



Biotechnology Certificate – New Technologies For Health

January 2019

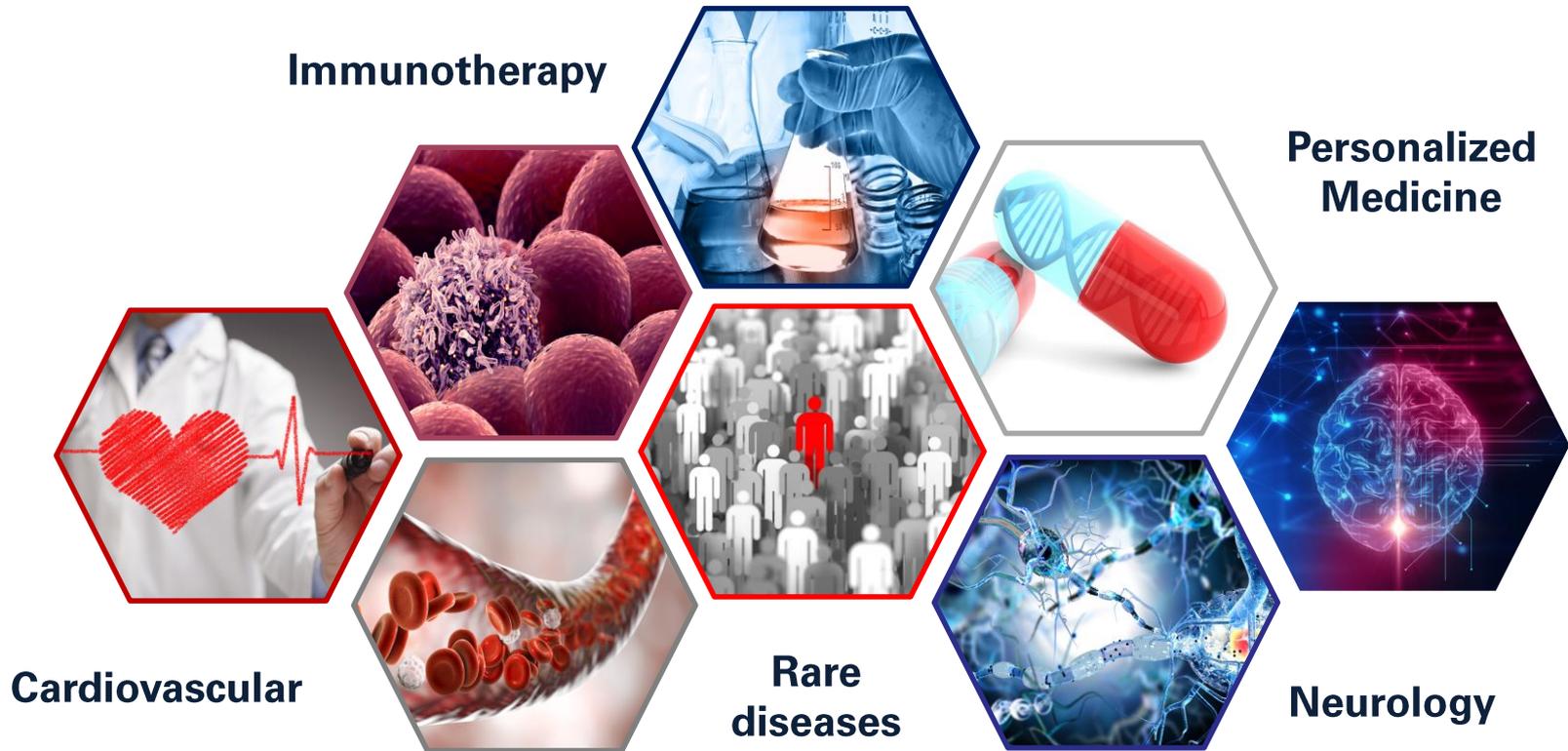

AtonRā Partners

Investment Case

- On the therapeutic front, we believe that genes therapies and personalized medicine will be on investors' agenda as we move into 2019 as newer technologies (including mobile wearables) are now able to capture, analyze, and share clinical data in a very short timeframe.
- We also believe that personalized medicine is not far away from becoming ubiquitous as prices for new testing (including DNA analysis) and analysis are coming down sharply
- We see M&A as a very powerful catalyst to support sector's undemanding valuations. A huge consolidation will take place in the healthcare sector.
- With the new US tax code and the huge incentive it has on investments (expense of amortizations), Capex is likely to get a boost and is likely to benefit the "hardware" players.
- Against this backdrop, we favor Biotech companies exposed to cell and gene therapies, antibodies and rare diseases over the larger market cap names which benefited more from rising drug prices than from volume growth

Biotechnology Certificate details

- ✓ Issuing bank: UBS AG Zurich, Calculation agent: UBS AG, London Branch
- ✓ ISIN: CH0275762380
- ✓ Currency: USD
- ✓ Fees: 1.6% management fee



What Is Biotechnology?

