



svb



Silicon Valley Bank

2020

Annual
Report

Healthcare Investments and Exits

Hot IPO Market Drives the
Healthcare Sector



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Outlook

Healthcare Investments: Full Year 2019

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Continued Robust Fundraising and Investment

US healthcare venture fundraising set a record in 2019, reaching \$10.7B, a 10% increase over the previous year. Strong M&A and IPO performance led to great markups and returns for limited partners, in turn, driving the fundraising.

Investment into venture-backed biopharma, medical device (device), diagnostics and tools (dx/tools), and healthtech reached \$32B, slightly below the record set in 2018 but far ahead of the 2017 total.

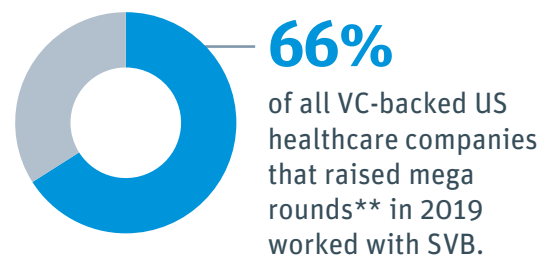
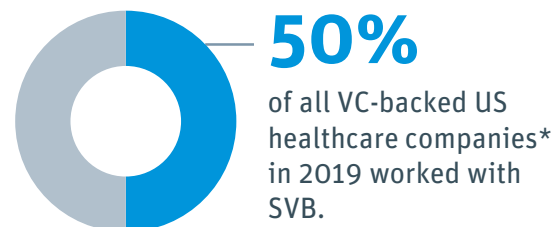
Biopharma investments slightly decreased from a record 2018, while Series A declined 31%. Series A investments in platform surpassed oncology for the first time. Crossover investors continue to be active in funding Series B mezzanine (mezz) rounds, signaling optimism for 2020 IPOs.

Device investing increased for a second year, led by large, late-stage deals. Sensing the continued, strong device IPO performance in 2020, crossovers and late-stage venture investors contributed to this upswing.

Dx/Tools investment saw a significant drop overall, as we saw fewer late-stage mega rounds in 2019. Instead, investments were centered on Series A, especially in dx tests and R&D tools.

HealthTech venture-backed investments continued strong in 2019, hitting a record and cementing healthtech as the fastest growing healthcare sector. Growth is largely attributed to alternative care and provider operations, each of which has received \$2B+ in investments.

Silicon Valley Bank Market Stats



Healthcare Exits: Full Year 2019

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Strong IPO Activity Leads Great Returns in 2019

In 2019, VC-backed biopharma exits and returns barely trailed 2018's record. Taken together, 2018 and 2019 returns nearly equal total returns from 2014–2017. Robust mezzanine valuations coupled with positive IPO step-ups encouraged biopharma companies to go public, accounting for 50 IPOs in 2019.

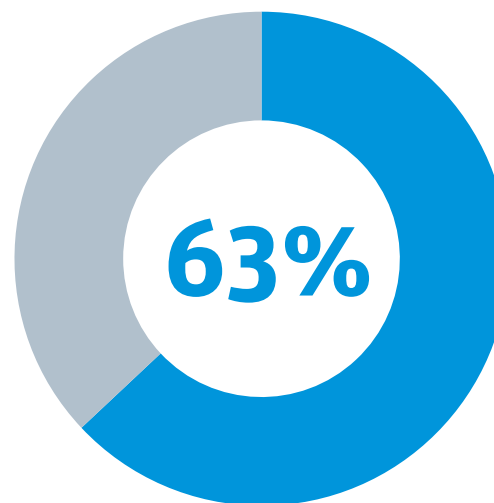
The buoyant public market has created significant markups with up-round IPOs and positive post-IPO performance for the biopharma IPO class of 2019, with a record 20 \$1B+ market cap companies at year-end. The recent IPO surge also yielded multiple \$1B+ acquisitions of recent venture-backed IPOs, indicating that acquirers remain active, despite private M&A deals equaling a five-year low.

Auris Health's \$5.8B acquisition by Johnson & Johnson (J&J) led device M&A returns to a new high; although without this deal, M&A had one of its weaker years for deal values. The 2019 device IPO class set new highs in pre-money values and proceeds. Post-IPO, one company was acquired at a premium, while five of the remaining seven IPOs were trading ahead of their offering price at year end.

The record value in dx/tools has been largely created in the public market. Six of the nine 2019 IPOs were R&D tools companies, two of which (10X Genomics and Adaptive Biotechnologies) achieved \$2B+ IPO valuations. Post-IPO performance of dx/tools for the last two years has been compelling. Nine of 11 companies have seen their value increase after the IPO.

HealthTech IPOs also rebounded in a big way in 2019. M&A had been the predominant form of liquidity for the last five years, but in 2019 IPOs accounted for 94% of the total exit value.

Silicon Valley Bank Market Stats



of all VC-backed healthcare IPOs in the past three years have worked with SVB.*





Healthcare Investments

Robust Exits Drive Record
Fundraising and Strong
Investment

Healthcare Venture Fundraising Hits a High

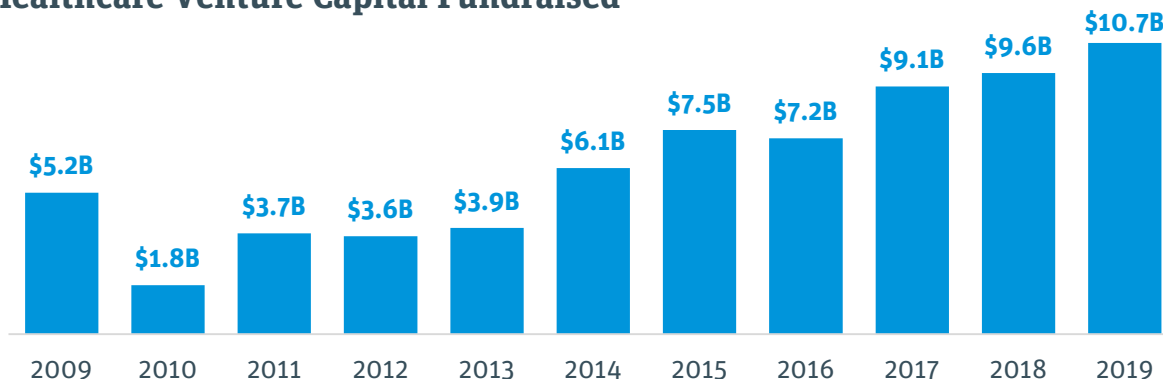
US healthcare venture fundraising set another record in 2019, raising \$10B+ to invest in healthcare companies. M&A and IPO activity have directly impacted this increase. The buoyant IPO market has created significant markups with up-round IPOs. These newly public companies have seen solid performance, abundant access to additional capital, and public M&A at favorable premiums. Even if these holdings are not liquidated in the short term, the potential returns have helped drive fundraising success. Large \$50M+ mezzanine rounds to fund these IPO-hopeful companies have also dominated the sector since 17Q3.

Biopharma-focused investors that raised funds in 2019 include Vivo Capital (\$1B+), Third Rock Ventures, Flagship Pioneering, Vida Ventures, Omega Funds, MPM Capital, and Atlas Venture. Notable multi-sector funds include HealthQuest Capital, SAM Ventures, Arboretum Ventures, and Vensana Capital. Diversified funds that invest in healthcare include Oak HC/FT, Norwest Venture Partners, Data Collective, Lux Capital Management and Flare Capital Partners, among others.

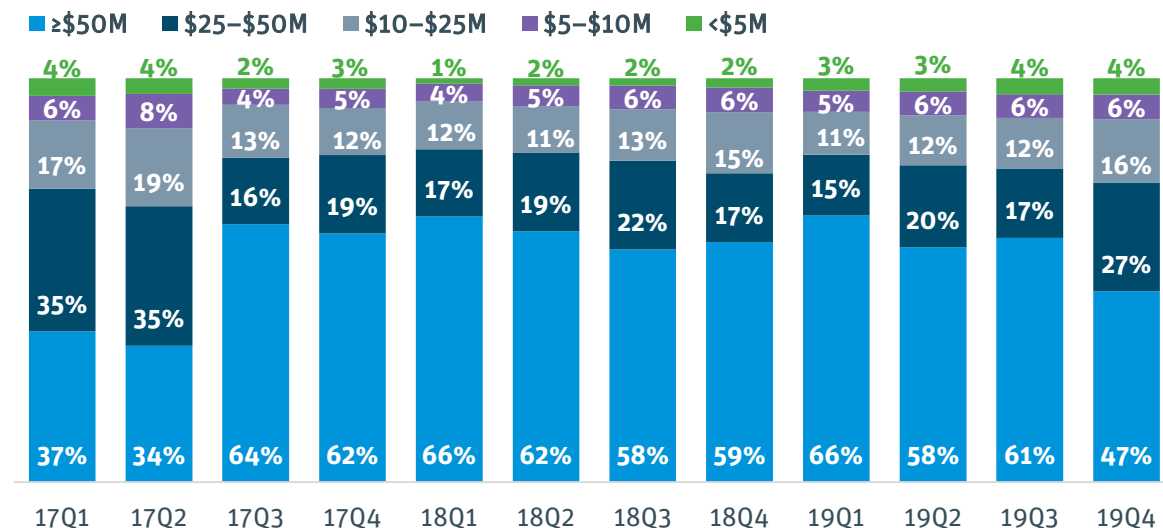
US Healthcare Venture Capital Fundraising 2009–2019

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Healthcare Venture Capital Fundraised



Investment into Companies by Round Size



Device and HealthTech Investment Rises, Dx/Tools Dollars Dip

Despite a significant increase in the number of deals in 2019, total investment dollars are slightly down from 2018's record. Still, this figure is a 50% increase from 2017.

With increased investment in every sector, European investment showed a significant 50% uptick year over year in 2019 and has increased each of the last three years.

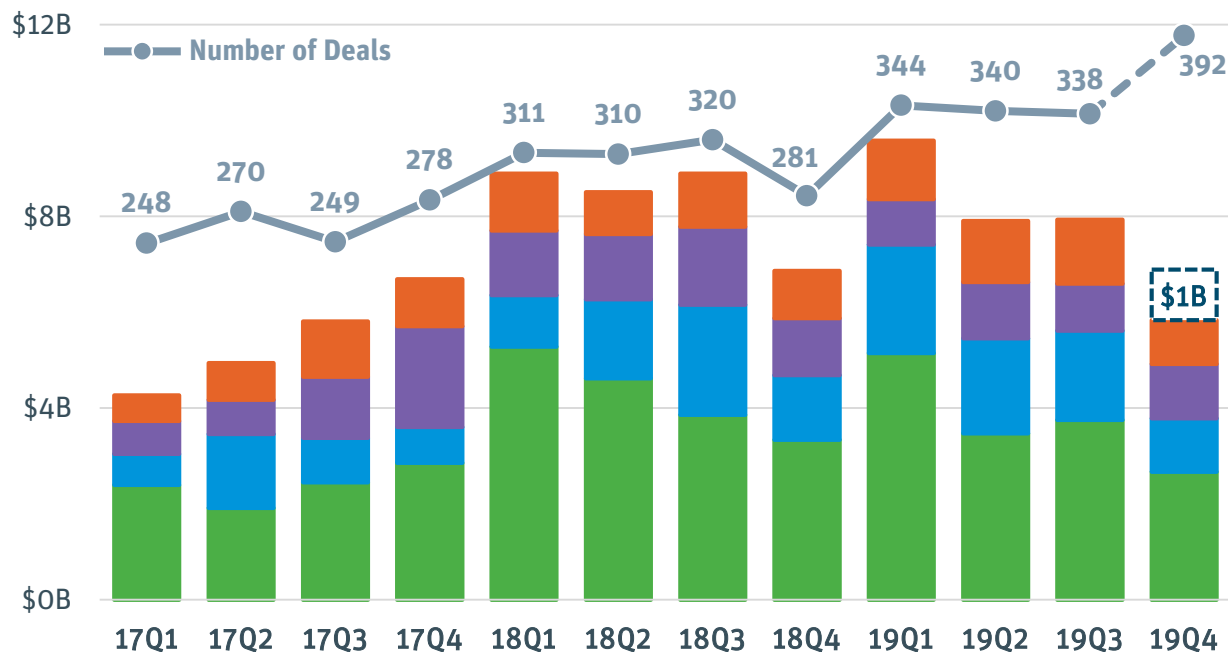
Device and healthtech both saw jumps in investment dollars in 2019, increasing 15% and 13%, respectively. Device is up 43% since 2017, and healthtech investment jumped 95% over the same period.

