J.P.Morgan

Biopharma and Medtech Deals and Funding

October 2021

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Executive summary

Biopharma's banner year continues

The COVID-19 pandemic transformed the life science industry, illuminating the vital solutions these companies can provide. Now is an exhilarating time for the sector amid such scientific innovation, corporate sophistication and investor engagement.

Dealmaking across all aspects of the life science sector continued to advance and set new records in the third quarter. Biopharma therapeutics and discovery platform companies led the way, and medtech activity remains well above its prepandemic levels.

Here are some of the 3Q highlights in this report:

- **Biopharma venture:** Funding through September 30 hit \$30 billion, surpassing the \$26 billion raised in all of 2020.
- **R&D partnerships:** The deal count was lighter, but with larger upfront cash and equity which led to larger deal totals.
- **Cell therapy:** This sector is attracting a greater share of big pharma in-licensing for oncology, neurology and hematology therapies.
- **Medtech:** Diagnostics and digital health therapeutics were the most active subsectors, for both venture and partnerships.

J.P. Morgan is committed to your success. Our relationships, our capital and our skilled team of bankers and specialists dedicated to the life science and healthcare sectors reflect our conviction in the pivotal contributions these clients add to their stakeholders – society, shareholders and employees alike.

Our bankers' expertise ranges from advising companies at the earliest stage of venture formation to the most graduated, complex M&A and capital markets transactions. Regardless of the size or stage of your company, we are prepared, equipped and enthusiastic about advising and enabling you to meet your strategic, financial and technical objectives.

Thank you for taking the time to read this report. We look forward to supporting you.

Sincerely,

Kathryn McDonough Co-Head of Healthcare, Commercial Banking J.P. Morgan

Parameters

Biopharma companies are defined as firms developing therapeutics and technology platforms engaged in drug discovery, clinical R&D and commercialization. Medtech companies are defined as firms developing medical devices, diagnostics, digital health therapeutics and research tools. Therapy areas, development stages and modalities are segmented per the DealForma database.

Financials are based on disclosed figures curated by DealForma. Multiple tranches of the same Series are counted as one together.

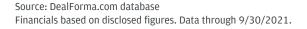
Data as of 9/30/2021



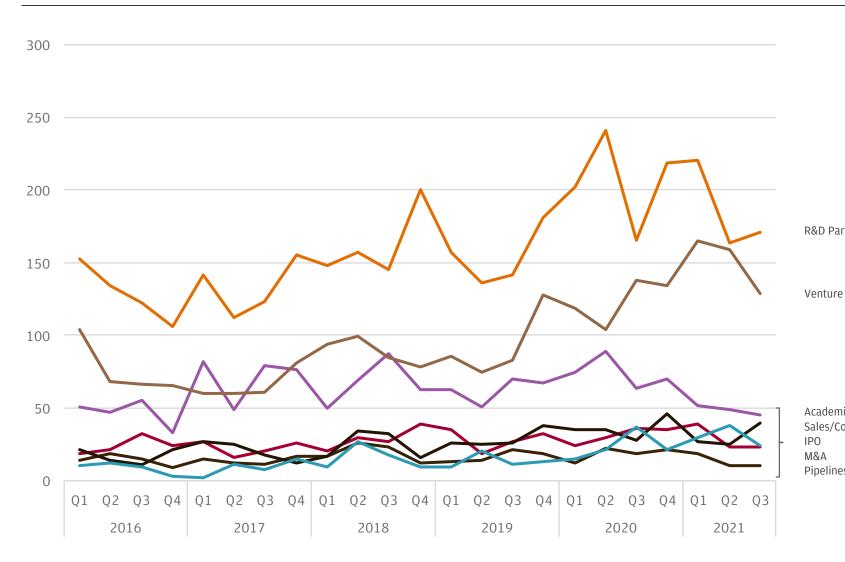
Biopharma dealmaking in perspective

Biopharma business developers and finance pros are still busy with deal flow, despite a cooling off in the third quarter.

- 442 total transactions across venture rounds and IPOs, deals and M&A in the third quarter.
- 171 biopharma R&D partnerships signed, down from the peak of 241 in Q2 2020, which was driven by dealmaking for COVID-19 assets.
- 129 venture rounds completed for drug and platform developers, down from a very active first half of 2021.



Biopharma Therapeutics and Discovery Platform Deal Flow: Total Number of Deals



R&D Partnerships

Academic Licenses Sales/Co-Promotion IPO M&A Pipelines/Business Units

Biopharma venture investment already topped previous full-year totals by the third quarter

Venture investment activity in biopharma continued to set new records for quarterly dollars raised.