- The term has appeared for the first time with the **discovery of DNA**
- Modern biotechnology involves **the use of living organisms or their products** (bacteria or enzymes) to manufacture drugs
- Biotechnology products have **wider applications** than classic pharma
- A completely different business model than pharma:

R&D intensive **Smaller size**
Entrepreneurial

High risk, high reward profile

- Today lines are blurred between pure biotech and pharmaceutical companies as **these industries are partially consolidating**



Solution To A Global Social Issue - The "Hope Offering"



Entrepreneurial, knowledge intensive



High risk, high reward **profile**, strictly regulated



Computing power is an underlying fundamental of the industry



Reimbursement and pricing – important success factors

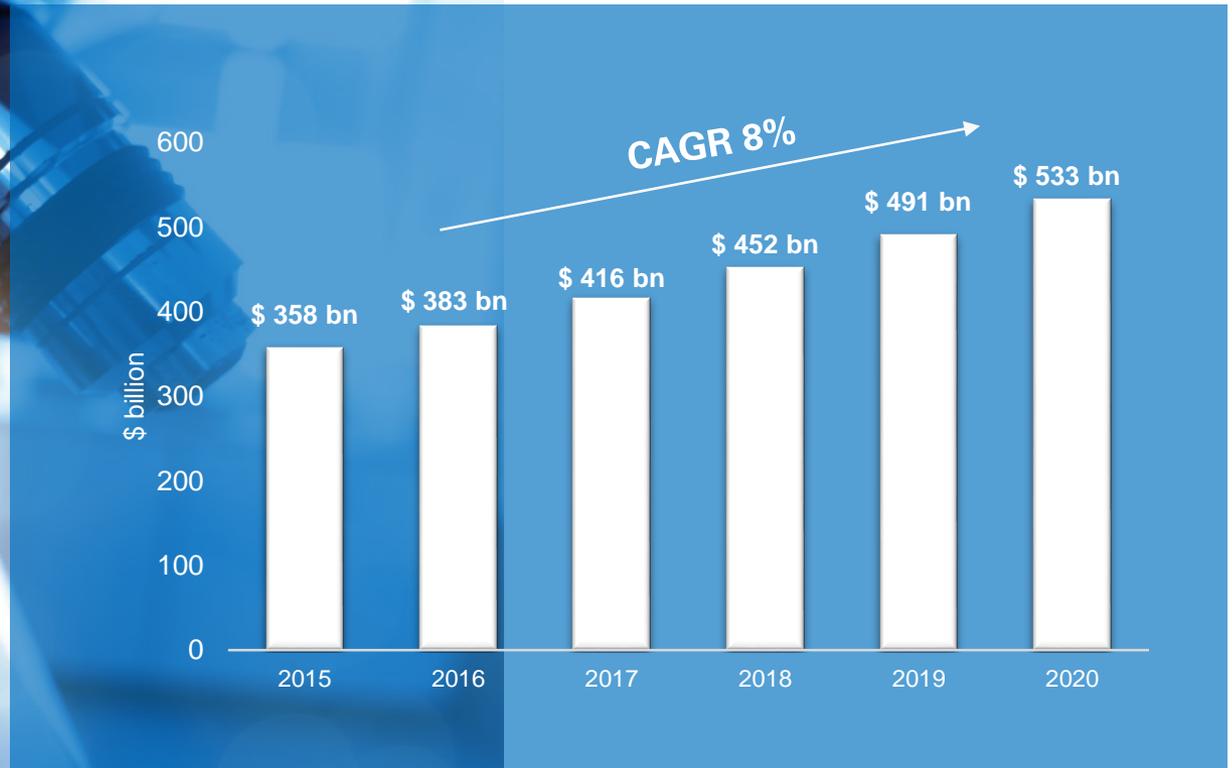


R&D dependent, high capital requirements



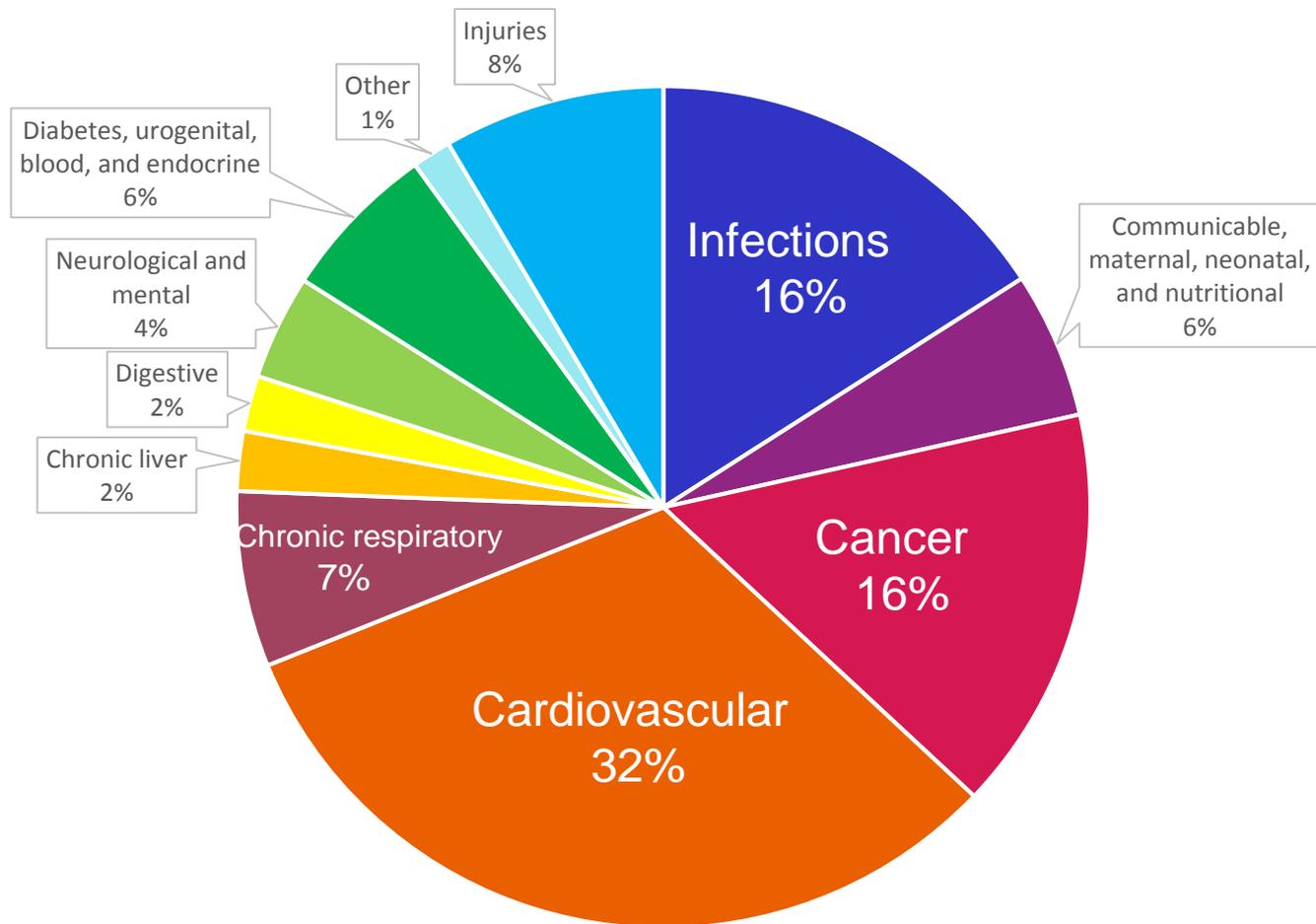