Dx/Tools saw the largest decline in 2019 at -20%. This was driven by a reduction in the number of mezzanine financings (>\$50M) in the sector.

HealthTech deals overlap with ~10% of deals in the other three healthcare sectors. We have removed these deals and dollars from healthtech totals for this slide. For example, the three \$100M+ deals that overlapped in 2019 were Tempus (dx/tools), Schrödinger (biopharma), and Insitro (biopharma).

VC Dollars and Deals by Healthcare Sectors US and Europe

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	2017			2018			2019*		
Sectors (\$M)	US	Europe	Total	US	Europe	Total	US	Europe	Total
Biopharma	\$7,700	\$1,914	\$9,614	\$14,390	\$2,710	\$17,100	\$12,168	\$3,472	\$15,640
HealthTech	\$3,320	\$541	\$3,861	\$5,898	\$480	\$6,378	\$6,073	\$1,440	\$7,513
Dx/Tools	\$4,431	\$354	\$4,785	\$5,116	\$422	\$5,538	\$3,659	\$760	\$4,419
Device	\$2,944	\$499	\$3,443	\$3,617	\$538	\$4,155	\$4,019	\$907	\$4,926
Total	\$18,395	\$3,308	\$21,703	\$29,021	\$4,150	\$33,171	\$25,919	\$6,579	\$32,498



Series A Drops; Platform \$s Lead, Orphan/Rare Rebounds

Biopharma investment dipped only 10% in 2019, but Series A dollars dropped 31%, reaching 2017 levels. We believe this reflects two trends. First, traditional VCs are deliberately decreasing Series A investment pace to focus on their current portfolios for Series B mezzanine rounds and upcoming IPOs. In addition, Top 15 Crossovers slowed participation in \$40M+ Series A deals, from 12 in 2018 to seven in 2019, with a corresponding \$500M drop in total Series A \$100M+ mega financings.

Historically, since 2013 oncology Series A outpaced all other indications in deals and dollars, oftentimes doubling activity of the next closest indication. However, 2019 saw a stunning 46% drop in Series A oncology dollars; as a result, oncology was outtraised by platform companies (typically early, pre-clinical companies without an identified lead asset).

Orphan/rare rebounded from its steep first half decline, finishing stable in deals and higher in dollars. Top 15 Crossovers avoided this indication at Series A, investing in only 2/14 deals, despite historically good IPO performance. The top Series A firm in orphan/rare was Novo (3), then Frazier, OrbiMed, and NEA with two each.

Series A Biopharma Deals US and Europe

	2017	2018	2019
Number of Investments	US / Europe	134 / 68	140 / 44
	Total	202	184
Total Funding (\$M)	US / Europe	2,802 / 828	4,576 / 713
	Total	3,630	5,289
Corporate Investments	US / Europe	30% / 32%	23% / 18%
			24% / 28%

Series A by Top Indications

	2017	2018	2019
Oncology	\$1.1B 53	\$1.5B 49	\$835M 40
Platform	\$515M 28	\$1.2B 34	\$943M 38
Neurology	\$279M 18	\$615M 27	\$303M 22
Orphan/Rare Disease	\$661M 24	\$530M 15	\$650M 14
Anti-Infective	\$320M 16	\$102M 8	\$91M 6

2019 Series A Deals (\$75M+)





VC-Created Series A Deals Command Large Valuations

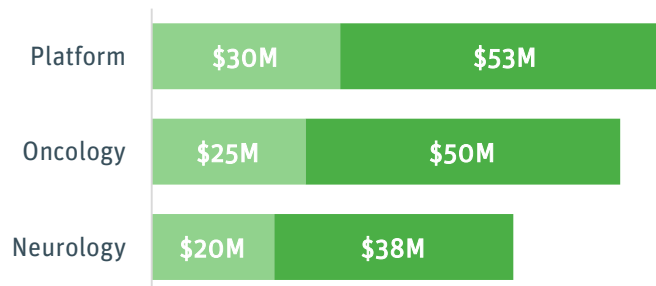
The majority of large Series A biopharma deals are venture capital-created and start as Newcos within venture firms. The firm typically identifies notable academic research/IP and partners with an external management team to spearhead development. This may initially happen with small seed financing from the lead VC but will eventually lead to a large, syndicated Series A deal with other venture firms. Prior to this funding, these deals usually have not raised significant outside capital or have a previously established founding team, which allows venture firms to garner higher ownership percentages.

Series A Biopharma Valuations

Larger Series A Biopharma Deals (≥\$15M)

US and Europe 2018–2019

■ Median Pre-Money ■ Median Deal Size



\$22M

Median Pre-Money

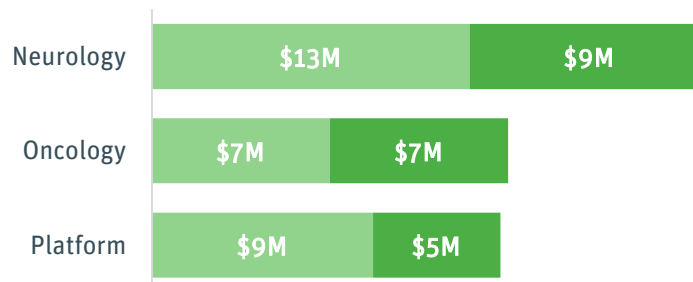
\$44M

Median Deal Size

Smaller Series A Biopharma Deals (<\$15M)

US and Europe 2018–2019

■ Median Pre-Money ■ Median Deal Size



\$8M

Median Pre-Money

\$6M

Median Deal Size





Crossovers Are Bullish as Platform IPO Pipeline Grows

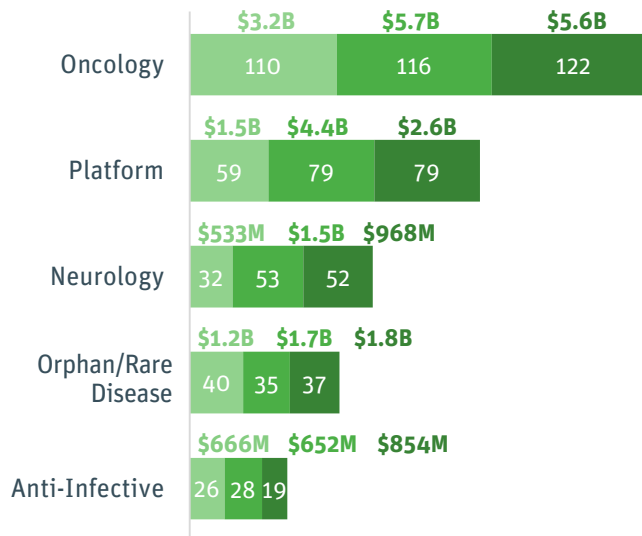
Overall investment in biopharma was slightly down from 2018's record, but there were more Series B+ mezzanine mega deals (\$100M+) in 2019.

Platform deal activity stayed consistent, but dollars declined significantly. In 2019, platform companies had a median deal value of \$16M, with 19 \$50M+ deals, versus a heavily mezz, large round focus in 2018 with a median deal size of \$47M and 37 \$50M+ deals. 2019 may be a rebuilding year after 22 platform deals went public over the last two years.

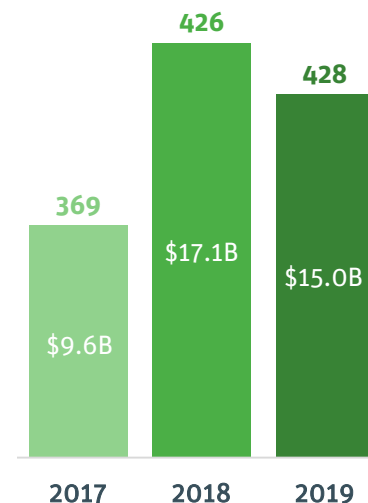
We have monitored \$40M+ private mezz financings with Top 15 Crossover investors as a proxy for IPO sentiment and pipeline. Since 2017, 52% (68/137) of these companies went public or were acquired. Of the 31 mezz financings from 2017, 81% have IPO'd or been acquired. For the 61 deals in 2018, 48% went public, and 31% of the 45 mezz deals from 2019 have already gone public. Based on this exit trend, the six-month median time to IPO from mezz round, and this year's consistent crossover private investment pace and IPO activity, we see positive IPO sentiment and robust IPO pipeline for 2020.

Biopharma Deals by Top Indications US and Europe

■ 2017 ■ 2018 ■ 2019



Total Deals and \$ US and Europe



2019 Deals





Platform and Oncology Dominate Valuations, Lead M&A and IPOs

This list contains the highest-valued private companies since 2018, all with publicly disclosed post-money valuations of \$575M+.*

Ten of 15 companies on this list are either platform or oncology, which mirrors overall venture investment (top two in deals and dollars) and private M&A/IPOs [oncology (21) and platform (11) were the top two in 2019].

Seven of these 15 companies closed a financing in 2019. Median numbers show a round size of \$108M and a pre-money value of \$660M, representing a 3.1x step-up from the last round.

The post-money values listed for these private companies are pricy—double the typical biopharma pre-money IPO median. However, the nine that went public were able to price at a positive pre-money IPO step-up median of 1.2x (range of 0.3 to 2.7). Post-IPO performance through the end of the year has been slightly below water with a median and average decrease of -7% and -11%, respectively. However, six of nine still had market caps over \$1B at the end of 2019, and Allogene and Viela Bio were both up over 40% from their IPO price.

Post-Money Private Biopharma Companies (\$575M+) US and Europe, 2018–2019

Platform Companies

 5/4/18 \$125M Round \$7,125M Post	 3/1/18 \$101M Round \$951M Post	 3/19/18 \$60M Round \$710M Post
 6/25/18 \$101M Round \$576M Post	 7/20/18 \$230M Round \$650M Post	 3/6/19 \$135M Round \$675M Post

☐ Company went public

Orphan/Rare

 8/13/18 \$149M Round \$729M Post
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Oncology

 7/31/2019 \$100M Round \$1,150M Post	 4/19/18 \$412M Round \$687M Post
 2/8/19 \$179M Round \$1,165M Post	 5/8/2019 \$108M Round \$623M Post

Anti-Infective

 5/21/19 \$121M Round \$731M Post
--

Dermatology

 1/28/19 \$100M Round \$1,100M Post
--

Auto-Immune

 6/12/19 \$75M Round \$735M Post

Neurology

 7/25/18 \$133M Round \$913M Post
--



VCs Lead Series A Deals; Crossovers Favor Later Stage

The active venture investors list has stayed remarkably stable over the last few years. Deal pace, however, is down from 2018. Apart from Novo, every firm listed invested in fewer new deals in 2019.

Venture investors with six or more new Series A deals since 2018 include ARCH, Novo, F-Prime, OrbiMed, Samsara, Longitude, New Leaf, Pontifax (mostly European), and Versant.

Corporate venture bounced back from less early stage investment in 2018, with increased participation in Series A deals in 2019. Overall investment activity by this group was stable in 2019, other than increased deal activity for Novartis and a decline for Celgene.

Crossovers and later-stage investors continued funding mezzanine pre-IPO rounds. Invus is a new entry to the list of Top 15 Crossovers, focusing on large oncology and platform company financings (median round size of \$85M).

Similar to venture, many crossover investors pulled back their investment pace from 2018, including RA Capital, Fidelity and EcoR1, while Redmile Group was the only firm to show an increase in 2019.

Biopharma Most Active New Investors*

Number of Deals (US and Europe, 2018–2019)

Venture Capital		Corporate Investor		Crossover & Late-Stage Investor	
19	 OrbiMed Healthcare Fund Management	42	 ALEXANDRIA	25	RACAPITAL
18	 Novo Holdings Investors in life science	17	 G/	24	 PERCEPTIVE ADVISORS
16	 ARCH Venture Partners	16	 NOVARTIS	20	Redmile Group
15	 HBM Healthcare Investments	13	 Pfizer	20	DEERFIELD
13	 SAMSARA BIOCAPITAL	12	 J&J INNOVATION	19	 INVUS
13	 SOFINNOVA INVESTMENTS	9	abbvie	19	 CORMORANT ASSET MANAGEMENT
12	 通融和承 6 Dimensions Capital	9	 Celgene	14	 Fidelity INVESTMENTS
12	 NEA	7	 MERCK	13	 EcoR1 CAPITAL



Series A Activity Booms Yet Deal Size Declines

Series A dollars reverted to 2017 levels after a 20% increase in 2018. However, deal activity set a record in 2019, increasing to 105 financings. We noted a major decrease in Series A median deal size in 2019 to \$4M (50% lower than 2018).

