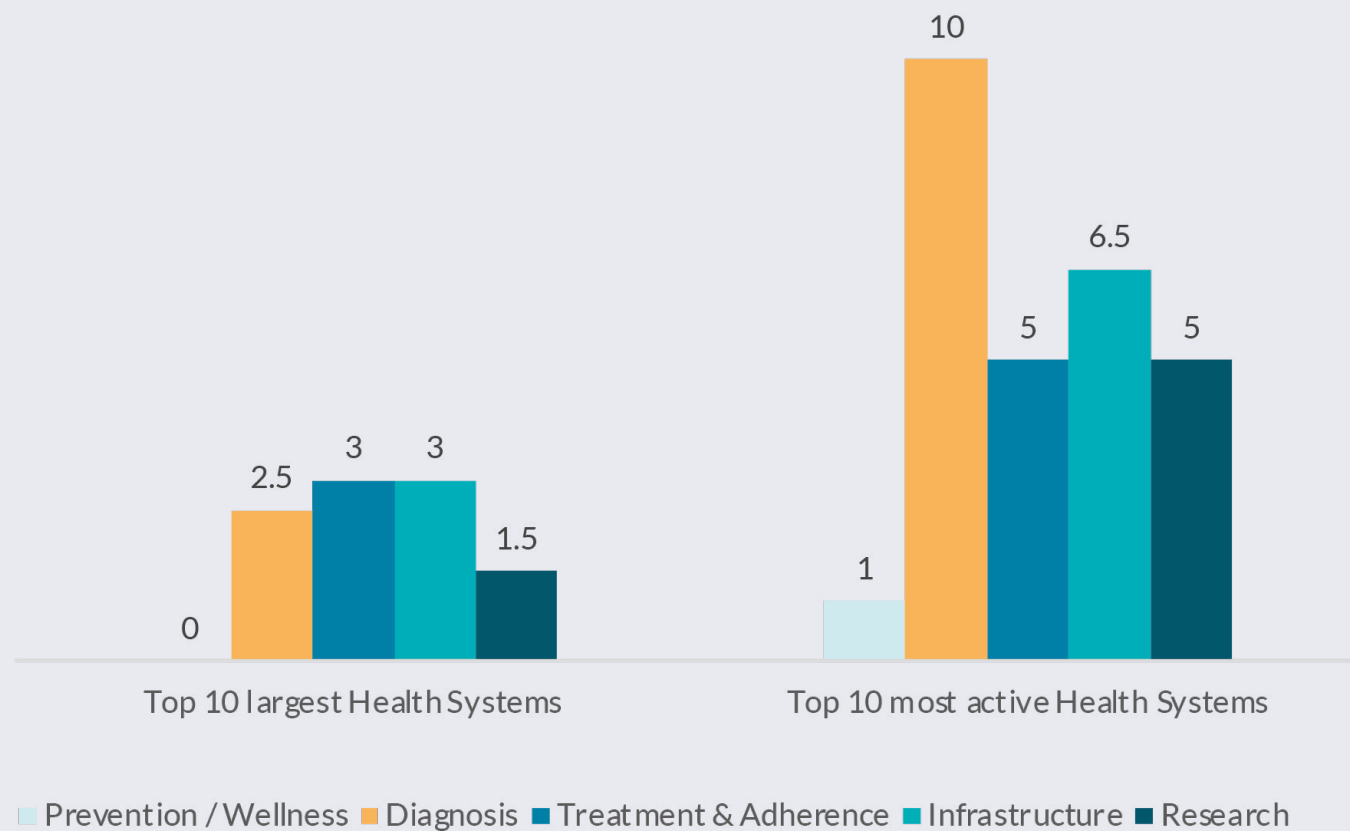
Average Size of Digital Health Portfolio Comparison

Top 10 largest Health Systems: 12.9 ventures
Top 10 Most Active Health Systems: 27.5 ventures
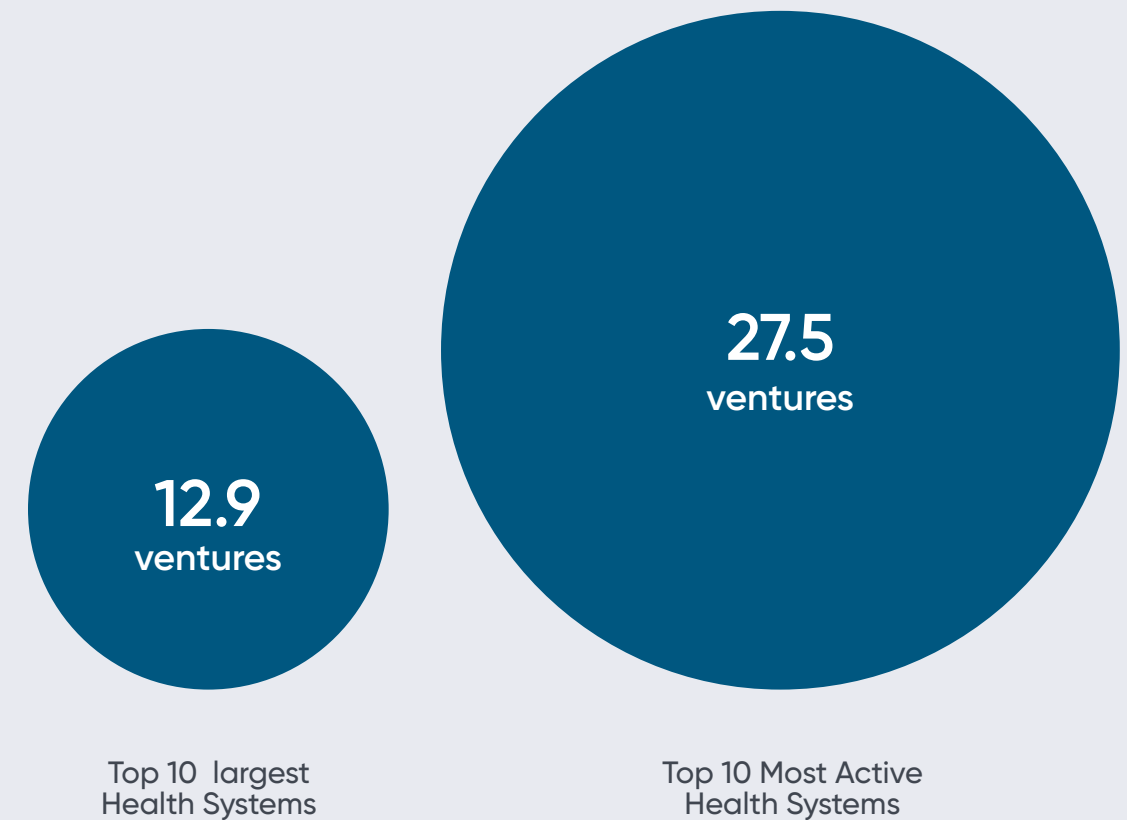
Digital Health in the Largest Health Systems
(by # of Hospitals)[3]

Health System	Number of hospitals[3]	DH Portfolio Size	Prevention/ Wellness	Diagnosis	Treatment & Adherence	Infrastructure	Research	Avg. Portfolio Alpha Score[4]
HCA Healthcare	182	14	0%	14%	21%	14%	21%	66.5
Veterans Health Administration	171	16	19%	25%	44%	19%	19%	69
CommonSpirit Health	140	35	3%	23%	26%	29%	9%	68.9
Ascension	139	8	0%	13%	13%	38%	13%	62.6
Trinity Health	88	14	0%	33%	28%	22%	22%	70.5
LifePoint Health	84	7	14%	43%	43%	29%	0%	70.7
Community Health Systems	79	8	0%	50%	25%	63%	25%	77.6
Advocate Health	67	6	33%	17%	50%	17%	0%	65.1
Tenet Healthcare	61	14	0%	14%	21%	29%	7%	64.6
Christus Health	60	3	0%	0%	0%	100%	0%	66.3

Digital Health in the Most Active Hospitals & Health Systems

Hospital & Health System	DH Portfolio Size	Prevention/ Wellness	Diagnosis	Treatment & Adherence	Infrastructure	Research	Avg. Portfolio Alpha Score[4]
Mayo Clinic	76	8%	32%	23%	18%	19%	66
Mount Sinai	34	3%	30%	15%	33%	18%	69.2
Cleveland Clinic	32	6%	50%	8%	19%	17%	72.2
Boston Children's Hospital	24	17%	36%	14%	17%	17%	69.2
Memorial Sloan Kettering Cancer Center	23	0%	43%	11%	11%	36%	70.3
Massachusetts General Hospital*	22	10%	33%	27%	17%	13%	64.9
Northwell Health	19	4%	26%	39%	30%	0%	70.3
Cedars-Sinai	18	7%	21%	7%	57%	7%	67.7
Brigham and Women's Hospital*	18	5%	36%	41%	9%	9%	67.5
Intermountain Healthcare	16	0%	44%	17%	17%	22%	75.1

HCA Healthcare

Partnerships	14
Share of Partnerships with Ventures Founded Outside of North America	8%
Avg. Alpha Score	66
Avg. Team Score	38
Share of Portfolio Companies with Evidence Signal>40	25%

Portfolio Distribution across Strategic Areas

(selected ventures, not a complete list)