- \$9 billion was raised in private funding rounds in the third quarter alone after a record 2021 first quarter.
- Fewer rounds were raised this quarter at 129, with larger raises going to fewer companies.
- The \$30 billion in year-to-date venture funding into biopharma therapeutics and discovery platforms has already passed previous full-year totals.



Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.

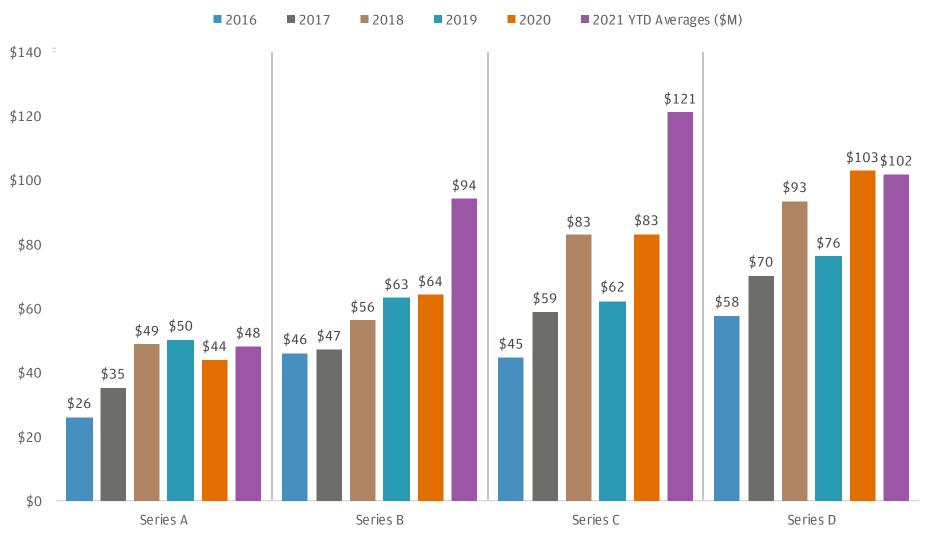
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Biopharma Therapeutics and Platforms: Venture Totals (\$B) and Number of Rounds

Big gains in Series B and C round averages for biopharma

With abundant venture capital flow starting in 2017, biopharma firms are now back for second and third rounds as Series B and C averages topped prior years.

- Series B saw a 47% increase to a \$94 million average in year-to-date growth.
- Series C average increased 46% to \$121 million
- First-round averages have been within range since climbing in 2018. Series A rounds averaged \$48 million.



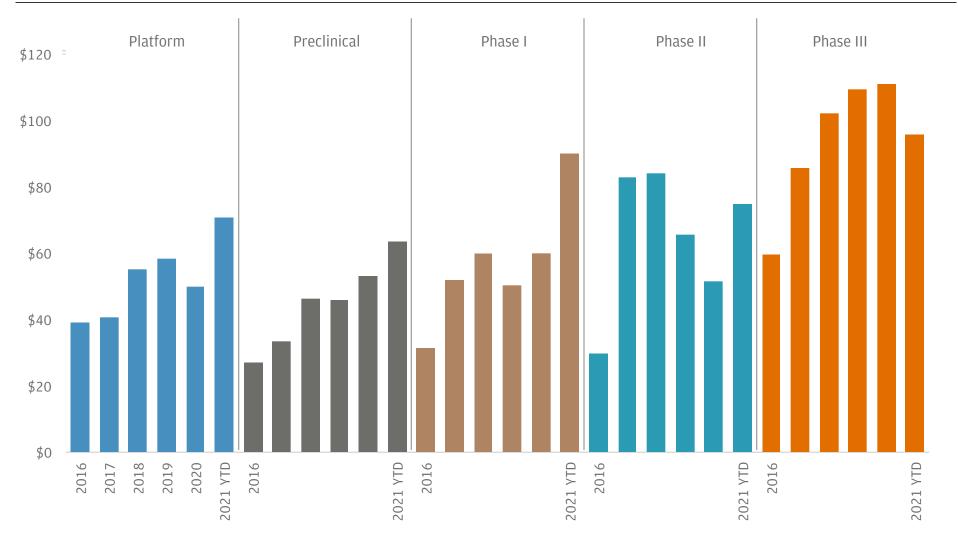
Biopharma Therapeutics and Platforms: Average Venture Rounds by Series

Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.