Constant business model evolution

Global Biotechnology Market Expected To Grow By 8% CAGR Through 2020



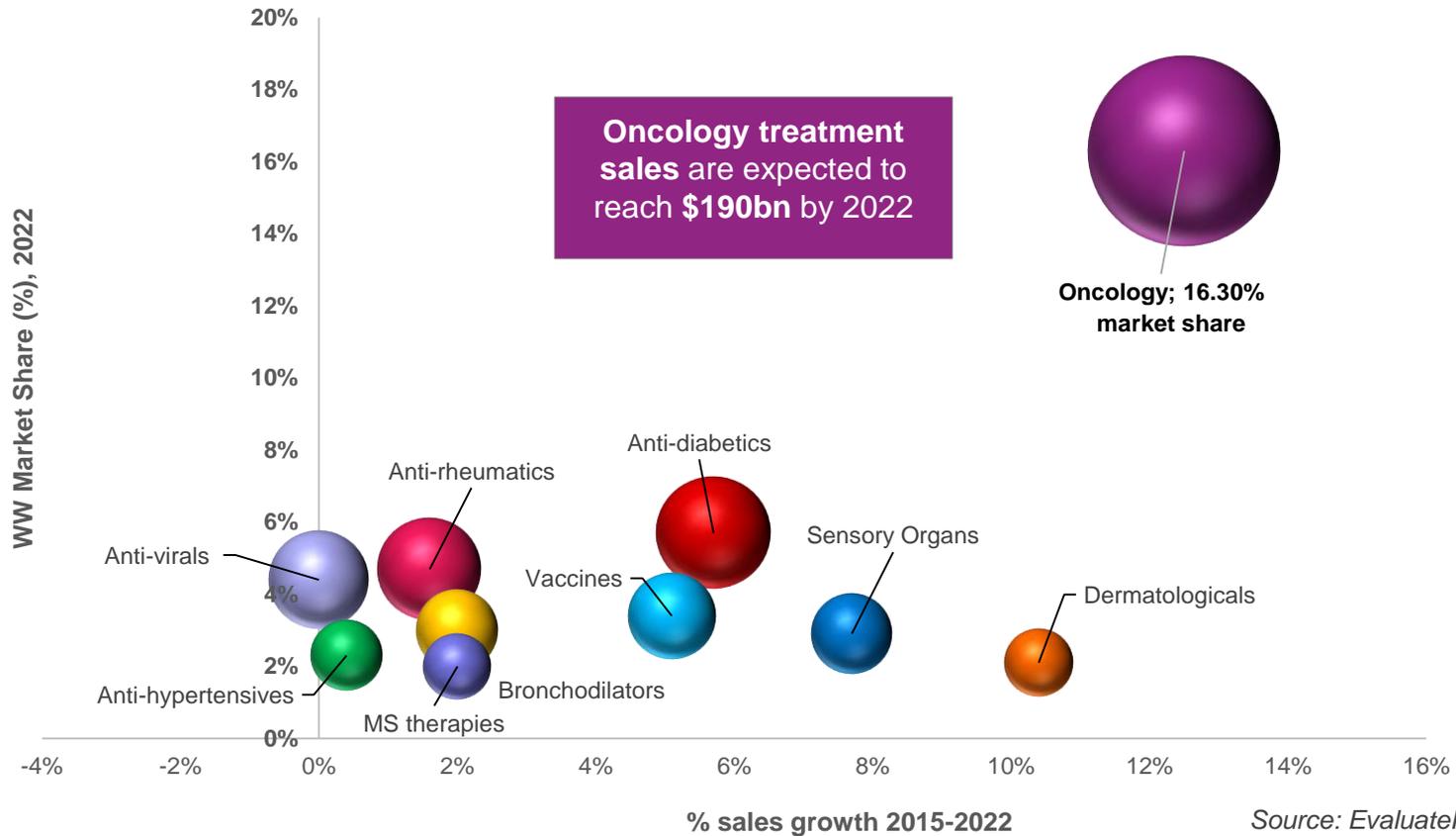
Source: MarketLine Industry Profile

Global Mortality Causes In 2015 (nb. of cases)



Oncology Has The Largest Market Potential

Top 10 Therapeutic Areas By 2022 - Market Share & Sales Growth



➤ **Emerging markets will lead “Anti-diabetics” growth**

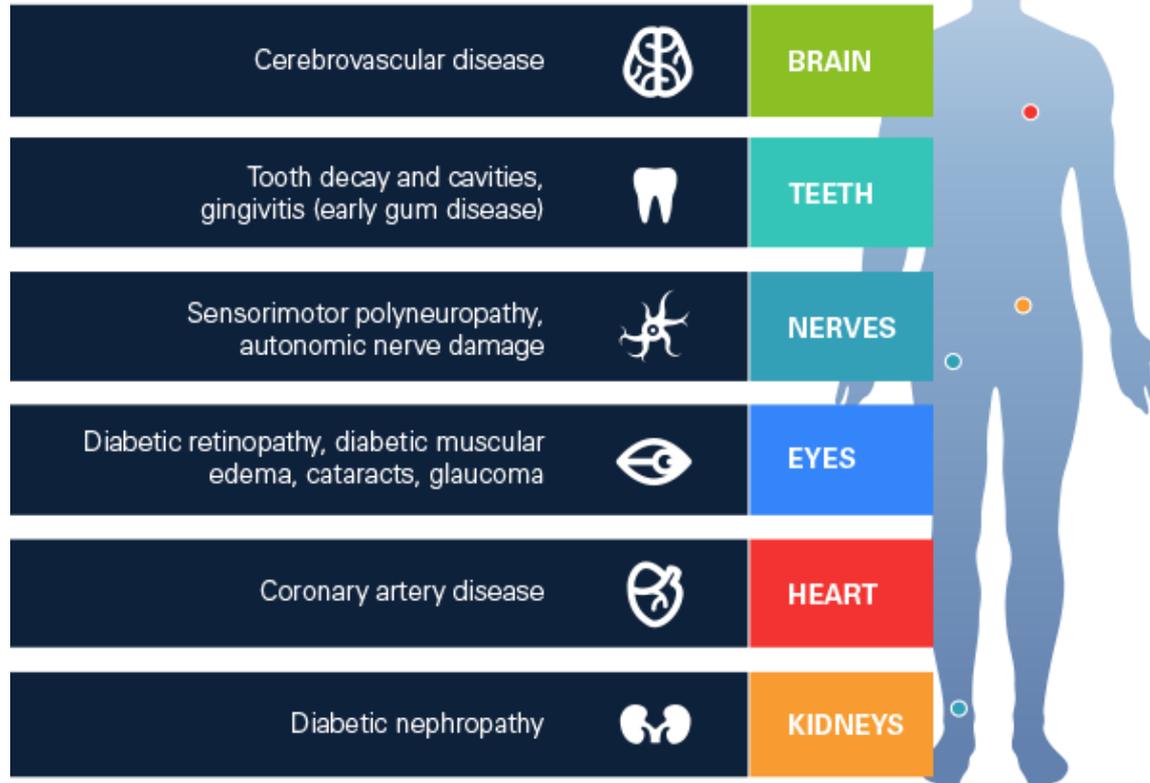
New Challenges For A New World (I)

