

VALUE FOCUS

Medical Device Industry



Third Quarter 2016

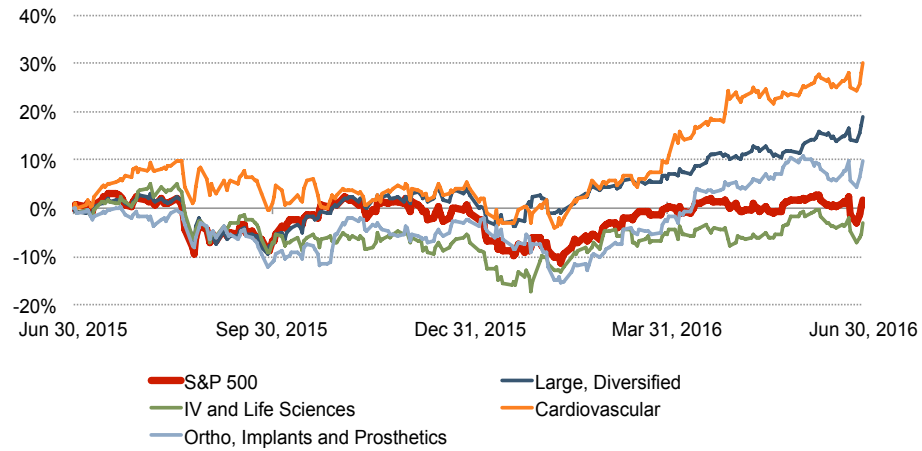
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Stock Market Performance

Investor returns across major medical device sectors, except in-vitro diagnostic (IVD), exceeded S&P 500 performance over the twelve months to 2Q16. Overall, cardiovascular and large, diversified medtech companies saw the largest year-over-year (YOY) returns. Multiples expanded across sectors relative to 2Q15, with the exception of the IVD sector.

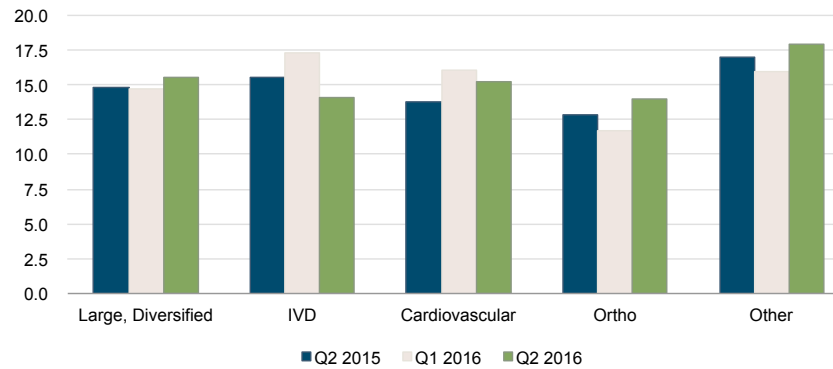
- » IVD companies moved generally in step with broader markets over the second quarter, rising 2.6% from 1Q16 compared to 1.9% for the S&P 500. On a YOY basis, the sector saw a 3.0% decline, led by declines from Hologic (-9.1%) and Bio-Rad Laboratories (-5.0%). Bio Techne saw a 14.5% increase that mitigated price weaknesses from other IVD constituents.
- » Cardiovascular companies returned a collective 29.9% over the year to 2Q16, and 18.6% during the quarter. Significant stock movers YOY within the group included Abiomed (66.3%), Edward Lifesciences Corporation (40.0%), and CR Bard (37.8%). St. Jude also experienced significant stock appreciation on news of its merger with Abbott Labs in 2Q16. The deal is expected to close in 4Q16.
- » The orthopedic, implants and prosthetics sector saw solid gains in 2Q16, leading to positive YOY performance. Overall, the sector improved 9.7% and 12.5% YOY and through the 2Q16, respectively. Significant price movers included Zimmer (10.2%) and Integra LifeSciences (18.4%).
- » The group of large, diversified companies gained 11.9% in 2Q16 and 18.9% over the previous twelve months, widely outpacing the broader market in the quarter (1.9%) and on a YOY basis (1.7%). Large movers in 2Q16 included Johnson & Johnson (12.1%) and Stryker (11.7%). Following news of Abbott's acquisition of St. Jude, the company's stock declined 6.0% over the quarter.

Total Shareholder Returns



Represents market capitalization weighted index for each group. Source: Bloomberg, Mercer Capital analysis

EV/EBITDA Multiples

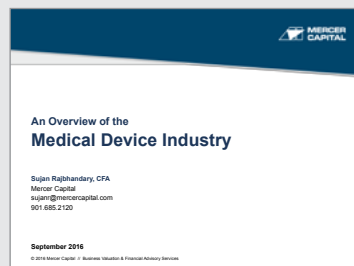


Median EBITDA multiples from each MCM group. Data source: Bloomberg

Venture Capital Funding & Exit Activity

Venture Capital funding in the medical device industry grew at a sluggish pace in 2Q16 compared to the prior quarter. **Medical device investment in 2Q16** totaled \$539 million, representing a 3.4% increase from 1Q16. Deal volume improved slightly from the prior quarter (58 in 1Q16 compared to 61 in 2Q16), while declining 27% from 2Q15 (83).

- » VC investments in medical device companies accounted for 3.5% of all VC investments during 2Q16, down from 4.1% in 1Q16 and 4.8% in 2Q15.
- » Total VC funding in all sectors for 2Q16 was \$15.3 billion, up 20.5% from the previous quarter. Life Science investment funding (including biotechnology and medical devices) totaled \$2.2 billion in 2Q16, representing a 10.1% decrease from the previous quarter.
- » Average deal size for medical device deals was \$8.8 million, down from \$9.0 million in the previous quarter and \$10.2 million in 2Q15.



MERCER CAPITAL PRESENTATION

An Overview of the Medical Device Industry

Sujan Rajbhandary, CFA, leader of Mercer Capital's Medical Device Industry team, presents a broad outline of the medical device industry, which is characterized by:

1. Continual technological advancement
2. High profitability
3. Sustained growth

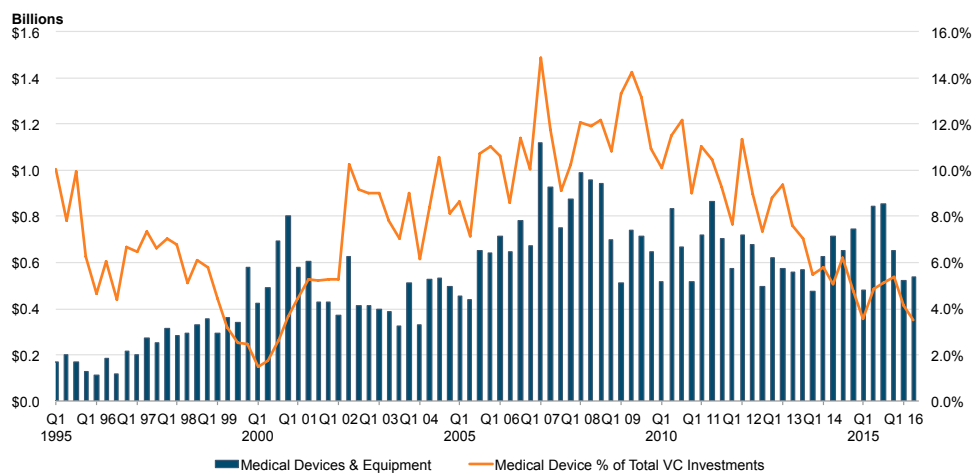
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Venture Capital Funding & Exit Activity (continued)

Exit activity for venture-backed companies increased in 2Q16 compared to 1Q16, led by biotechnology companies.