Imaging saw the largest deal increase. Companies specializing in 3D imaging, AI/ML for augmented reality/analytics, tumor visualization, and wearable ultrasound technology led this uptick.

Neurology showed increased funding, primarily in neuromodulation technologies. These companies focus on a myriad of conditions such as migraines, Parkinson's, peripheral neuropathy, appetite suppression, IBS, narcolepsy, and ALS.

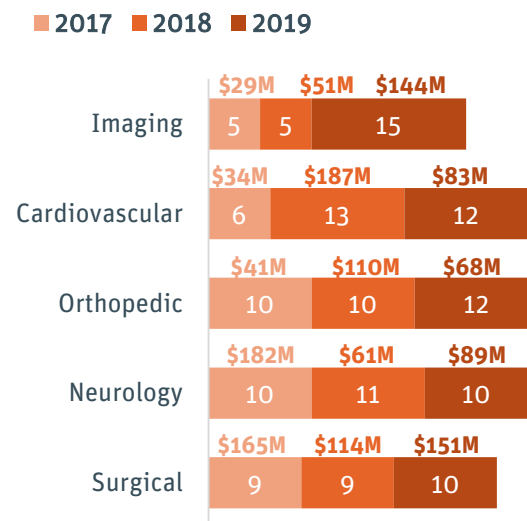
Ophthalmology and respiratory deals were also up over the last two years, albeit in smaller round sizes.

Northern California led Series A device financings in 2019 (15 deals/\$87M); Massachusetts was second (10 deals/\$106M), followed by Southern California (eight deals/\$50M).

Series A Device Deals US and Europe

		2017	2018	2019
Number of Investments	US / Europe	50 / 27	74 / 23	76 / 29
	Total	77	97	105
Total Funding (\$M)	US / Europe	587 / 198	661 / 288	610 / 160
	Total	785	949	770
Corporate Investments	US / Europe	18% / 11%	8% / 0%	10% / 3%

Series A by Top Indications



2019 Series A Deals (\$20M+)





Cardiovascular, Orthopedic Lead Series A Pre-Money Valuations

Cardiovascular commands the largest pre-money median and has also garnered the most M&A and IPO exits since 2015. We have seen a rise over the last few years in imaging pre-money valuations, which may be driven by AI/ML technology and support of generalist and tech investors. This indication also has a faster clearance/commercialization track.

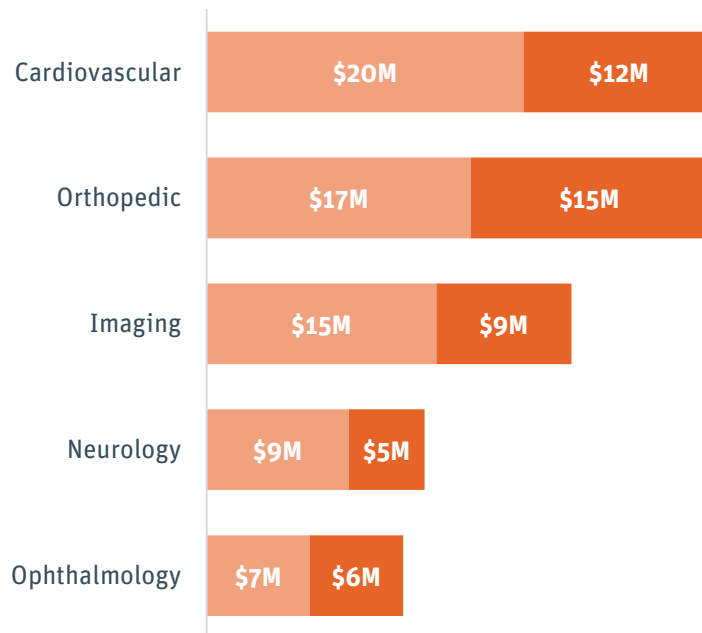
Orthopedic deals saw fairly high valuations, although in the last two years, orthopedic M&A exits have fallen below the sector's median upfront and total deal values.

Series A Device Valuations

Series A Device Deals

US and Europe 2018–2019

■ Median Pre-Money ■ Median Deal Size



\$10M

Median Pre-Money

\$7M

Median Deal Size





Large Late-Stage Deals Dominate Device Investing

While cardiovascular led in deals, surgical garnered the most investment dollars in 2019, due to big deals in organ preservation and robotics (Detraxi and HistoSonics).

2019 equaled 2018's number of \$50M+ deals (15), but dollars raised by these deals made up a smaller portion of total device investment (28% vs. 36% in 2018). These large, late-stage development/early commercialization financings included later-stage investors like Pura Vida, Wanxiang Healthcare, RTW, Ally Bridge and ArrowMark, each of which participated in more than two device deals.

Activity increased in ophthalmology (surgical tools and corrective lenses/glasses) and uro/gyn (three deals in female sexual function and wellness in Cliovana, Joylux and Madorra). We also saw a surge in dental, with five deals in tooth remodeling/alignment.

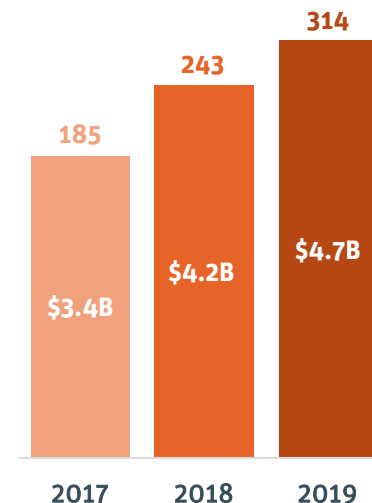
Despite a 20% decrease from 2018, Northern California led with 47 deals. Massachusetts nearly doubled from 20 deals to 37, and Minnesota continued its comeback as a crucial device region with 15 financings, up from 12 in 2018.

Device Deals by Top Indications US and Europe

2017 2018 2019

Cardiovascular	\$442M 26	\$617M 30	\$638M 38
Surgical	\$579M 20	\$529M 27	\$684M 34
Neurology	\$521M 22	\$551M 29	\$328M 29
Orthopedic	\$265M 20	\$337M 27	\$426M 27
Vascular	\$313M 17	\$299M 18	\$435M 24

Total Deals and \$ US and Europe



2019 Deals

>\$100M

ACUTUS
MEDICAL

CMR
SURGICAL

THINK
SURGICAL

\$55M+ to \$100M

ABLATIVE
SOLUTIONS

beta bionics

CANDID

CardioFocus

Detraxi



ENDOTRONIX

Imperative
CARE

NUVAIRA

PQ
Bypass

pulmonX

TISSUETECH



Highly Valued Companies May Feed IPO Pipeline

Over last two years, there have been limited but healthy returns from this group: Shockwave excelled following a flat pre-money IPO and has increased 160% from its IPO price (market cap at >3.5x from last private valuation), while Auris was acquired as a private company for \$5.8B.

Two financings joined this list in 2019. CMR Surgical, a surgical robotics company, raised a commercialization round at a 2x step-up from its 2018 Series B. Robotics is positioned as a high-profile, big-market space, as evidenced by emerging robotics investments (like Procept) and J&J's deals for Auris Health and Verily's stake in Verb Surgical.

The other 2019 deal, Neuralink, raised its Series B at a 3.6x step-up. This company, led by Elon Musk, is developing a neural brain implant.

The public market seems to be a logical next step for many of these companies. The last two years have seen 16 venture-backed device IPOs, and we see venture-backed companies with ramping revenue that are IPO candidates. However, these companies will need to contend with median pre-money IPO valuations that are much lower than their current valuation.

Post-Money Private Device Companies (\$350M+) US and Europe, 2018–2019

Neurology



6/28/19
\$51M Round
\$509M Post



7/25/18
\$60M Round
\$388M Post

Uro/Gyn



2/21/18
\$118M Round
\$398M Post

Vascular



12/12/18
\$15M Round
\$360M Post



3/9/18
\$75M Round
\$450M Post

Renal



8/28/18
\$132M Round
\$607M Post

Surgical



9/17/19
\$239M Round
\$1,226M Post



11/28/18
\$220M Round
\$2,160M Post

Imaging



9/27/18
\$250M Round
\$1,250M Post

 Company went public

 Company was acquired while still private



VCs Top Series A Deals; Crossovers Lead Later Stage




The most active new venture investor group added three new firms: Aperture Venture Partners, Ajax Health, and Qesta Capital. Those focused primarily on Series A include Keiretsu, Shangbay, and Ajax. Ajax is a unique story as it operates and provides capital for device companies. Ajax raised two \$100M financings in 2019 led by HealthQuest Capital. The company is run by CEO Duke Rohlen, who has an extensive history of successful device exits.

Corporate investors included active device acquirers Boston Scientific, Johnson & Johnson and LivaNova, joined by OSF Healthcare, a healthcare network investing largely in imaging/sensor technologies, and DSM, a company broadly based on health and energy, investing in compatible biomaterials for orthopedics. DSM and Johnson & Johnson were the only corporates to invest in more early-stage deals than late.

Ally Bridge and Atlantic Bridge (with a European focus) joined the list. Crossovers continue with a later-stage focus, although Cormorant recently invested in two early-stage device companies spun out of the Shifamed innovation hub.

Device Most Active New Investors*

Number of Deals (US and Europe, 2018–2019)

Venture Capital		Corporate Investor		Crossover & Late-Stage Investor	
8	 KEIRETSU FORUM	5	 OSF HEALTHCARE	6	 Ally Bridge Group
6	 APERTURE Venture Partners, LLC	3	 Boston Scientific	4	 andera PARTNERS
6	 SHANGBAY CAPITAL	3	 DSM	4	 DEERFIELD
5	 endeavour vision	3	 J&J INNOVATION	4	 PERCEPTIVE ADVISORS
5	 GOLDEN HEALTHCARE	2	 intel	3	 ATLANTIC BRIDGE
3	 AJAX HEALTH	2	 Baxter	3	 BNP PARIBAS
3	 QESTA CAPITAL	2	 LivaNova	3	 CORMORANT ASSET MANAGEMENT
3**	 LIGHTSTONE VENTURES	2**	 ABIOMED	3**	 KCK GROUP





Dx Tests Surprise as Series A Deals Nearly Double

While dx/tools Series A investments were down for the second year in row, the number of deals increased.

Despite a difficult venture return history for dx tests companies, Series A surged in 2019, eclipsing 2018 deals and dollars by more than 50% and outpacing the other dx/tools subsectors for the first time.

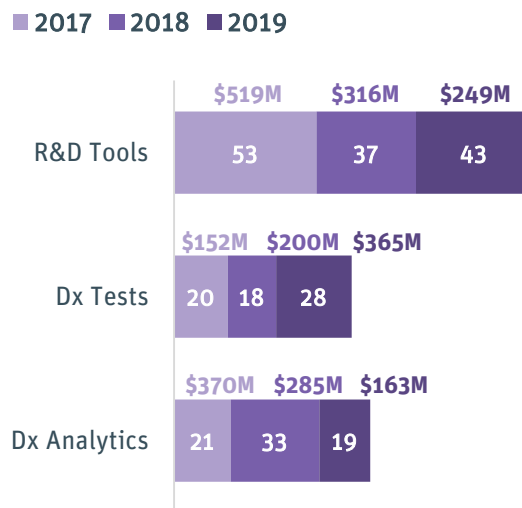
Conversely, R&D tools saw lower investment dollars, despite steady deal flow and high-profile IPOs, as investors likely sought to restock their early-stage portfolio.

Despite a competitive liquid biopsy landscape with Grail and Guardant Health, investors continue to take big bets on new contenders (Thrive Earlier Detection, LAM, Cradle Genomics). Interestingly, these companies span the commercialization life cycle, ranging from product development (Thrive) to clinical translation (Cradle) to revenue generation (LAM).