- **Prevention 8%** — PsychHub
- **Diagnosis 8%** — Viz.ai
- **Treatment 25%** — VitalConnect, Locus
- **Infrastructure 25%** — lumere, AZRA
- **Research 8%** — GENOSPACE
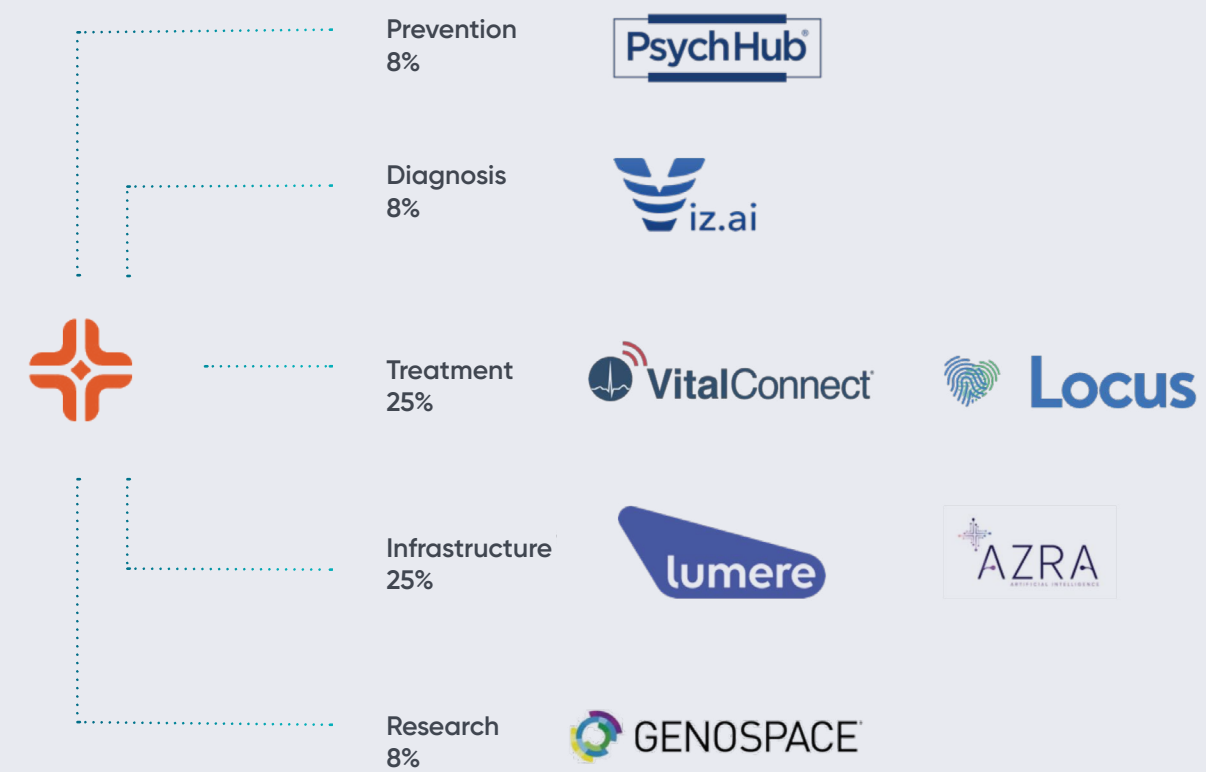
Veterans Health Administration

Partnerships	16
Share of Partnerships with Ventures Founded Outside of North America	6%
Avg. Alpha Score	69
Avg. Team Score	42
Share of Portfolio Companies with Evidence Signal>40	31%

Portfolio Distribution across Strategic Areas

(selected ventures, not a complete list)

- **Prevention 19%** — IncludeHealth, PsychHub
- **Diagnosis 25%** — CIRRUS MD, GRAIL, TEMPUS
- **Treatment 44%** — virta, iHealth, Constant Therapy
- **Infrastructure 19%** — ManagingLife
- **Research 19%** — LifeImage

CommonSpirit Health

Largest Health System

Partnerships	35
Share of Partnerships with Ventures Founded Outside of North America	3%
Avg. Alpha Score	68
Avg. Team Score	43
Share of Portfolio Companies with Evidence Signal>40	17%

Includes Catholic Health Initiative and Dignity Health

Portfolio Distribution across Strategic Areas
(selected ventures, not a complete list)

Prevention 3%	SIMPLE HEALTHKIT
Diagnosis 23%	Tia, MD save, notable
Treatment 26%	SEASON, concert, Propeller
Infrastructure 29%	Docent Health, TRUVETA
Research 9%	saama

Ascension

Largest Health System

Partnerships	8
Share of Partnerships with Ventures Founded Outside of North America	0%
Avg. Alpha Score	63
Avg. Team Score	30
Share of Portfolio Companies with Evidence Signal>40	38%

Portfolio Distribution across Strategic Areas
(selected ventures, not a complete list)

|	
Prevention 0%	
Diagnosis 13%	OwlInsights
Treatment 13%	CONTESSA HOME RECOVERY CARE
Infrastructure 38%	apervita, HNI healthcare
Research 13%	COFACTOR genomics

Largest Health System
Trinity Health

Partnerships	14
Share of Partnerships with Ventures Founded Outside of North America	21%
Avg. Alpha Score	69
Avg. Team Score	57
Share of Portfolio Companies with Evidence Signal>40	21%
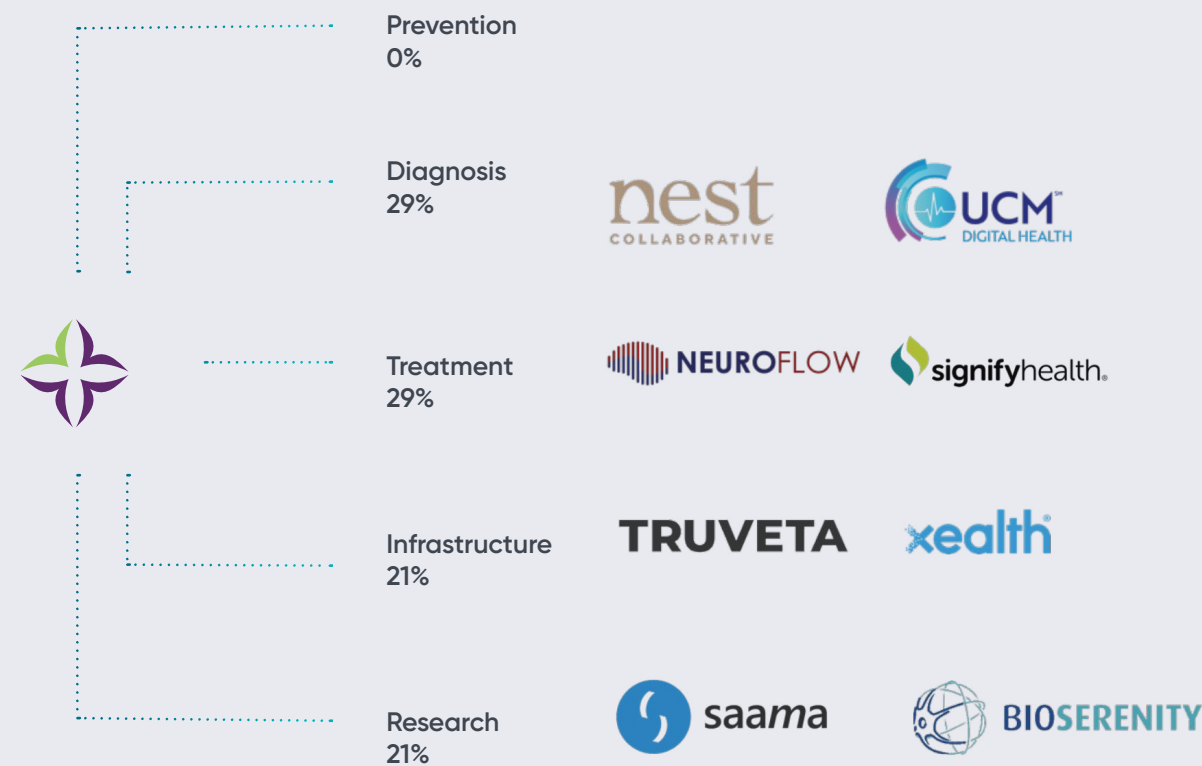
Largest Portfolios
Mayo Clinic

Partnerships	77
Share of Partnerships with Ventures Founded Outside of North America	31%
Avg. Alpha Score	66
Avg. Team Score	58
Share of Portfolio Companies with Evidence Signal>40	42%

Includes Mayo Clinic partnerships
Does not include Mayo Clinic VC, Mayo Clinic Platform or Mayo Clinic Health System

Portfolio Distribution across Strategic Areas
(selected ventures, not a complete list)

Prevention 0%

Diagnosis 29% — nest COLLABORATIVE, UCM DIGITAL HEALTH

Treatment 29% — NEUROFLOW, signify health

Infrastructure 21% — TRUVETA, xealth

Research 21% — saama, BIOSERENITY

Portfolio Distribution across Strategic Areas
(selected ventures, not a complete list)

Prevention 8% — xsensio, VIOME

Diagnosis 32% — endiatx, ULTROMICS, Reemo HEALTH

Treatment 23% — MEMORA HEALTH, lisa health, Medically Home

Infrastructure 18% — nference, TripleBl'nd, nuvolo

Research 19% — VERISIM Life, Helix, ATROPOS

Largest Portfolios
Mount Sinai Health System

Partnerships	34
Share of Partnerships with Ventures Founded Outside of North America	24%
Avg. Alpha Score	69
Avg. Team Score	55
Share of Portfolio Companies with Evidence Signal>40	29%

Includes Mount Sinai Health System. Does not include Mount Sinai School of Medicine

Portfolio Distribution across Strategic Areas
(selected ventures, not a complete list)

Prevention 3% — 明安在线 MING AN ONLINE

Diagnosis 30% — promaxo, BGI 华大, Airdoc

Treatment 15% — mindmaze, mPulse mobile, current health

Infrastructure 33% — sema4, avoMD, CLOUD MEDX

Research 18% — Flywheel, Helix, MODEL MEDICINES

Largest Portfolios
Cleveland Clinic

Partnerships	32
Share of Partnerships with Ventures Founded Outside of North America	27%
Avg. Alpha Score	72
Avg. Team Score	57
Share of Portfolio Companies with Evidence Signal>40	40%

Portfolio Distribution across Strategic Areas
(selected ventures, not a complete list)

Prevention 6% — WHOOP

Diagnosis 50% — transcarent, MAVEN, PathAI

Treatment 8% — UNITE US

Infrastructure 19% — avaneer HEALTH, AI TRICS, OWKIN

Research 17% — PGDx, TEMPUS, GRAIL

Largest Portfolios
Boston Children's Hospital

Partnerships	24
Share of Partnerships with Ventures Founded Outside of North America	29%
Avg. Alpha Score	69
Avg. Team Score	63
Share of Portfolio Companies with Evidence Signal>40	42%

Portfolio Distribution across Strategic Areas
(selected ventures, not a complete list)

- Prevention 17% — MIGHTIER by Neuromotion Labs, geninus, unyte Guiding You
- Diagnosis 36% — 2nd.MD, buoy, AnchorDx 基准医疗
- Treatment 14% — M, empatica, luminopia
- Infrastructure 17% — Get Well, Mass Medical International, TracInnovations
- Research 17% — TriNetX, genuity science, SOPHiA

Largest Portfolios
Memorial Sloan Kettering Cancer Center

Partnerships	23
Share of Partnerships with Ventures Founded Outside of North America	25%
Avg. Alpha Score	70
Avg. Team Score	60
Share of Portfolio Companies with Evidence Signal>40	35%

Portfolio Distribution across Strategic Areas
(selected ventures, not a complete list)

- Prevention 0%
- Diagnosis 43% — SOPHiA, BostonGene, DELFI
- Treatment 11% — QTC Care, Blue Note Therapeutics, LiYFE
- Infrastructure 11% — COTA
- Research 36% — GNS HEALTHCARE, ENVISAGENICS, PostEra
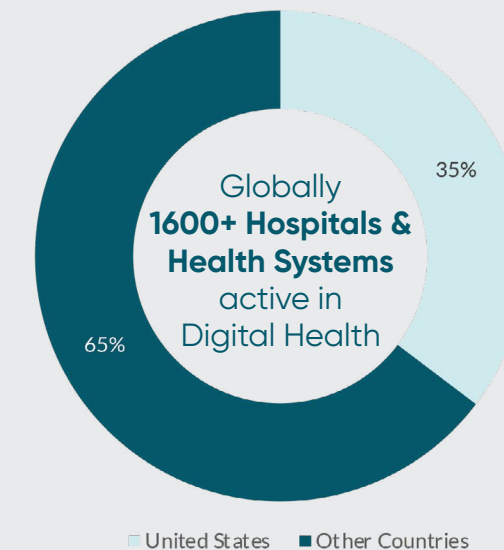
Partnership Insights

"We are likely to see more partnerships between health systems and digital health innovators in the months and years to come because close relationships between these groups are vital as we seek ways to leverage technology to enhance patient care and outcomes and improve both providers' and patients' experiences. The reality is that health systems and digital health innovators can sometimes have very different views on the challenges and opportunities that exist in healthcare. Working with health systems allows innovators to understand the realities of care delivery and working with innovators allows health systems a view into the possibilities of new technology. Collaboration is how we make a difference faster."