- » During 2Q16, nine IPOs of venture-backed life science companies (biotechnology and medical device / healthcare) raised \$533.9 million, compared to \$574.5 million raised in 1Q16.
- » Ten venture-backed life science companies entered into strategic M&A transactions during 2Q16. The quarter saw Abbvie Inc.'s \$5.8 billion acquisition of Stemcentrx Inc., along with McKesson Specialty Health's \$1.2 billion purchase of Vantage Oncology, Inc., an operator of radiation oncology treatment centers. The combinations of these two deals pushed the disclosed value of venture-backed strategic exits in the life sciences sector during 2Q16 to an all-time quarterly record of \$7.3 billion.

Venture Capital Investments in Medical Devices



Data Source: MoneyTree Report; PwC/NVCA, Thomson Reuters, Mercer Capital analysis

Select Venture Funding Deals

Company	Recent Financing		Founded	Notes
	Amount (\$M)	Round		
Earlens Corp	\$54	Later Stage	2005	Specializes in manufacturing hearing aids.
TransMedics Inc	\$51	Later Stage	1998	Designs and produces organ transplant technologies and devices.
Livongo Health Inc	\$49	Early Stage	2014	Develops medical monitoring equipment for diabetes management.
CVRx Inc	\$47	Later Stage	2001	Develops implantable technology for the treatment of high blood pressure.
Mitralign Inc	\$40	Later Stage	NA	Develop catheter-based technology for the percutaneous treatments of functional mitral regurgitation.
Sonendo Inc	\$33	Later Stage	2007	Develops technologies related to endodontic therapy.
Optiscan Biomedical Corp	\$29	Later Stage	1994	Develops glucose monitoring systems.
Endostim Inc	\$25	Early Stage	2009	Produces medical devices to treat gastrointestinal and urological neuro-muscular disorders.
Reflexion Medical Inc	\$23	Early Stage	2009	Develops biologically guided radiation therapy system.
SI-Bone Inc	\$20	Later Stage	2008	Develops sacroiliac joint medical devices and technologies.
NeuMoDx Molecular Inc	\$20	Expansion	2013	Develops molecular diagnostic testing.
WHILL Inc	\$18	Expansion	2012	Designs and develops personal mobility products.
Obalon Therapeutics Inc	\$16	Later Stage	2008	Develops weight loss medical devices.
Magnolia Medical Technologies LLC	\$14	Later Stage	2011	Focuses on improving the accuracy of diagnostic blood culture tests.
3Scan Inc	\$13	Expansion	2011	Develops automated microscopy services and supporting software for the 3D analysis of cells, tissues, and organs.

Data Source: MoneyTree Report, PwC/NVCA, Thomson Reuters; and, CrunchBase [<http://www.crunchbase.com/>] at TechCrunch.com. Medical Devices and Equipment funding rounds over \$10 million during 2Q16.

Medical Devices Select Transactions Summary

(\$Millions)

Acquirer	Target	Announce Date	Implied EV	Implied Enterprise Value			Sector
				EBIT	EBITDA	Revenue	
Abbott Laboratories	St. Jude Medical Inc.	04/27/2016	29,840.8	24.0x	18.7x	5.3x	Healthcare Equipment
Sanofi	Medivation, Inc.	04/15/2016	9,215.7	20.6x	20.2x	9.0x	Biotechnology
Pfizer Inc.	Anacor Pharmaceuticals, Inc.	05/14/2016	4,479.8	NM	NM	52.9x	Biotechnology
Jazz Pharmaceuticals Public Limited Company	Celator Pharmaceuticals, Inc.	05/27/2016	1,471.4	NM	NM	NA	Biotechnology
Merck & Co., Inc.	Afferent Pharmaceuticals, Inc.	06/09/2016	1,250.0	NA	NA	NA	Biotechnology
Gilead Sciences Inc.	Nimbus Apollo, Inc.	04/04/2016	1,200.0	NA	NA	NA	Life Sciences Tools and Services
Medtronic, Inc.	Heartware International Inc.	06/27/2016	1,066.4	NM	NM	4.1x	Healthcare Equipment
Zimmer Biomet Holdings, Inc.	LDR Holding Corporation	06/06/2016	1,043.3	NM	NM	6.3x	Healthcare Equipment
SMAC Co.,Ltd.	Aprogen, Inc.	5/18/2016	614.5	287.5x	130.2x	37.1x	Biotechnology
MicroVention, Inc.	Sequent Medical, Inc.	06/13/2016	380.0	NA	NA	NA	Healthcare Equipment
Dentsply Israel Ltd.	MIS Implants Technologies Ltd.	06/27/2016	375.0	NA	NA	4.7x	Healthcare Supplies
QLT Inc.	Aegerion Pharmaceuticals, Inc.	06/14/2016	260.5	NM	NM	1.2x	Biotechnology
Pharmaceutical Product Development, LLC	Synexus Limited	04/13/2016	257.8	NA	16.2x	3.7x	Life Sciences Tools and Services
Grifols Worldwide Operations Limited	Interstate Blood Bank, Inc.	04/08/2016	204.1	NA	NA	NA	Biotechnology

Only deals with available deal size information shown. | Data Source: Bloomberg and Capital IQ

Medical Devices Select Transactions Summary *(continued)*

(\$Millions)

Acquirer	Target	Announce Date	Implied EV	Implied Enterprise Value			Sector
				EBIT	EBITDA	Revenue	
Sinocare Inc.	CHEK Diagnostics	05/02/2016	200.0	NA	NA	NA	Healthcare Equipment
Richter Gedeon Vegyészeti Gyár Nyilvánosan Muködo Rt.	Finox AG	06/30/2016	194.8	NA	NA	NA	Biotechnology
Nokia Corporation	Withings SAS	4/26/2016	192.3	NA	NA	NA	Healthcare Equipment
Halyard Health, Inc.	CORPAK MedSystems, Inc.	04/05/2016	174.0	NA	NA	NA	Healthcare Supplies
RoundTable Healthcare Management, LLC; RoundTable Healthcare Partners IV, L.P.; RoundTable Healthcare Investors IV, L.P.	Symmetry Surgical Inc.	05/02/2016	142.2	53.1x	15.6x	1.7x	Healthcare Equipment
BTG plc	Galil Medical Ltd.	05/06/2016	110.0	NA	NA	5.0x	Healthcare Equipment
Lisi Medical SAS	Alcoa Remmele Medical Operations	3/31/2016	102.0	NA	NA	1.5x	Healthcare Equipment
Auris Surgical Robotics, Inc.	Hansen Medical, Inc.	04/19/2016	101.4	NM	NM	7.6x	Healthcare Equipment
Sartorius AG	IntelliCyt Corporation	06/28/2016	90.0	NA	NA	6.7x	Life Sciences Tools and Services
Allergan plc	Topokine Therapeutics, Inc.	04/21/2016	85.0	NA	NA	NA	Biotechnology
Gentherm Incorporated	Cincinnati Sub-Zero Products, Inc.	3/31/2016	65.0	NA	NA	1.0x	Healthcare Equipment
CooperSurgical Inc.	Genesis Genetics Institute, LLC	4/4/2016	60.0	NA	NA	2.5x	Biotechnology
Handicare AB	Prism Medical Ltd.	06/27/2016	61.2	65.1x	22.0x	1.3x	Healthcare Equipment

Only deals with available deal size information shown. | Data Source: Bloomberg and Capital IQ

Medical Devices Select Transactions Summary *(continued)*

(\$Millions)

Acquirer	Target	Announce Date	Implied EV	Implied Enterprise Value			Sector
				EBIT	EBITDA	Revenue	
Myriad Genetics, Inc.	Sividon Diagnostics GmbH	05/31/2016	55.6	NA	NA	NA	Biotechnology
Eastbridge Asian Mid-Market Opportunity Fund II L.P.	TCM Korea Inc.	06/01/2016	52.2	NA	NA	NA	Healthcare Equipment
Stryker Corporation	Stanmore Implants Worldwide Ltd.	04/29/2016	52.1	NA	NA	NA	Healthcare Equipment
Luminex Corporation	Nanosphere, Inc.	05/15/2016	51.8	NM	NM	2.2x	Biotechnology
Scapa Group plc	Euromed Inc.	05/23/2016	42.0	NA	16.8x	2.3x	Healthcare Supplies
Ergomed Plc	Haemostatix Ltd.	05/04/2016	40.8	NA	NA	NA	Biotechnology
Opko Health, Inc.	Transition Therapeutics Inc.	06/29/2016	40.7	NM	NM	NA	Biotechnology
Dragon Jade International Ltd.	Ultroid Marketing Development Corporation	5/5/2016	40.0	NA	NA	NA	Biotechnology
Ossur Hf.	Touch Bionics Limited	4/9/2016	38.9	NA	30.6x	1.8x	Healthcare Equipment
Universal Display Corp.	Adesis, Inc.	06/23/2016	36.0	NA	NA	NA	Life Sciences Tools and Services