Series A Dx/Tools Deals US and Europe

		2017	2018	2019
Number of Investments	US / Europe	61 / 33	70 / 18	67 / 23
	Total	94	88	90
Total Funding (\$M)	US / Europe	830 / 211	712 / 89	643 / 134
	Total	1,041	801	777
Corporate Investments	US / Europe	23% / 0%	20% / 28%	25% / 18%

Series A by All Subsectors



2019 Series A Deals (\$17M+)





Dx Tests Posts Largest Pre-Money Valuations

The hefty valuations in dx tests deals were surprising in light of current exit trends. Gaining commercial reimbursement has been challenging and typically extends commercialization ramp, requiring additional venture funding. This often translates into longer hold times and lackluster returns for investors.

Curiously, R&D tools, which dominated the M&A and IPO market over the past two years, had the lowest pre-money and round size in their larger Series A financings.

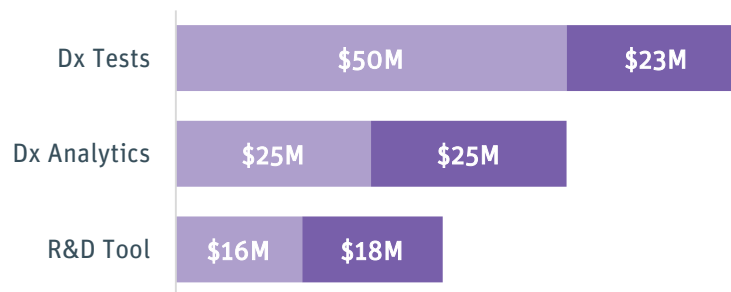
The dx/tools pre-money values rivals what we see in the large biopharma Series A financings. However, median deal size in biopharma is double that of dx/tools, meaning that investors in dx/tools get smaller ownership. A possible reason for the ownership discrepancy is that large biopharma deals start within venture firms, while many of these dx/tools deals have substantial founding team ownership prior to their Series A.

Series A Dx/Tools Valuations

Larger Series A Dx/Tools Deals (≥ \$10M)

US and Europe 2018–2019

■ Median Pre-Money ■ Median Deal Size



\$25M

Median Pre-Money

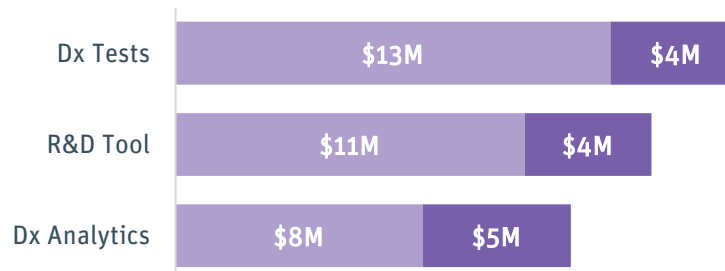
\$23M

Median Deal Size

Smaller Series A Dx/Tools Deals (< \$10M)

US and Europe 2018–2019

■ Median Pre-Money ■ Median Deal Size



\$10M

Median Pre-Money

\$4M

Median Deal Size



Dx/Tools Investment Hits 3-Year Low

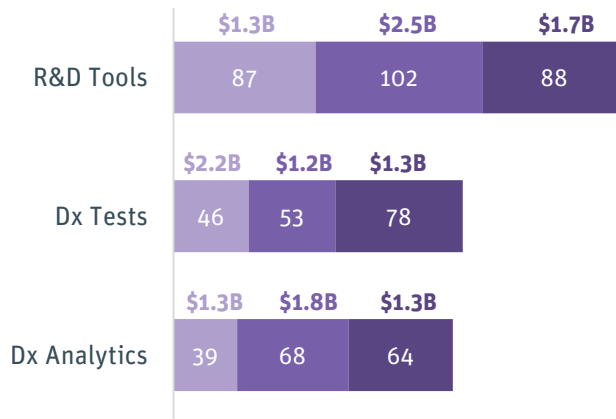
Overall dx/tools investment decreased by 24% from 2018, despite a slight increase in the number of deals, which was buoyed by Series A dx tests financings.

R&D tools experienced a 30% decline in dollars invested and 14% fewer deals in 2019. The drop-off in dollars was partly related to the increased investment in 2018 from pre-IPO mega financings by 10X and Twist and the \$400M+ private round closed by Zymergen. However, in 2019 we did see large \$100M+ deals closed by Ginkgo Bioworks and Inscripta.

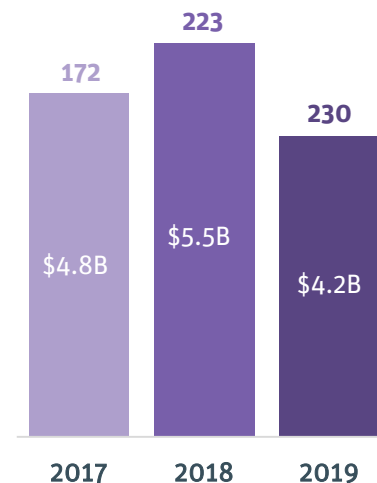
Larger deals (\$50M+) declined to 20 in 2019 vs. 26 in 2018. When investors did fund big rounds for the sector, they made far bigger bets on dx tests companies, which had the highest median deal value of the three subsectors at \$110M. These deals, including Freenome, Grail, Thrive Earlier Detection and Lamoncogroup (LAM), all focused in the oncology liquid biopsy space.

Dx/Tools Deals by All Subsectors US and Europe

■ 2017 ■ 2018 ■ 2019



Total Deals and \$ US and Europe



2019 Deals





Highest Valued Deals Find Their Niche; Ready for Public Market









This list contains the highest-valued private companies since 2018, all with publicly disclosed post-money valuations of \$350M+.* The vast majority of these companies are dx analytics or R&D tools (12/14).

While this list only includes publicly disclosed private valuations, we see that each of these companies fill a unique niche in the sector with little competitive overlap from the others. However, there is competition in the public sector, coming from both relatively recent IPOs/exits (Guardant Health for Grail; Flatiron Health for Tempus) and long-standing industry pillars (Natera for Progenity; Illumina for 10X and Omniome). This latter category of competition may be potential near-term acquirers.





Recent dx/tools exit activity shows companies pursuing the public market, as M&A has lagged in this sector. Despite mixed pre-money IPO step-ups, both Twist (.6x) and 10X (2.6x) showed strong post-IPO performances (Twist +57% and 10X +100%).

Post-Money Private Dx/Tools Companies (\$350M+) US and Europe, 2018–2019

R&D Tools

 4/2/18 \$125M Round \$474M Post	 1/7/19 \$35M Round \$1,280M Post	 6/28/19 \$18M Round \$368M Post	 6/28/18 \$95M Round \$797M Post
 4/17/19 \$60M Round \$375M Post	 9/19/19 \$290M Round \$4,000M Post	 12/10/19 \$125M Round \$515M Post	 12/10/19 \$40M Round \$400M Post

Dx Analytics

 6/13/19 \$65M Round \$1,565M Post	 5/30/19 \$200M Round \$3,100 Post
 9/21/18 \$83M Round \$600M Post	 1/4/19 \$64M Round \$494M Post

Dx Tests

 5/21/18 \$300M Round \$3,200M Post
 9/13/19 \$25M Round \$515M Post

☐ Company went public



VCs Lead Series A Deals; Corporates Favor Later Stage

Series A investment is the focus for active venture investors. Only Northpond has completed more Series B+ deals than Series A over the past two years.

The corporate investors listed are varied, comprised of real estate, multi-disciplinary corporates, and healthcare (both broad and specific subsector focus). With the exception of Alexandria, every corporate investor on this list focused on later-stage (Series B+). Most corporates invested across different subsectors, though Agilent focused on R&D tools and LabCorp focused on dx analytics.

In previous years, the most active crossover and late-stage investors would dominate large mega (\$50M+) financings. However, in this group, only Casdin, T. Rowe Price, and Baillie Gifford focused on big deals. The early-stage Series A focused investors were Casdin and Viking, while the rest of the group invested in smaller-sized Series B+ deals.

Dx/Tools Most Active New Investors*

Number of Deals (US and Europe, 2018–2019)

	Venture Capital		Corporate Investor		Crossover & Late-Stage Investor
8		11		5	
7		6		3	
6		4		3	
5		4		3	
4		3		3	
4		3		2	
4**		3**		2**	



HealthTech Series A Funding Surpasses \$1B+

HealthTech Series A deals rebounded after a 20% dip from 2017 to 2018. Total funding increased by 32% from 2018 to 2019, mainly driven by US companies.

Wellness & education deals doubled, leading all subsectors, and experienced the biggest increase in investment. Most of these deals were health & wellness (fourteen), including large \$25M+ deals by BioIntellisense and Well Dot.

The other seven deals were medical education companies, including Immertec and GIBLIB, which both use VR to train providers.

Provider operations received the most invested capital, followed by alternative care.

Alumni Ventures Group (NH), LRVHealth (MA), and Martin Ventures (TN) were notable Series A investors within provider operations, while FJ Labs (NY), SOSV (NJ), and Atlantic Labs (Germany) focused on alternative care deals.

Series A HealthTech Deals US and Europe

	2017	2018	2019
Number of Investments	US / Europe	145 / 37	107 / 39
	Total	182	146
Total Funding (\$M)	US / Europe	688 / 152	647 / 211
	Total	840	858
Corporate Investments	US / Europe	29% / 14%	27% / 21%
			14% / 12%

Series A by Top Subsectors

	2017	2018	2019
Provider Operations	\$345M	\$253M	\$378M
	70	55	59
Alternative Care	\$232M	\$291M	\$375M
	54	47	54
Wellness & Education	\$62M	\$71M	\$121M
	16	9	21
Clinical Trial Enablement	\$57M	\$111M	\$61M
	11	17	12
Medication Management	\$68M	\$33M	\$54M
	14	8	9

2019 Series A Deals (\$18M+)

ablacon*	insitro
BostonGene*	JAWBONE [®] HEALTH
BIO INTELLISENSE	Stratason
BrightInsight>>>	well
CLINIGENCE HEALTH	WithMe Health



Navigation Companies Lead Large Series A Post-Money Valuations

Healthcare navigation companies, dedicated to helping match consumers with the right provider and/or payer at the right time, achieved the highest post-money valuation in the bigger Series A deals. Homecare is one example of a navigation company that raised an \$11M Series A in 2018 with a \$46M post-money valuation.

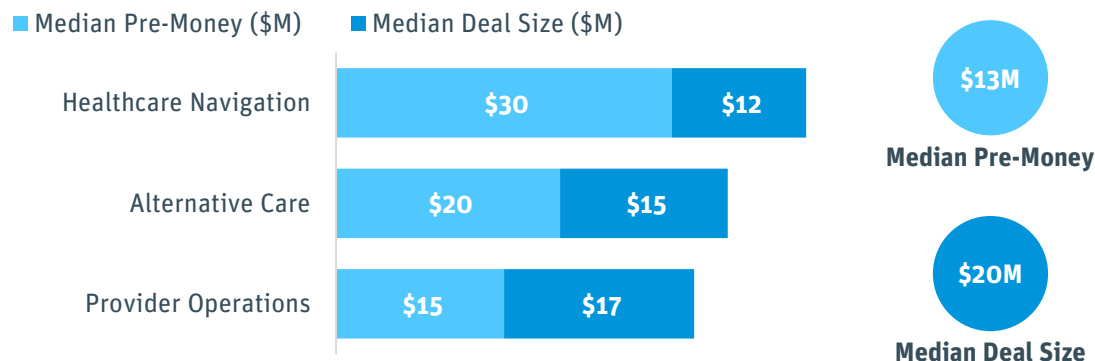
However, healthcare navigation companies achieved the lowest post-money valuation when raising smaller Series A rounds. Interestingly, within this level of Series A investment the median post-money valuation was roughly consistent across all other subsectors.

There were three Series A companies that achieved a \$50M+ post-money valuation in 2019. BioIntellisense, focused on health & wellness, Variant Bio focused on drug discovery platform and Medly Pharmacy, focused on medication delivery.

