

## 2017 global life sciences sector outlook

Deloitte's yearly look at the topics, trends, and issues impacting the global life sciences sector

Global health care spend projected to reach **\$8.7 trillion** by 2020

**% of GDP spent on health care should also rise slightly, from an estimated 10.4 % in 2015 to 10.5 % in 2020**

**Where is the growth expected?**  
Emerging and lower-income countries will drive the rise in health care expenditures through 2020 as well as the expansion of services in developed countries.

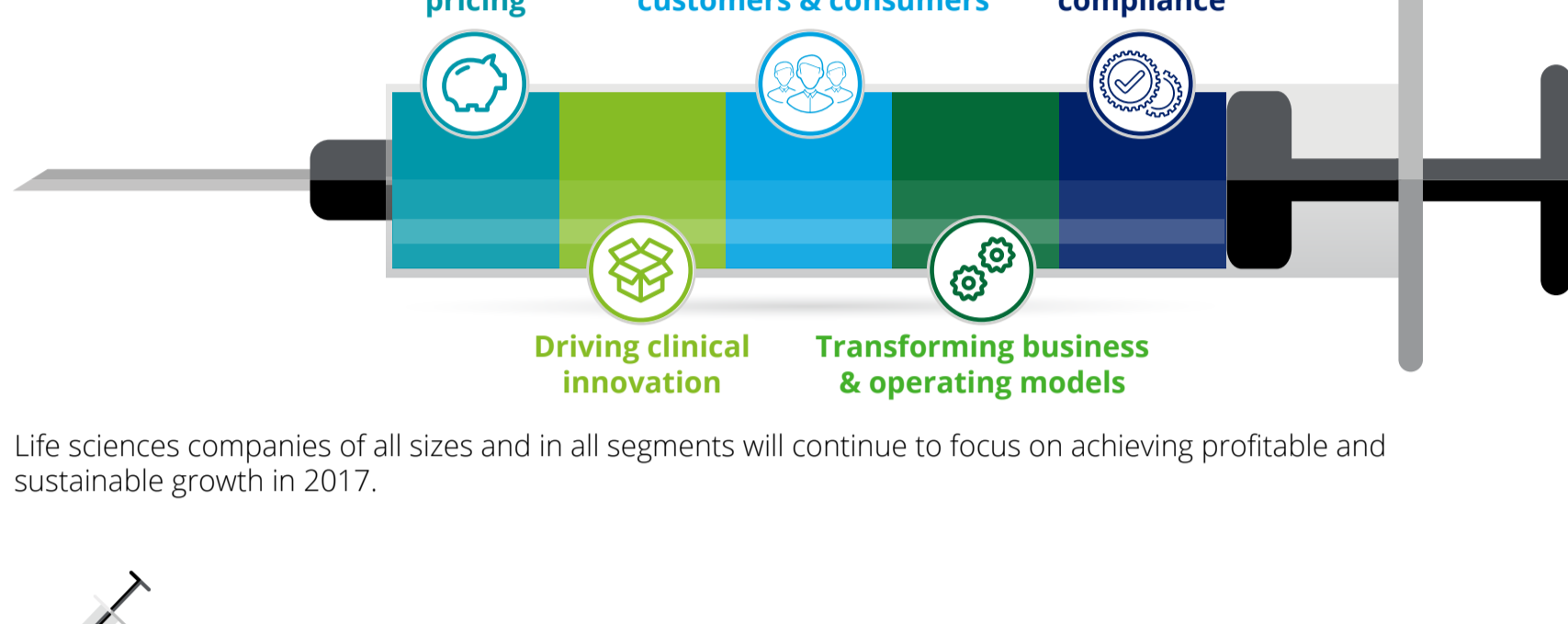
### Estimated sales

Pharma	Biotech	Generics	Medtech	Distributors
\$1,038b	\$293.5b	\$86b	\$388b	\$810b



### Global health care drivers

- By 2020, **50 percent** of global health care expenditures – about \$4 trillion – will be spent on three leading causes of death: cardiovascular diseases, cancer and respiratory diseases.
- Number of diabetes sufferers is expected to rise from the current **415 million** to **642 million** by 2040.
- HIV/AIDS continues to affect **36.9 million** people worldwide, around 70 percent of them living in Sub-Saharan Africa. The Zika virus and associated upsurge in microcephaly are major threats in Latin America.
- Prevalence of dementia is forecast to increase in every region of the world and is anticipated to double every 20 years, reaching **74.7 million** by 2030.
- Aging population (> 65 yrs old) will increase by **eight percent**, from 559 million in 2015 to **604 million** in 2020.



Life sciences companies of all sizes and in all segments will continue to focus on achieving profitable and sustainable growth in 2017.

### Managing cost & pricing

The broad challenge of managing cost and pricing is not expected to subside anytime soon and remains a front-burner issue for 2017 and the foreseeable future.

- Pressure to reduce costs
- Demands for lower-cost drugs and devices
- Greater use of generic medicines
- Outcome-based payment models
- Reference pricing systems
- Value-based pricing and reimbursement model changes
- Justifying the cost of their products using improved targeting, comparative effectiveness (CE) measures, and real-world evidence (RWE)
- Drug price cost-containment measures

**How are companies addressing these issues?**

- Companies are increasing operational efficiency through digital supply networks (DSN) which integrate information from many different sources and locations to drive the physical act of production and distribution
- Embracing operating models that are based on end-to-end (E2E) evidence management strategies and capabilities throughout product development, marketing and distribution

### Driving clinical innovation

Driving and sustaining clinical innovation persists as a life sciences sector priority in 2017, as stiff competition and patent cliffs continue to jeopardize revenue.

