

Medtech dealmaking and financing trends in 2017

Although dealmaking in the medtech industry slowed in 2017, political developments and innovations in areas such as digital health technologies could fuel greater activity in 2018.

Amanda Micklus and Maureen Riordan

Dealmaking in the medtech industry experienced a marked slow-down in 2017, as companies continued to face challenges. With approximately 44 new draft and final regulatory guidances issued in the US in 2017, and the publication of medical device and in vitro diagnostics regulations in Europe (which come into effect in May 2020 and May 2022, respectively), market players will be expected to adjust to new approaches.

On the positive side, as part of a budget resolution signed in early 2018 to temporarily keep the US government funded, a planned medical device excise tax was delayed by 2 years, after its suspension in 2015. Furthermore, the passage of US tax reform in late 2017 could lead to an increase in deal activity as major medtech companies take advantage of a lower corporate tax rate and the potential to repatriate cash. The expansion of the mobile health market will also create opportunities in the medtech sector, and at the same time increase the complexity of managing the large amounts of data to be tracked.

Key transactions of 2017

In 2017, there were approximately 115 medtech acquisitions (including those in the medical device, diagnostics, and research-tools industries), together worth an aggregate of \$52 billion. This was a noticeable drop from the 154 deals in 2016, which were worth \$72 billion. During 2017, both the number of acquisitions and their value generally decreased each quarter, with the exception of Q2, which featured the most transactions at 40 and an outlier total of \$36 billion, compared with the figures in each of the other quarters of less than \$10 billion (Fig. 1). The \$24 billion takeover of CR Bard by Becton Dickinson (BD) in April represented the majority of the total acquisition value in Q2.

The resulting combination of this takeover, which was the largest medtech merger and acquisition of 2017, is expected to earn \$16 billion in annual revenue (Table 1). Together, BD and Bard boast expertise in medication management, infection control and prevention, and an expanded portfolio of devices in peripheral vascular disease, urology, hernia and oncology. In order to satisfy conditions of the Bard acquisition, BD had to divest certain assets and brands,