Series A HealthTech Valuations

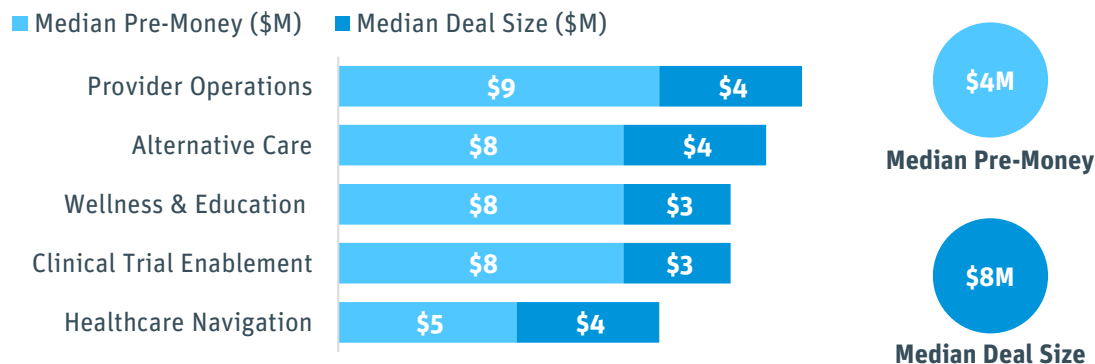
Larger Series A HealthTech Deals (≥\$10M)

US and Europe 2017–2019



Smaller Series A HealthTech Deals (<\$10M)

US and Europe 2017–2019



HealthTech Investment Doubles in Two Years

Total healthtech investments have doubled from 2017 to \$8.8B, propelling healthtech to become the fastest growing sector in healthcare and the second biggest overall.

While provider operations had the most investment activity in 2019, alternative care led in total dollars invested. This was largely driven by two \$100M+ deals, Chicago-based VillageMD, which raised \$175M, and London-based Babylon Health, which raised a \$550M round. Both companies focus on the primary care space.

Alternative care leads big rounds, with 39 \$50M+ financings in the past three years, almost doubling provider operations, which is in second place. The majority of alternative care companies focused on the primary care and mental health spaces.

Two example of these mental health companies are Click Therapeutics and Pear Therapeutics.

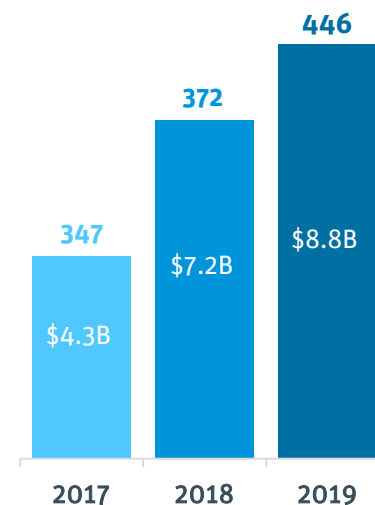
**Bright Health, focused on insurance, closed a \$635M, Series D deal on 12/17/19. This financing happened after our final date of data collection and is not included in our analysis.

HealthTech* Deals by Top Subsectors US and Europe

■ 2017 ■ 2018 ■ 2019

Provider Operations	\$1.5B 132	\$2.2B 155	\$2.4B 178
Alternative Care	\$1.2B 105	\$2.5B 112	\$3.1B 132
Wellness & Education	\$157M 22	\$193M 22	\$611M 46
Clinical Trial Enablement	\$518M 27	\$467M 33	\$892M 34
Healthcare Navigation	\$265M 30	\$487M 22	\$823M 31

Total Deals and \$* US and Europe



2019 Deals





Multiple HealthTech Subsectors Reach \$1B+ Valuations

This list is comprised of the highest-valued private companies over the last two years, all with publicly disclosed post-money valuations of \$700M+.*

There are 10 companies that achieved \$1B+ private valuations across various healthtech subsectors. Insurance-focused Oscar leads all valuations at \$3.2B on \$375M in equity capital.

Of the six 2019 financings that made this list, Tempus (\$3.1B) and Babylon Health (\$2B) are the highest-valued. Tempus raised its Series E at a 1.8x step-up and focuses on clinical decision support for cancer patients, while Babylon Health, focused on primary care, financed its Series C at a significant 7.3x step-up.

The successful public offerings of Livongo and HealthCatalyst have helped validate an IPO path for provider operations and alternative care subsectors. Going into 2020, we predict more IPOs within alternative care, such as One Medical, which recently filed for a public offering.

**Bright Health closed a \$635M, Series D deal on 12/17/19, giving the company a \$2.2B post-money valuation. This financing happened after our final date of data collection and is not included in our analysis.

Post-Money Private HealthTech Companies (\$700M+) US and Europe, 2018–2019

Provider Operations

TEMPUS 5/30/19 \$200M Round \$3,100M Post	 7/27/18 \$266M Round \$1,902M Post
 2/6/19 \$100M Round \$1,000M Post	 6/13/19 \$65M Round \$1,565M Post

☐ Company went public

HC Navigation

 3/20/19 \$170M Round \$1,280M Post
 5/1/18 \$50M Round \$750M Post

Alternative Care

 8/1/19 \$550M Round \$2,000M Post	 8/22/18 \$350M Round \$1,500M Post
 4/11/18 \$105M Round \$805M Post	American Well 6/29/18 \$291M Round \$972M Post

Wellness & Education

 7/2/19 \$115M Round \$1,027M Post

Insurance

oscar 3/27/18 \$165M Round \$3,200M Post	 10/16/18 \$300M Round \$1,800M Post	bright HEALTH 11/29/18** \$200M Round \$950M Post
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Active New Investors Fund Later-Stage Rounds

Of the active new investors, AXA and Bpifrance have focused on Series A investments. Alumni Ventures Group, Merck, Philips, Service Provider Capital, and BlueCross have completed a mix of both Series A and Serie B+, while the rest focus predominately on later stage deals.

Other notable early-stage venture investors include Venrock, NEA, Bessemer, Maverick, and Flare Capital.

The corporate investors include payers, hospital systems, big tech, and big pharma and reaffirms that healthtech companies provide solutions for a range of pain points within the overall healthcare system.

Crossover investors continue to stay focused on later-stage financings, although Perceptive Advisors, SoftBank, Foresite, and Viking have all made some Series A bets.

HealthTech Most Active New Investors* Number of Deals (US and Europe, 2018–2019)

Venture Capital		Corporate Investor		Crossover & Late-Stage Investor	
11		20		3	
10		12		3	
9		7		3	
8		6		3	
7		5		2	
7		5		2	
7		4		2	
6**		4**			

Healthcare Exits

High-Flying IPOs Make
for Second Banner Year
of Returns



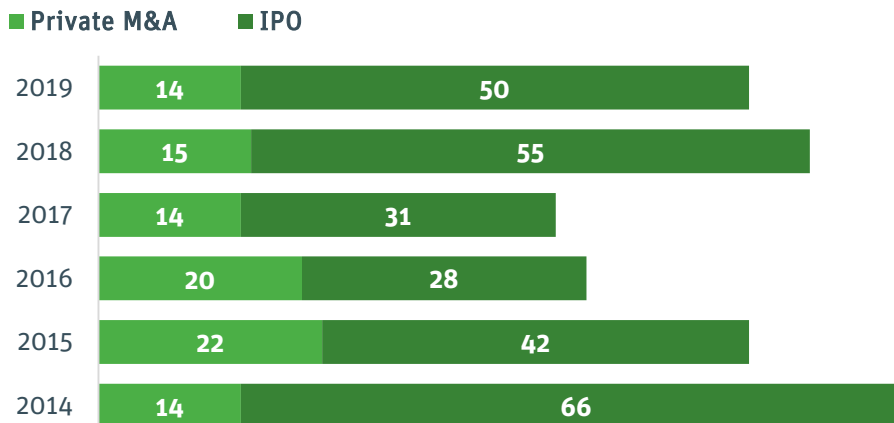
IPO Surge Drives Healthy Investor Returns

A) Robust mezzanine valuations coupled with positive IPO step-ups continue to encourage biopharma companies to go public, as seen by the sector's 50 IPOs in 2019. Since 2017, and even more evident today, acquisition of venture-backed companies has shifted from the private to the public market, and private M&A deal count has dropped.

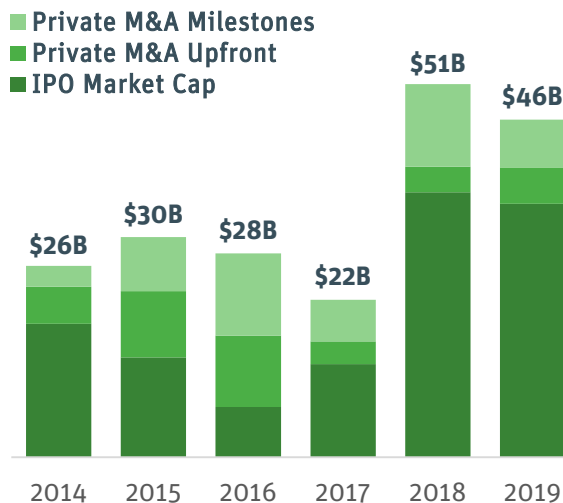
B) Exit values continue to be spectacular. 2019 market cap at IPO totals (\$35B) alone mirrors 2018's record and exceeds the combined full-year value of IPO and M&A deals from 2014 to 2017. While market cap at IPO is an important metric, post-IPO performance (and the ability to trade out of a stock) matters more to investors. 2019 IPOs have performed extremely well after their public offerings (average: +56%, median: +25%).

C) With 17 IPO and four M&A deals in 2019, oncology dominated exit activity vs. other indications. Platform (9/2), orphan/rare (6/3), and neuro (6/3) had significant exits as well.

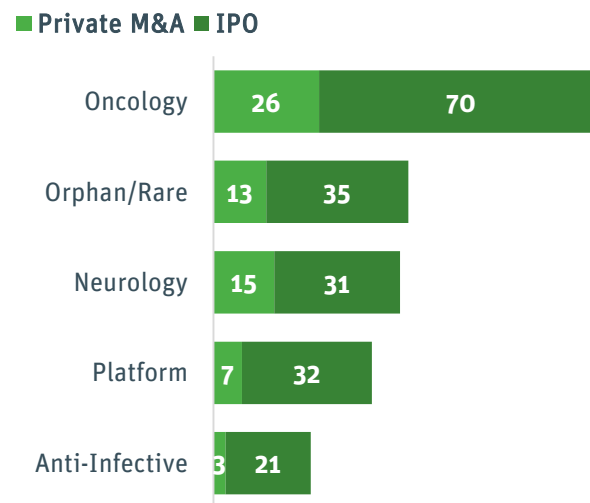
A) Biopharma Private M&A Deals & IPOs by Year Global, 2014–2019



B) Exit Values by Year Global, 2014–2019



C) Top M&A and IPOs by Indication Global, 2014–2019





Quick Early Stage Exits Generate Healthy Returns

Despite private M&A deal activity equaling a five-year low, acquirers are still interested in venture-backed companies. The recent IPO surge has caused acquisitions of venture-backed companies to shift from the private to the public market. Prime examples of this trend were the 2019 acquisitions of Audentes and Synthorx, both pre-clinical at IPO and each picked up in the public market for more than \$2B+.