Aaron Lewis
Executive Vice President, Growth and Integrated Solutions
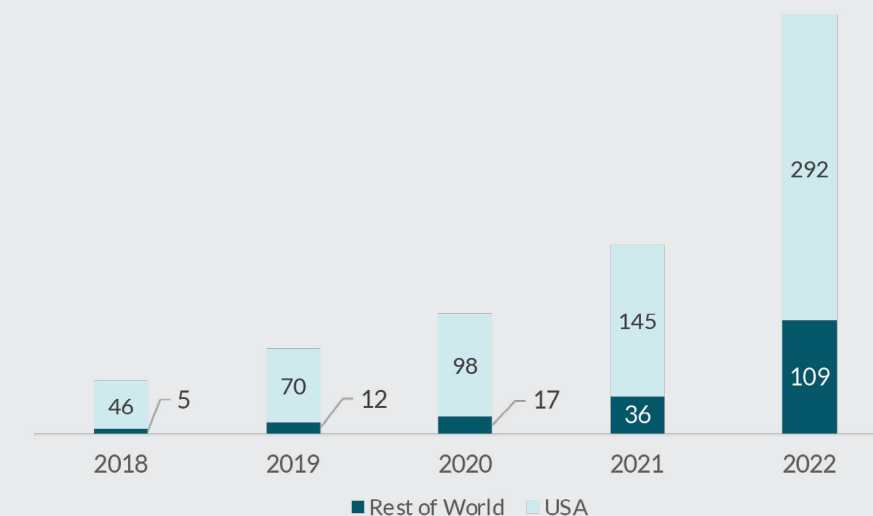Lifepoint Health

Health System Partnerships with Digital Health are Accelerating

While Health Systems are traditionally averse to risk and infrastructure updates (fact: many still use fax machines), the pandemic forced the adoption of Digital Health across many facets of the healthcare business. By the end of 2022, there were more than 1,600 Health Systems across the globe that had cumulatively disclosed more than 3,200 partnerships with Digital Health ventures. 35% of those Health Systems are located in the United States. In 2022, 72% of all new partnership announcements were made by U.S. Health Systems.

**Global Share of Health Systems with Digital Health Partnerships**

Globally
1600+ Hospitals & Health Systems
active in
Digital Health

35%

65%

☐ United States ■ Other Countries

Number of New Partnership Announcements by Year and Health System Location

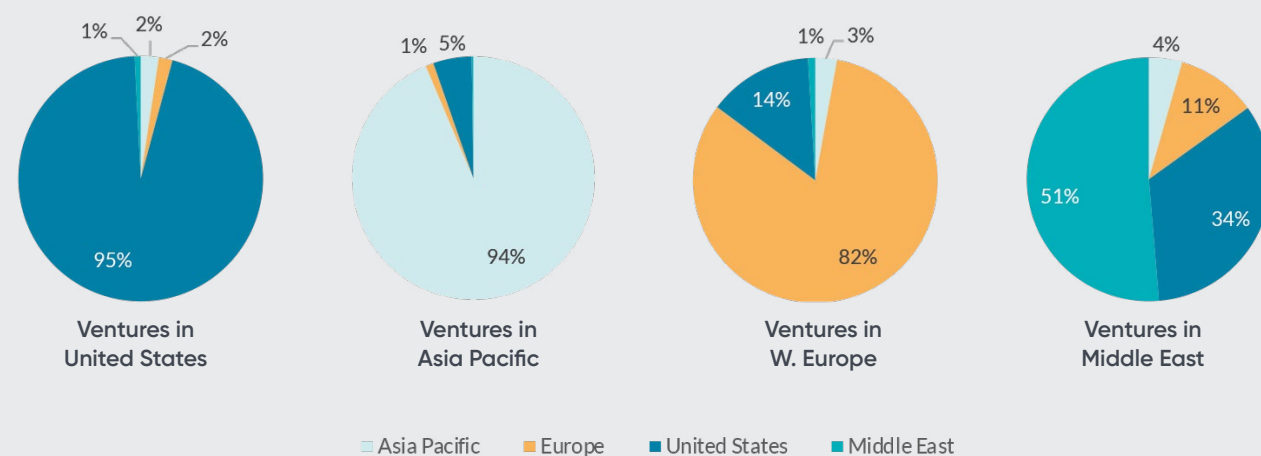| Year	Rest of World	USA
2018	5	46
2019	12	70
2020	17	98
2021	36	145
2022	109	292

■ Rest of World ☐ USA

Health Systems Choose Digital Health Ventures from across the Globe

Digital Health ventures founded in North America or Asia Pacific take 83% of all partnerships with hospitals and Health Systems across the globe. In order to achieve their share of partnerships, ventures founded in Western Europe or the Middle East have gone beyond their regional boarders, with Middle Eastern ventures signing 49% of all Health System partnerships with non-Middle Eastern partners.

Share of Digital Health Partnerships with Health Systems by Venture Location
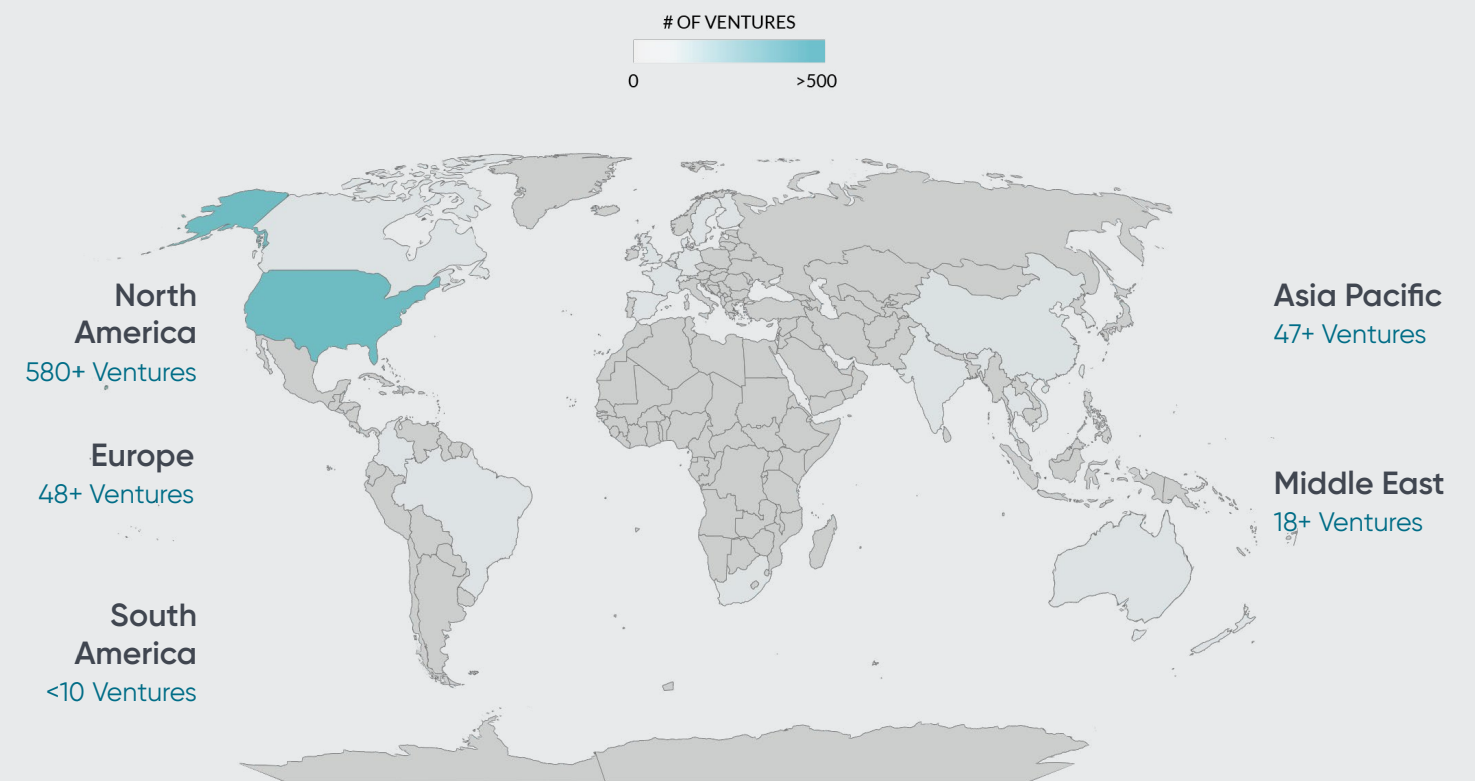(place of initial incorporation)

Location	Share
North America	43%
Asia Pacific	40%
Europe	13%
Middle East	3%
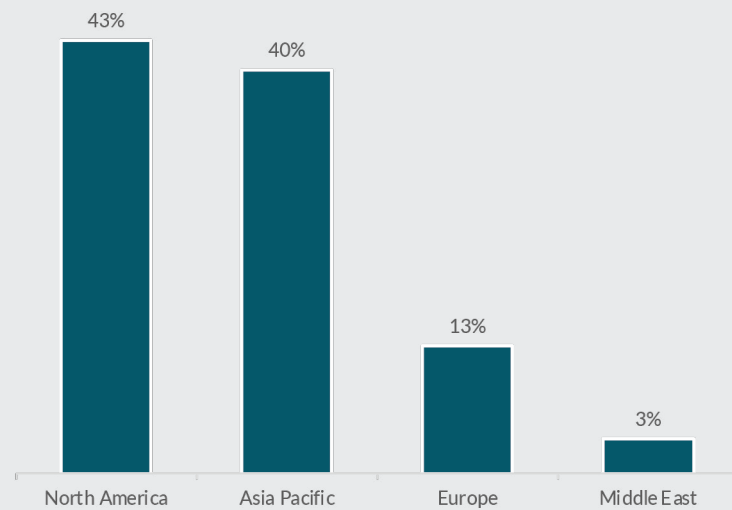
Share of New Partnership Announcements (2012 – 2022) by Venture and Health System Location

Ventures in United States: 95%, 1%, 2%, 2%

Ventures in Asia Pacific: 94%, 1%, 5%

Ventures in W. Europe: 82%, 14%, 1%, 3%

Ventures in Middle East: 51%, 34%, 11%, 4%

Legend: ▪ Asia Pacific ▪ Europe ▪ United States ▪ Middle East

U.S. Health Systems Look Beyond the U.S. for Digital Health Innovation

With many Digital Health solutions requiring strong cultural aspects, it should not be surprising that more than 80% of the partnerships developed by U.S. Health Systems are with ventures founded in the United States.

