



# Frontiers Health - Healthcare Report Outlook Q4 2025 & beyond

Berlin, November 2025



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- 1 Public markets & transaction highlights
- 2 HealthIT deep-dive



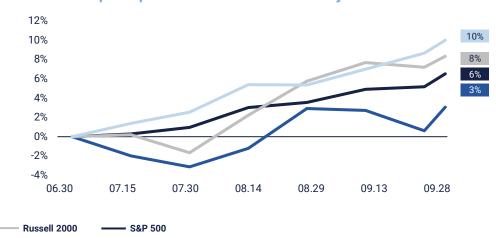


# Public markets: LTM indexed share price performance across HCIT subsectors (I/II)

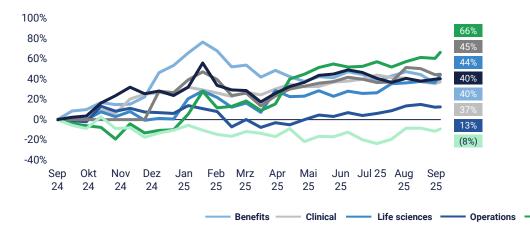
## LTM share price performance – HCIT<sup>1</sup> vs. major market indices



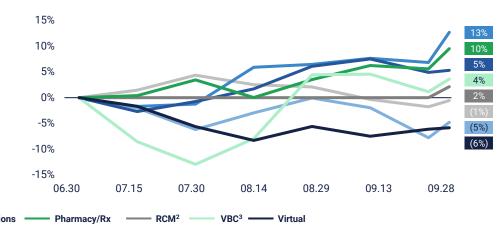
### L3M share price performance – HCIT vs. major market indices



### LTM share price performance - HCIT subsectors



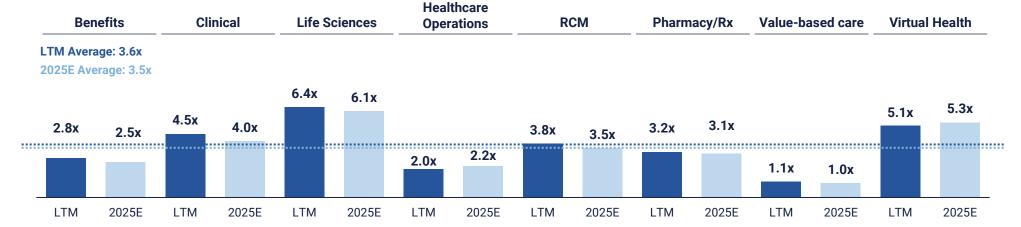
### L3M share price performance - HCIT subsectors



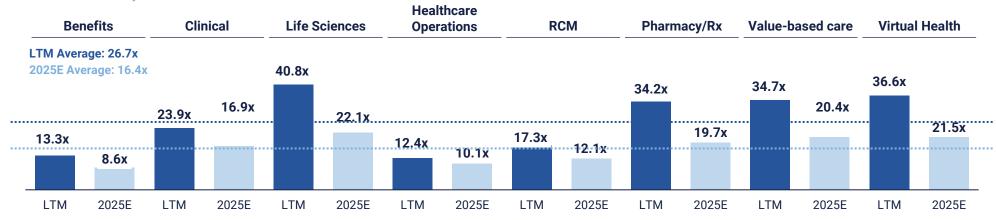


# Public markets: HCIT sub-sector valuation benchmarking (II/II)

## EV/revenue multiples<sup>1</sup>



## **EV/EBITDA** multiples<sup>1</sup>

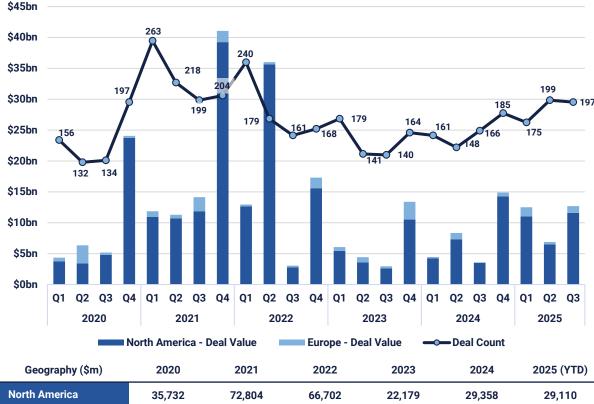




# CARLSQUARE SHSCapital

# Transaction highlights: HCIT M&A activity in Europe and North America (I/III)

# **HCIT M&A deal value & count in Europe and North America**



Geography (\$m)	2020	2021	2022	2023	2024	2025 (YTD)
North America	35,732	72,804	66,702	22,179	29,358	29,110
Europe	4,232	5,578	2,639	4,673	1,939	2,991
Total	39,964	78,382	69,341	26,852	31,297	32,100
EV/Revenue (Median) <sup>1</sup>	3.9x	5.8x	4.4x	3.9x	3.3x	3.9x

# YTD Q3'25 commentary

- Healthcare IT M&A environment is rebounding strongly in 2025
  - YTD aggregate deal volume and values are the greatest since 2022
  - YTD deal value of \$32.1bn is more than full year 2024 and 2023
  - YTD deal values and volumes are up 96% and 20%, respectively, over the prior YTD period
- However, there is a strong concentration of large deals driving up overall deal values
  - 75% of aggregate YTD deal value is from the Top 10 deals
- Financial sponsors are leading the charge
  - More than 60% of all deal activity is from PE/VC
- Focus on horizontal consolidation to build end-toend suites
- > Buyers want integrated platforms, not point solutions