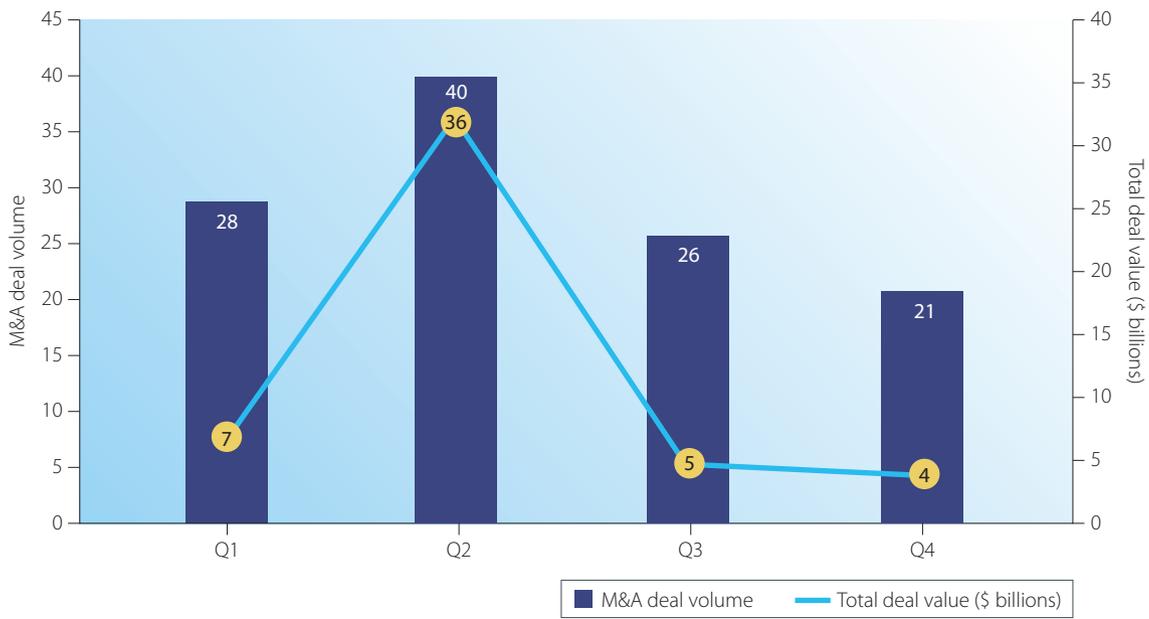


Fig. 1 | Medtech M&A activity in 2017 by quarter. M&A, merger and acquisition. Source: Informa's Strategic Transactions.

Table 1 | Top ten medtech mergers and acquisitions of 2017 by value

Month	Acquirer	Target	Deal value (\$ millions)	Deal summary
April	Becton Dickinson	CR Bard	23,463	Becton Dickinson acquires CR Bard, a medtech company with expertise in peripheral vascular disease, urology, and oncology.
April	Cardinal Health	Medtronic's patient monitoring and recovery division	6,100	Medtronic divests its patient monitoring and recovery division, considered to be a low-growth, low-margin business, to Cardinal Health.
February	Allergan	Zeltiq	2,475	Allergan buys contouring device company Zeltiq.
June	Royal Philips Electronics	Spectranetics	2,100	Royal Philips Electronics acquires Spectranetics to strengthen its image-guided therapy business.
August	Fresenius Medical Care	NxStage Medical	1,980	Fresenius Medical Care takes over NxStage Medical, which develops and sells products for the home and critical care markets.
February	Hologic	Cynosure	1,650	Hologic marks its entrance into the medical aesthetics market through the acquisition of Cynosure.
June	PerkinElmer	EuroImmun	1,300	PerkinElmer buys EuroImmun, which offers autoimmune, infectious disease, and allergy testing.
September	Teleflex	NeoTract	1,100	Teleflex acquires urology device company NeoTract.
February	Integra LifeSciences	Codman Neurosurgery	1,045	Johnson & Johnson's DePuy Synthes divests Codman Neurosurgery to Integra LifeSciences.
July	Konica Minolta	Ambry Genetics	1,000	Konica Minolta purchases Ambry Genetics, which offers genetic-screening solutions for inherited and noninherited diseases.

Source: Informa's *Strategic Transactions*.

including soft tissue core needle biopsy products and the Aspira drainage system line, which Merit Medical Systems acquired for \$100 million. During 2017, Bard also undertook another big transaction, to buy the remaining 60% of Caesarea Medical Electronics that it did not already own. Based in Israel, Caesarea sells compact, portable, and multipurpose infusion and syringe pumps used in hospital and home-care settings.

Another important transaction completed in 2017 featured a heavyweight in the device industry, Medtronic, except this time the company was on the divesting side. For \$6.1 billion, Medtronic sold part of its patient monitoring and recovery operations to Cardinal Health. The acquired assets, which came from Medtronic's acquisition of Covidien in 2014, cover more than 20 product categories, broadly including patient care, deep vein thrombosis, and nutritional insufficiency, and these assets complement Cardinal's medical consumables business. Medtronic considers these to be lower-growth and lower-margin assets, and will now have more resources to allocate toward higher-return products.

The aesthetics market has long been attractive to medtech players, and two key deals in 2017 exemplified this. Allergan paid \$2.5 billion for Zeltiq Aesthetics, whose flagship CoolSculpting technology is used in body contouring to reduce the temperature of cold-sensitive fat cells in a targeted treatment area. In 2017, Allergan also acquired Keller Medical, which has a line of devices that deliver silicone gel implants to certain sites of the body. Whereas Allergan has been present in the aesthetics sector for many years (and has purchased several different companies including LifeCell, Topokine, Anterios, and Kythera), Hologic has newly entered the market to look for products that will complement its women's health business. In 2017, the company bought Cynosure for \$1.65 billion. Cynosure is active in many areas, including noninvasive body contouring, scar removal, wrinkle reduction, and skin revitalization.