OF VENTURES
0 — >500

North America 580+ Ventures

Europe 48+ Ventures

South America <10 Ventures

Asia Pacific 47+ Ventures

Middle East 18+ Ventures

Quick Facts

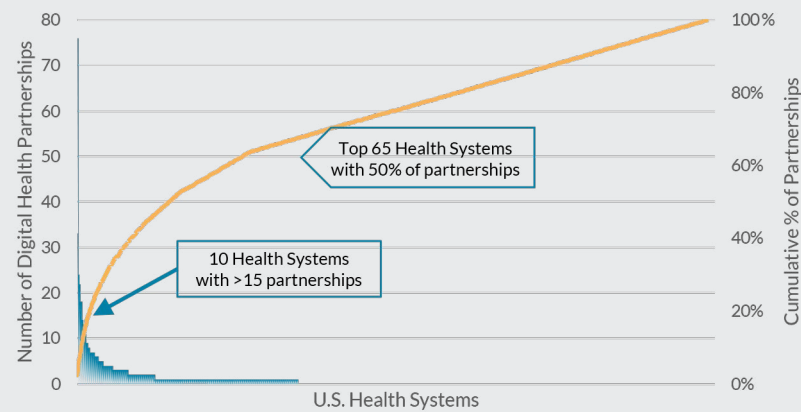**560+** U.S. Health Systems

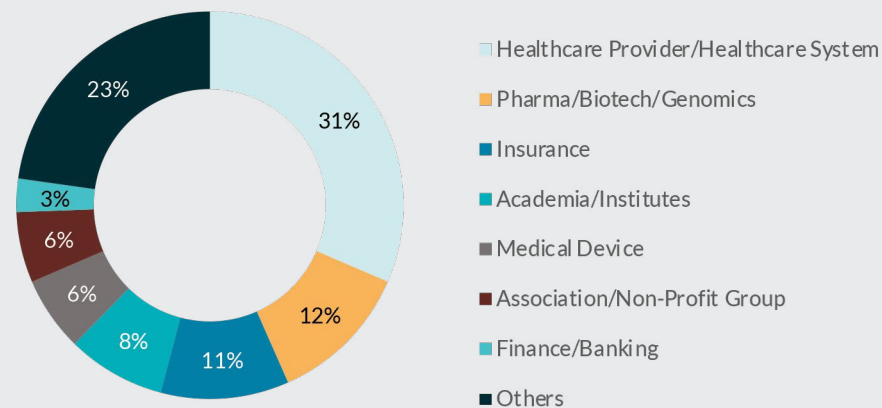**1400+** Partnerships

700+ Ventures

Digital Health Partnerships with U.S. Health Systems

Galen Growth has recorded more than 1,400 partnerships globally between Digital Health ventures and Health Systems in the United States since 2012, with the top 65 most active Health Systems accountable for at least half of all recorded partnerships. Nearly a third of all partnerships announced by U.S. founded ventures in 2022 were with Health Systems. However, Health Systems need to continue actively building a Digital Health portfolio and deploying digital solutions to overcome staff shortages and improve process efficiency.

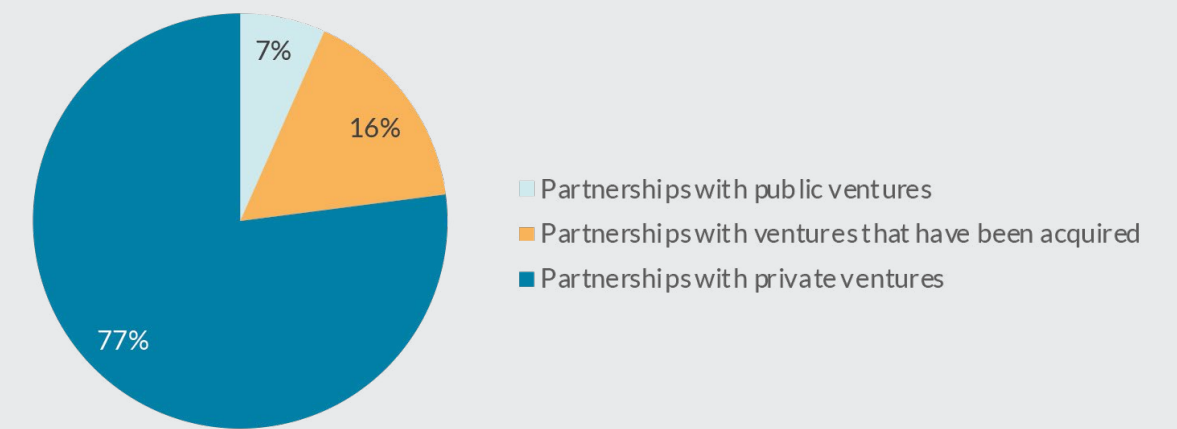## Pareto Chart of Partnerships between Health Systems and Digital Health Ventures

Top 65 Health Systems with 50% of partnerships

10 Health Systems with >15 partnerships

U.S. Health Systems

Share of Corporate Partnerships for U.S. Ventures by Industry Vertical

- Healthcare Provider/Healthcare System — 31%
- Pharma/Biotech/Genomics — 12%
- Insurance — 11%
- Academia/Institutes — 8%
- Medical Device — 6%
- Association/Non-Profit Group — 6%
- Finance/Banking — 3%
- Others — 23%

Health Systems in the U.S. Favor Private Ventures with B2B Business Models

A snapshot of ventures partnering with U.S. Health Systems shows that 24% of ventures have either issued an IPO or have been acquired, either before or during the partnering relationship. 77% of the ventures are offering their solutions directly to the Health System in a B2B business model, whereas 26% of the ventures have solutions that are passed directly to the patients. Another 26% of the ventures sell their solutions to the Health System, but the patients are the direct users of the solution.

Share of Partnership Volume with Health Systems by Venture Status

- Partnerships with public ventures — 7%
- Partnerships with ventures that have been acquired — 16%
- Partnerships with private ventures — 77%

Share of Partnership Volume by Venture Business Model

77% B2B business model

26% B2C business model

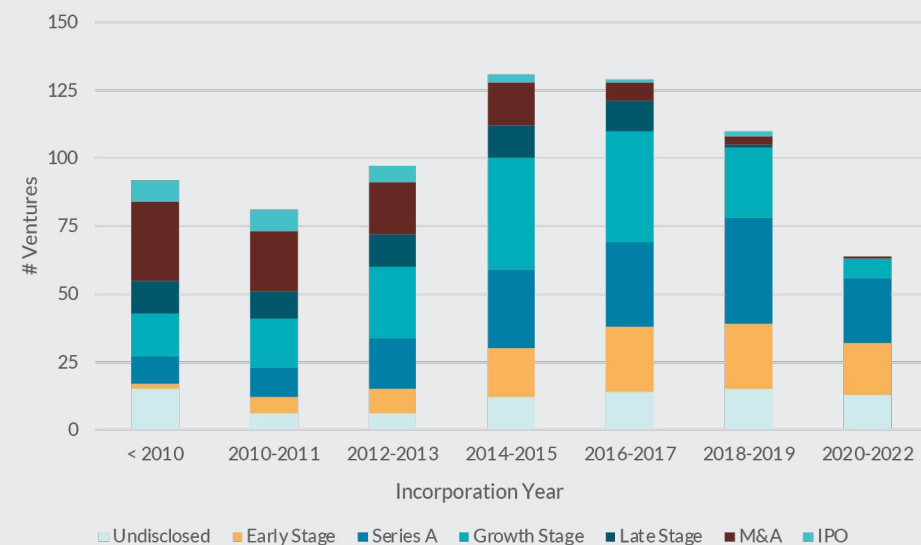**26%** B2B2C business model
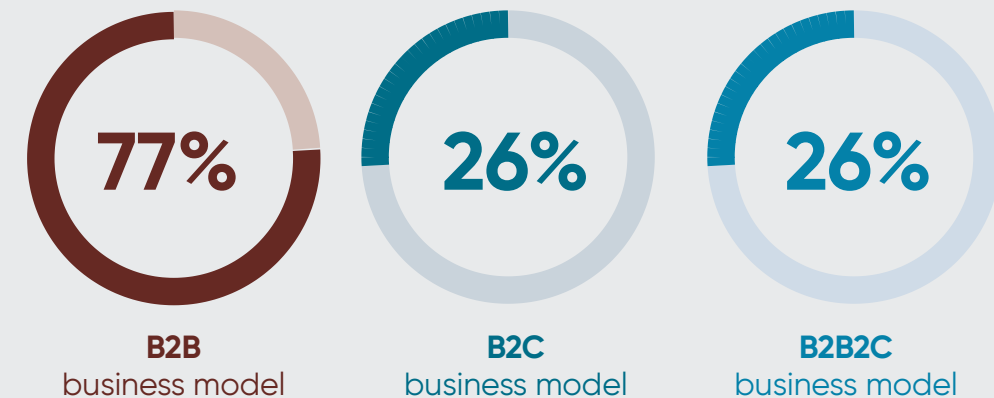
35% of U.S. Healthcare Partnerships are with Early Stage & Series A Ventures

Partnerships between a venture and a Health System can be a springboard to help a venture scale and gain evidence of product effectiveness for further development. U.S. Health Systems have not hesitated to enter into partnerships with young ventures, since 9% of of ventures were incorporated between 2020 and 2022. 35% of partnerships are with Early Stage and Series A ventures.