# Transaction highlights: Top 10 M&A Deals in 2025 (II/III)

**Top 10 M&A transactions YTD through October 2025** 

Date	Company	Acquiror	Valuation (\$m)
Oct-25	<b>¬</b> PressGaney	qualtrics SILVER LAKE	6,750
Mar-25	ModMed	<b>CLEARLAKE</b>	5,300
Mar-25	🍏 CareAllies.	HCSC tealth Care Corporation	3,300
Sep-25	U · HealthProof HEALTHEDGE	<b>▼</b> BainCapital	2,600
Sep-25	▶ PREMIER	PATIENT SQUARE CANTEL	2,600
Jan-25	accesshealthcare	Smarter Technologies 1 NMC NEW MOUNTAIN CAPITAL	2,069
Apr-25	CentralReach	Roper	1,850
Jun-25	vaxcare	Blackstone	1,700
May-25	<u>m</u> ercalis	PharmaCord PERMIRA	1,425
Jan-25	nexus  <mark>ag</mark>	ТА	1,333
		Total Strategic Value	\$5,150
Standalone s	trategic acquiror	Total PE Value	\$23,777

#### **Comments**

90%

of aggregate YTD deal value is attributable to the top 10 deals

80%

of the top 10 deals were led by Private Equity

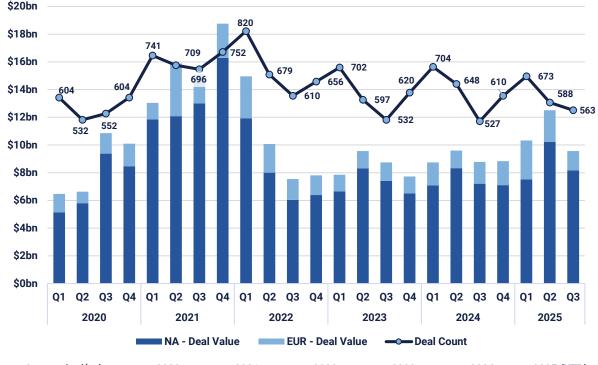
74%

of total YTD deal value comes from Private Equity investment in these top 8 deals alone



# Transaction highlights: HCIT financing activity in Europe and North America (III/III)

# **HCIT financing deal value & count in Europe and North America**



Geography (\$m)	2020	2021	2022	2023	2024	2025 (YTD)
North America	28,777	53,201	32,380	28,870	29,729	25,910
Europe	5,290	9,587	8,004	5,032	6,244	6,489
Total	34,067	62,788	40,384	33,903	35,973	32,398

- The Healthcare IT fundraising environment remains very strong in 2025
  - YTD financing values are up 19% from YTD'24 and the number of financings is flat
  - Q3'25 is down 24% from the prior quarter, but up
     9% from the prior year
- The European financing market is propping up the category in 2025
  - YTD'25 financings in Europe are up 44%
     compared to last year North America is only up 15%
  - Q1'25 financings from Europe accounted for 27% of total – the highest we have seen over the last 5 years
- The widespread utilization and adoption of AI in Healthcare is leading to many new unicorns in 2025 including:
  - Smarter Technologies \$6.0bn+ valuation
  - OpenEvidence, \$6.0bn valuation
  - Hippocratic AI, \$3.5bn valuation
  - Abridge, \$5.3bn valuation
  - Innovaccer \$3.5bn valuation
  - Transcarent, \$2.7bn valuation
  - Ambience Healthcare, \$1.3bn valuation



# **Transaction highlights: Notable Q3 2025 activity**

### **M&A transactions**

Date	Company	Acquiror	Deal Size/EV (\$m)	EV/ Revenue
Sep-25	PREMIER	PATIENT SQUARE	2,616	2.6x
Sep-25	HEALTH <b>EDGE</b>	BainCapital	2,600	N/A
Sep-25	St HealthProof"	BainCapital	1,000	N/A
Sep-25	deep <b>intent</b> +	VITRUVIAN	637	N/A
Sep-25	@Clanwilliam	ТА	528	N/A
Aug-25	THIRTY MADISON	Remedy	500	2.3x
Jul-25	AETION	N M C NEE NOESTAIN CAPES	400	N/A
Jul-25	<b>X</b> 23andMe	TTAM Research Institute	369	1.7x
Sep-25	interwell 🏠 health	FRESENIUS MEDICAL CARE	365	N/A
Aug-25	ANALYTE HEALTH	BRIGHTSTAR	350	N/A
		Median	514	2.3x

## **Capital raises**

Date	Company	Investor	Deal Size/EV (\$m)	Post-Money Valuation (\$m)
Sep-25	strîve HEALTH	NEA	550	N/A
Sep-25	() JUDI.	WELLINGTON MANAGEMENT <sup>*</sup>	400	3,250
Jul-25	<b>Map</b> Light	Forbion.	372	816
Jul-25	//\ Ambience	andreessen. horowitz	243	1,250
Jul-25	OpenEvidence	C KLEINER PERKINS	210	3,500
	Expedition	novo		221
Jul-25	aıdoc	<b>G</b> GENERAL CATALYST	150	N/A
Nov-25	Hippocratic AI — Do No Harm —	Avenir	126	3,500
	STAR THERAPEUTICS	sanofi ventures		N/A
Jul-25	Nudge	THRIVE	100	N/A
		Median	188	2,250



Investment arm of strategic company

- 1 Public markets & transaction highlights
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  - 2.1 Al & Healthcare efficiency
  - 2.2 Consolidation in Healthcare
  - 2.3 Efficiency in R&D









The next decade of Healthcare will be defined by two forces: Al that compresses cost and expands throughput, and consolidation that transforms point solutions into scaled platforms across the ecosystem



# Two forces reshaping Healthcare

## Al compresses cost and expands throughput



**Fewer denials, faster cash, higher throughput:** Al cleans coding and documentation upfront, lifting first-pass approvals and speeding collections



Admin/ops automation: Automates coding, prior auth, claims, denials, documentation, and scheduling so teams focus on exceptions, not busywork



Integration of international health delivery platforms: Aligns with DRG/catalogues and verifies private benefits to prevent billing friction and write-offs



**Budget alignment and control:** Ties directly to payer/provider revenue-cycle and ops budgets, enabling short sales cycles and measurable ROI



**Standardization of quality and outcome:** Enforces consistent note-to-order accuracy across sites, reducing rework and audit risk

## Consolidation that converts point solutions into scaled platforms

Comprehensive and holistic service offering: Roll-ups bundle contracts and channels, putting more modules in front of the same buyers with less incremental CAC