- **Oncology: a 232 bn market by 2025 (CAGR 8%)**
- Cancers together with heart diseases are responsible for two thirds of all deaths worldwide
- New cases have increased **by 17% worldwide during the last 10 years**
 - ✓ The accumulation of mutations on the DNA lead to the development of a tumor, the biggest factor risk: **aging**
 - ✓ Increased DNA **damage** and **replication error** can also be due to **environmental carcinogens (UV, Smoking...)**
- Targeted therapy and immunotherapy are taking their place alongside conventional treatments
- Immunotherapy is the use of medicines to stimulate a patient's own immune system to recognize and destroy cancer cells more effectively.
- **Combination** between several kind of therapies as immuno-chemotherapy agents **will be the key** as chemotherapy stimulates the immune system
- The industry **consolidation** is a key driver of growth (several big M&A deals in this sector since January 2019: GSK, Bristol Myers, Ely Lilly)

New Challenges For A New World (II)

- **Diabetes and chronic kidney diseases** increased worldwide by **30% from 2005**
 - ✓ due to: **Obesity, High Blood Pressure, Smoking, Environmental, Inactivity**

IMPACT OF DIABETES

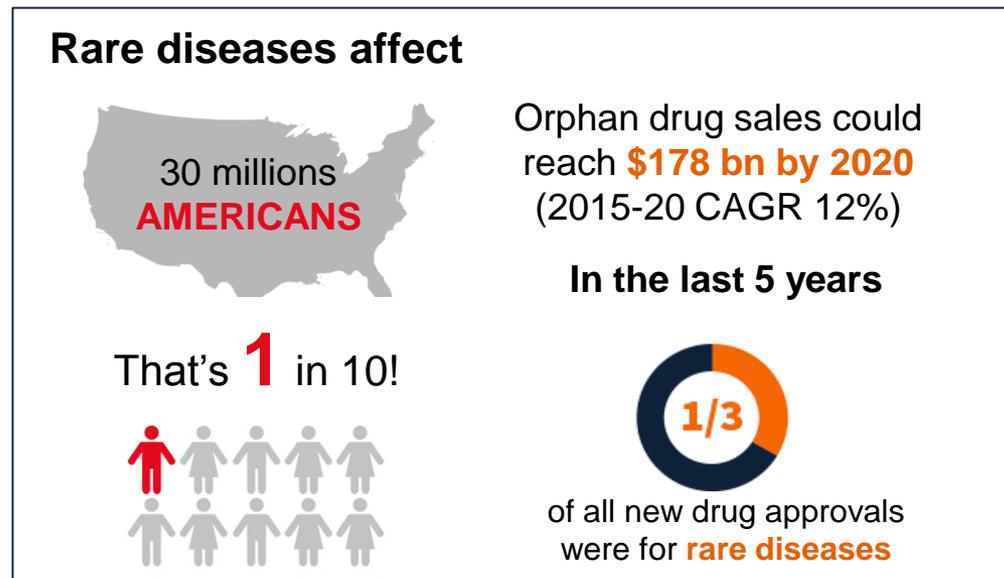


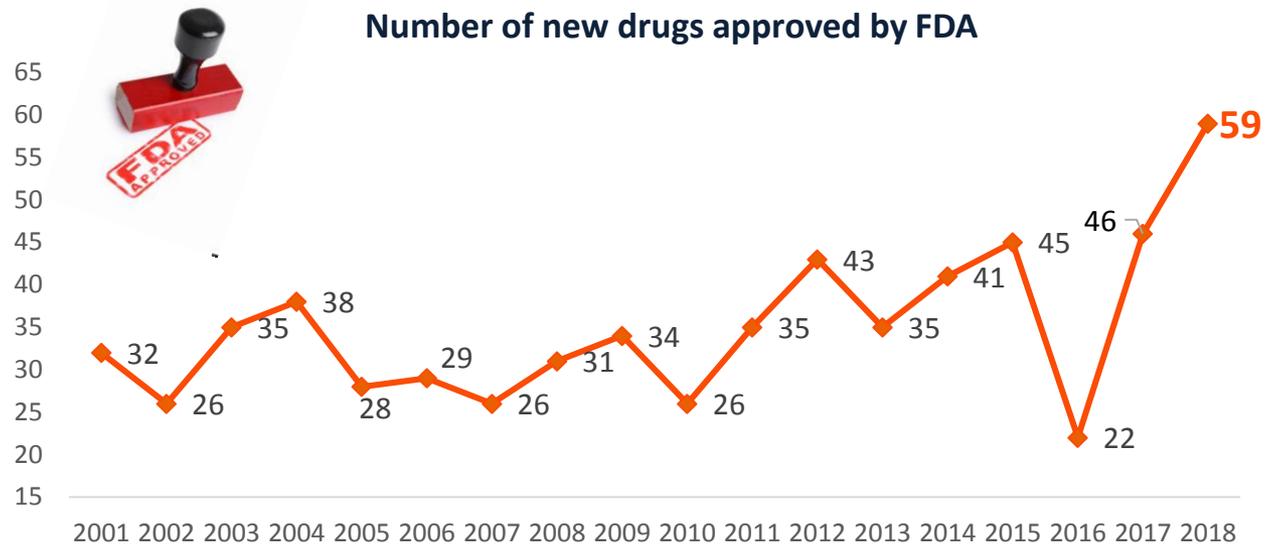
New Challenges For A New World (III)

- **Infection cases** have **decreased by 10%** during the last 10 years led primarily by decreases in HIV/AIDS and tuberculosis cases



- **Cheaper gene sequencing** trigger the development of **personalized medicine** notably in oncology
- **Rare diseases** are more and more “attractive” due to governmental support and high profit margins