Only deals with available deal size information shown. | Data Source: Bloomberg and Capital IQ

Select Operating Metrics

Segment	Gross Margin		EBITDA Margin		Operating Margin		R&D / Revenue	
	Q2 2016	Q1 2016	Q2 2016	Q1 2016	Q2 2016	Q1 2016	Q2 2016	Q1 2016
Large, Diversified	66.7%	66.0%	26.7%	26.3%	14.0%	13.6%	7.2%	7.2%
IVD & Life Sciences	55.0%	55.3%	15.0%	14.6%	10.3%	10.0%	9.1%	9.2%
Cardiovascular	66.1%	66.3%	18.8%	17.6%	8.4%	7.4%	12.4%	12.3%
Ortho, Implants & Prosthetics	69.5%	69.3%	17.3%	17.2%	8.2%	8.0%	7.0%	7.0%
Other	53.3%	53.6%	5.8%	4.4%	-1.0%	-0.9%	8.1%	8.2%
All Companies	58.1%	57.8%	16.3%	15.7%	8.2%	8.0%	7.9%	7.9%

Segment	Historical Rev Growth		LT Fwd Op Earn Grwth		Debt / EV		Debt / EBITDA	
	Quarterly	Annual	Q2 2016	Q1 2016	Q2 2016	Q1 2016	Q2 2016	Q1 2016
Large, Diversified	1.0%	2.5%	11.2%	11.4%	14.8%	18.4%	2.6	2.7
IVD & Life Sciences	2.1%	2.7%	12.5%	14.0%	5.5%	4.9%	1.5	1.4
Cardiovascular	2.7%	5.0%	17.5%	16.5%	9.1%	10.6%	1.0	0.8
Ortho, Implants & Prosthetics	1.9%	5.6%	14.1%	14.3%	20.3%	23.2%	2.7	2.7
Other	2.5%	5.3%	14.0%	13.1%	8.0%	6.2%	0.5	0.4
All Companies	2.4%	4.5%	13.6%	13.4%	10.4%	10.5%	1.3	1.4

Median measures for each group. | Data Source: Bloomberg

Public Medical Device Companies

	Price			Δ Stock Price		EV	TTM Rev	TTM EBITDA	FWD EBITDA		EV / Sales	EV / EBITDA	EV / FWD EBITDA	
	Q2 2016	Q1 2016	Q2 2015	Qtrly	Annual				Q2 2016	Q2 2016			Q2 2016	FY 2016
Large, Diversified														
Abbott Laboratories	\$39.31	\$41.65	\$49.01	-5.6%	-19.8%	\$62,346.4	\$20,556.0	\$5,393.0	\$5,100.5	\$5,743.8	3.03	11.6	12.2	10.9
Baxter	\$45.22	\$41.26	\$70.65	9.6%	-36.0%	\$25,512.3	\$10,050.0	\$1,622.0	\$1,905.4	\$2,133.4	2.54	15.7	13.4	12.0
Becton, Dickinson and Company	\$169.59	\$152.54	\$141.78	11.2%	19.6%	\$46,198.3	\$12,310.0	\$3,265.0	\$3,433.0	\$3,732.5	3.75	14.1	13.5	12.4
Boston Scientific Corporation	\$23.37	\$18.82	\$17.81	24.2%	31.2%	\$36,699.0	\$7,956.0	\$2,127.0	\$2,352.7	\$2,580.4	4.61	17.3	15.6	14.2
Medtronic, Inc.	\$86.77	\$75.42	\$73.30	15.0%	18.4%	\$139,626.9	\$28,833.0	\$9,016.0	\$9,860.1	\$10,549.1	4.84	15.5	14.2	13.2
Johnson & Johnson	\$121.30	\$108.98	\$97.68	11.3%	24.2%	\$317,312.2	\$70,877.0	\$24,521.0	\$25,174.6	\$26,774.9	4.48	12.9	12.6	11.9
Stryker Corporation	\$119.83	\$107.05	\$95.36	11.9%	25.7%	\$48,802.2	\$10,470.0	\$2,858.0	\$3,106.4	\$3,432.3	4.66	17.1	15.7	14.2
IVD & Life Sciences														
Bio-Rad Laboratories, Inc.	\$143.02	\$136.47	\$150.25	4.8%	-4.8%	\$3,841.9	\$2,028.5	\$278.3	\$289.0	\$303.0	1.89	13.8	13.3	12.7
Bruker Corporation	\$22.74	\$28.38	\$20.37	-19.9%	11.6%	\$3,601.2	\$1,621.4	\$255.8	\$259.3	\$295.8	2.22	14.1	13.9	12.2
Enzo Biochem, Inc.	\$5.97	\$4.43	\$2.94	34.8%	103.1%	\$245.8	\$101.9	(\$5.8)	(\$6.3)	(\$4.6)	2.41	nm	nm	nm
GenMark Diagnostics, Inc.	\$8.70	\$5.12	\$9.10	69.9%	-4.4%	\$354.4	\$45.2	(\$41.3)	(\$46.5)	(\$43.9)	7.84	nm	nm	nm
Haemonetics Corporation	\$28.99	\$34.72	\$41.34	-16.5%	-29.9%	\$1,761.2	\$906.2	\$178.8	\$188.7	\$210.3	1.94	9.8	9.3	8.4
Hologic, Inc.	\$34.60	\$34.50	\$37.63	0.3%	-8.1%	\$12,628.2	\$2,808.7	\$1,023.9	\$1,043.6	\$1,106.1	4.50	12.3	12.1	11.4
Illumina, Inc.	\$140.38	\$157.43	\$213.98	-10.8%	-34.4%	\$20,388.4	\$2,313.7	\$710.5	\$777.1	\$900.6	8.81	28.7	26.2	22.6
Luminex Corporation	\$20.23	\$19.49	\$17.22	3.8%	17.5%	\$795.1	\$248.2	\$56.0	\$58.0	\$57.0	3.20	14.2	13.7	13.9
OraSure Technology	\$5.91	\$7.20	\$5.41	-17.9%	9.2%	\$214.5	\$122.7	\$18.4	\$22.6	\$14.9	1.75	11.7	9.5	14.4
Quidel Corporation	\$17.86	\$17.23	\$22.85	3.7%	-21.8%	\$567.9	\$188.7	\$15.7	\$34.2	\$48.7	3.01	36.1	16.6	11.7
TECHNE Corporation	\$112.77	\$95.56	\$98.12	18.0%	14.9%	\$4,234.5	\$499.0	\$192.9	\$224.7	\$248.5	8.49	22.0	18.8	17.0
Trinity Biotech	\$11.34	\$11.50	\$18.02	-1.4%	-37.1%	\$272.6	\$100.5	\$0.0	\$17.5	\$22.0	2.71	nm	15.6	12.4
Vermillion, Inc.	\$1.11	\$1.53	\$2.08	-27.5%	-46.6%	\$48.7	\$1.9	(\$18.2)	nm	nm	25.58	nm	nm	nm

(\$Millions, except per share figures)

Data Source: Bloomberg

Public Medical Device Companies (continued)