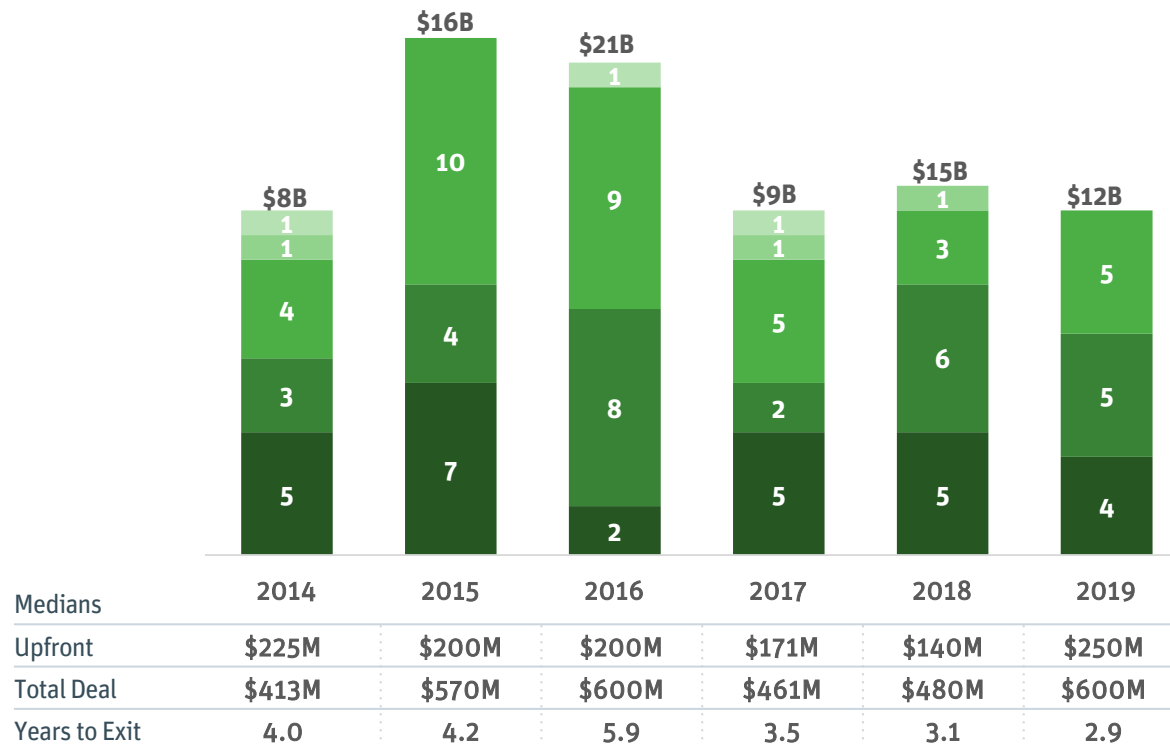
For private M&A exits, overall time to exit decreased again, upfront deal value set a six year high, and total deal value matched 2016's record. Most deals exited early, with nine of 14 deals transacting with pre-clinical or phase I data. This group required less capital (median \$57M), leading to robust 4x upfront and 11x total deal multiples on invested capital.

*Only nine of 29 acquisitions since 2018 had a Big Pharma collaboration (four oncology, four neuro, one metabolic). Five were subsequently bought by their collaborator, and all of these M&A deals were early stage. We think this may lead to more collaboration-to-acquisition and build-to-buy deals.











Private Biopharma M&A by Stage

Global, 2014–2019

■ Pre-Clinical ■ Phase I ■ Phase II ■ Phase III ■ U.S. Commercial



Biopharma Collaborations Leads to Acquisitions, 2018 to 2019*

Acquisition*					
Acquirer					
Upfront (Total)	\$240M (\$600M)	\$364M (\$477M)	\$165M (\$405M)	\$244M (\$244M)	Not Reported



Pre-Money IPO Values Hit Another Record

Median pre-money IPO valuations hit another record of \$337M in 2019, while total proceeds slightly declined to \$85M. Mezzanine rounds led by Top 15 Crossover investors made up 67% of all 2019 IPOs and had a median time from crossover round to IPO of just six months.

Early stage (pre-clinical or phase I) IPOs dominated 1H 2019 (15/27), with a steep drop-off in 2H (4/23). Median time from Series A to IPO for the class of 2019 was just 3.4 years.

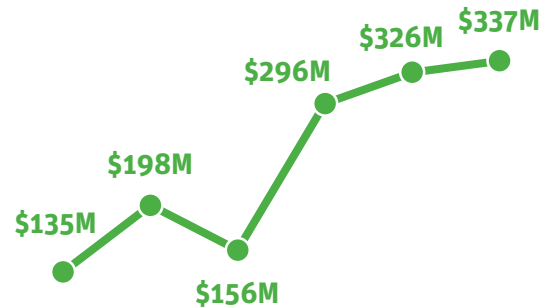
Strong post-IPO performance (average: +56%, median: +25%) defined 2019 IPOs. Karuna Therapeutics, NextCure, Cortexyme, Turning Point Therapeutics, and Aprea Therapeutics all showed +200% performance at year end.

Oncology (+57%/+6%), neuro (+96%/+10%), and platform (+52%/16%) IPO's performed well during after-market trading, while orphan/rare (+48%/+60%) staged a late Q4 rally to come back from negative performance for much of the year. Orphan/rare companies have shown aggressive median step-ups to mezz financings (2.5x) and to IPOs (1.6x) and appear to be building value in the public market.

VC-Backed Biopharma IPOs by Year

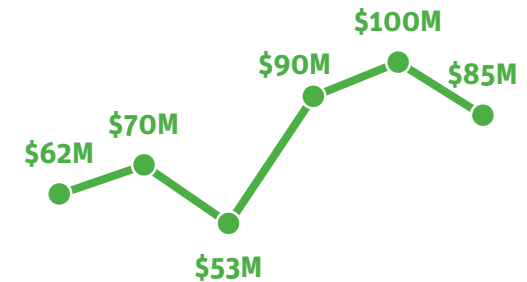
Global, 2014–2019

IPO Pre-Money Valuation*



2014 2015 2016 2017 2018 2019

IPO Proceeds*



2014 2015 2016 2017 2018 2019

2019 IPOs by Top Indications

Indication	Number of Deals	% Early Stage (Pre-Clinical & Phase I)	Median Step-Up from Venture to Mezz Round	Median Step-Up from Mezz Round to Pre-Money IPO
Oncology	17	53%	1.8x	1.0x
Platform	9	33%	2.0x	1.3x
Orphan/Rare	6	33%	2.6x	1.6x
Neurology	6	33%	1.8x	1.2x



Big Robotics M&A, Strong Device IPOs Propel Returns

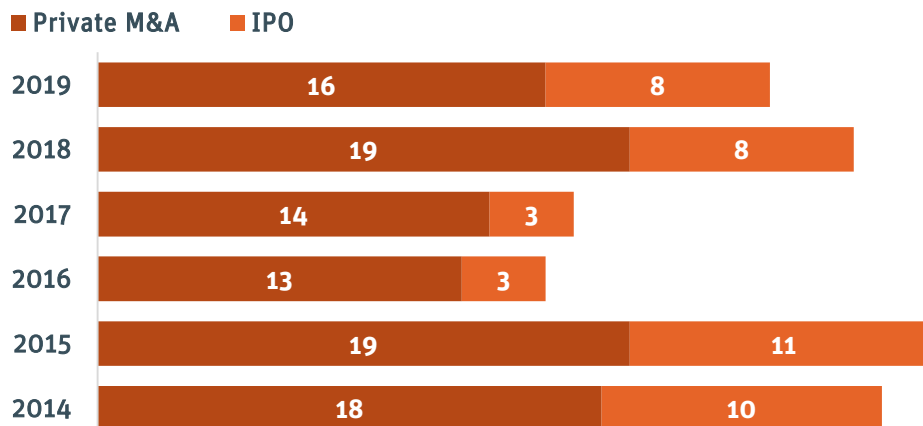
A) Device M&A and IPOs remain consistent. Five 1H 2019 IPOs drove activity with only three 2H 2019 offerings, two of which were non-US (Hong Kong and Shanghai).

B) M&A returns hit a new high due to Johnson & Johnson's acquisition of Auris Health for \$5.8B (\$3.4B upfront). Without this huge win for the robotics sector, device M&A had one of its weaker years in upfront and total deal value.

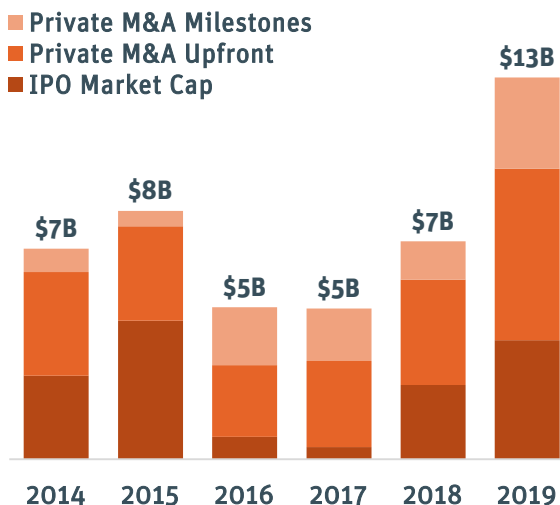
C) IPOs over the last few years tend to show revenue growth (\$70M+ yearly run rate within two years) in an established market. In 2019, median IPO pre-money values and proceeds improved on 2018's record numbers. 2019 post-IPO returns already look promising with Avedro being acquired by Glaukos at a premium and five of the other seven IPOs trading up (performance average +69%, median +19%).

Since 2015, median performance of the 28 IPOs (minus five public M&A deals) is mixed (average +76%, median +2%). However, the group's market cap after IPO grew 3x to \$33B, led by seven companies showing a +200% price increase post IPO.

A) Device Private M&As & IPOs by Year Global, 2014–2019



B) Exit Values by Year Global, 2014–2019



C) IPO Activity Global, 2014–2019

	Number of IPOs	Median Pre-Money	Median Raised
2019	8	\$297M	\$94M
2018	8	\$217M	\$86M
2017	3	\$59M	\$26M
2016	3	\$164M	\$75M
2015	11	\$163M	\$72M
2014	10	\$189M	\$70M





M&A Upfront Values Decline to Lowest Level in Six Years

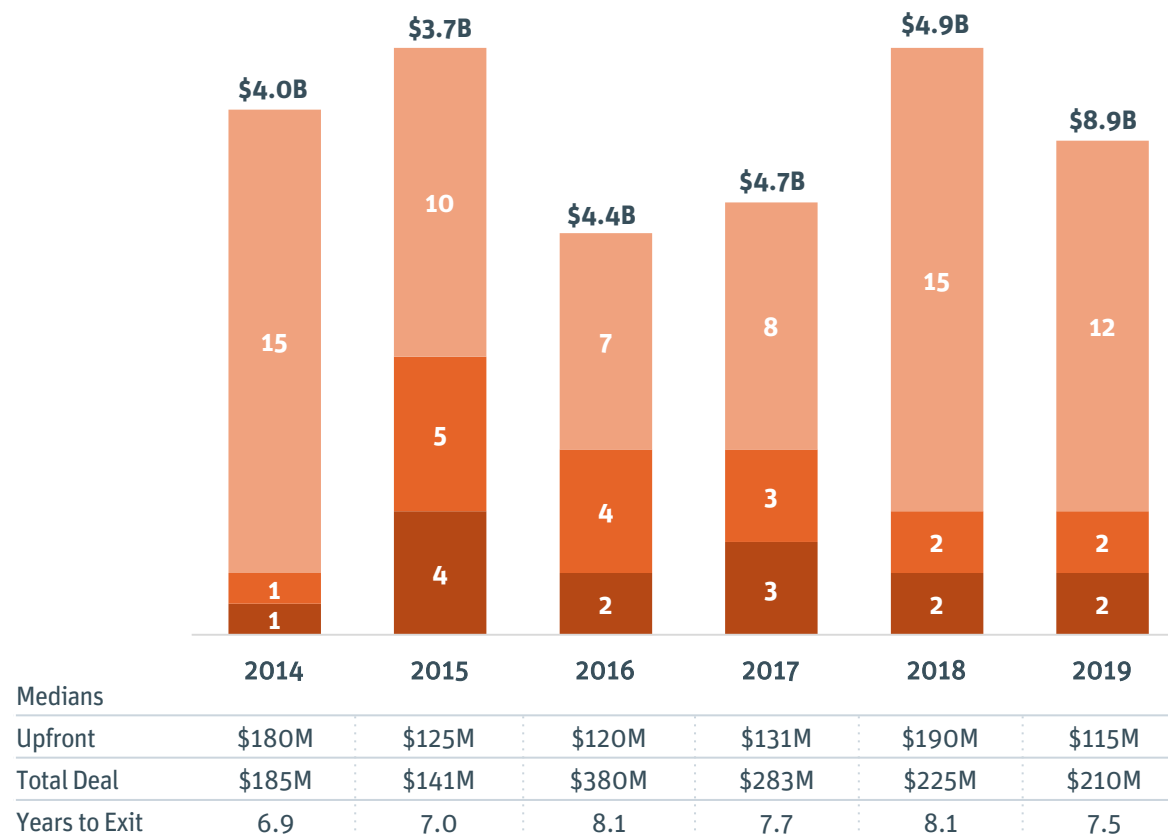
Median M&A deal size decreased in 2019, despite Auris Health's acquisition. Several quicker 510(k) pathway exits reduced the group's overall years to exit.

Over the last two years, orthopedics and cardiovascular led private M&A with six deals each. Cardiovascular outperformed median deal value, while orthopedics underperformed. Oncology, surgical, vascular (four deals each), and non-invasive monitoring (three deals) round out the top M&A areas.