Royal Philips Electronics has been quite active in medtech deal-making and announced four acquisitions in 2017. In its most expensive deal, the company took over Spectranetics for \$2.1 billion in a move to advance into the image-guided therapy field, where Philips has already established itself through the acquisition of Volcano in 2014. Spectranetics' portfolio includes drug-coated balloons such as Stellarex for the treatment of peripheral arterial disease (PAD). Through another transaction, Philips continued to build up

image-guide therapy capabilities with the purchase of CardioProlific, which is working on catheter-based thrombectomy technologies for PAD. Because of these acquisitions, Philips also found the need to narrow down its existing image-guided therapy portfolio, hence the divestment of the Sonallevé MR-HIFU ablation imaging business to partner Profound Medical. During the year, Philips also acquired Electrical Geodesics, a developer of noninvasive technologies that interpret and monitor brain activity, and RespirTech, which has created the inCourage vest, used to clear excess mucus from the lungs and airways of patients with respiratory disease.

Johnson & Johnson, a diversified big pharma company that actively participates in the device industry, continued to build up its portfolio through acquisitions in 2017. Throughout the year, it bought players in various markets, including electrosurgery (Megadyne Medical), gastrointestinal devices (Torax Medical) and ophthalmic imaging (TearScience). One area that Johnson & Johnson has deprioritized is neurosurgical devices, and in 2017 the company divested its Codman Neurosurgery division to Integra LifeSciences for \$1.05 billion. Following the Integra deal, Codman went on to acquire more neurosurgical assets, through the takeover of Neuravi, a neurovascular company.

Financings in medtech

Full-year 2017 medtech financings—including debt sales, follow-on public offerings (FOPOs), initial public offerings (IPOs), private investments in public equity (PIPEs), and venture capital (VC) funding—reached \$14.4 billion from 270 transactions. Although there was definitely a slump in deal activity, with 12% fewer financings during 2017 versus the 308 completed the previous year, the total money raised was a 14% increase over the \$12.6 billion aggregate in 2016 (Fig. 2).

The combination of Becton Dickinson and CR Bard, the largest medtech M&A of 2017, is expected to earn \$16 billion in annual revenue.

Similar to 2016, debt raises in 2017 again represented the financing vehicle that brought in the most money with a total of \$4.6 billion, which constitutes just under a third of the 2017 fundraising aggregate, despite a slow start in Q1 (when VC rounds were the main source) followed by a sluggish Q2 (when FOPOs dominated). Eleven medtech players completed debt financings of \$100 million or higher. At the top of the list was women's health device giant CooperSurgical's \$1.1 billion September bridge loan to finance its concurrent acquisition of the Paragard intrauterine device from Teva. This transaction, along with three other debt facility agreements penned by molecular diagnostics firm Quidel (\$270 million), cardiac monitoring company BioTelemetry (\$255 million) and genetic-testing diagnostics-focused Natera (\$100 million), contributed to more than 90% of the \$1.85 billion debt financing total in Q3.

Q3 was the period in 2017 in which the most money—\$4.9 billion—across all financing categories was raised, driven by debt raises and a surge in FOPO values. Of the \$1.65 billion aggregate for FOPO financing in Q3, 90% was from a single transaction: research company Thermo Fisher Scientific's \$1.5 billion public offering, which was also the largest financing event of the year across all fundraising categories. Similar to CooperSurgical, Thermo Fisher is also using the proceeds to fund an acquisition—its \$7.2 billion purchase of contract development and manufacturing organization Patheon. Overall, FOPOs, at \$2.9 billion, contributed 20% of the 2017 full-year financing total (with the Thermo Fisher outlier accounting for about half of this value).