	Price			Δ Stock Price		EV	TTM Rev	TTM EBITDA	FWD EBITDA		EV / Sales	EV / EBITDA	EV / FWD EBITDA	
	Q2 2016	Q1 2016	Q2 2015	Qtrly	Annual	Q2 2016	Q2 2016	Q2 2016	FY 2016	FY 2017	Q2 2016	Q2 2016	2016	2017
Cardiovascular														
ABIOMED, Inc.	\$109.29	\$93.03	\$65.33	17.5%	67.3%	\$4,475.4	\$359.1	\$75.3	\$90.2	\$150.7	12.46	59.4	49.6	29.7
CR Bard Inc.	\$235.16	\$202.88	\$170.94	15.9%	37.6%	\$18,084.3	\$3,541.5	\$1,094.7	\$1,216.8	\$1,310.9	5.11	16.5	14.9	13.8
CardioNet Inc.	\$16.30	\$12.07	\$9.29	35.0%	75.5%	\$467.0	\$191.6	\$36.0	\$43.7	\$50.3	2.44	13.0	10.7	9.3
Cardiovascular Systems, Inc.	\$18.38	\$10.14	\$26.56	81.2%	-30.8%	\$539.1	\$178.2	(\$39.9)	(\$9.2)	\$1.0	3.03	nm	nm	515.8
CryoLife, Inc.	\$11.81	\$11.15	\$11.16	5.9%	5.8%	\$410.5	\$166.6	\$28.6	\$25.7	\$27.0	2.46	14.3	16.0	15.2
Edwards Lifesciences Corporation	\$99.73	\$88.89	\$71.18	12.2%	40.1%	\$20,661.4	\$2,743.2	\$814.4	\$891.0	\$1,036.9	7.53	25.4	23.2	19.9
Integer Holdings Corporation	\$30.93	\$35.07	\$53.54	-11.8%	-42.2%	\$2,672.8	\$1,144.8	\$204.4	\$298.3	\$310.0	2.33	13.1	9.0	8.6
HeartWare International, Inc.	\$57.75	\$31.40	\$72.96	83.9%	-20.8%	\$1,019.9	\$257.0	(\$34.4)	(\$37.3)	(\$25.2)	3.97	nm	nm	nm
LeMaitre Vascular, Inc.	\$14.27	\$15.40	\$11.53	-7.3%	23.8%	\$233.0	\$82.2	\$16.2	\$20.1	\$23.6	2.84	14.3	11.6	9.9
Merit Medical Systems, Inc.	\$19.83	\$18.38	\$21.12	7.9%	-6.1%	\$1,099.9	\$563.6	\$84.5	\$95.6	\$109.2	1.95	13.0	11.5	10.1
St. Jude Medical, Inc.	\$78.00	\$55.05	\$72.85	41.7%	7.1%	\$27,866.6	\$5,796.0	\$1,724.0	\$1,826.2	\$1,922.2	4.81	16.2	15.3	14.5
The Spectranetics Corporation	\$18.71	\$14.38	\$23.75	30.1%	-21.2%	\$1,040.1	\$257.5	(\$13.8)	(\$15.0)	(\$5.3)	4.04	nm	nm	nm
Vascular Solutions, Inc.	\$41.66	\$32.47	\$34.24	28.3%	21.7%	\$688.7	\$155.6	\$33.3	\$33.6	\$45.0	4.43	20.7	20.5	15.3

(\$Millions, except per share figures)

Data Source: Bloomberg

Public Medical Device Companies (continued)

	Price			Δ Stock Price		EV	TTM Rev	TTM EBITDA	FWD EBITDA		EV / Sales	EV / EBITDA	EV / FWD EBITDA	
	Q2 2016	Q1 2016	Q2 2015	Qtrly	Annual				Q2 2016	Q2 2016			Q2 2016	FY 2016
Ortho, Implants and Prosthetics														
Alphatech Holdings	\$0.35	\$0.26	\$1.38	37.3%	-74.6%	\$130.1	\$178.6	\$8.8	nm	nm	0.73	14.8	nm	nm
Exactech, Inc.	\$26.74	\$19.19	\$20.89	39.3%	28.0%	\$386.9	\$250.4	\$43.3	\$44.9	\$48.7	1.55	8.9	8.6	8.0
Globus Medical, Inc.	\$23.83	\$23.39	\$25.58	1.9%	-6.8%	\$1,885.6	\$556.3	\$197.2	\$207.1	\$225.7	3.39	9.6	9.1	8.4
Intergra LifeSciences Holdings	\$79.78	\$67.55	\$67.48	18.1%	18.2%	\$3,588.1	\$953.6	\$204.2	\$235.8	\$267.0	3.76	17.6	15.2	13.4
NuVasive, Inc.	\$59.72	\$48.66	\$47.60	22.7%	25.5%	\$3,326.6	\$867.1	\$191.8	\$243.8	\$278.6	3.84	17.3	13.6	11.9
Orthofix International N.V.	\$42.40	\$41.68	\$32.95	1.7%	28.7%	\$732.5	\$408.5	\$55.2	\$70.5	\$85.9	1.79	13.3	10.4	8.5
RTI Surgical Inc.	\$3.59	\$4.01	\$6.24	-10.5%	-42.5%	\$338.4	\$277.6	\$38.0	\$35.0	\$38.6	1.22	8.9	9.7	8.8
Wright Medical Group, Inc.	\$17.37	\$16.73	\$24.80	3.8%	-30.0%	\$2,219.4	\$603.7	(\$19.6)	\$43.6	\$80.9	3.68	nm	50.9	27.4
Zimmer Holdings, Inc.	\$120.38	\$106.70	\$109.29	12.8%	10.1%	\$34,095.4	\$7,533.8	\$2,276.7	\$3,081.5	\$3,321.9	4.53	15.0	11.1	10.3

(\$Millions, except per share figures)

Data Source: Bloomberg

Public Medical Device Companies (continued)

	Price			Δ Stock Price		EV Q2 2016	TTM Rev Q2 2016	TTM EBITDA Q2 2016	FWD EBITDA		EV / Sales Q2 2016	EV / EBITDA Q2 2016	EV / FWD EBITDA	
	Q2 2016	Q1 2016	Q2 2015	Qtrly	Annual				FY 2016	FY 2017			2016	2017
Cosmetics														
Cutera, Inc.	\$11.21	\$11.12	\$15.98	0.8%	-29.8%	\$103.3	\$103.0	(\$0.3)	\$7.0	\$9.7	1.00	nm	14.8	10.6
Cynosure, Inc.	\$48.65	\$43.89	\$38.51	10.8%	26.3%	\$952.1	\$385.9	\$56.3	\$65.6	\$89.9	2.47	16.9	14.5	10.6
PhotoMedex, Inc.	\$0.25	\$0.54	\$1.47	-53.3%	-82.9%	\$5.6	\$60.4	(\$11.1)	nm	nm	0.09	nm	nm	nm
Dental														
Align Technology, Inc.	\$80.55	\$72.01	\$61.65	11.9%	30.7%	\$5,773.9	\$946.0	\$235.1	\$267.9	\$338.3	6.10	24.6	21.6	17.1
DENTSPLY International	\$62.04	\$62.06	\$51.33	0.0%	20.9%	\$15,405.8	\$3,114.6	\$753.4	\$944.3	\$1,103.9	4.95	20.4	16.3	14.0
Obesity Treatment														
EnteroMedics Inc.	\$0.29	\$0.98	\$0.97	-70.4%	-70.1%	\$5.5	\$0.6	(\$28.3)	nm	nm	9.81	nm	nm	nm
ZELTIQ Aesthetics, Inc.	\$27.33	\$26.76	\$29.79	2.1%	-8.3%	\$1,027.1	\$293.4	(\$8.1)	\$24.5	\$53.7	3.50	nm	41.9	19.1
Pediatric Medical Devices														
Natus Medical Incorporated	\$37.80	\$39.19	\$42.06	-3.5%	-10.1%	\$1,165.5	\$377.8	\$76.6	\$80.2	\$90.3	3.08	15.2	14.5	12.9
Surgery and Life Support Devices														
AtriCure	\$14.13	\$16.94	\$24.09	-16.6%	-41.3%	\$464.6	\$142.9	(\$22.9)	(\$13.9)	(\$8.4)	3.25	nm	nm	nm
Intuitive Surgical, Inc.	\$661.41	\$598.28	\$483.78	10.6%	36.7%	\$22,989.7	\$2,530.8	\$960.1	\$960.4	\$1,080.4	9.08	23.9	23.9	21.3
Misonix, Inc.	\$5.17	\$6.12	\$9.75	-15.5%	-47.0%	\$31.9	\$23.5	(\$2.5)	nm	nm	1.36	nm	nm	nm
NxStage Medical, Inc.	\$21.68	\$14.96	\$14.49	44.9%	49.6%	\$1,359.0	\$357.7	\$24.8	\$38.2	\$49.0	3.80	54.8	35.6	27.7
Stereotaxis, Inc.	\$0.98	\$1.10	\$1.46	-10.9%	-32.9%	\$38.6	\$35.0	(\$4.9)	nm	nm	1.10	nm	nm	nm
SurModics Inc.	\$23.48	\$19.04	\$23.34	23.3%	0.6%	\$261.4	\$70.6	\$27.8	\$25.3	\$25.0	3.70	9.4	10.3	10.5
Teleflex, Inc.	\$177.31	\$155.94	\$135.10	13.7%	31.2%	\$8,337.5	\$1,826.7	\$473.7	\$544.3	\$607.3	4.56	17.6	15.3	13.7