Share of Partnerships Announced from 2018 – 2022 by Venture Funding Stage

Pie chart segments:
- Early Stage — 11%
- Series A — 24%
- Growth Stage — 35%
- Late Stage — 22%
- undisclosed — 8%
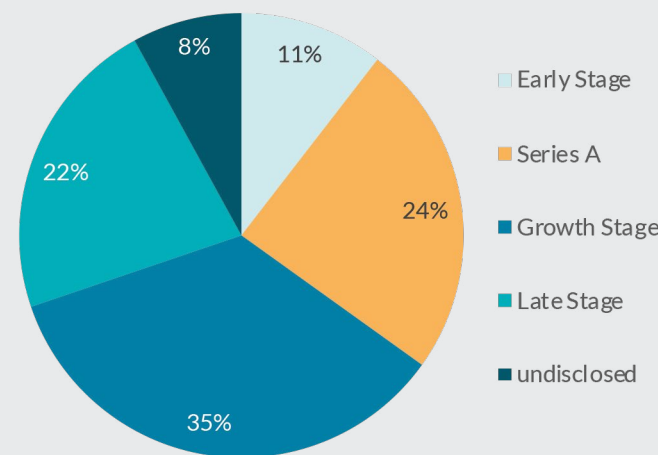
Distribution of Funding Stage for Ventures with U.S. Health Systems Partnerships by Venture Incorporation Year

Y-axis: # Ventures (0–150)
X-axis: Incorporation Year — < 2010, 2010-2011, 2012-2013, 2014-2015, 2016-2017, 2018-2019, 2020-2022

Legend: Undisclosed, Early Stage, Series A, Growth Stage, Late Stage, M&A, IPO
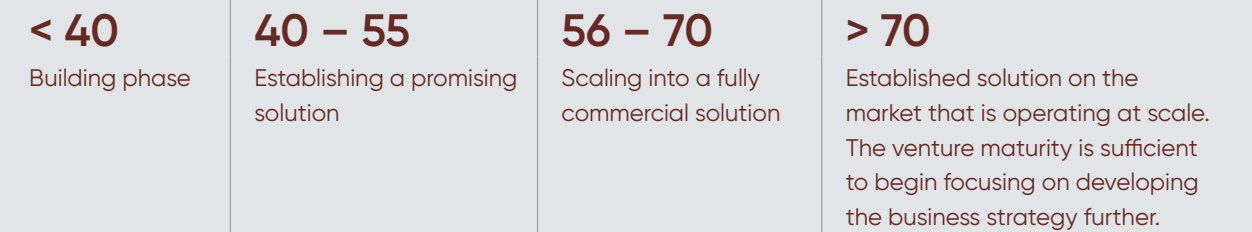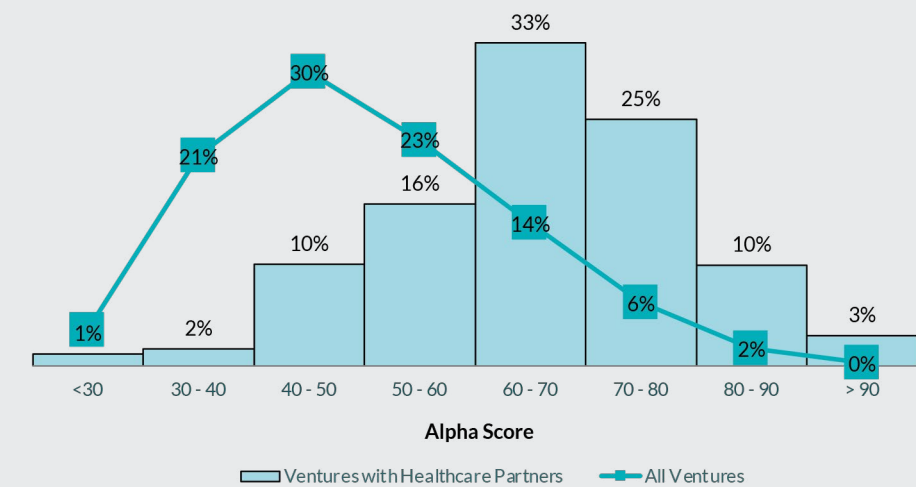

HealthTech Alpha Analytics: Venture Maturity

Galen Growth calculates Venture Maturity using the proprietary Alpha Score, which analyzes the ventures in a multi-dimensional approach, considering aspects of the venture relative to the ecosystem in which they operate.

Ventures with U.S. Health Systems partners have a median Alpha Score that is 17 points higher than the global median venture score.

Alpha Score Correlation with Venture Strategy

< 40	40 – 55	56 – 70	> 70
Building phase	Establishing a promising solution	Scaling into a fully commercial solution	Established solution on the market that is operating at scale. The venture maturity is sufficient to begin focusing on developing the business strategy further.

Alpha Score Histogram

Bars (Ventures with Healthcare Partners): <30, 30-40 (2%), 40-50 (10%), 50-60 (16%), 60-70 (33%), 70-80 (25%), 80-90 (10%), >90 (3%)
Line (All Ventures): <30 (1%), 30-40 (21%), 40-50 (30%), 50-60 (23%), 60-70 (14%), 70-80 (6%), 80-90 (2%), >90 (0%)

X-axis: Alpha Score

Legend: Ventures with Healthcare Partners, All Ventures

Median Alpha Score

Less Mature ← → More Mature

- All ventures — 49.4
- Ventures with Health Systems partners — 66.3
- Ventures with top 10 Health System partners — 67.9
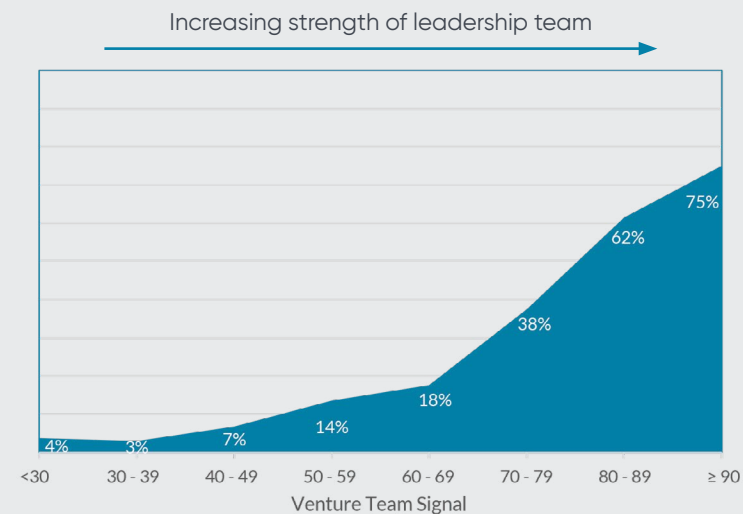
Strong Venture Leadership Team is a Priority for U.S. Health Systems

Ventures with a strong leadership team are successful at finding Health System partners. More than 62% of all U.S. ventures with a Team Signal* of 80 or higher also have at least one Health System partnership.

Share of U.S. Ventures with Health System Partners by Team Signal

Increasing strength of leadership team

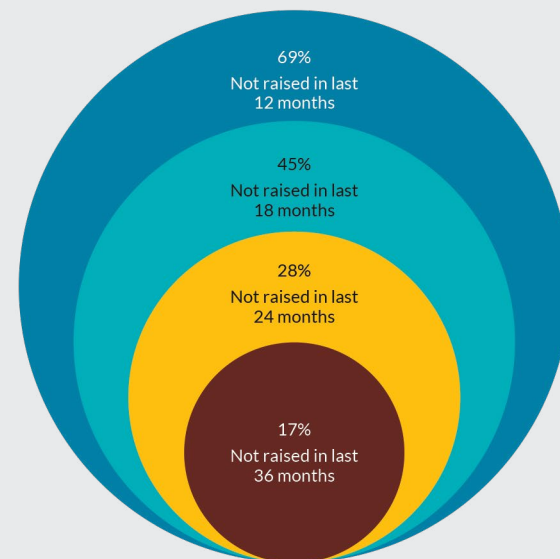| Venture Team Signal	
<30	4%
30 - 39	3%
40 - 49	7%
50 - 59	14%
60 - 69	18%
70 - 79	38%
80 - 89	62%
≥ 90	75%

*For more information on Galen Growth's Team Signal, see page 51

Venture Funding Downturn Could Impact Nearly Half of Partnerships

2022 proved to be a challenging year for ventures across all industry verticals to attain venture funding. For the ventures that successfully closed funding rounds in 2021, the deceleration in funding is less daunting. For U.S. Health Systems, 31% of their Digital Health partnerships are with ventures that raised funding in the last 12 months. However, nearly half (45%) of the partnerships are with ventures that have not raised in the past 18 months, which should lead to discussions around the venture's financial stability.

Share of Partnerships by Date of Last Successful Funding Round

- 69% Not raised in last 12 months
- 45% Not raised in last 18 months
- 28% Not raised in last 24 months
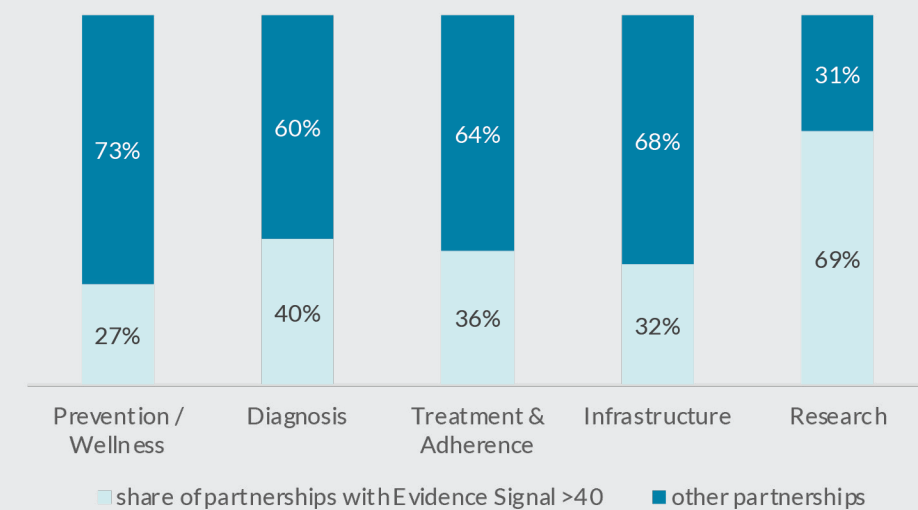- 17% Not raised in last 36 months

Note: 6% of ventures have undisclosed funding information

Building a Portfolio with an Emphasis on Strong Clinical Evidence

As Digital Health ventures mature, it is critical for Health Systems to have evidence that the solution offered improves the health of the patient population that is being addressed. Galen Growth's Evidence Signal evaluates the number of global regulatory filings, approved clinical trial applications, and peer-reviewed publications*. Among the ventures that are partnering with U.S. Health Systems, ventures focused on Research & Clinical Trials take the top Strategic Area spot, with 69% of the ventures having Evidence Signal > 40.