Unlike in 2016 when late-stage VC rounds (series C and later) accounted for the bigger percentage of full-year VC funding dollars, in 2017, the early-stage financings (seed through series B rounds) outpaced them. Early-stage VC rounds started the year with a strong showing, accounting for more than half the \$3.6 billion total financing in Q1, mostly owing to a \$900 million series B round (later expanded to \$973 million) by 2016 Illumina spin-off Grail (Box 1), coupled with an \$800 million series A raise by Verily, a research and engineering company that spun out of Google in 2015. Grail's series B is the largest venture round by a medtech firm to date (since *Strategic Transactions* began tracking such deals in 1991). In Q2, early-stage VC rounds started to decline, reaching an all-year low in Q3, before rebounding slightly in Q4.

Despite the head start by the early-stage rounds—which ultimately finished ahead (comprising 24%, or \$3.5 billion, of the total 2017 financing)—late-stage VC rounds outperformed them during both

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Q3 and Q4 (and overall captured 17%, or \$2.5 billion, of the full-year financing dollars). Highlights included big raises by minimally invasive surgical device firm Auris Surgical Robotics, which brought in \$280 million in series D money; consumer genetics company 23andMe's \$250 million series F round; and a \$150 million series E by magnetic resonance imaging (MRI)-guided focused ultrasound surgery technology developer InSightec (the largest late-stage round by an Israeli device company to date).

PIPEs, which contributed just 4% of the 2017 full-year medtech financing total, remained consistent from Q1 to Q3 but then spiked in Q4, in which the total reached \$249 million, the highest amount for this fundraising group in a single quarter. Belgian molecular diagnostics company Biocartis's \$95 million placement, along with MRI-guided-radiation-focused ViewRay's \$50 million PIPE, together accounted for more than half of the PIPE dollars in Q4.

The IPO category contributed only 2% (\$275 million) of the 2017 aggregate. Of the nine medtech players that went public during the year, diagnostics company Quanterix—which has an immunoassay platform based on its Simoa digital single-molecule-array detection technology—raised the most. Quanterix's deal accounted for almost half of the IPO total for Q4 2017, the quarter that brought in the most IPO dollars (\$148 million) of 2017. Three orthopedic device players also completed offerings during the year: Swedish company BoneSupport raised \$57 million in its June float on the Nasdaq Stockholm Exchange; OrthoPediatrics closed a \$56 million Nasdaq IPO in October; and Myomo completed a \$5 million listing on the New York Stock Exchange in June. (Myomo subsequently netted \$9 million in a November FOPO.)