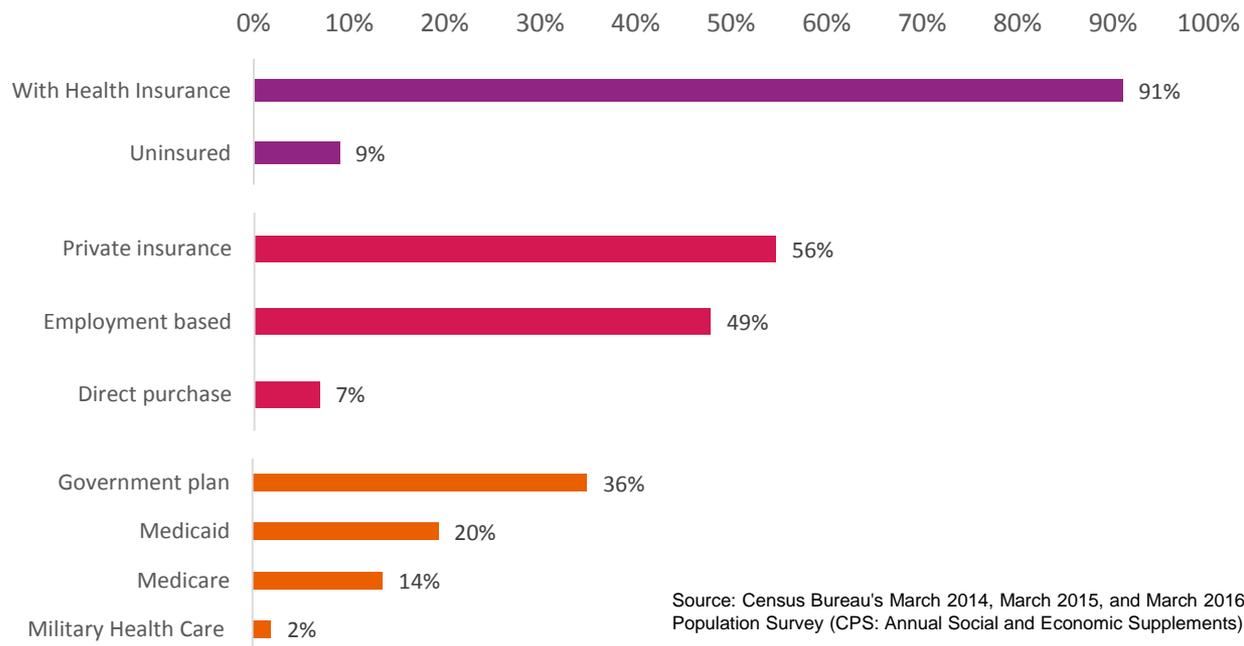


Source: AtonRā Partners, FDA.gov

- The innovation in the development of new kind of drugs was supported by the FDA. 2018, as last year, was again a record year for FDA approvals!
- **The next 5 years outlook will also be promising as:**
 - ✓ Many important drugs in the **last stages of development** are awaiting approval.
 - ✓ The FDA is providing scientific and regulatory advice needed to bring new type of treatments into the market. The FDA is reshaping current regulations to speed up approvals of new drugs.