Proportion of partnerships with ventures that have Evidence Signal >40, by Strategic Area

	Prevention / Wellness	Diagnosis	Treatment & Adherence	Infrastructure	Research
other partnerships	73%	60%	64%	68%	31%
share of partnerships with Evidence Signal >40	27%	40%	36%	32%	69%

share of partnerships with Evidence Signal >40 ■ other partnerships

Proportion of partnerships with ventures that have Evidence Signal >40, by Selected Digital Health Clusters

Remote Devices	71%
Clinical Trials	71%
Research Solutions	57%
Wellness	52%
Patient Solutions	34%
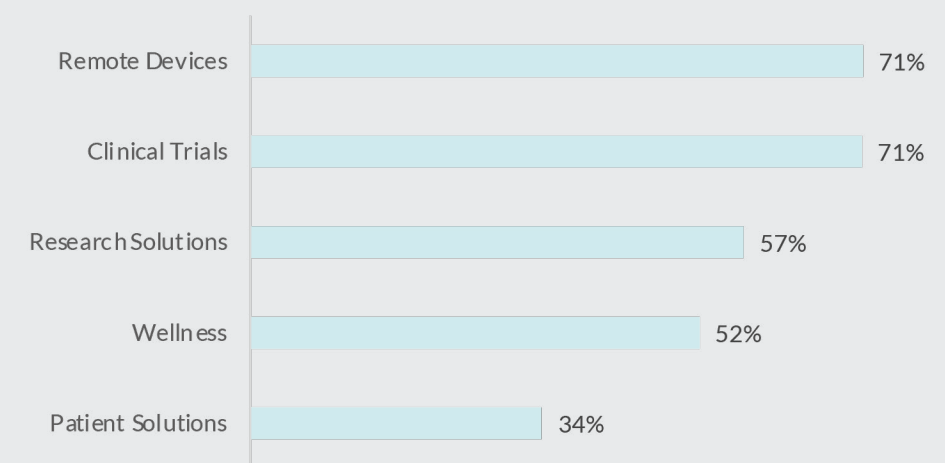
*For more information on the Evidence Signal methodology and insights into Clinical Strength in Digital Health, download Galen Growth's Clinical Strength in Digital Health report at www.GalenGrowth.com/Research

U.S. HEALTH SYSTEMS IN DIGITAL HEALTH

Cluster
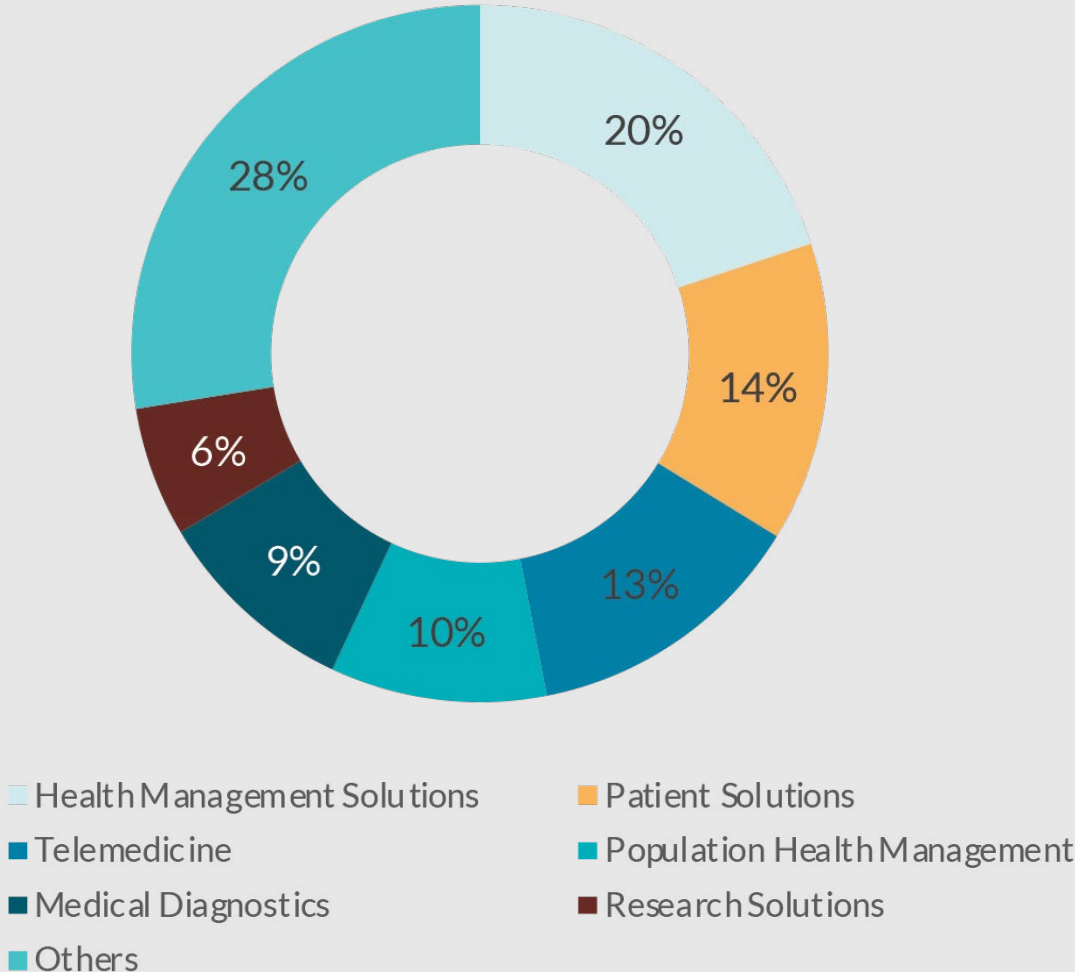# Focus

Galen Growth Digital Health Taxonomy™

Health Management Solutions
EHR/PHR
Hospital
Pharmacy
Physician/Clinic
Prescriptive Analytics

Health Services Search
Healthcare Navigation
Medical Concierge
Medical Tourism
Triage

Health InsurTech
Health Claim Management
Health Insurance
Medical Payments

Medical Diagnostics
Diagnosis Tools
Medical Imaging
Omics Related Diagnosis

Medical Education
Consumer Education
HCP Education
Health Information Platform

Online Health Communities
Other HCP Networks
Patient Health Forums
Physician Networks

Online Marketplace
Consumer Marketplace
On-demand Lab Tests
Online Pharmacy
Professional Marketplace

Patient Solutions
Digital Therapeutics
Disease Management
Health/Symptom Checker
Medication Management

Population Health Management
Care Coordination
Corporate Health
Home Healthcare
Integrated Solutions

Remote Devices
Assistive Care
Remote Diagnostic Devices
Remote Monitoring Devices

Research Solutions
Bioinformatics
Drug Discovery
Omics Related Research

Clinical Trials
Decentralized Clinical Trials
Clinical Trial Matching
Data Collection Tools

Telemedicine
Teleconsultation
Telepathology
Teleradiology
Telesurgery

Veterinarian
Animal Health Forums
Animal Imaging
Animal Monitoring
Omics Related Veterinary
Televeterinary

Wellness
Omics Related Applications
Smart Equipment
Wearables
Wellness Apps
Wellness Information Platform

Safety & Security
Counterfeit Tracking
Cybersecurity
Pharmacovigilance

Healthcare Logistics
Transportation Management
On-demand Delivery

Other
Contamination Management
HCP Job Board
Healthcare Marketing
Social Enterprise
Software Provider

Partnerships in Key Digital Health Clusters

The Health Management Solutions and Patient Solutions clusters captured 34% of the cumulative partnership activity since 2012 between U.S. Health Systems and Digital Health ventures. In 2022, 57 partnerships were announced for Health Management Solutions, the top cluster in both 2022 and overall. Within this cluster, Truveta has announced over 19 partnerships with U.S. Health Systems.

Share of U.S. Health Systems Partnerships by Digital Health Cluster

- Health Management Solutions — 20%
- Patient Solutions — 14%
- Telemedicine
- Population Health Management — 10%
- Medical Diagnostics — 9%
- Research Solutions — 6%
- Others — 28%
- 13%

Digital Health Cluster by # of partnerships 2012 – 2022	Total U.S. Health Systems Partnerships in 2022	Private venture with most U.S. Health Systems partnerships since 2012
Health Management Solutions	57	**Truveta** Renton, WA
Patient Solutions	28	**Locus Health** Charlottesville, VA
Telemedicine	14	**Health Recovery Solutions** Hoboken, NJ
Population Health Management	42	**DispatchHealth** Denver, CO
Medical Diagnostics	37	**Tempus** Chicago, IL
Research Solutions	11	**Cofactor Genomics** Cambridge, MA

Portfolio Size Allows Greater Diversity

The pandemic forced Health Systems across the globe to re-think care models and accelerate the adoption of Telemedicine to meet the needs of patients to overcome lockdown restrictions.

A heatmap of categories by portfolio size demonstrates that for Health Systems with small portfolio sizes, the focus of partnering is Teleconsultation, followed by Disease Management and Prescriptive Analytics.

The Health Systems with larger portfolios are typically research-focused hospitals, with more partnerships in the strategic area of Research & Clinical Trials.