**Taking advantage of big data lakes:** Aggregated datasets improve model accuracy and compliance reporting, strengthening outcomes and trust



**Cross-sell engine:** Shared platforms unlock multi-module attach into existing provider and payer workflows



Compliance and regulatory: Centralized governance, security, and certifications reduce duplicated cost and shorten enterprise due diligence



**Enhanced value creation:** Scale, profitability, and embedded distribution position platforms for M&A as the primary liquidity path, with selective IPO windows



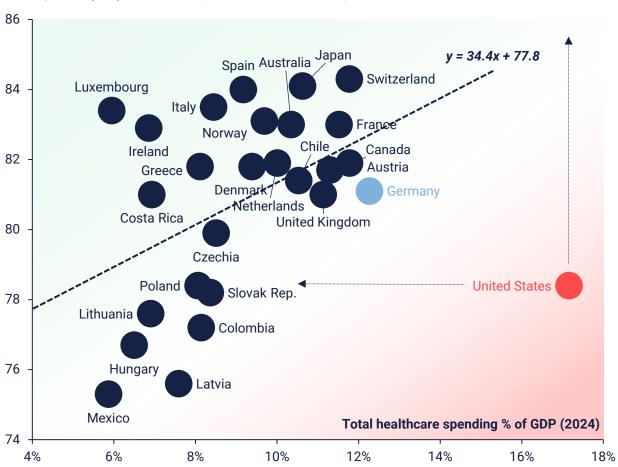




# Higher spending does not equate to higher life expectancy; lot of room for optimization in the US...(I/II)

## Life expectancy vs. national healthcare spending

Life expectancy in years at birth (2023 or latest available)



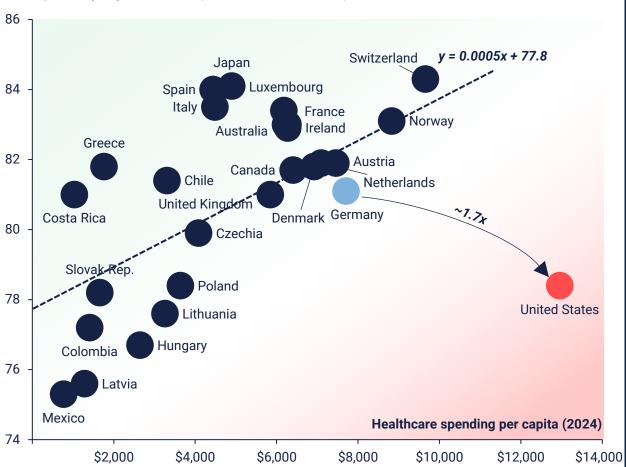
- Countries that devote a higher share of GDP to healthcare do not automatically achieve higher life expectancy
- The US is the stark outlier with top spend and middling longevity while several other countries deliver longer lives at materially lower spend
- Why the **US underperforms** at high spend:
  - Spend mix skews toward prices and administrative overhead, with fragmented payer/provider rails driving waste
  - High burden of preventable and chronic disease (obesity, cardiovascular, diabetes) depresses longevity despite access to advanced care
  - Late, specialty-heavy care pathways crowd out primary and preventive services
- Why some **countries outperform** at lower spend:
  - Strong primary care orientation and earlier intervention
  - Broader social policy investment (education, income support, housing) that improves health determinants beyond the clinic
  - Tighter purchasing and price regulation, lowering unit costs



# ...especially on a per capita basis (II/II)

## Life expectancy vs. Healthcare spending per capita

### Life expectancy in years at birth (2023 or latest available)



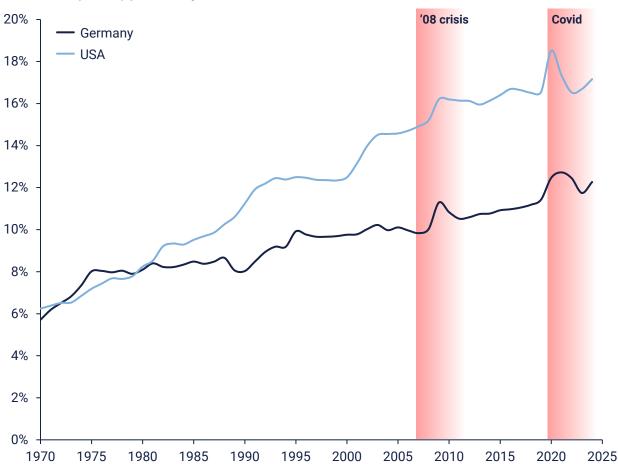
- Per capita healthcare spending further highlights US inefficiency:
  - The US spends over 1.7x more per capita on healthcare than Germany, yet life expectancy remains well below peers
  - High per capita costs in the US are driven by expensive treatments, administrative overhead, and fragmented care, and not matched by superior health outcomes
- This gap underscores significant potential for the US to improve efficiency and value in healthcare delivery
  - Better data integration, automation, and Al-driven workflow optimization can materially reduce administrative waste and unnecessary utilization
  - The US market is therefore highly receptive to HealthIT, particularly solutions addressing care coordination, billing accuracy, and clinical workflow automation



# Healthcare spending keeps climbing hence smarter allocation must drive outcomes

Healthcare spending over time (Germany vs. US)

## Healthcare spending per country as % of GDP



- The long-term trend suggests that incremental cost controls are insufficient – system-wide innovation in interoperability, automation, and preventive care is needed to sustain quality
- Both the US and Germany show a steady increase in healthcare spending as a percent of GDP since the 1970s, reflecting medical technology adoption, aging populations, and rising health sector prices
- The US is consistently higher than Germany and spends a larger share of GDP than Germany due to higher unit prices, administrative complexity, and a more specialty-heavy delivery model
- The US spends nearly twice as much of its GDP as Germany, yet health outcomes (life expectancy, preventable mortality) lag behind, showing diminishing returns on spending
- 2008-2009: ratio effect from GDP contraction during the 'Great Financial Crisis'
  - Health spending as a share of GDP rose because overall GDP fell while health outlays were relatively stable (a typical recession dynamic)
- 2020-2021 Covid spike:
  - Pandemic-related spending on testing, vaccination, PPE, and hospital capacity, combined with sharp GDP declines in 2020, produced a pronounced spike in the health-spend/GDP ratio
  - Especially in the US, where spending surged in 2020 more than 2021 compared with peers