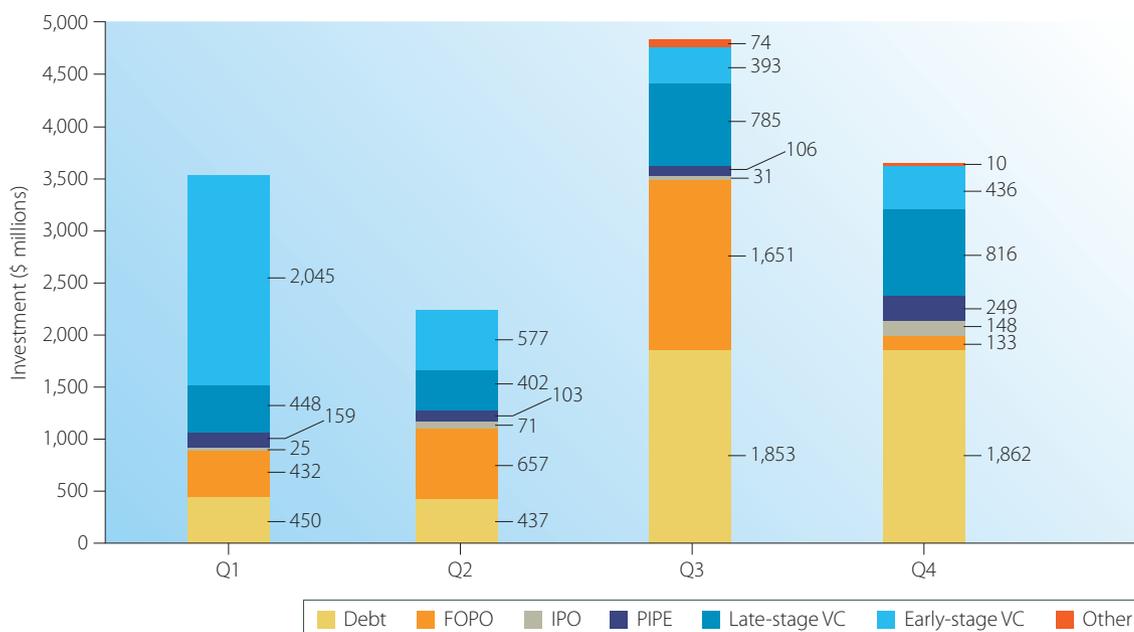


Fig. 2 | Total investment in medtech in 2017, by quarter and financing type. FOPO, follow-on public offering; IPO, initial public offering; PIPE, private investment in public equity; VC, venture capital. Source: Informa's *Strategic Transactions*.

Box 1 | Spotlight on diagnostics

Diagnostics continue to be an important component of the medtech field, particularly in areas such as oncology, where the potential to help guide treatment with targeted therapies is well established. **Table 2** highlights the highest-value mergers and acquisitions related to the molecular diagnostics industry that took place in 2017.

Table 2 | Top molecular diagnostics mergers and acquisitions of 2017 by value

Month	Acquirer	Target	Deal value (\$ millions)	Deal summary
June	PerkinElmer ^a	Eurolmmun	1,300	PerkinElmer buys Eurolmmun, which offers autoimmune, infectious disease and allergy testing.
July	Konica Minolta	Ambry Genetics	1,000	Konica Minolta purchases Ambry Genetics, which offers genetic-screening solutions for inherited and noninherited diseases.
July	Invitae	Good Start	40	Invitae acquires Good Start, which has a next-generation sequencing platform used in pre-implantation genetic screening to detect disease-causing mutations in parents prior to conception.
July	Invitae	CombiMatrix	33	Invitae acquires reproductive health firm CombiMatrix, which offers DNA-based fertility and perinatal testing.
May	Sygnis	Innova Biosciences	9	Sygnis acquires Innova, which offers a range of antibody- and protein-labeling bioconjugation products and services.

Source: Informa's *Strategic Transactions*. ^aThe PerkinElmer–Eurolmmun transaction is not primarily molecular diagnostics, but was included because there is a molecular diagnostics component to the deal.

There were also some notable financings for molecular diagnostics companies last year (**Table 3**). In the the largest venture round by a medtech firm to date, Grail's series B financing raised \$973 million in January 2017. Grail, a spin-out from the genomics company Illumina, is developing blood-based diagnostics for cancer—so-called liquid biopsies—which could aid diagnosis as well as the development of targeted cancer therapies (*Nat. Rev. Drug Discov.* **16**, 373–374; 2017). In addition, the largest initial public offering in the medtech industry overall was for diagnostics company Quanterix, which raised \$74 million in December 2017.

Table 3 | Top ten molecular diagnostics financings of 2017 by value

Month	Company (business area)	Financing type	Deal value (\$ millions)
January	Grail (blood-based cancer diagnostics)	Series B round	973
May	Guardant Health (cancer diagnostics)	Undisclosed late-stage round	360
July	Quidel (rapid diagnostics)	Debt	270
September	23andMe (consumer genetics and research)	Series F round	250
May	WuXi NextCODE (contract genomics)	Series B round	240
June	Exact Sciences (cancer diagnostics)	Follow-on public offering	239
November	Progenity (women's health, reproductive medicine and oncology testing)	Series B round	125
August	Natera (genetic testing for reproductive health)	Debt	100
November	Biocartis (fully automated molecular testing platform)	Private investment in public equity	95
November	Counsyl (prenatal testing, women's health and hereditary disorder screening)	Undisclosed late-stage round	80

Source: Informa's *Strategic Transactions*.

Amanda Micklus (amanda.micklus@informa.com) and Maureen Riordan (maureen.riordan@informa.com) are based at Informa, New York, NY, USA.