 - ✓ The FDA and the Center for Biologics Evaluation and Research expect more than 200 Investigational New Drug applications per year by 2020 for cell and gene therapeutic candidates. They predict 10 to 20 approvals each year by 2025 for these kind of treatments.

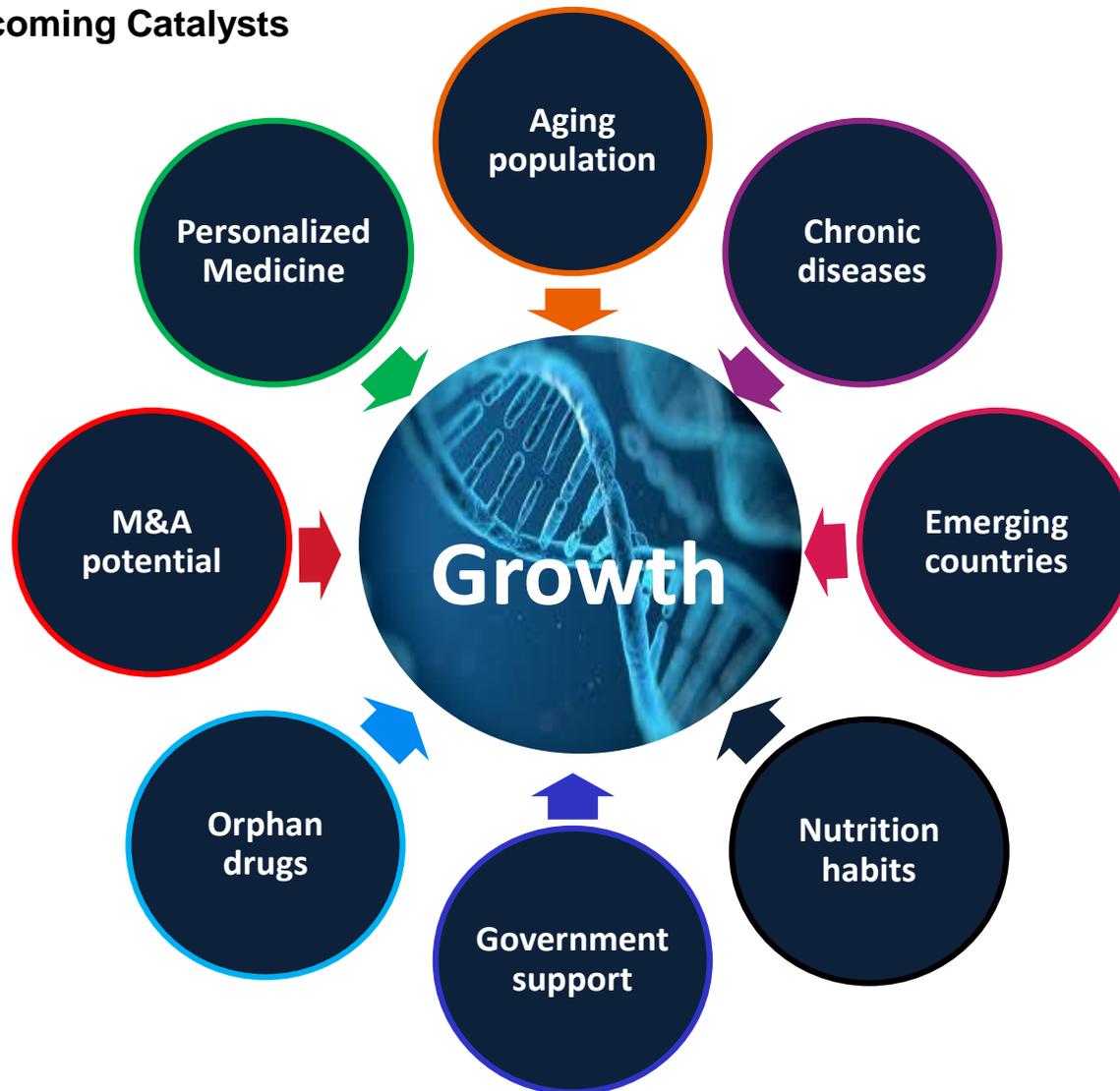
- **Food and Drug Administration** → The first level of decision-making before commercialization
 - ✓ consistent legal and political framework across states
 - ✓ the FDA has the most demanding approval standards in the world
- The **FDA** does **not decide on a drug's reimbursement** policy:
 - ✓ insurance companies have the right to decide individually
 - ✓ biotech companies start reimbursement discussions at the **earliest stages of research**