Early-stage biopharma venture round averages continued to increase

Phase I and earlier-staged biopharma companies continued to see larger venture averages when looking at a company's most advanced stage at funding.

- Platform and discovery-stage biopharma companies are seeing an average round of \$69 million.
- Year-over-year growth in preclinical to \$63 million and Phase I venture rounds to \$90 million.



Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.



Biopharma Therapeutics and Platforms: Average Venture Rounds by Company Stage

Top therapy areas and modalities attract seed and Series A rounds

Biopharma companies developing cancer therapies attracted half of all initial venture funding since 2020 along with biologics and small molecule drugs.

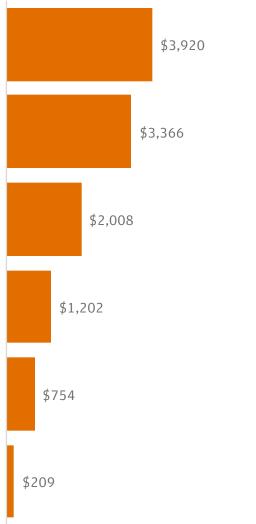
- \$5.1 billion in seed and Series A rounds focused on cancer since 2020.
- \$10.4 billion in total seed and Series A across all therapy areas.
- Biologics and small molecule drug developers saw \$3.9 billion and \$3.4 billion in initial funding rounds followed by cell and gene therapy.

\$5,132 Cancer Biologics, Antibody, DNA, \$1,685 RNA, Protein, etc. Neurologic \$1,007 Autoimmune Cardiovascular \$472 Small Molecule Ophthalmic \$459 Endocrine / Metabolic \$266 Cell Therapy Infectious \$233 Hepatic \$227 Gene Therapy and Vectors Inflammation \$221 Hematologic \$219 Pulmonary \$193 Immunotherapy \$183 Dermatologic Musculoskeletal \$61 Gene Editing/CRISPR \$60 Renal

Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.

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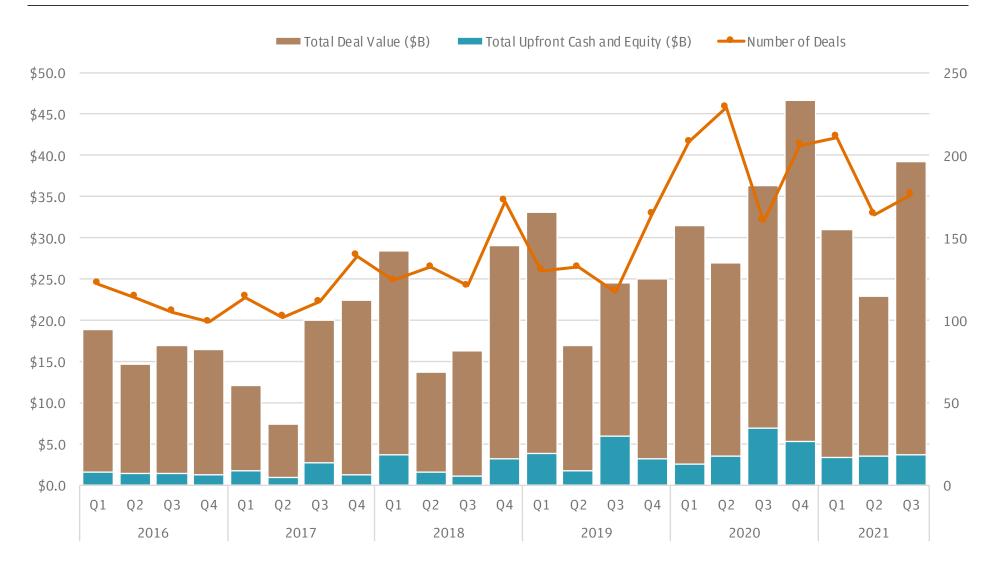
Top Therapeutics Areas and Modalities: Total Seed and Series A for 2020-2021 YTD (\$M)



Biopharma licensing upfronts are steady while milestones and total deal values stack higher

Biopharma R&D partnership activity picked up from a quiet second quarter. Third quarter 2021 saw increases in licensing deal counts, upfronts and total deal values.

- 176 Biopharma R&D partnerships were signed in third quarter 2021, up from 164 in the prior quarter.
- \$3.7 billion in total upfront cash and equity for licensing therapeutics and discovery platforms, up slightly from second quarter 2021.
- \$39.2 billion in total announced deal values as milestones stacked higher, driven by earlier-stage dealmaking.



Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.

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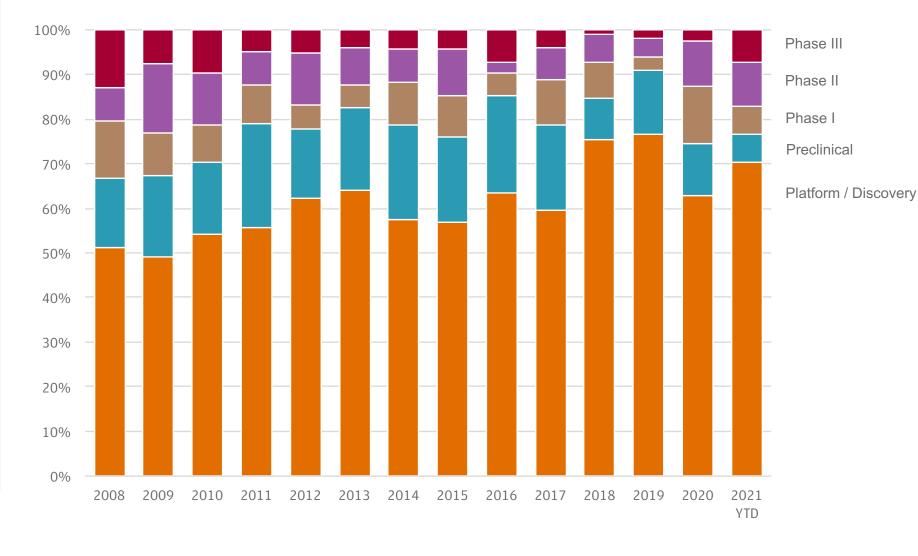
Biopharma Therapeutics and Platforms: R&D Partnership Totals (\$B) and Number of Deals

Big pharma is in-licensing earlier

Big pharma's interests are an important topic on every business developer's mind. By stage of development, large cap biopharma (\$50 billion+) has been going earlier in their transactions.

- Large cap biopharma in-licensed 81 deals in Phase III and earlier stages year-to-date.
- 70% of in-licensing partnerships signed into large cap biopharma are for discovery platforms.

In-Licensing by Large Cap Biopharma (\$50B+): Share of R&D Partnerships by Stage at Signing



Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.

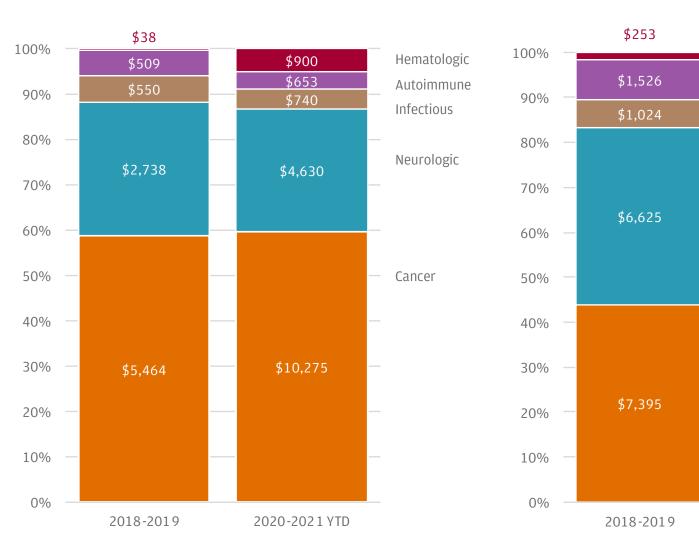




Cell therapy is attracting a greater share of big pharma in-licensing

Large cap biopharma paid more deal upfront cash and equity across all therapy areas in the last two years, and the top 5 areas have nearly doubled. Deals for the approaches have remained consistent, however, apart from cell therapy seeing nearly triple the committed deal payments since 2020.

- \$10.3 billion in upfront cash and equity for cancer program in-licensing.
- Hematology saw the biggest growth, from \$38 million in 2018-2019 to \$900 million since 2020.
- Cell therapy in-licensing upfront cash and equity payments tripled in the last two years to \$685 million, up from \$253 million in 2018-2019.



Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.