(\$Millions, except per share figures)

Data Source: Bloomberg

Public Medical Device Companies (continued)

	Price			Δ Stock Price		EV	TTM Rev	TTM EBITDA	FWD EBITDA		EV / Sales	EV / EBITDA	EV / FWD EBITDA	
	Q2 2016	Q1 2016	Q2 2015	Qtrly	Annual				Q2 2016	Q2 2016			Q2 2016	FY 2016
General Hospital Devices and Supplies														
CONMED Corporation	\$47.73	\$40.92	\$57.83	16.6%	-17.5%	\$1,820.1	\$734.8	\$124.3	\$133.3	\$144.0	2.48	14.6	13.7	12.6
Digirad Corporation	\$5.15	\$5.06	\$4.28	1.8%	20.3%	\$119.5	\$94.7	\$11.7	\$17.3	\$19.7	1.26	10.2	6.9	6.1
Dynatronics Corporation	\$2.97	\$2.93	\$3.23	1.4%	-8.0%	\$14.5	\$30.2	(\$0.5)	nm	nm	0.48	nm	nm	nm
FONAR Corporation	\$20.36	\$15.24	\$10.50	33.6%	93.9%	\$134.5	\$71.5	\$18.5	nm	nm	1.88	7.3	nm	nm
Intuitive Surgical, Inc.	\$661.41	\$598.28	\$483.78	10.6%	36.7%	\$22,989.7	\$2,530.8	\$960.1	\$960.4	\$1,080.4	9.08	23.9	23.9	21.3
Masimo Corporation	\$52.52	\$40.80	\$38.55	28.7%	36.2%	\$2,631.5	\$663.7	\$136.0	\$132.0	\$149.0	3.97	19.3	19.9	17.7
Opko Health, Inc.	\$9.34	\$9.90	\$15.49	-5.7%	-39.7%	\$4,997.0	\$1,067.4	\$79.3	\$34.5	\$53.3	4.68	63.0	144.7	93.8
STERIS Corporation	\$68.75	\$71.74	\$64.48	-4.2%	6.6%	\$7,233.2	\$2,437.2	\$521.8	\$598.0	\$656.0	2.97	13.9	12.1	11.0
Varian Medical Systems, Inc.	\$82.23	\$79.80	\$83.60	3.0%	-1.6%	\$7,709.0	\$3,123.1	\$627.4	\$671.3	\$709.3	2.47	12.3	11.5	10.9
Home Health and Consumer Devices														
Invacare Corporation	\$12.13	\$13.09	\$22.05	-7.3%	-45.0%	\$427.2	\$1,099.6	\$9.1	\$9.4	\$28.8	0.39	46.9	45.7	14.9
Mine Safety Appliances Company	\$52.53	\$48.43	\$48.84	8.5%	7.6%	\$2,323.6	\$1,161.2	\$188.8	\$210.0	\$223.0	2.00	12.3	11.1	10.4
ResMed Inc.	\$63.23	\$56.89	\$55.44	11.1%	14.1%	\$9,321.7	\$1,838.7	\$525.4	\$620.4	\$683.4	5.07	17.7	15.0	13.6
Span-America Medical Systems, Inc.	\$17.89	\$19.00	\$18.35	-5.8%	-2.5%	\$45.5	\$69.4	\$7.1	nm	nm	0.66	6.4	nm	nm
Syneron Medical Ltd.	\$7.69	\$7.28	\$10.79	5.6%	-28.7%	\$190.3	\$284.6	\$7.2	\$12.7	\$18.7	0.67	26.4	15.0	10.2

(\$Millions, except per share figures)

Data Source: Bloomberg

Public Medical Device Companies (continued)

	Price			Δ Stock Price		EV Q2 2016	TTM Rev Q2 2016	TTM EBITDA Q2 2016	FWD EBITDA		EV / Sales Q2 2016	EV / EBITDA Q2 2016	EV / FWD EBITDA	
	Q2 2016	Q1 2016	Q2 2015	Qtrly	Annual				FY 2016	FY 2017			2016	2017
Other Medical Device														
Accuray Incorporated	\$5.19	\$5.57	\$6.60	-6.8%	-21.4%	\$463.4	\$398.8	\$13.4	\$37.9	\$49.3	1.16	34.5	12.2	9.4
Allied Healthcare Products, Inc.	\$0.60	\$0.70	\$1.47	-14.3%	-59.2%	\$3.1	\$35.3	(\$1.3)	nm	nm	0.09	nm	nm	nm
Arrhythmia Research Technology, Inc.	\$4.40	\$4.43	\$6.37	-0.7%	-30.9%	\$17.1	\$20.1	\$0.9	nm	nm	0.85	18.1	nm	nm
Escalon Medical Corp.	\$0.78	\$0.79	\$1.42	-1.3%	-45.1%	\$5.3	\$12.2	(\$1.2)	nm	nm	0.43	nm	nm	nm
Hansen Medical, Inc.	\$3.97	\$2.56	\$0.88	55.1%	351.1%	\$96.7	\$13.3	(\$34.2)	nm	nm	7.26	nm	nm	nm
IRIDEX Corporation	\$14.79	\$10.30	\$8.29	43.6%	78.4%	\$137.4	\$45.8	\$1.0	nm	nm	3.00	144.5	nm	nm
Navidea Biopharmaceuticals, Inc.	\$0.53	\$0.93	\$1.63	-43.0%	-67.5%	\$143.1	\$18.4	(\$10.0)	nm	nm	7.78	nm	nm	nm
ThermoGenesis Corp.	\$2.93	\$3.72	\$0.84	-21.2%	246.9%	\$3.1	\$12.7	(\$10.0)	nm	nm	0.25	nm	nm	nm
Congentix Medical, Inc.	\$0.96	\$1.05	\$1.68	-8.4%	-42.7%	\$46.4	\$48.8	(\$1.4)	nm	nm	0.95	nm	nm	nm
Other Diversified Cos with Med-Tech Components														
Agilent Technologies, Inc.	\$44.36	\$40.12	\$38.74	10.6%	14.5%	\$14,131.1	\$4,126.0	\$922.0	\$942.6	\$1,046.9	3.42	15.3	15.0	13.5
Danaher Corporation	\$101.00	\$95.03	\$84.75	6.3%	19.2%	\$80,188.0	\$22,080.4	\$5,182.5	\$3,952.9	\$4,249.1	3.63	15.5	20.3	18.9
General Electric	\$31.48	\$31.83	\$26.64	-1.1%	18.2%	\$373,730.3	\$122,448.0	\$11,819.5	\$21,650.2	\$22,399.1	3.05	31.6	17.3	16.7
PerkinElmer, Inc.	\$52.42	\$49.34	\$52.83	6.2%	-0.8%	\$6,523.9	\$2,282.9	\$433.4	\$467.3	\$502.5	2.86	15.1	14.0	13.0
Thermo Fisher Scientific Inc.	\$147.76	\$140.79	\$129.45	5.0%	14.1%	\$71,630.1	\$17,605.7	\$4,359.7	\$4,541.0	\$4,953.0	4.07	16.4	15.8	14.5

(\$Millions, except per share figures)

Data Source: Bloomberg

Five Trends to Watch in the Medical Device Industry

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Medical Device Overview

The medical device manufacturing industry produces equipment designed to diagnose and treat patients within global healthcare systems. Medical devices range from simple tongue depressors and bandages, to complex programmable pacemakers and sophisticated imaging systems. Major product categories include surgical implants and instruments, medical supplies, electro-medical equipment, in-vitro diagnostic equipment and reagents, irradiation apparatuses, and dental goods.