Percentage of People by Type of Health Insurance Coverage in US



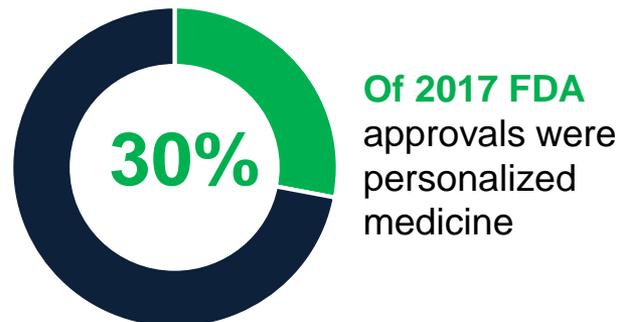
Source: Census Bureau's March 2014, March 2015, and March 2016 Current Population Survey (CPS: Annual Social and Economic Supplements).

Upcoming Catalysts



Personalized Medicine: The Future Of Medicine?

- Treatments targeted to the needs of individual patients
- **Technological breakthroughs** and **computer power** are giving a boost to this field
- Strong government support: 16 new personalized medicine therapies approved in 2017 for target cancer, orphan diseases, infectious disease, two CAR-T gene therapies.

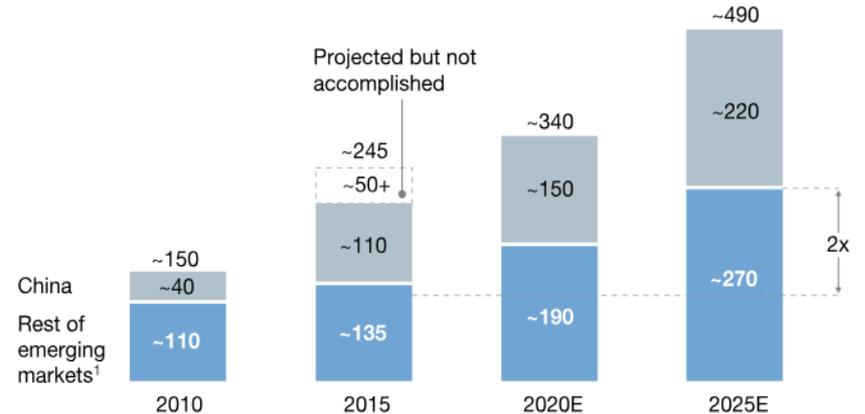


A Fast Changing World: Emerging Markets

A Real Opportunity For Biotech and Pharma due to:

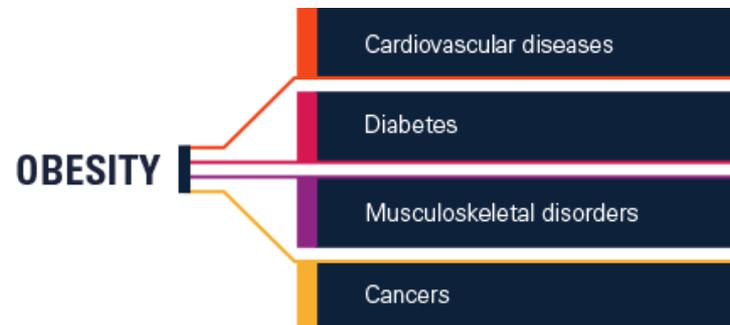
- huge populations
- increasing prosperity and standards of living (growing middle class)
- aging population

Pharma emerging-market revenues projections (\$bn)



Source: McKinsey & Company

- The two countries showing the highest growth in obesity are **China** and **India** (15% of the worldwide obese population) leading to:



2019 Is Expected To Be A Very Strong Year In M&A

Biopharma sector **M&A** upturn in 2018 after a quiet year in 2017.

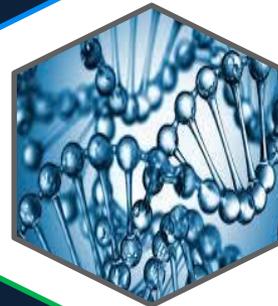


Strong pipeline in high growth therapeutics

External growth through M&A represents an **attractive opportunity**

Pharma and Biotech companies in order to stay competitive are becoming bigger and bigger

Novel technologies platform



An estimated value of \$265 bn in M&A activity in 2018, +26% compared to 2017 (source: Informa Pharma)

High returns potential

Cheap Valuations

Pharma and Biotech companies to get highly specialized on big markets or highly diversified to create synergies

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