- Soaring R&D costs
- Growing market share for generic pharmaceuticals and biosimilars
- Increasing pricing pressures
- Heightened scrutiny by regulators

**Deloitte analysis shows that the traditional, fully integrated pipeline process from idea to R&D to commercialization has been showing diminishing returns**

As cost to develop an asset increases, sales continue to decline

Year	R&D Cost (\$bn)	Average Peak Sales (\$bn)
2010	\$1,188	\$816m
2016	\$1,539	\$394m

Cost to develop an asset has increased by 1/3rd since 2010. Average peak sales per asset have halved since 2010.

### Trends in clinical innovation

Genetics, epigenomics, and genomics	Molecular biology	Biomechanical/biomedical engineering	Biotechnological/biopharmaceutical technologies	Breakthrough drugs and devices
By 2020, genetic testing is expected to be part of mainstream medical practice, paving the way for stratified or personalized medicine	Pharma technologies of the future will be better-positioned to analyze the molecular basis on diseases, enabling development of targeted medicines	New clinical engineering methods will drive innovation around regenerative medicine (e.g., tissue-repair products like skin grafts, tissue replacement products using 3D bioprinters to print living tissue with ink derived from human cells)	Advancements will support continued development of lower-cost biosimilars, including monoclonal antibodies and recombinant products	Bone-rebuilding drug, Romosozumab (awaiting FDA approval); 3D printed epilepsy drug, Spritam; bioelectric implants; and surgical robots are anticipated to improve health outcomes and drive future life sciences sector growth

**Translational medicine, health care digitalization, artificial intelligence (AI), big data and analytics continue to impact clinical innovation**

**How are companies addressing clinical innovation?**

- Continuous R&D innovation
- Collaborative directed research
- Lifetime patient data management
- Accelerated access processes
- Clinical pathway delivery
- Launch factories
- Digital platforms

### Connecting with customers and consumers

Increasingly engaged and empowered health care consumers are demanding services and solutions that are coordinated, convenient, customized, and accessible.

- Changing stakeholder roles and influence
- Expectations and demands for innovative products
- Patient involvement, and shared decision-making
- Increase in data and information access
- Mobile applications
- Personal health devices
- Focus from traditional product development and marketing models to more patient-centric ones

Growing consumer appetite for using technology-enabled care - telemedicine, remote patient monitoring, drones - for post-surgical care, chronic disease monitoring, by patients and caregivers, but it must be personal and safe.

### Technology is powering consumer health care engagement

The increase in data and information access, mobile applications, and personal health devices is accelerating the pace of consumer engagement in health care

**Nearly 40% of surveyed health care consumers looked online for information related to health and treatment.**

**23% used social media for health related purposes.**

**Online tools:** Online communities can empower patients and provide a source of information and social/emotional support.

**Telehealth:** For patients with congestive heart failure, diabetes, depression, and other chronic conditions, digital health technologies such as home telemonitoring can reduce hospital readmissions and increase the ability of individuals to live independently.

The Center for Medicare & Medicaid Innovation, with \$10 billion in funding for 10 years, is encouraging grant winners to use and test telemedicine and home health services, among other offerings.

**Social networks:** Have become powerful customer engagement tools and offer a more personal and open dialogue than traditional marketing.

**18%** of surveyed consumers consulted a provider using secure messaging, texting, or email.

**28%** are very interested in doing so in the future.

**13%** of surveyed consumers used video, a computer program, or mobile app to learn about treatment options.

**17%** are very interested in doing so in the future.

**28%** of surveyed consumers used technologies to monitor and manage their fitness/health, compared with 17% in 2013.

### Transforming business & operating models

Many life sciences companies are looking at how they can transform their current business and operating models to counter rising cost pressures and pursue excellence across their organizations.

### Life sciences company likely cost-management actions

- Streamline business processes
- Improve policy compliance
- Streamline organization structure
- Reduce external spend
- Increase centralization
- Change business configuration
- Outsource/Off-shore business processes

Companies are taking multiple paths to achieve their quality, cost, and efficiency goals

- Collaborative product development
- Portfolio and operational restructuring
- Growth through M&A

### Collaborative product development

Collaborations can span the spectrum of openness and potential partners may be found in government, academia, traditional biopharma, and new industry entrants

Degree of alignment with open innovation

Closed/traditional (Low) ----- Medium ----- High (Open/emerging)

Type 1	Type 2	Type 3	Type 4
Pure outsourcing R&D activity pursued by external entity, such as CROs and universities	Licensing, mergers and acquisitions, technology transfer, venture capital funding	Collaboration and variants (co-development, joint ventures)	Open source: Sharing technology, skills capabilities, to better produce products

Adopted by other industries like IT and C&P, but not much by biopharma companies

**Potential opportunity for biopharma to learn from other industries**

**Portfolio and operational restructuring** - Some biopharma and medtech companies are pursuing revenue and market growth by expanding their product portfolios via investments in new technologies such as regenerative medicine.

**Growth through M&A** - Merger, acquisition, and divestiture activity plays a significant role in life sciences companies' strategies to gain scale and to add new markets, new drugs, and novel technologies.

**Talent transformation** - Achieving operational excellence, measurable cost savings, and sustained innovation requires that life sciences companies leverage advancements in talent acquisition, management, and development as well as advances in technology because the two are intrinsically linked.

### Meeting regulatory compliance

Regulatory focus areas for 2017

- Cybersecurity
- Drug and device safety
- Intellectual property (IP) protection
- Counterfeit drugs
- Corruption

Life sciences companies should consider basing their efforts on a compliance risk framework that identifies and addresses their overall risk architecture. Compliance failures can be costly, both in terms of fines, remediation costs, and reputational damage. Identifying, analyzing, and mitigating compliance risks are, therefore, essential in developing an effective compliance program.