The following outlines five structural factors and trends that influence demand and supply of medical devices and related procedures.

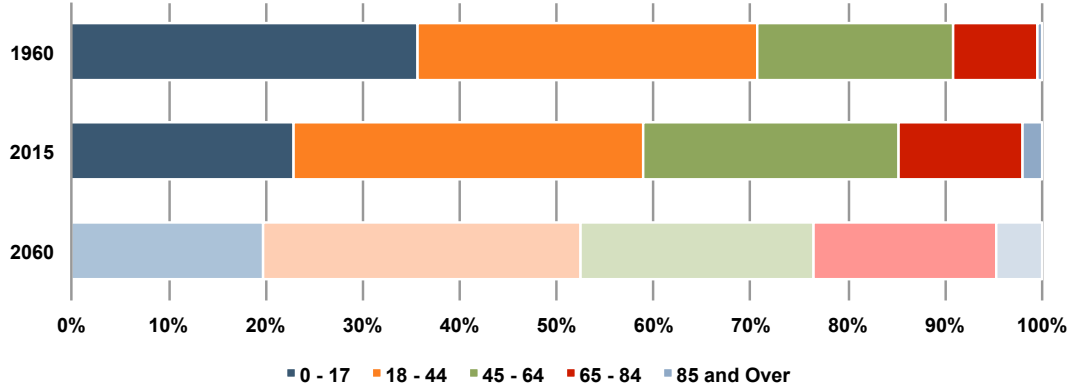
1 Demographics

The aging population, driven by declining fertility rates and increasing life expectancy, represents a major demand driver for medical devices. The U.S. elderly population (persons 65 and above) totaled 48 million in 2015 (15% of the population). The U.S. Census Bureau estimates that the elderly will roughly double by 2060 to 98 million, representing 24% of the total U.S. population.

The elderly account for nearly one third of total healthcare consumption. **Personal healthcare spending for the 65 and above population** segment was \$19,000 per person in 2012, five times the spending per child (\$3,600) and almost triple the spending per working-age person (\$6,600).

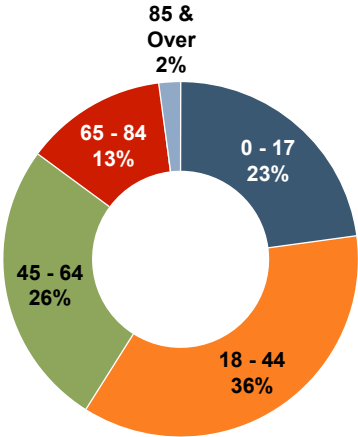
According to United Nations projections, the global elderly population will rise from 608 million (8.3% of world population) in 2015 to 1.8 billion (18.1% of world population) in 2060. Europe's elderly are projected to reach 28% of the population by 2060, making it the world's oldest region. While Latin America and Asia are currently relatively young, these regions are expected to experience drastic transformations over the next several decades, with the over 65 population segments expected to expand from 8% in 2015 to more than 23% of the total population by 2060.

U.S. Population Distribution by Age Group

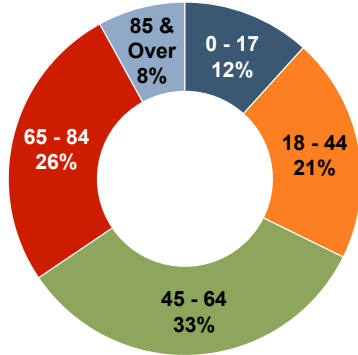


Source: US Census Bureau, 2015

U.S. Population Distribution by Age

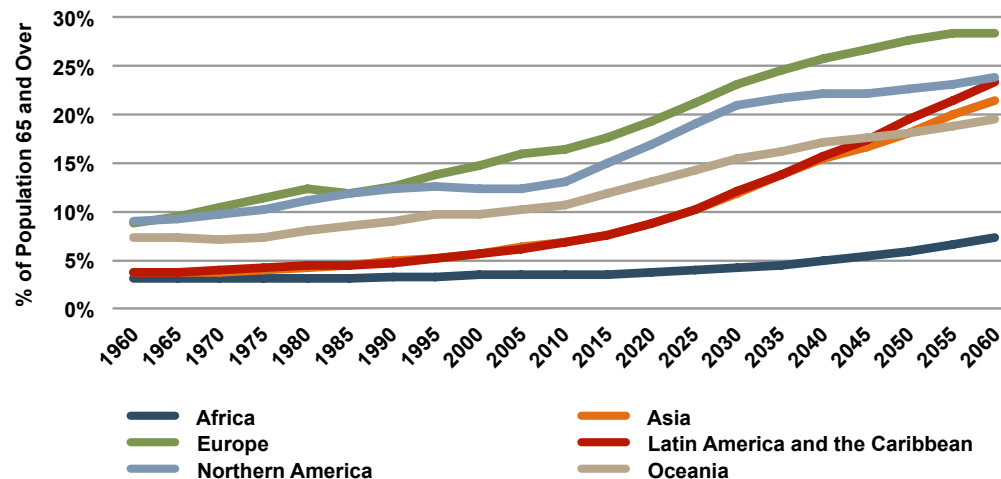


U.S. Healthcare Consumption Distribution by Age



Source: U.S. Census Bureau, Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group

World Population 65 and Over (% of Total)



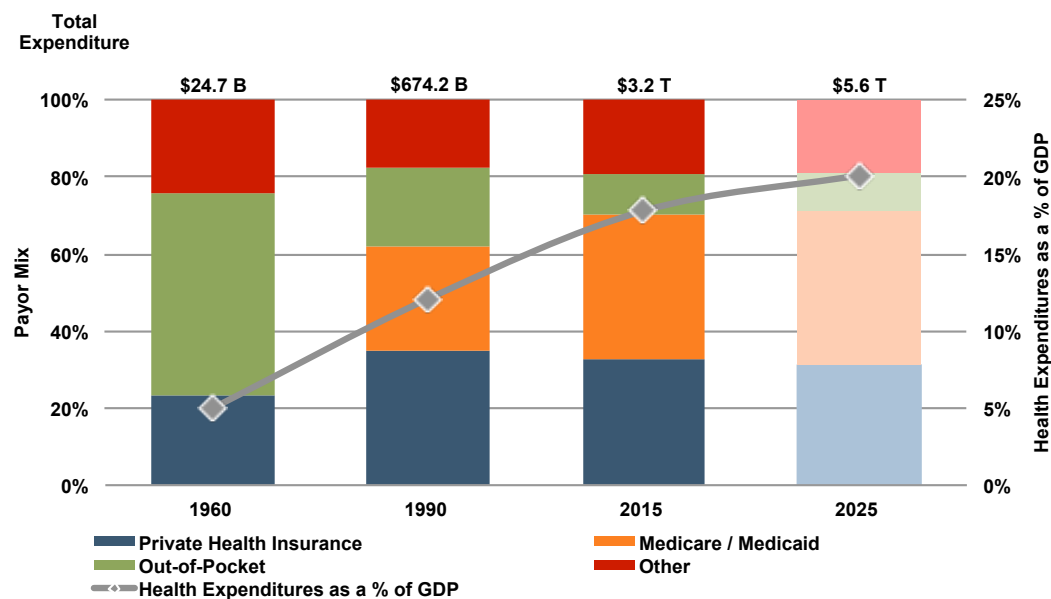
Source: United Nations, Department of Economic and Social Affairs, World Population Prospects: 2012 Revision

2 Healthcare Spending and the Legislative Landscape in the U.S.

Demographic shifts underlie the expected growth in total U.S. healthcare expenditure from \$3.2 trillion in 2015 to \$5.6 trillion in 2025. Healthcare spending as a percentage of GDP is also expected to expand from 17% in 2015 to over 20% by 2025.