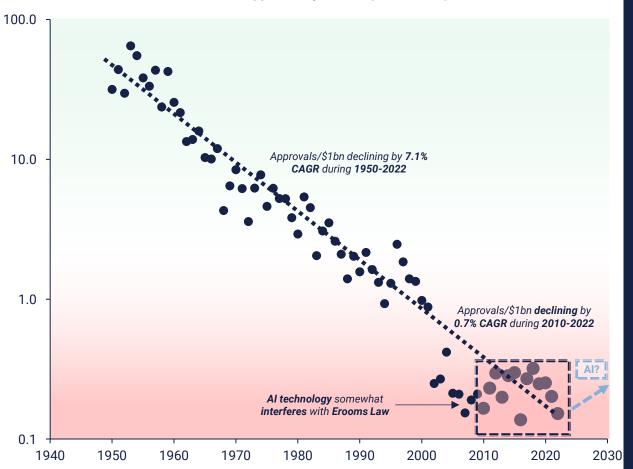




# Drug approvals per \$1bn have been falling, but AI and better trial designs can bend the curve going forward

New molecule entities and new biologics approved by the FDA

Eroom's Law: Number of new molecules approved by US FDA per \$1bn in global R&D



#### **Comments**

#### Magnitude of decline:

 R&D efficiency has dropped on the order of ~80-fold since the 1950s, implying vastly higher investment per approved drug today compared to earlier decades

#### Consequence:

- Falling approvals per \$1bn push up cost per approval, straining innovation economics and, ultimately, patient access
- Why productivity fell (key drivers):
  - Scientific complexity: Remaining targets are harder as much of the "low-hanging fruit" is gone, leading to increased failure rates and cycle times
  - Regulatory stringency: Safety/efficacy expectations and evidentiary standards have risen, increasing trial size, duration, and cost
  - Trial and resource inefficiency: Larger budgets have not proportionally raised output due to recruitment, design, and operational frictions

### Recent pattern:

- The post-2010 period shows a modest deviation from the long-run decline
- Modalities like biologics, gene/cell therapies, and data-driven trial optimization contribute to intermittent productivity improvements
- > The long-term slope remains negative

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# In the US, providers and payers are harnessing automation to reduce denials and lower costs across the care pathway

Providers want fewer denials while payers want lower costs

	Providers			+		Payers	
Front-end	<ul> <li>Patient management – get patients to the right care at the right time</li> <li>Identify missed diagnoses and engage to retain patient revenue</li> </ul>	Clarify  H1  Pipperatic AI  O be beam —  N notable.	50% of all denials		Coverage	<ul> <li>Patient engagement – steer patients to low-cost / high-quality points of care</li> <li>Identify "at-risk" patients and engage to avoid high-cost health event</li> </ul>	Clinia  included  innovaccer JUDI  Rightway  transcarent
Revenue integrity	<ul> <li>Fewer denials and faster appeals</li> <li>Higher realization of claim values</li> <li>Reduced underpayments and clawbacks</li> <li>Lower administrative workload for coding, billing, and RCM teams</li> </ul>	ABRIDGE  AKASA  Ambience  commure  smarterhealth  solventum	21% of all denials		Payment integrity	<ul> <li>More accurate and defensible payment decisions</li> <li>Reduction of overpayments and downstream corrections</li> <li>Improved compliance and payment-schedule accuracy</li> </ul>	© CODOXO COTIVITI HEALTHEDGE Lyric Valenz
Back-end	<ul> <li>Deeper insights into denial and appeal patterns</li> <li>Clear visibility into payment barriers</li> <li>Stronger population health analytics and benchmarking</li> <li>Improved coding, documentation, and claims accuracy workflows</li> </ul>	ARCADIA  Athelas  Candid Health	23% of all denials		Back-end	<ul> <li>More accurate assessment of patient risk</li> <li>Predictive analytics for quality and performance scoring</li> <li>Improved population health insights and benchmarking</li> <li>Better medical loss ratio analysis</li> </ul>	ARCADIA  ARCADIA  Availity  CEDAR GATE  MERATIVE  Optum  Separative  Zeomega

**Providers** want fewer denials, with currently **20**% of all claims denied and **60**% of those never appealed. **Payers** seek lower costs amid **\$32.0bn** in **improper Medicare payments in 2024** and **3-10**% of healthcare spending lost to fraud, waste, or abuse



# In Healthcare's emerging AI arms race in Europe, providers and payers use automation to push efficiency beyond clinical boundaries

**European healthcare systems are integrating Al** 

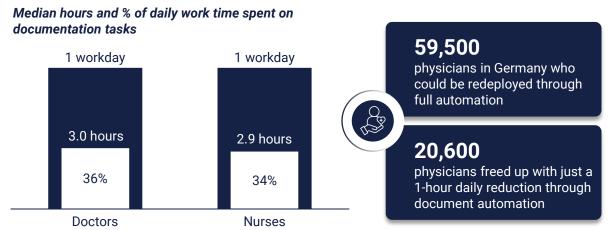
	Providers	(+)	Payers
Admin & admission	<ul> <li>Insurance status verification and fraud detection</li> <li>Digital onboarding and document collection</li> <li>Automated patient registration and eligibility checks</li> </ul>	Ankor  Ciles  INTEROCLOUD  medatix  medatix  tucuvi	Coverage      Automated eligibility and benefit verification     Efficient clinical and administrative workflows     Real-time coverage checks integrated into clinical and billing workflows     ★ARZ Haan AG  ▼itagroup)  ▼ xund
Delivery & documentation	<ul> <li>Higher claims value realization</li> <li>Automated data capture from EHRs and clinical notes</li> <li>Fewer denials, easier appeals</li> <li>Reduced administrative workload for providers</li> </ul>	Nabla  Praxipal Tandem TORTUS	<ul> <li>Coding</li> <li>Al-assisted medical coding and code validation</li> <li>Elimination of overpayments and corrections</li> <li>Automated compliance with national and payer-specific coding rules</li> </ul>
Billing & post- processing	<ul> <li>Automated appeals and payment reconciliation</li> <li>Visibility into payment barriers and performance</li> <li>Denial prediction and management tools</li> </ul>	Adfin  NEQY  opto data GRUPPE  LINIMEC  Visiba Care	Payment + analysis  Precise patient risk assessment Predictive analytics for cash flow and cost forecasting Revenue cycle and denial trend analysis Medical loss ratio performance and predictions  Precise patient risk assessment Precise patient risk assessment  Precise patient risk assessment  Predictive analytics for cash flow and cost forecasting  Revenue cycle and denial trend analysis  Medical loss ratio performance and predictions