After no private venture-backed device M&A activity for more than three years, Medtronic and Abbott completed one deal each. Boston Scientific has dominated device M&A with eight deals since 2018 but has been silent since August's BTG deal. Stryker added to its 2018 acquisitions of HyperBranch and public venture-backed Invuity and Entellus with three private deals in 2019. J&J and Merit bought two venture-backed private companies each. Showing no M&A activity themselves, mid-level publics may be protecting their own attractiveness for acquisition.

Private Device M&A by Stage Global, 2014–2019

■ Not Approved ■ CE Mark ■ US Commercial





Recent 510(k) Deals Reach Faster Exits and More Milestones

Since 2015, device acquisition trends have been clear: 510(k) pathway companies need FDA clearance and revenue ramp to be viable acquisition candidates, while PMA pathway deals get snapped up before FDA approval. A smaller group of De Novo pathway companies have exited after FDA approval.

M&A in 2019 continued this trend. Ten of 11 510(k) pathway companies needed FDA clearance and commercial traction for M&A, while three of four PMA pathway companies transacted before FDA approval.

510(k) exits in 2019 raised a smaller amount of equity, resulting in higher median deal value multiples. On the flip side, three of four PMA deals exited 10+ years after Series A and raised \$75M+ of venture capital, resulting in a decrease in deal multiples and an increase in years to exit.

VC-Backed Device M&A by Pathway Global, 2015–2019

■ Development Stage ■ CE Mark Only ■ FDA-Approved

Median	510(k) M&As 45 Exits	De Novo 510(k) M&As 4 Exits	PMA M&As 30 Exits
Stage at Exit	42 2 1	4	4 14 12
Invested Capital	\$41M	\$46M	\$51M
Upfront	\$110M	\$360M	\$220M
Upfront Multiple	3.4x	4.6x	3.8x
Total Deal	\$130M	\$435M	\$325M
Total Deal Multiple	4.7x	6.1x	5.8x
Years to Exit	8.1	8.8	6.7

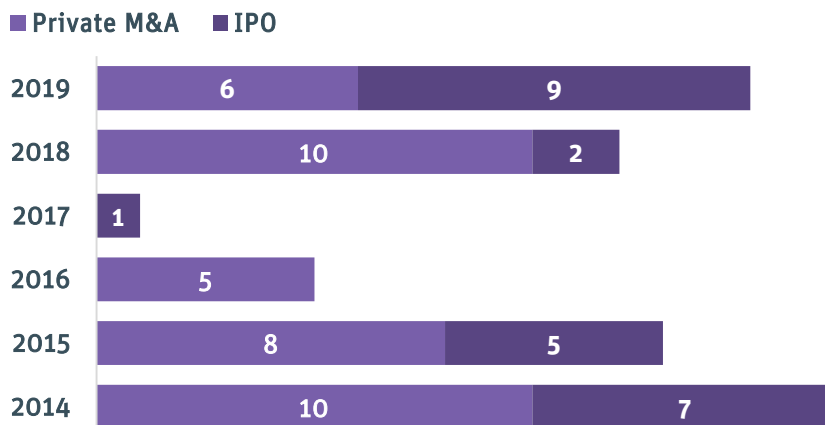
Dx/Tools Sees Record IPO Values and Post-IPO Success

A) 2019 was the year of the tools IPO, with R&D tools companies comprising six of nine offerings, two of which (10X Genomics and Adaptive Biotechnologies) achieved \$2B+ IPO valuations. M&A remained active with six venture-backed transactions, but deal values decreased substantially.

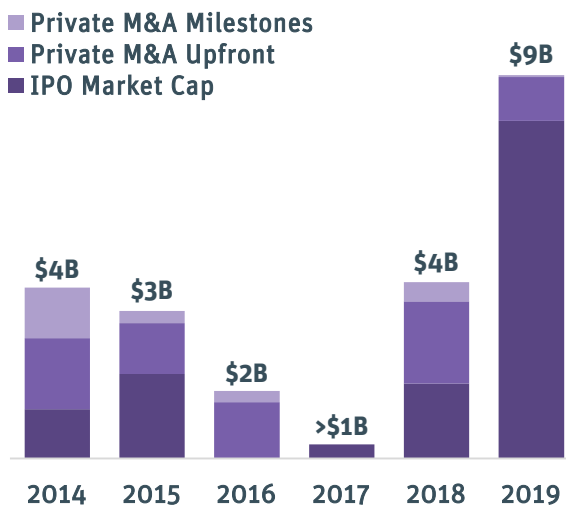
B) The IPO market drove almost all the value in 2019. M&A contributed the smallest exit values in the past six years outside of 2017's drought. Market cap at IPO value in 2019 hit a record of \$7.6B, 3x higher than any other year.

C) Post-IPO performance is impressive in 2019, but even more so for the 11 venture-backed IPOs since 2018 (+77% average, +57% median). These companies boosted their value since IPO by 2.4x with a 2019 end-of-year market cap total of \$22B, led by Guardant (+315%), Castle (+112%), and 10X (+100%). This will help provide significant returns back to venture investors after lock-up. Of note, Adaptive and Hotgen are up over their IPO price, but off first-day performance increases.

A) Dx/Tools Private M&As & IPOs by Year Global, 2014–2019



B) Exit Values by Year Global, 2014–2019



C) 2019 Top Post-IPO Performance Global, 2014–2019

	IPO Price (Date)	Price 12/27/19	Price +/-	Market Cap* 12/27/19
10X GENOMICS	\$39.00 (9/13/19)	\$78.15	+100%	\$7.5B
Adaptive	\$20.00 (6/27/19)	\$29.27	+46%	\$3.6B
CASTLE BIOSCIENCES	\$16.00 (7/25/19)	\$33.99	+112%	\$580M
Hotgen	\$4.20 (9/30/19)	\$6.61	+58%	\$411M
Exagen*	\$14.00 (9/19/19)	\$25.74	+84%	\$323M



Weak M&A Pushes Dx/Tools to IPO Track

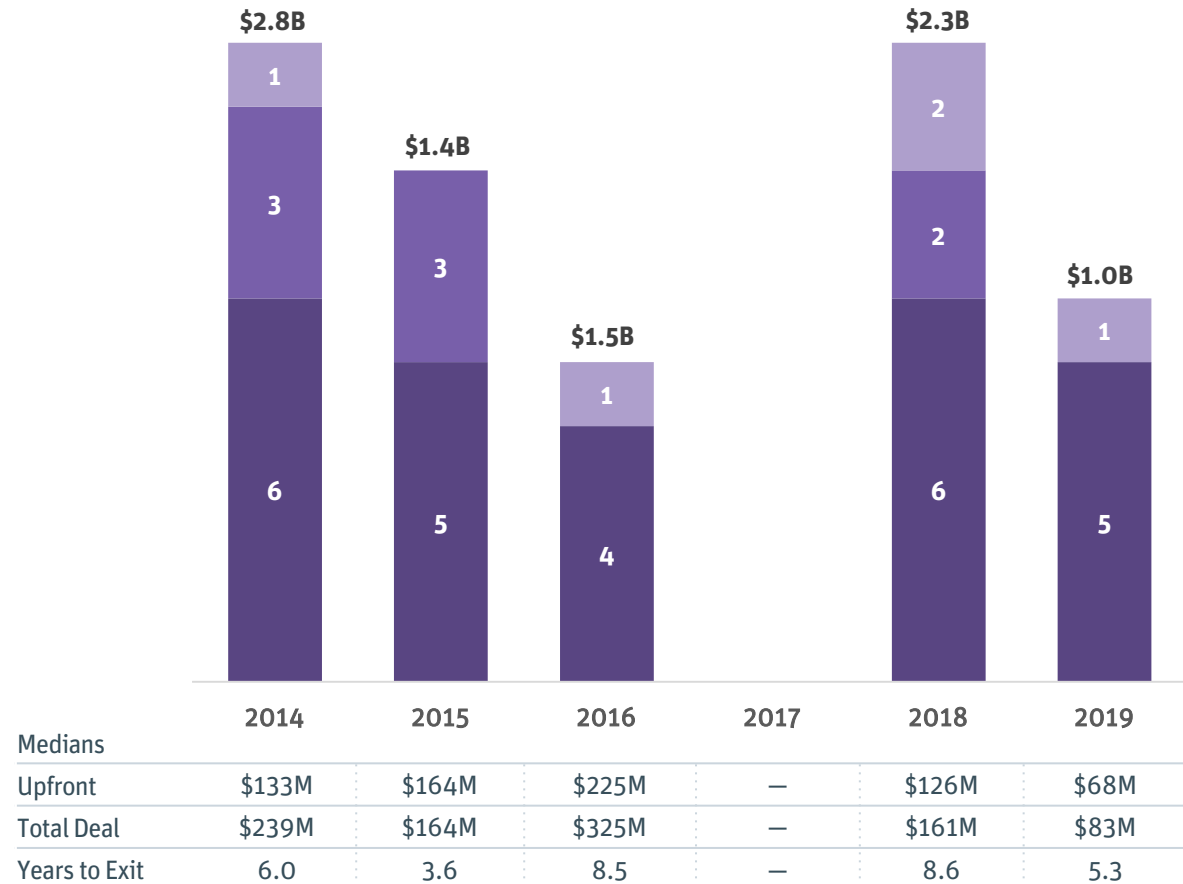
M&A deal size dramatically decreased in 2019 with record-low median upfront and total deal values. Dx/Tools IPOs have been the value creator in the sector. Similar to previous years, R&D tools companies led M&A in 2019.

While AI/ML is core for two exits (Jungla, Just Biotherapeutics), most deals focused on expanding established markets or optimizing industrial processes. All companies were commercial at time of acquisition.

We continue to wait for large technology companies to transition from investors into acquirers, specifically around AI/ML analytics and dx tests. This group could create a market around a specific indication. In addition, R&D tools leveraging AI/ML in drug discovery and/or optimization may move from large biopharma service contracts or collaborations to acquisitions.

Private Dx/Tools M&A by Subsector Global, 2014–2019

■ R&D Tools ■ Dx Test ■ Dx Analytics





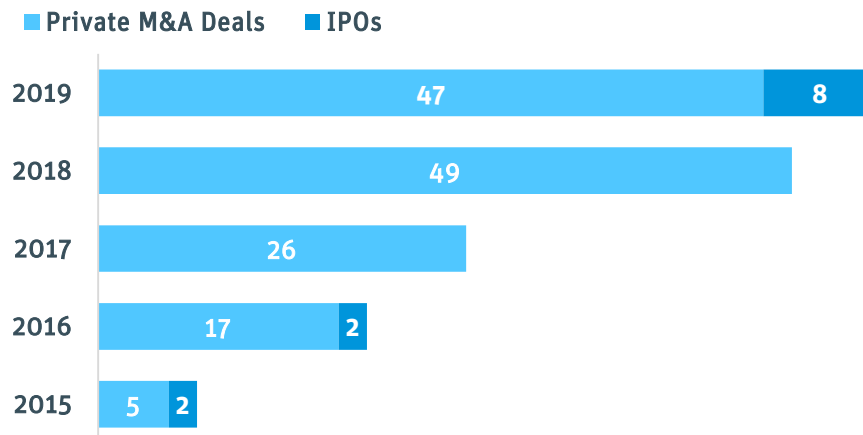
HealthTech Breaks Out of IPO Slump, Boosting Exit Values

A) Despite almost six times more M&A deals than IPOs, market cap value at IPO for these newly public companies represented 94% of total exit value in healthtech.

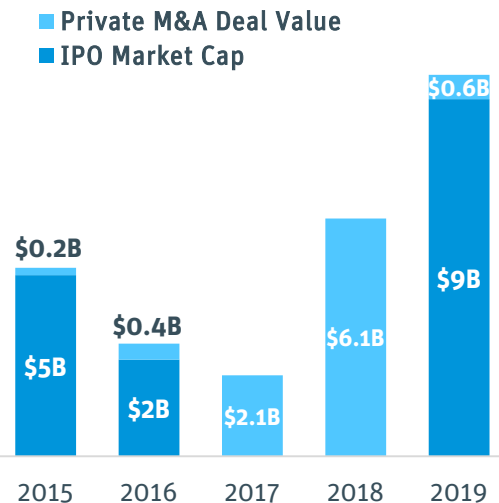
B) There were three publicly disclosed private M&A deals over \$100M in 2019: Propeller Health (medication management) by ResMed for \$225M, Voalte (provider operations) by Hill-Rom Holdings for \$195M and Digital Pharmacist (medication management) by K1 Investment Management for \$125M.