Since inception, Medicare has accounted for an increasing proportion of total U.S. healthcare expenditures. Medicare currently provides healthcare benefits for an estimated 57 million elderly and disabled Americans, **constituting approximately 15% of the federal budget** in 2015. Medicare represents the largest portion of total healthcare costs, constituting 20% of total health spending in 2014. Medicare also accounts for 26% of hospital spending, 29% of retail prescription drugs sales, and 23% of physician services.

U.S. Healthcare Consumption Payor Mix and as % of GDP



Source: Centers for Medicare & Medicaid Services, Office of the Actuary

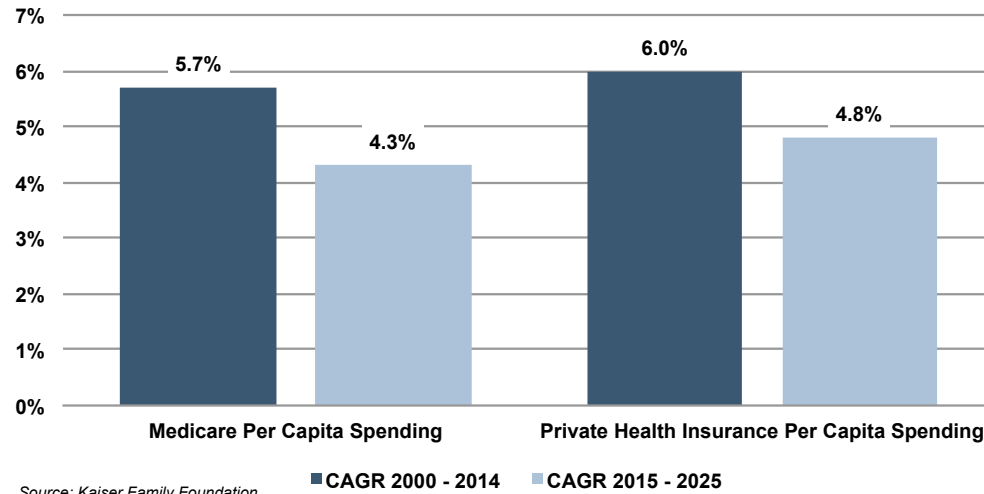
Owing to the growing influence of Medicare in aggregate healthcare consumption, legislative developments can have a potentially outsized effect on the demand and pricing for medical products and services. **Net outlays to the four parts of Medicare totaled** \$540 billion in 2015, and spending is expected to reach \$709 billion by 2020. Between 2000 and 2010, growth in Medicare spending per capita was comparable or lower than private health insurance spending.

The Patient Protection and Affordable Care Act (“ACA”) of 2010 incorporated changes that are expected to constrain annual growth in Medicare spending over the next several decades by curtailing increases in Medicare payments to healthcare providers, and establishing several new policies and programs designed to

reduce costs. On a per person basis, **Medicare spending is projected to grow** at 4.3% annually from 2015 and 2025, compared to 5.7% average annualized growth realized from 2000 to 2014.

As part of ACA legislation, a **2.3% excise tax was imposed** on certain medical devices for sales by manufacturers, producers, or importers. The 2.3% levy was expected to net nearly \$30 billion over a decade into the early 2020s. The tax became effective on December 31, 2012, but met **resistance from industry participants** and policy makers. In July of 2015, the U.S. House of Representatives voted to repeal the medical device tax. In late 2015, Congress passed legislation **promulgating a two-year moratorium** on the tax beginning January 2016.

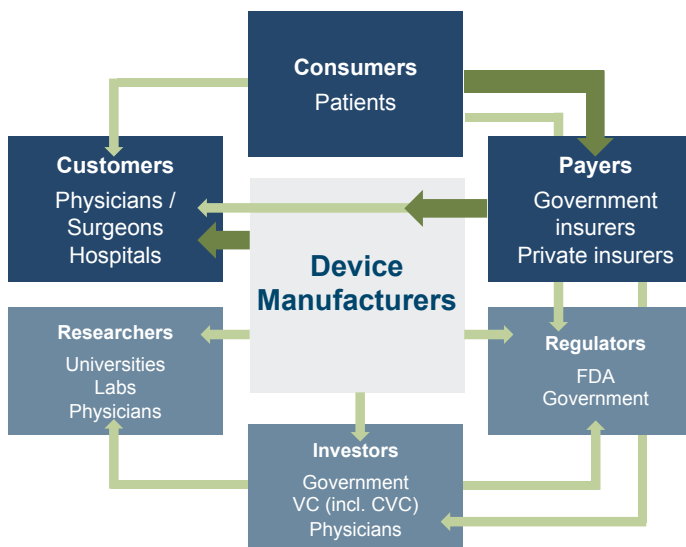
Average Spending Growth Rates, Medicare and Private Health Insurance



3 Third-Party Coverage and Reimbursement

The primary customers of medical device companies are physicians (and/or product approval committees at their hospitals), who select the appropriate equipment for consumers (the patients). In most developed economies, the consumers themselves are one (or more) step removed from interactions with manufacturers, and therefore pricing of medical devices. Device manufacturers typically receive payments from insurers, who usually reimburse healthcare providers for routine procedures (rather than for specific components like the devices used). Accordingly, medical device purchasing decisions tend to be largely disconnected from price.

Third-party payors (both private and government programs) are keen to reevaluate their payment policies to constrain rising healthcare costs. Several elements of the ACA are expected to limit reimbursement growth for hospitals, which form the largest market for medical devices. Lower reimbursement growth will likely persuade hospitals to scrutinize medical purchases by adopting i) higher standards to evaluate the benefits of new procedures and devices, and ii) a more disciplined price bargaining stance.



The transition of the healthcare delivery paradigm from fee-for-service (FFS) to value models is expected to lead to fewer hospital admissions and procedures, given the focus on cost-cutting and efficiency. In 2015, the Department of Health and Human Services (HHS) announced goals to have 85% and 90% of all **Medicare payments tied to quality or value** by 2016 and 2018, respectively, and 30% and 50% of total Medicare payments tied to alternative payment models by the end of 2016 and 2018, respectively. In March 2016, the HHS estimated 30% of Medicare payments were tied to alternative, value-based models, **nearly one year ahead of schedule**. Ultimately, lower reimbursement rates and reduced procedure volume will likely limit pricing gains for medical devices and equipment.

The medical device industry faces similar reimbursement issues globally. A number of countries have instituted price ceilings on certain medical procedures, which could deflate the reimbursement rates of third-party payors, forcing down industry product prices. Whether third-party payors consider certain devices medically reasonable or necessary for operations presents a hurdle that device makers and manufacturers must overcome in bringing their devices to market.