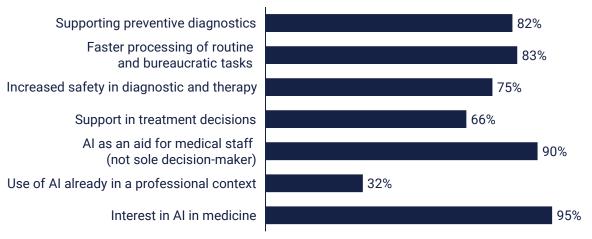


# **Excursion Germany: Administrative overload drives** demand for AI and automation

### Doctors spend a third of their day on paperwork



## German physician practice: Al use case adoption (% reporting as relevant/advantageous)



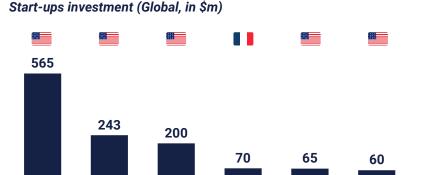
- German physicians spend an average of 3 hours per day (ca. 36% of working time) on administrative tasks; nurses spend 2.9 hours (34%)
- This inefficiency creates measurable workforce strain:
  - Up to 59,500 doctors could be redeployed to patient care if documentation were fully automated
  - Al is rapidly moving into this gap, with ambient and generative AI tools being integrated into EHR systems to automate note-taking, billing documentation, discharge summaries, and messaging workflows
- The automation of back-office workflows represents one of the largest productivity unlocks in healthcare, with over 83% of German physicians recognizing Al's value in accelerating routine and bureaucratic tasks
- Nearly 90% of physicians see AI as a supportive tool for medical staff, underscoring strong professional interest in leveraging automation to optimize care delivery
- > The scale of potential efficiency gains has made Aldriven documentation one of the fastest-adopted technologies in healthcare



# Money flows into AI documentation as start-ups and tech giants battle for the future of clinical workflows

X Rad Al

# Notable 2025 AI scribe and documentation start-ups and investors

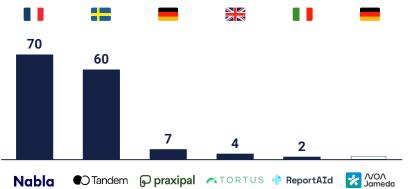




Presence in Europe

#### Start-ups investment (Europe only, last round in \$m)

ABRIDGE Ambience commure Nabla





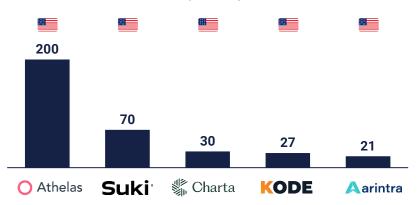
- Clinician admin load remains stubbornly high
  - Persistent growth in EHR time and meaningful reductions when teams adopt ambient documentation
  - That burden + staffing pressure is the demand engine for AI scribes
- Capital is concentrating:
  - Since early-2024, funding has surged but is clustering in a handful of platforms (Abridge, Ambience, Suki/Nabla), with Abridge alone raising multiple mega-rounds in 2025
- Distribution is the moat:
  - Deeper EHR embedding is separating winners: Microsoft's Nuance DAX Copilot is fully embedded in Epic; Abridge Inside runs across Epic; AWS HealthScribe and Google MedLM/Vertex AI are arming partners
- The US leads on scale and check size
  - Europe's activity is earlier-stage but accelerating
  - Regulatory pathways (EU MDR) and multilanguage requirements slow pan-EU scaling but create defensible local champions

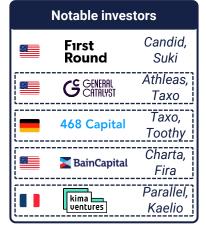


# Medical coding shapes care decisions, yet AI tools still rely on human oversight to unlock efficiency gains

Medical coding: bridging clinical documentation and revenue cycle efficiency

Notable 2025 AI medical coding start-ups and investors





Presence in Europe

## LLM performance in three medical code sets

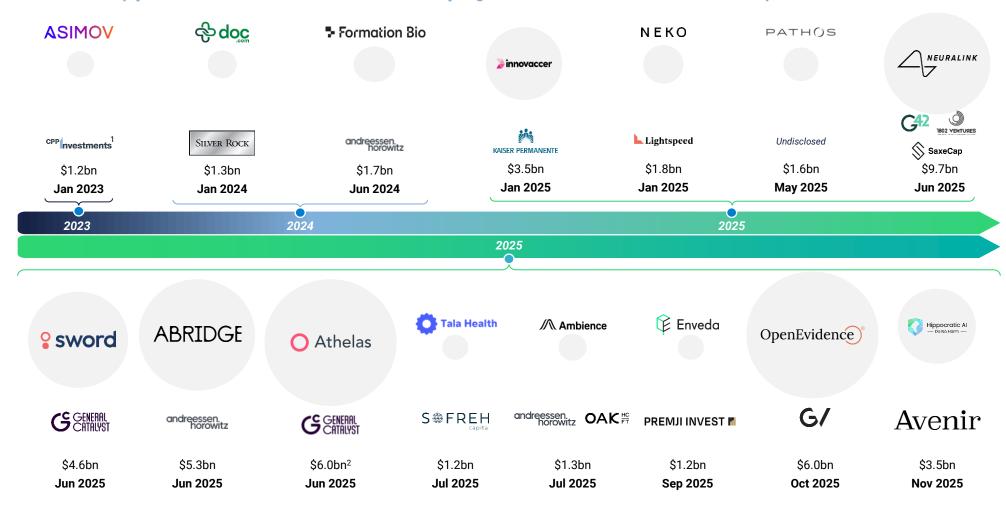
Testing criteria	Best performer	Worst performer	Notes
Exact code matching	1. GPT-4 2. GPT-3.5 3. Gemini-Pro	4. Llama2-70b Chat	No model had a successful exact rate >50%
Billable code generation	1. GPT-3.5 2. GPT-4 3. Gemini-Pro	4. Llama2-70b Chat	In ICD-10-CM testing the top success rate was 72%
Incorrectly generated codes	1. GPT-4 2. GPT-3.5	3. Gemini-Pro 4. Llama2-70b Chat	Errors caused by wrong specificity/classification
Fabricated codes	1. GPT-3.5 2. GPT-4	3. Llama2-70b Chat 4. Gemini-Pro	Some models hallucinate invalid or non-existent codes