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Top Therapy Areas and Modalities In-Licensed by Large Cap Biopharma: Total Upfront Cash & Equity (\$M)

| \$685 | Cell Therapy |
|-----------------|----------------|
| \$1,140 | Gene Therapy |
| \$995 | Immunotherapy |
| \$6,171 | Small Molecule |
| \$8,708 | Biologics |
| 2020 2021 VTD | |

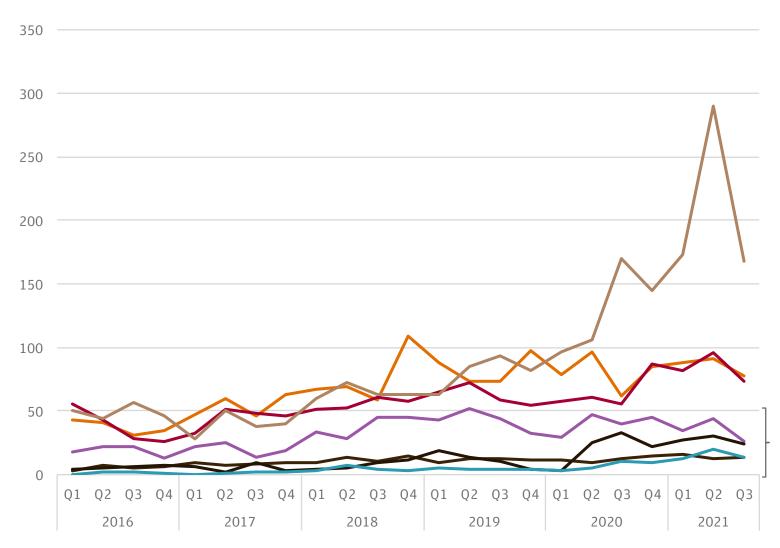
2020-2021 YTD

Medtech dealmaking in perspective

Venture fundraising has been the most active deal space in medtech since the start of 2020 due in part to activity around COVID-19 diagnostics and digital tech.

- Medtech venture activity in third quarter 2021 followed a record second quarter, which saw 290 rounds. 168 venture rounds closed in the third.
- Business and corporate development deal numbers are holding steady, coming in at about 75 deals each in the third quarter.

Medtech, Diagnostics, Digital Therapeutics and Tools Deal Flow: Total Number of Deals



Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.

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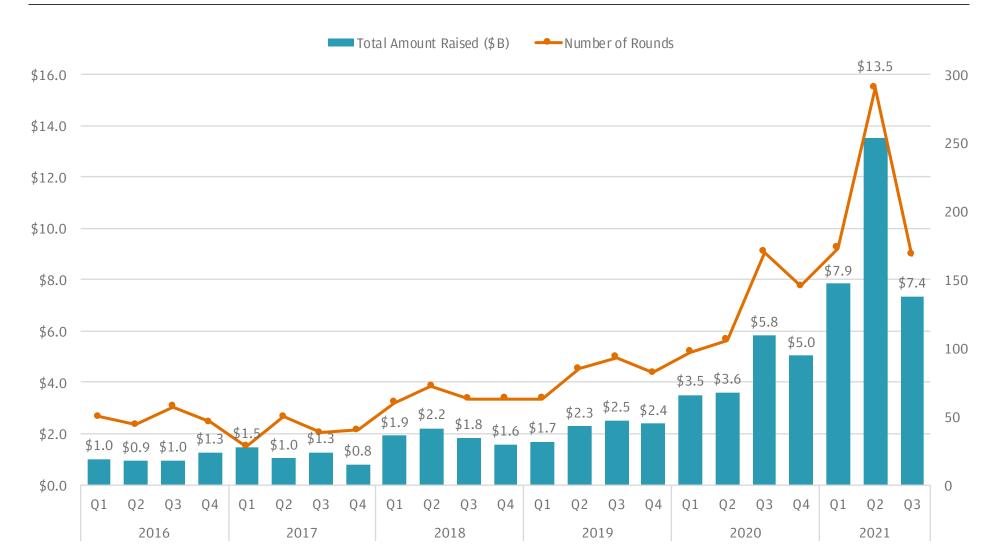
Venture

R&D Partnerships M&A Academic Licenses Sales/Co-Promotion IPO Pipelines/Business Units

Medtech venture investment continued quarter-over-quarter growth

Third quarter 2021 medtech venture funding followed a record-setting second quarter as attention turned to diagnostics, digital health and computational tools.

- \$7.4 billion in total medtech venture funding in the third quarter of 2021, following \$13.5 billion in the previous quarter.
- 168 funding rounds, far fewer than the 290 in the second quarter, though still more active than in earlier quarters.
- \$28.8 billion in total medtech venture funding through third quarter 2021 already topping the \$17.9 billion for full-year 2020.



Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.