Share of U.S. Health Systems Partnering in each Digital Health Category by Portfolio Size

		Digital Health Portfolio Size (by # of ventures)						
		1 - 2	3 - 4	5 - 6	7 - 9	10 - 14	15 - 19	20+
Prevention/ Wellness	Corporate Health	2%	12%	14%	19%	18%	20%	67%
	Wellness Apps	2%	12%	23%	10%	27%	20%	50%
	Consumer Education	1%	7%	5%	19%	18%	20%	33%
	Wearables	1%	8%	0%	0%	0%		50%
	Health Information Platform	1%	3%	9%	0%	18%	20%	50%
Diagnosis	Teleconsultation	17%	44%	86%	71%	91%	100%	83%
	Health/Symptom Checker	1%	10%	9%	10%	27%	20%	33%
	Omics related Diagnosis	5%	14%	27%	19%	36%		100%
	Diagnosis Tools	3%	7%	9%	19%	45%	20%	50%
	On-Demand Lab Tests	2%	3%	5%	14%	9%	40%	17%
	Medical Imaging	10%	10%	14%	43%	45%	80%	100%
Treatment & Adherence	Disease Management	16%	44%		81%	91%	80%	100%
	Digital Therapeutics	5%	7%	9%	10%	45%	80%	100%
	Remote Monitoring Devices	4%	20%	18%	43%	45%	40%	0%
	Care Coordination	10%	29%	36%	29%	82%	80%	67%
	Medication Management	0%	0%	5%	0%	9%	20%	0%
Infrastructure & Staff	Hospital	7%	34%	36%	52%	55%	80%	83%
	Prescriptive Analytics	13%	34%	68%	71%		100%	100%
	Triage	3%	14%	14%	10%	18%	0%	17%
	Physician Networks	3%	7%	5%	5%	18%	0%	50%
	HCP Education	2%	2%	5%	5%	9%	20%	83%
Research & Clinical Trials	Bioinformatics	7%	17%	27%	38%	36%	80%	100%
	Drug Discovery	2%	7%	0%	10%	9%	0%	83%
	Omics Related Research	4%	15%	14%	33%	36%	20%	83%
	Decentralised Clinical Trials	3%	3%	5%	14%	18%	20%	83%
	Clinical Trial Matching	9%	14%	27%	14%	36%		83%

Gray numbers indicate the share of Health Systems in each portfolio size range that have the category within their portfolio
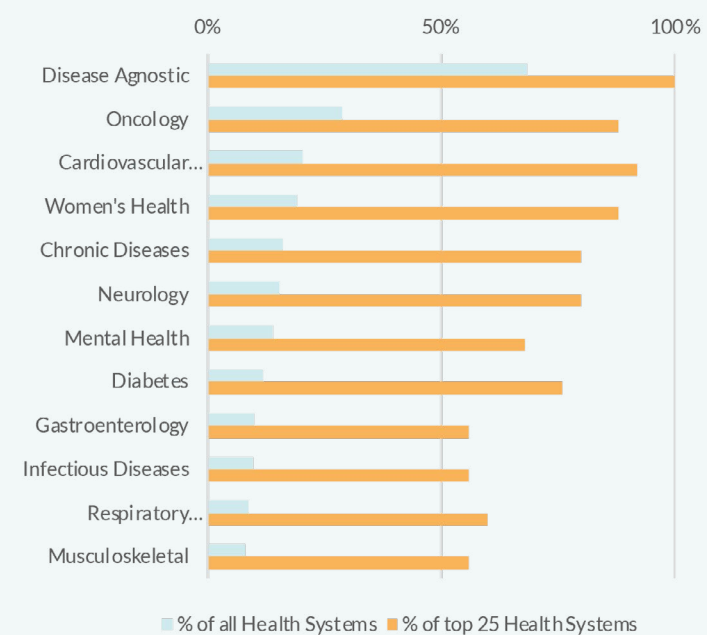
Therapeutic Focus

Key Therapeutic Areas for Health Systems Partnerships

Oncology takes the top position of the therapeutic area with the largest share of ventures having U.S. Health System partnerships, with Cardiovascular Diseases in second place. Although, in 2022 there were larger numbers of partnerships in Women's Health. Looking across the top 25 most active Health Systems, the top 13 therapeutic areas were represented in more than half of the Digital Health portfolios.

Share of Health Systems Partnering with Ventures in Selected Therapeutic Area
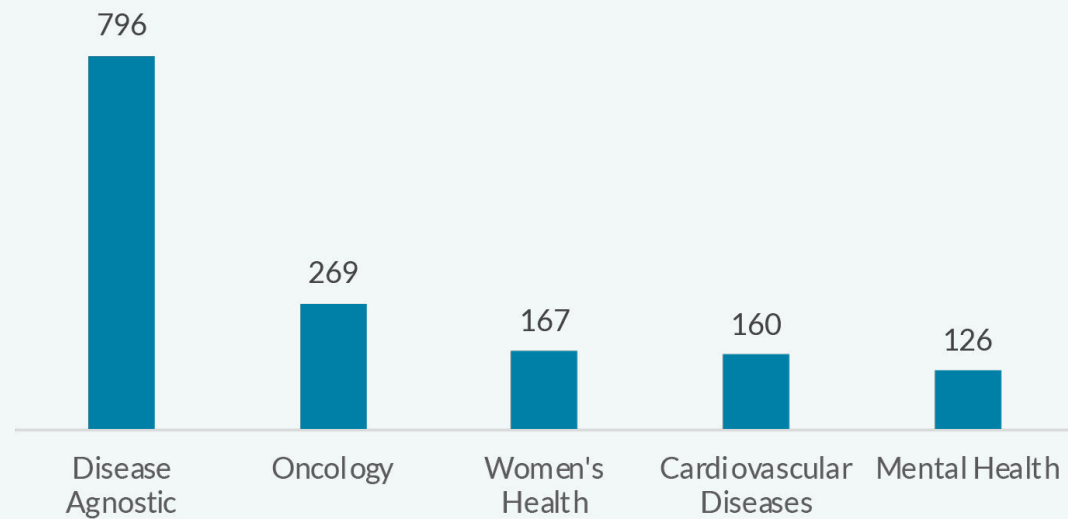

- Disease Agnostic
- Oncology
- Cardiovascular...
- Women's Health
- Chronic Diseases
- Neurology
- Mental Health
- Diabetes
- Gastroenterology
- Infectious Diseases
- Respiratory...
- Musculoskeletal

■ % of all Health Systems ■ % of top 25 Health Systems

Therapeutic Areas	Total U.S. Health Systems Partnerships in 2022	Private venture with most U.S. Health Systems partnerships since 2012
Oncology	65	Tempus Chicago, IL
Cardiovascular Diseases	29	DispatchHealth Denver, CO
Women's Health	47	BabyScripts Washington, D.C.
Chronic Diseases	21	Conversa Health Portland, ME
Neurology	23	Neurotrack Palo Alto, CA

Cluster Distribution Depends on Therapeutic Area

Ventures with Disease Agnostic solutions have by far the largest number of partnerships between ventures and U.S. Health Systems. The top 3 clusters for Disease Agnostic ventures in these partnerships are Health Management Systems, Telemedicine, and Population Management. The Medical Diagnostics cluster shows up in the top 3 across Oncology, Women's Health, and Cardiovascular Diseases.

Top Therapeutic Areas by Number of Partnerships

Disease Agnostic	796
Oncology	269
Women's Health	167
Cardiovascular Diseases	160
Mental Health	126

Top 3 Clusters for Health Systems Partnerships in Selected Therapeutic Areas

Disease Agnostic	Oncology	Women's Health	Cardiovascular Diseases	Mental Health
Health Management Solutions	Medical Diagnostics	Medical Diagnostics	Medical Diagnostics	Patient Solutions
Telemedicine	Research Solutions	Research Solutions	Remote Devices	Telemedicine
Population Health Management	Health Management Solutions	Clinical Trials	Patient Solutions	Wellness

Top 5 private ventures with the most U.S. Health System Partnerships

Venture	Category	Country of 1st Incorporation	Incorporation Year	Stage	Alpha Score	Team Score
DispatchHealth	Home Healthcare	United States	2013	Series E	92	80
Truveta	Prescriptive Analytics	United States	2020	Series E	69	75
Tempus	Clinical Trial Matching, Prescriptive Analytics, Omics Related Diagnosis, Bioinformatics	United States	2015	Series H &	85	83
Innovaccer	EHR / PHR	United States	2014	Series E	95	81
Health Recovery Solutions	Disease Management, Teleconsultation	United States	2012	Series C	77	67

Private Ventures in U.S. with the Most Health Systems Partnerships

DispatchHealth

DispatchHealth is redefining health care delivery to offer on-demand care for people of all ages in the comfort of their own home. DispatchHealth's board-certified medical teams are equipped with all the tools necessary to treat common to complex injuries and illnesses.

Country	Primary Category	Latest Funding	U.S. Health System Partnerships	INC. Date	Maturity Score
United States	Home Healthcare	$330M (Series E)	19	9/2013	92.8

Truveta

Truveta is a new company cofounded by innovative healthcare providers. Our vision is to save lives with data. With de-identified data from our founding partners, we are building a statistically significant data platform for studying U.S. health. Learning from this platform will help researchers find cures faster, empower every clinician to be an expert, and help families make the most informed decisions about their care.

Country	Primary Category	Latest Funding	U.S. Health System Partnerships	INC. Date	Maturity Score
United States	Prescriptive Analytics	$95M (Series A)	19	9/2020	69.4

Tempus

Tempus has built an operating system to battle cancer. Tempus enables physicians to deliver personalized cancer care through its interactive analytical and machine learning platform. The company provides genomic sequencing services and analyzes molecular and therapeutic data to empower physicians to make real-time, data-driven decisions.

Country	Primary Category	Latest Funding	U.S. Health System Partnerships	INC. Date	Maturity Score
United States	Omics Related Diagnosis	$275M (Series H)	18	8/2015	85.9

Private Ventures in Europe with the Most Health Systems Partnerships

BioSerenity

BioSerenity, through its telemedicine subsidiaries, is currently deploying technologists and physicians to perform and interpret electrophysiological evaluations and to remotely monitor patients. This is done through its use of medical devices, focused on developing smart healthcare solutions, using smart clothing that allows for long-term monitoring. We also offer expertise in clinical trials, from proof of concept to post-marketing studies.

Country	Primary Category	Latest Funding	U.S. Health System Partnerships	INC. Date	Maturity Score
France	Data Collection Tools	undisclosed (Series B1)	3	12/2013	80.9

Proximie

Proximie's platform enables surgeons to virtually transport themselves into operating and diagnostic rooms – anywhere in the world – to visually interact, engage and help guide procedures. Proximie combines the best human expertise with the power of augmented reality, artificial intelligence and machine learning.

Country	Primary Category	Latest Funding	U.S. Health System Partnerships	INC. Date	Maturity Score
United Kingdom	Telesurgery	$80M (Series C)	3	12/2016	83.2

Optellum

Optellum provides Artificial Intelligence decision support software to assist physicians in early diagnosis and patient treatment. Optellum's roadmap includes lung cancer diagnosis and treatment and other lung diseases including interstitial lung disease (ILD) and chronic obstructive pulmonary disease (COPD).