- Over 11% of all claims face denial, with ~42% of denials attributable to coding issues
- Coding back-logs, labor shortage, and surge in documentation complexity mean increased revenuecycle risk for providers and payers
- Al-driven coding solutions, using deep learning, clinical-entity extraction, and real-time workflow orchestration, are now scaling in both inpatient and outpatient environments
- This will lead to accelerated claim submission, reduced revenue leakage, improved productivity and cash flow
- Coding automation is no longer niche, it's a fundamental enabler of efficient care, accurate reimbursement and scalable workflows
- Which platform will integrate coding, data and care pathways seamlessly will be able to extract the most value out of the Al tools



# **Artificial intelligence unicorns in HealthTech**

Unicorns multiply as 2025 delivers blockbuster deals and sky-high valuations across HealthTech AI companies





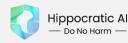
# Leading value propositions and top workflow raises

## **Top funded value propositions**

	2021	2022	2023	2024	2025
Clinical Workflow	\$2.4bn	\$1.5bn	\$0.9bn	\$1.2bn	\$2.8bn
Nonclinical Workflow	\$3.8bn	\$2.5bn	\$2.1bn	\$1.8bn	\$2.5bn
Care Coordination	\$1.9bn	\$1.7bn	\$1.4bn	\$0.8bn	\$1.2bn
Treatment of Disease	\$5.0bn	\$2.2bn	\$1.9bn	\$1.9bn	\$1.1bn
Population Health Management	\$1.9bn	\$0.3bn	\$1.0bn	\$0.1bn	\$1.0bn
Data Infrastructure & Interoperability	\$1.8bn	\$1.1bn	\$0.7bn	\$0.7bn	\$1.0bn







Series D, \$550m

Series C, \$243m

Series C, \$126m

- Investment is shifting from alternative care models (e.g. virtual, centers of excellence, narrow networks) to workflow solutions
  - Covid-era investment was focused on how to treat patients in more modern way with focus on convenience, cost and outcomes
  - Many vertically focused solutions emerged in categories like behavioral health, obesity, and MSK – the winners and losers have been established (recent Omada and Hinge IPOs)
  - Al is shifting the focus to workflow to make backoffice operations more efficient and allow providers to operate the top of their license
- The largest deals of the year have centered around Al and RCM automation, such as:
  - Commure \$200m raise
  - Athelas \$200m raise
  - Abridge \$250m raise and \$300m+ raise
  - Aidoc \$150m raise
  - Ambience \$240m+ raise
- Clinical systems are still relevant, if vertically focused
  - Warburg invested \$5.0bn in vertically focused ModMed
  - PT EHR, Jane Software, was valued at \$1.0bn+ by TCV, JMI, and Tidemark

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  - 2.3 Efficiency in R&D

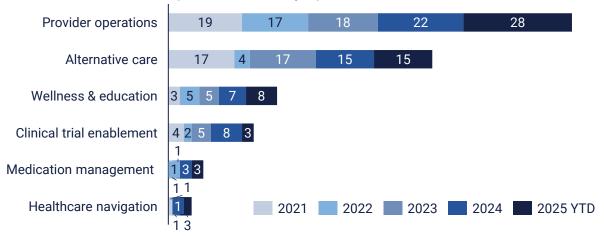




# Healthtech M&A accelerates as liquidity shifts from IPOs to strategic buyers and PE exits

## **Consolidation hits high gear**

### Global Healthtech VC-backed private M&A deals by top subsector



### Sponsor-backed Healthtech transactions in 2025

Buyers	Acquisitions	Total spent	Strategic sectors
Clearlake Capital	Modernizing Medicine	\$5.3bn	Specific EHR software
Cotiviti	Edifecs	\$3.1bn	Health data platform
Ardan Equity, Bain Capital	HealthEdge	\$2.6bn	Care management & admin
PharmaCord	Mercalis	\$1.4bn	Life science product tools
TA Associates	Nexus	\$1.2bn	HealthIT software provider

- With IPOs largely inactive, M&A has become the dominant exit path for Healthtech
- **Provider operations** is now the largest sub-sector:
  - Private equity and strategic buyers are stepping in as liquidity providers
  - Sponsors are fueling the HealthIT space with large-scale transactions
  - Exits are increasingly structured via consolidation rather than IPO
- Headline PE-backed exits, including Warburg Pincus' exits of Modernizing medicine to Clearlake Capital, Cotiviti's purchase of Edifecs and PharmaCord's acquisition of Mercalis, show the scale of capital flowing
- Buyers are not only seeking immediate efficiencies, but also positioning portfolio companies for future growth, secondary sales or eventual re-entry to the public markets when conditions improve
- ➤ For investors and acquirers, the opportunity is no longer just building standalone apps, it's acquiring or scaling platforms that can deliver enterprisevalue, across workflow, data and operations