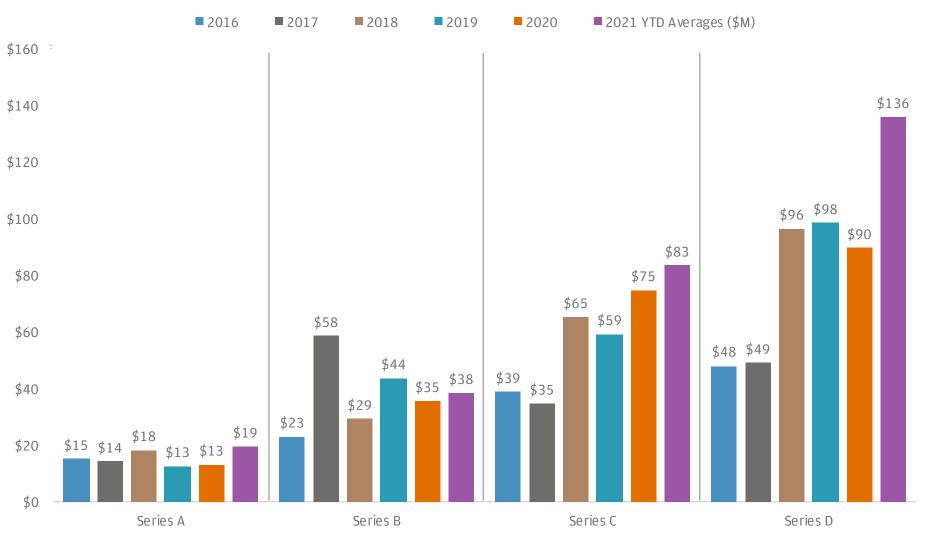
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Medtech, Diagnostics, Digital Therapeutics and Tools: Venture Totals (\$B) and Number of Rounds

Medtech saw steady growth across all venture series averages

Averages for all rounds of venture funding grew in 2021, with the largest increase in Series D rounds.

- \$19 million average Series A for medtech extending to \$136 million average Series D.
- Digital therapeutics are attracting more attention as several app-based approaches have been approved recently.



Medtech, Diagnostics, Digital Therapeutics and Tools: Average Venture Rounds by Series

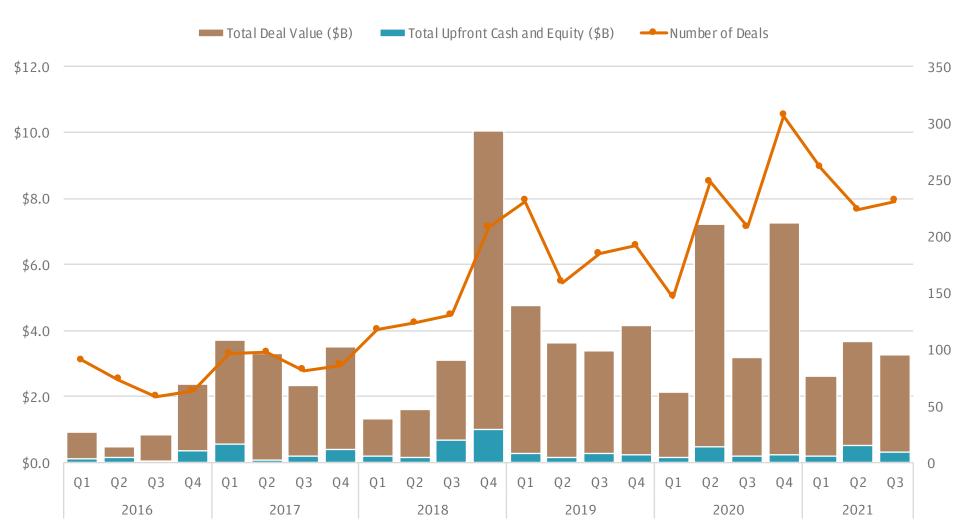
Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.



Diagnostics partnerships and contracts are driving medtech activity higher

Partnerships to develop medtech and diagnostics are often signed with large cap biopharma with access to large amounts of patient data and the need to organize and prioritize clinical trials.

- 231 medtech partnerships and service contracts were signed in third quarter 2021, up slightly from the previous quarter.
- \$3.3 billion in total announced deal value, with \$300 million in committed upfront cash and equity.



Source: DealForma.com database Financials based on disclosed figures. Data through 9/30/2021.



Medtech, Diagnostics, Digital Therapeutics and Tools: Partnerships and Contract Services