4 Competitive Factors and Regulatory Regime

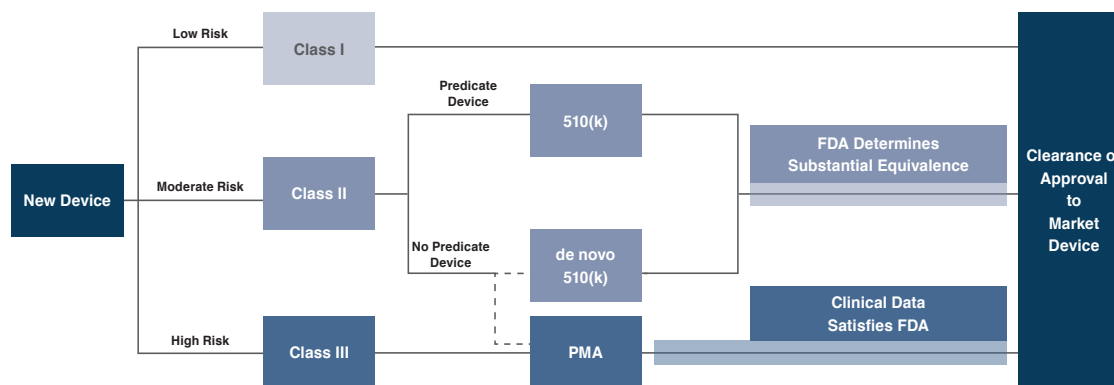
Historically, much of the growth for medical technology companies has been predicated on continual product innovations that make devices easier for doctors to use and improve health outcomes for the patients. Successful product development usually requires significant R&D outlays and a measure of luck. However, viable new devices can elevate average selling prices, market penetration, and market share.

Government regulations curb competition in two ways to foster an environment where firms may realize an acceptable level of returns on their R&D investments. First, firms that are first to the market with a new product can benefit from patents and intellectual property protection giving them a competitive advantage for a finite period. Second, regulations govern medical device design and development, preclinical and clinical testing, premarket clearance or approval, registration and listing, manufacturing, labeling, storage, advertising and promotions, sales and distribution, export and import, and post market surveillance.

Regulatory Overview in the U.S.

In the U.S., the FDA generally oversees the implementation of the second set of regulations. Some relatively simple devices deemed to pose low risk are exempt from the FDA's clearance requirement and can be marketed in the U.S. without prior authorization. For the remaining devices, commercial distribution requires marketing authorization from the FDA, which comes in primarily two flavors.

- » The premarket notification ("**510(k) clearance**") process requires the manufacturer to demonstrate that a device is "substantially equivalent" to an existing device that is legally marketed in the U.S. The 510(k) clearance process may occasionally require clinical data, and generally takes between 90 days and one year for completion.
- » The premarket approval ("**PMA**") process is more stringent, time-consuming and expensive. A PMA application must be supported by valid scientific evidence, which typically entails collection of extensive technical, preclinical, clinical and manufacturing data. Once the PMA is submitted and found to be complete, the FDA begins an in-depth review, which is required by statute to take no longer than 180 days. However, the process typically takes significantly longer, and may require several years to complete.



Pursuant to the Medical Device User Fee Modernization Act (MDUFA), the FDA collects user fees for the review of devices for marketing clearance or approval, as well as establishment registration. The current iteration of the act, MDUFA III, was enacted in 2012 and **expected to collect** approximately \$400 million in user fees over five years. The FDA and the medical device industry have reached a broad agreement on the outlines of the next iteration. The FDA is expected to collect nearly \$1 billion in user fees over five years pursuant to MDUFA IV, which would go into effect in October 2017.

Regulatory Overview Outside the U.S.

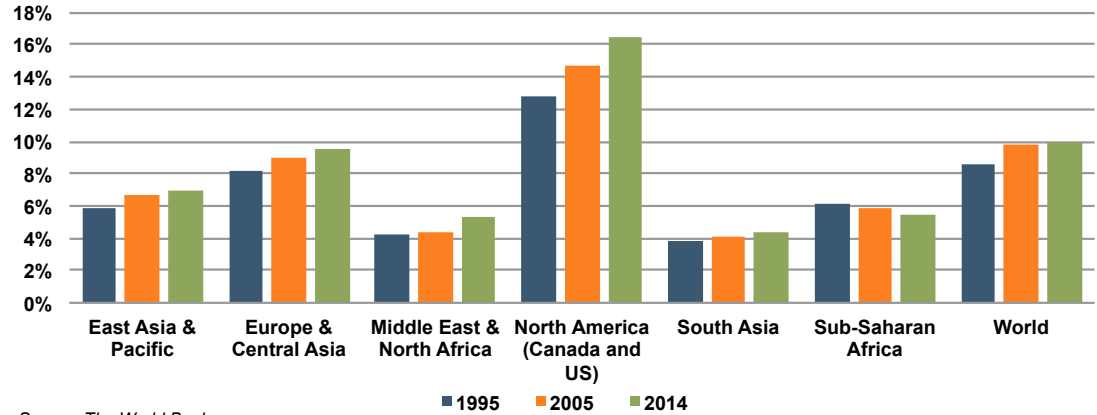
The European Union (EU), along with countries such as Japan, Canada, and Australia all operate strict regulatory regimes similar to that of the U.S. FDA, and international consensus is moving towards more stringent regulations. Stricter regulations for new devices may slow release dates and may negatively affect companies within the industry.

Medical device manufacturers face a single regulatory body across the EU, the Company's second largest end market behind the U.S. **In order for a medical device to be allowed on the market**, it must meet the requirements set by the EU Medical Devices Directive. Devices must receive a Conformité Européenne (CE) Mark certificate before they are allowed to be sold on the market. This CE marking verifies that a device meets all regulatory requirements for the EU, and that they meet EU safety standards. A set of different directives apply to different types of devices, and the device must be compliant with the directive that purviews it.

5 Emerging Global Markets

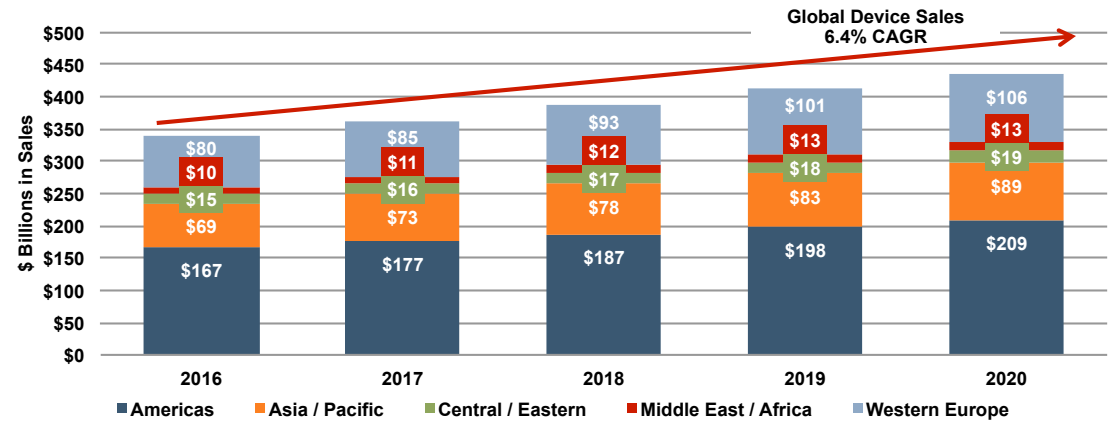
Emerging economies are claiming a growing share of global healthcare consumption, including medical devices and related procedures, owing to relative economic prosperity, growing medical awareness, and increasing (and increasingly aging) populations. As global health expenditure continues to increase, sales to countries outside the U.S. represent a potential avenue for growth for domestic medical device companies. According to the World Bank, all regions (except Sub-Saharan Africa) have seen an increase in healthcare spending as a percentage of total output over the last two decades.

World Healthcare Expenditure as a % of GDP



Source: The World Bank

Global Medical Device Market



Source: Worldwide Medical Devices Forecast to 2020, 2016 ITA Medical Devices Top Markets Report

Global medical devices sales are estimated to increase 6.4% annually from 2016 to 2020, reaching nearly \$440 billion according to the **International Trade Administration**. While the Americas are projected to remain the world's largest medical device market, the Asia and Pacific and Western Europe markets are expected to expand at a quicker pace over the next several years.

Summary

Demographic shifts underlie the long-term market opportunity for medical device manufacturers. While efforts to control costs on the part of the government insurer in the U.S. may limit future pricing growth for incumbent products, a growing global market provides domestic device manufacturers with an opportunity to broaden and diversify their geographic revenue base. Developing new products and procedures is risky and usually more resource intensive compared to some other growth sectors of the economy. However, barriers to entry in the form of existing regulations provide a measure of relief from competition, especially for newly developed products.

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