# Provider consolidation reshapes European healthcare and fuels demand for scaled, integrated solutions

e.g., UK: PE-backed dental

practice market share<sup>1</sup>

### **Creating critical mass for operational efficiency and digital innovation**

e.g., Germany: Market share of Top 5 hospital groups (by care beds)

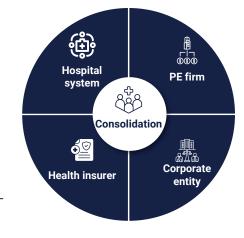
22%

c. 105k

2018



Who Is driving provider consolidation?





c. 145k

2024

YoY growth in digital health funding in Europe in 2024 (vs. ~6% global)



of European digital health investment in 2024 went to Al-enabled ventures



70%

of digital health M&A deals in Europe in 2024 involved venture-to-venture consolidation



estimated staff shortage in Europe, accelerating consolidation for efficiency

- Consolidation is accelerating: the top 5 German hospital groups now control 30% of acute beds, and 31% of UK dental practices are PE-owned, both up sharply since 2018
- Hospital systems, private equity, insurers, and digital health platforms are reshaping the provider landscape, with 70% of 2024 healthcare M&A involving platform-to-platform deals
- Digital health is a major driver, with 58% of sector investment now going to Al-enabled ventures
- Year-over-year growth in European digital health funding reached 27% in 2024, far outpacing the global average of 5.5%
- A 1.2 million staff shortage across Europe is intensifying the drive for scale, efficiency, and integration<sup>2</sup>
- > Success now depends on aligning with large, integrated networks, platforms that deliver systemlevel value will outperform standalone solutions





# In the US, provider consolidation reshapes the healthcare space and drives demand for integrated digital solutions

## **Creating the scale for digital transformation**

% of physicians employed by % of physicians working in Entities that may consolidate with or affiliated with hospital private practice physician practices systems (in US) **CAGR -2.9% CAGR +3.8** □ ©©® Hospital 60% system PE firm 8 42% 30% Physician practices Other Corporate physician entity practice <u>ó</u> <u>©</u> Health insurer 2012 2024 2012 2024



- Almost half of US physicians now operate in hospital-affiliated systems (vs. <30% in 2012)</li>
- Private equity and payers are increasingly part of the equation (~7% of physicians affiliated with PEbacked practices in 2024)
- Evidence links hospital-physician consolidation with higher spending/prices; fewer independent practices increases the importance of scale and integration
- Increases in care coordination following physician consolidation leads to decreases in care fragmentation, inpatient utilization, prescription drugs, lab and imaging, and the use of out-of-network providers
- ➤ In a consolidating environment, platforms that can engage at system-level and scale beyond standalone point solutions will outperform
- The consolidation of physician practices shifts the buyer landscape toward scaled systems and strategic investors
  - For innovators, this means selling into networks, not individuals
  - Platforms that align with enterprise-level needs will bear fruit



# HealthIT overall most attractive for cross-border activity...(I/II)

#### More cross-border









More domestic



# ...but highly dependent on sub-vertical (II/II)

#### More cross-border









More domestic



# Cross-boarder deals across domestic dominated sub-industries

#### **Selected transactions**

#### Assets with software/IP, regulatory-ready workflows, or pan-regional platforms draw attention from cross-border buyers



#### **Deal highlights**

- IQVIA acquired Legian
   Gesundheitsmanagement
   (LGM), a tech-enabled service
   provider to German statutory
   health insurers
- LGM provides software- and data-driven audits of hospital invoices, leveraging proprietary business rules, a case database of >1m records and specialized medical staff



#### **Deal highlights**

- ResMed acquired MEDIFOX DAN, a German provider of cloud-based software solutions for out-of-hospital care, including home health, long-term care, therapy practices and outpatient nursing services
- MEDIFOX DAN offers integrated workflow, documentation, scheduling, payroll and billing software



### **Deal highlights**

- DocPlanner acquired MyDr, a leading Polish provider of practice management software solutions for medical and dental clinics
- The acquisition strengthens
   DocPlanner's position as the largest digital healthcare platform in Central and Eastern Europe



#### **Deal highlights**

- EssilorLuxottica acquired
   Optegra Eye Health Care, a
   leading pan-European network
   of ophthalmology clinics
   operating in the UK, Central
   Europe and the Netherlands
- Optegra brings a portfolio of specialist ophthalmic treatments, including cataract surgery, refractive procedures and medical eye care, delivered through ~30 clinics and surgical centers

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# The convergence of AI technologies and human expertise in pharma R&D

Digital and AI innovation are reversing declining R&D productivity

Measuring the return from pharmaceutical innovation (2024)

5.9%

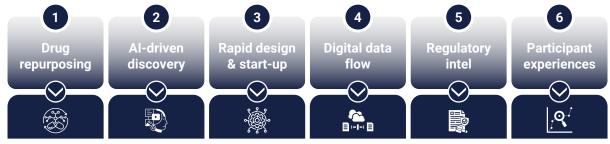
top 20 biopharma forecast R&D IRR in 2024 (represents a 1.6% increase YoY)

\$2.2bn

average cost per asset (represents a \$0.1bn increase YoY)

First sustained recovery in R&D returns after years of decline, driven by digitalization and AI adoption

#### Strategic application of GenAl in pharma R&D



Al analyses clinical and research data to identify new indications. cutting preclinical cost and improving time-to-market

Generative models accelerate hit identification and candidate screening,

Automation shortens protocol authoring and trial start-up, lowering overall phase and development clinical success cycle time

Standardized data pipelines and on-demand dossiers across optimize dashboards reduce time per improving speed artefact creation

Al compiles regulatory geographies, documentation reducing quality and approval success

Predictive analytics recruitment and retention. dropout rates and enhancing accuracy

- After decades of decline, global pharma R&D productivity shows early signs of improvement
- Eroom's Law is flattening:
  - Top-20 biopharma forecast R&D IRR rising to ~5.9% in 2024 (from 4.3% in 2023)
  - The average **cost per new asset** declining to \$2.2bn
- Digital transformation and AI are the primary catalysts, automating data integration, enabling realtime analytics, and improving portfolio allocation across discovery and development
- Leading biopharma companies expect potential uplift in R&D value when AI supports target identification, trial design, and data-flow management
- Efficiency gains translate directly into shareholder value - each 1% increase in R&D IRR adds Billions in Enterprise Value for top pharma companies
- > As productivity inflects upward, buyers will reward platforms and service providers that demonstrate Al-driven cycle-time reductions and data-asset leverage