Country	Primary Category	Latest Funding	U.S. Health System Partnerships	INC. Date	Maturity Score
United Kingdom	Diagnosis Tools	$14M (Series A)	2	10/2015	68.6

Private Ventures in Asia Pacific with the Most Health Systems Partnerships

Biofourmis

Biofourmis—a fast-growing global leader in digital therapeutics that powers personalized predictive care—discovers, develops and delivers clinically validated software-based therapeutics to provide better outcomes for patients, advanced tools for clinicians to deliver personalized care, technology to demonstrate the value of and complement pharmacotherapy, and cost-effective solutions for payers.

Country	Primary Category	Latest Funding	U.S. Health System Partnerships	INC. Date	Maturity Score
Singapore	Digital Therapeutics	$20M (Series D1)	4	5/2016	89.1

iHealth (爱和健康)

iHealth (爱和健康) helps consumers monitor their own health with devices connected to the cloud. Their products sync directly with a free mobile app and include blood pressure monitors, blood glucose monitors, body analysis scales, pulse oximeters and activity and sleep trackers. iHealth's Unified Care solution uses telemedicine and remote vitals monitoring to provide patient-centered chronic disease management.

Country	Primary Category	Latest Funding	U.S. Health System Partnerships	INC. Date	Maturity Score
China	Remote Monitoring Devices	$25M (Series A)	4	9/2015	58.9

AnchorDx (基准医疗)

AnchorDx (基准医疗) is a precision medicine company engaged in the clinical research & development of targeted DNA methylation high-throughput sequencing solutions for the early diagnosis of cancer.

Country	Primary Category	Latest Funding	U.S. Health System Partnerships	INC. Date	Maturity Score
China	Omics Related Diagnosis	$40M (Series C)	43	8/2015	76.7

Key
Information

Scope of Report

This report covers Digital Health ventures with incorporation date after 2002. The data is valid as of 15 Feb 2023.

Digital Health is defined as the intersection between healthcare and technology, and is also referred to as HealthTech. Digital Health does not include Biotech (protein research or pharmaceuticals), MedDev (devices that are mechanical and electronic in nature), neuro-stimulates, opioids and minimal-invasive instruments. We recommend reviewing our taxonomy on the next page for further details.

Data Sourcing and Tracking

Galen Growth tracks a comprehensive inventory of key data points ranging from company demographics, funding and valuation to in-market capabilities on a continuously growing and curated list of HealthTech ventures drawn from global markets. Data is collated from primary research, public domain sources (press releases, news, public filings), proprietary analytics and from its unique network.

The information is:

- Disclosed and undisclosed by nature
- Continuously updated with the latest data
- Curated from both direct and indirect verified sources
- Augmented with our proprietary algorithms

Each HealthTech Alpha Index and Score is calculated using proprietary algorithms and data points drawn from our carefully curated HealthTech Alpha database. We recommend reviewing page 51 for further insights.

Key Terms and Definitions

Base Currency	USD
Early Stage	All deals up to and including Series A Stage
Growth Stage	All deals at Series B & C stage
Late Stage	All deals at Series D & Beyond Stage
Exit	IPO, SPAC and M&A deals
HTA	Health Tech Alpha

Important Information

This report is provided solely for informational purposes and was prepared in good faith on the basis of public information available at the time of publication without independent verification. Numbers will be updated from time to time to reflect information identified after the event.

Galen Growth does not guarantee or warrant the reliability or completeness of the data nor its usefulness in achieving any particular purposes.

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Research Inquiries

For more information about data, research and Galen Growth's proprietary algorithm contact: research@galengrowth.com for more information.
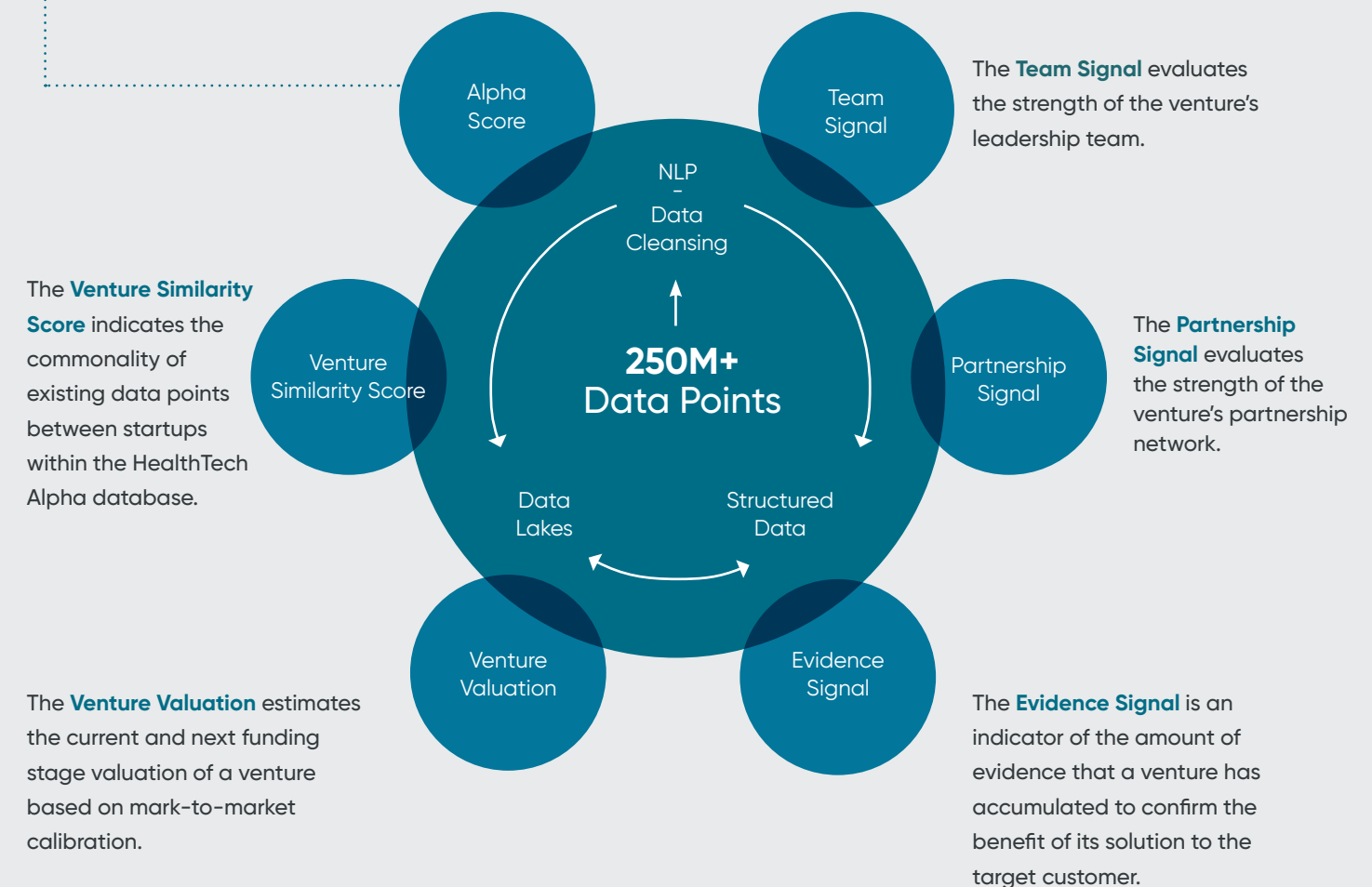
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Cybersecurity
Pharmacovigilance

Healthcare Logistics
Transportation Management
On-demand Delivery

Other
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HCP Job Board
Healthcare Marketing
Social Enterprise
Software Provider

Digital Health Analytics

The Alpha Score is a 360° Venture Maturity assessment that aggregates four distinct and independent Alpha Indices

- **Momentum index**: evaluates the present performance and fitness of the venture relative to its ecosystem peers.
- **Money index:** quantifies the financial strength and well-being of the venture based on its financial history and investor quality.
- **Market index:** evaluates the health of the sector category and sub-category in which a startup competes.
- **Innovation index:** evaluates the degree to which the venture is solving healthcare pain points.

The **Venture Similarity Score** indicates the commonality of existing data points between startups within the HealthTech Alpha database.

The **Team Signal** evaluates the strength of the venture's leadership team.

The **Partnership Signal** evaluates the strength of the venture's partnership network.

The **Venture Valuation** estimates the current and next funding stage valuation of a venture based on mark-to-market calibration.

The **Evidence Signal** is an indicator of the amount of evidence that a venture has accumulated to confirm the benefit of its solution to the target customer.

NLP – Data Cleansing

250M+ Data Points

Alpha Score
Team Signal
Partnership Signal
Evidence Signal
Venture Valuation
Venture Similarity Score
Data Lakes
Structured Data

About Galen Growth

Our unique combination of data, analytics, specialist team and Digital Health network, enables our clients to outperform their competition.

Global Digital Health Ecosystem Coverage

Our unmatched coverage of the world's most innovative Digital Health ventures means more innovation choice and better decisions. Our U.S., Asia and European offices serve our clients worldwide.

Specialist Team with Decades of Experience

With decades of experience, our team of analysts, researchers, decision makers & industry experts extend your team with specialist insights and know how.

Tailored Innovation Solutions

Whatever stage you are at in your innovation journey, we have a world class solution to enable you to succeed. Every solution leverages our unrivalled Digital Health data.

GALEN GROWTH

About FINN

Founded in 2011, FINN is one of the world's fastest growing independent agencies, serving clients through a powerful combination of hands-on partnerships, highly specialized, deep-rooted expertise and a values-driven culture that champions collaboration and innovation, and strives to create a more equitable world.

More than an integrated marketing agency, we are a bold collective of communications advocates, stewarding brands, protecting reputations, pioneering industries, influencing public policy and leveraging data and analytics to shape the most important conversations of our day.

We are smart, passionate people on a mission to make a difference in the world.

FINN
PARTNERS

33 offices

15+ industries

3 continents

1,400+ people

About Our Partnership

Galen Growth, the leading digital health, data-driven market intelligence and insights company, and FINN Partners, a global integrated marketing services agency, announced a collaboration to chart the complex and often fragmented digital health landscape, emerging market trends and areas of growth and innovation, and look beyond equity funding to explore what's expected to happen in this fast-paced digital health innovation sector. Drawing input from some 300M data points and more than 13,500 digital health ventures across the globe, the combined team will look beyond the "hype" of digital to map the priority and practical opportunities for decision-makers.

The Global Digital Health Ecosystem Q3 and Year End Reports laid the groundwork for future reports by recapping the year to date in digital health and focusing on global investment insights, categories, therapeutics and clinical evidence, to name just a few. Our collaboration will continue, in 2023 and beyond, to address the ecosystem development and in-depth themes that hold great potential to benefit from digital applications and the unraveling of the industry trends.

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