C) Post-IPO performance was solid for the eight IPOs in the class of 2019, at +12% median and +17% average, with Progyny (+115%) leading this group of companies.

A) HealthTech Private M&A and IPOs by Year US and Europe, 2015–2019



B) Exit Values by Year US and Europe, 2015–2019



C) 2019 IPOs at \$900M+ Market Cap* US and Europe, 2015–2019

	IPO Price (Date)	Price 12/27/19	Price +/-	Market Cap* 12/27/19
Livongo®	\$28 (7/25/19)	\$24	-14%	\$2.3B
progyny Smarter Fertility Benefits	\$13 (10/25/19)	\$28	+115%	\$2.3B
CHANGE HEALTHCARE	\$13 (6/27/19)	\$16	+23%	\$2.0B
HealthCatalyst®	\$26 (7/25/19)	\$34	+31%	\$1.2B
Phreesia	\$18 (7/18/19)	\$26	+44%	\$947M



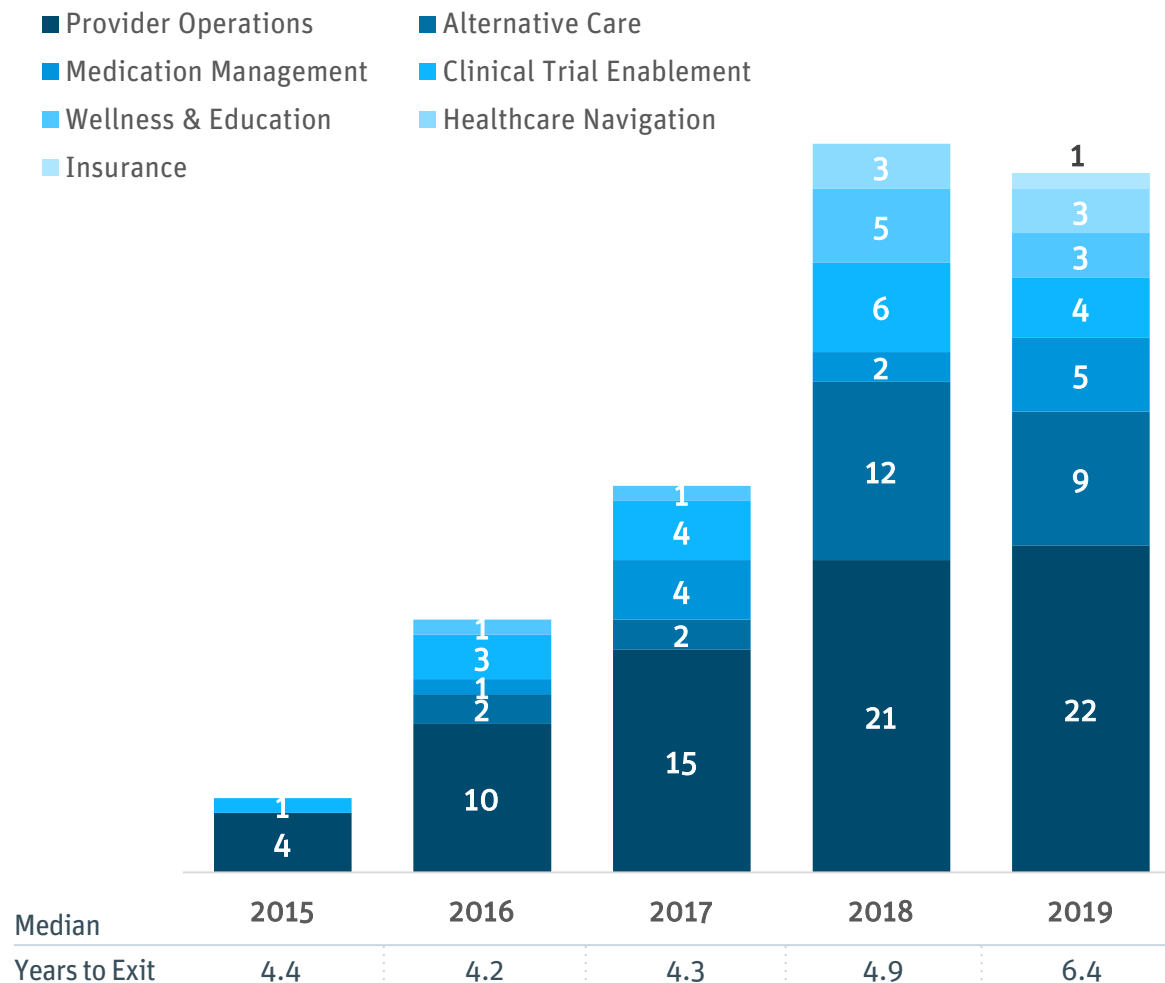
Provider Ops Continues to Lead Private M&A

Provider operations-focused companies have historically dominated healthtech M&A, and this subsector boasted two \$1B wins in 2018 with Flatiron, acquired by Roche for \$1.9B and ABILITY Network, which was bought by Inovalon Holdings for \$1.2B.

Over the past five years, there were eight other \$100M+ provider operations deals, all focused on optimizing the workflow within a clinical setting. Two examples are Provation Medical's (3/2018) acquisition by Clearlake Capital Group, as well as SCIO Health Analytics' (5/2018) acquisition by EXL Service Holdings.

Despite investment from tech companies, most healthtech acquisitions are still by healthcare companies, at roughly a 3:1 ratio vs. tech.

Private HealthTech M&A by Subsectors US and Europe, 2015–2019



Predictions for Venture-Backed Healthcare Sectors

- US fundraising will likely slow in the second half of 2020, reaching a total of \$9B for the full-year, compared to \$10.7B in 2019.
- Overall biopharma investment will decrease by 10% to 15% as larger private crossover-led deals decline. Series A should be stable. We expect between 28 to 35 biopharma IPOs, with stable or slightly higher pre-money valuations as the public market becomes more discerning. Private biopharma M&A deals will increase, and public biopharma M&A deals of recent IPOs will continue.
- Total device investments will decline to 2018 levels, and Series A deals may also decline slightly. The strong performance of device IPOs should spur between six to eight IPOs in 2020 and include offerings in Shanghai and Hong Kong. We predict M&A deals will increase in number and value as the appetite of large players and mid-tier acquirers increases. We will likely see more device M&A deals and/or IPO activity in robotic surgery.
- Dx/Tools investment should be stable in 2020, as a handful of private companies could be primed for \$100M+ financing rounds absent an M&A exit or IPO. We expect two or three high-valued (\$1B+) IPOs and between seven and 10 total IPOs. M&A deals should finally include some acquisitions of dx test and dx analytics companies by tech acquirers and could include some biopharma acquisitions of AI/ML-focused R&D tools companies.
- HealthTech investments will continue to rise in 2020, driven by provider operations and alternative care companies. We expect that 2019's successful public offerings will pave the way for more healthtech IPOs, specifically in the alternative care space.

Glossary

M&A Exits

M&A Exits defined as private, venture-backed merger and acquisition in which the upfront payment is \$75 million or more for biopharma deals and \$50 million or more for Device and Dx/Tools deals. For healthtech, we set no upfront minimum.

Initial Public Offering

IPO defined as a venture-backed company raising IPO proceeds of \$25 million or more.

Deal Descriptions

Structured Deal defined as a pay-for-performance acquisition where some of the deal value is paid upfront when the deal closes, but also contains additional value based on milestones that must be achieved.

All-In Deal defined as an acquisition where the full deal value is paid at deal close.

Upfront Payments defined as initial proceeds from an acquisition paid upon the close of a structured deal; they do not include milestones.

Milestones to be Earned defined as proceeds from an acquisition that are paid once predetermined milestones are met.

Total Deal Value defined as the full value of the acquisition, including any milestones to be earned.

Time to Exit defined as the time from the close of a company's first institutional round of financing to the exit.

Step-Up defined as the valuation change from the last round post-money value to the next round pre-money value.

Corporate Investor

Corporate Investor defined as both corporate venture and parent company investment into venture-backed companies.

Series A

Series A defined as all first-round institutional or corporate venture investment, and all first-round investments equal to or greater than \$2M, regardless of investor.

Device Regulatory Definitions

Non-approved defined as a device product that has no regulatory clearance or approval for its product.

CE Mark Only defined as a device company that has CE Mark approval but has not received FDA approval. CE Mark is a European Union designation that is typically less difficult to obtain than FDA approval, and the approval process often has a faster timeline.

510(k) defined as an FDA classification that provides clearance to market typically without clinical trials.

De Novo 510(k) defined as an FDA classification that provides approval to market but typically requires clinical trials.

PMA defined as an FDA classification that provides approval to market but typically requires pivotal clinical trials to collect safety and effectiveness data.

US Commercial defined as a device company that has received FDA approval or clearance of its product and usually is in a commercial stage.

Indication Definitions

Neurology (neuro) defined as CNS, pain and psychology companies, as well as neuro implant technologies.

Non-Invasive Monitoring defined as medical data collection through sensors and other technology.

Dx Tests defined as proprietary Yes/No diagnostic tests.

Dx Analytics defined as actionable data analytics to help determine treatment.

R&D Tools defined as research equipment/services for biopharma and academia.

Top 15 Crossover Investor

Top 15 Crossover Investor defined as a public-minded investor who strategically invests in private companies. The Top 15 list includes: RA Capital, Perceptive Advisors, Deerfield Management, Redmile Group, Cormorant Asset Management, The Invus Group, Fidelity (et al.), EcoR1, Foresite Capital Management, ArrowMark Partners, BVF Partners, Casdin Capital, Citadel, Rock Springs Capital, and Tavistock Group.

About the Authors



Jonathan Norris

Managing Director
Silicon Valley Bank
jnorris@svb.com
[@jonnysvb](#)

Jonathan spearheads strategic relationships with many healthcare VC firms and serial entrepreneurs. In addition, he helps SVB Capital through sourcing and advising on limited partnership allocations and direct investments. Jonathan speaks at major investor and industry conferences about healthcare VC trends. He has 19+ years of banking experience working with healthcare companies and VC firms. Jonathan earned a B.S. in business administration from the University of California, Riverside, and a J.D. from Santa Clara University.



Dhruv K. Vig, Ph.D.

Vice President
Silicon Valley Bank
dvig@svb.com
[@DhruvVigPhD](#)

Dhruv leverages a combination of SVB's proprietary data, its vantage point within the global innovation ecosystem and healthcare industry knowledge to build global, strategic relationships and publish thought-leadership pieces. Prior to SVB, Dhruv co-founded Decoded Health, a primary care-focused healthtech company, and was part of the SRI (formerly Stanford Research Institute) Ventures team. He holds a Ph.D. from the University of Arizona and completed a postdoctoral fellowship at Johns Hopkins University in computational biophysics.



Katherine Harris

Associate
Silicon Valley Bank
katharris@svb.com

Katherine is responsible for conducting data-driven analyses on the global innovation economy that SVB serves. In this role, she supports global research efforts that explore investment, fundraising, and exit dynamics in the venture ecosystem. Prior to SVB, Katherine worked at the intersection of basic and clinical research, studying the neurodevelopmental effects of opioids in newborns to advance treatment strategies. She graduated from Dartmouth College with high honors, receiving a B.A. in neuroscience.



Ritish Patnaik

Healthcare Consultant
rp2616@stanford.edu

Ritish developed SVB's analyses of the dx/tools, synthetic biology, and oncology biopharma subsectors and helps put together investment and exit trend takeaways. He is pursuing a Ph.D. in bioengineering at Stanford University, where he has created a method to inexpensively identify high-value cancer liquid biopsy biomarkers. He is also a co-founder of Luso Labs, a startup that is bringing affordable cervical cancer screening around the world. Ritish has a B.S. in biomedical engineering from Columbia University and a M.S. in management science and engineering from Stanford.

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For more than 35 years, Silicon Valley Bank has helped innovative companies and their investors move bold ideas forward, fast. SVB provides targeted financial services and expertise through its offices in innovation centers around the world. With commercial, international and private banking services, SVB helps address the unique needs of innovators.

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