# Al-driven discovery becomes an institutionalized segment across capital markets

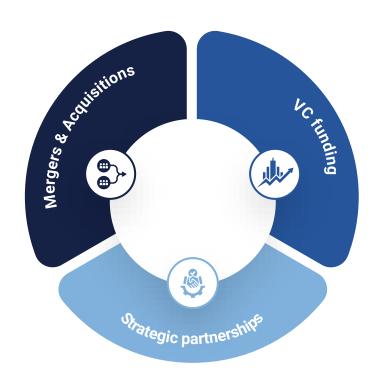
## Discovery AI is maturing into a validated segment

# A Mergers & Acquisitions

- ✓ Emerging trend: Al-native discovery platforms are increasingly being acquired by industry-leading firms to integrate data, speed trial design, and reduce attrition rates across the pipeline
- ✓ Example large-cap transactions:

C

- Qiagen acquired Parse Biosciences, an Al-based drug discovery firm building predictive virtual cell models, for ~\$230m (2025)
- Recursion, a clinical stage technologyenabled biotech company decoding biology to industrialize drug discovery, has acquired Exscientia, a biotechnology company providing Al-driven drug discovery and design, for ~\$810m (2024)



## VC funding

В

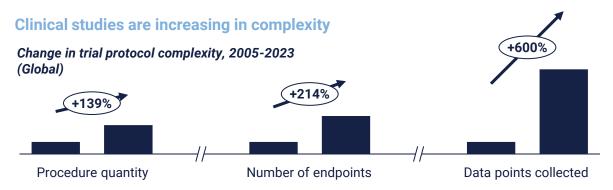
- ✓ Since 2015, Al-driven pharma startups grew 27x, reaching \$58.0bn cumulative funding
- ✓ In 2024–25, Al-biotech fundraising exceeded \$5.8bn, examples include:
  - Isomorphic Labs UK (~\$640m)
  - CHARM Therapeutics UK (~\$80m)
  - Chai Discovery US (\$70m)
- Al is a capital-efficiency lever, reducing trial costs and timelines while speeding up the approval process
- Pharma companies are internalizing Al stacks (buy + partner) to compress discovery timelines

# Strategic partnerships

- ✓ As AI transforms drug discovery, major pharma companies are increasingly collaborating with AI startups to stay competitive and address declining R&D efficiency (AstraZeneca leads with 27 partnerships, followed by Merck (22) and Sanofi (18))
- Pharma incumbents double down on **AI alliances to boost R&D efficiency** and derisk pipelines with focus areas being target discovery, molecular simulation, and digital twins for trial optimization

# CARLSQUARE SHSCapital

# Al-driven trial efficiency to compress timelines and reduce execution risk in the predict phase



#### Al increasingly addresses key trial inefficiencies

- Study design & protocol simulation: Identify risky parameters early to reduce amendments
- 2 | Site selection: Predict high-performing hospitals and investigator networks
- **3** Patient recruitment & retention: Match eligible patients using EHR / claims / RWD
- **4** Synthetic control arms & real-world evidence: Leverage historical data to shrink control groups
  - Data management & monitoring: Automate cleaning, anomaly detection, early-signal tracking

- Clinical-trial complexity has surged globally:
  - Al and advanced analytics are now essential to manage rising data volumes and operational risk
  - CROs and pharma-services providers increasingly integrate predictive tools for site and patient selection, protocol optimization, and real-worlddata analysis
- While M&A explicitly driven by AI remains limited, AI capability has become a hygiene factor in buyer due diligence, impacting perceived scalability and efficiency
- For exits, investors focus on measurable KPIs such as time-to-first-patient, recruitment velocity, and protocol-amendment frequency
- The next wave of pharma-services consolidation will differentiate on data assets and Al infrastructure, not just geographic footprint
- Clinical-trial complexity has increased significantly over the past two decades, forcing sponsors to adopt Al and advanced analytics just to stay efficient



# How AI adoption is reshaping software economics

## Al's impact on SaaS: Tradition meets transformation

Short-term margin compression but long-term upside potential



**Economies of scale:** Many Al workloads benefit from scale. As models are optimized and inference pipelines are improved, the **cost per transaction can decrease** significantly over time



**Margin recovery over time:** As Al matures, early gross margin compression may reverse due to **operational efficiencies**, **model improvements**, **and pricing adjustments** 

2 Pricing power and value creation



**Premiumization:** Al features can justify **price increases** or **premium tiers**, offsetting higher COGS



**Bundling and tiering:** SaaS companies can **bundle AI** features into **higher-priced plans**, effectively passing costs to customers without abandoning the subscription model

3 Evolution, not revolution, of pricing models



**Hybrid models emerging:** Rather than a wholesale shift from subscriptions to transactions, many **SaaS companies** are adopting **hybrid pricing:** base subscriptions plus usage-based surcharges for Al-heavy features (e.g., API calls, document processing, advanced analytics)



The healthcare sector's familiarity with **transaction-based models**, combined with its **notorious resistance to change**, allows ample time for stakeholders to **adapt and prepare** for new developments

- Al integration is reshaping SaaS economics through a combination of short-term margin pressure and long-term efficiency gains
- Early Al adoption raises COGS due to inference workloads, but scale effects and model optimization materially reduce cost per transaction over time
- As models mature and operational efficiencies accumulate, gross margin recovery becomes achievable through both technical improvements and pricing adjustments
- Providers are introducing premium tiers, featurebased surcharges, and bundled AI plans, allowing them to offset higher AI-related costs while expanding value to customers
- ➤ These strategies support incremental pricing power and help transition customers to higher-value plans without abandoning the subscription model
- For healthcare SaaS, this creates a unique opportunity to improve both value and resilience



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