

CANDRIAM 

A NEW YORK LIFE INVESTMENTS COMPANY

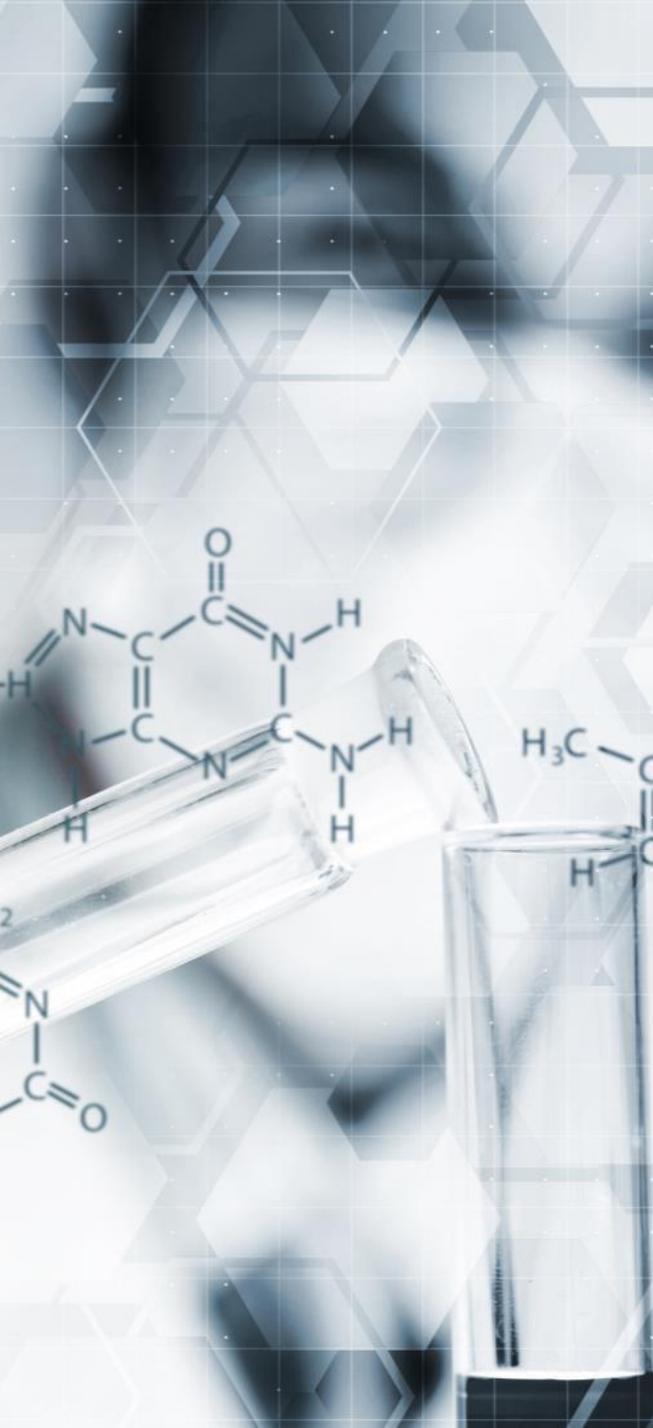
Healthcare Sector: Investing Today and Tomorrow

Tuesday 10 November

Rudi Van den Eynde Head of Thematic Global Equity

Commercial document intended exclusively for Professional Investors

November 2020



- **WHY INVEST IN HEALTH CARE**
- OUR EXPERTISE
- OVERVIEW OF THE HEALTH CARE SECTOR
- CANDRIAM EQUITIES L ONCOLOGY IMPACT

Health Care : a secular growth theme

1



Ageing

- ▶ As the world population grows older, demand for health care will structurally rise - the majority of health care expenditures occur after the age of 60
- ▶ This creates a structural demand for all subsectors of the health care industry

2



Innovation

- ▶ Health care innovation never sleeps
- ▶ New technologies, artificial intelligence, robotic surgery, genome therapies bring new solutions and hopes

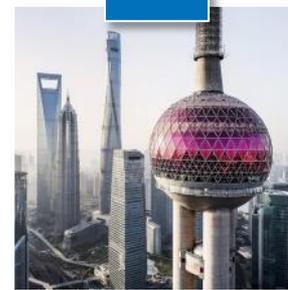
3



Pricing Power

- ▶ Strong pricing power for innovative drugs and technologies, certainly for life-saving treatments
- ▶ Medical devices markets (e.g. heart devices, orthopedics) are oligopolistic and innovation driven, creating huge entry barriers for new players

4



Emerging Markets

- ▶ Emerging markets offer long-term opportunities as health care insurance and access improve

5

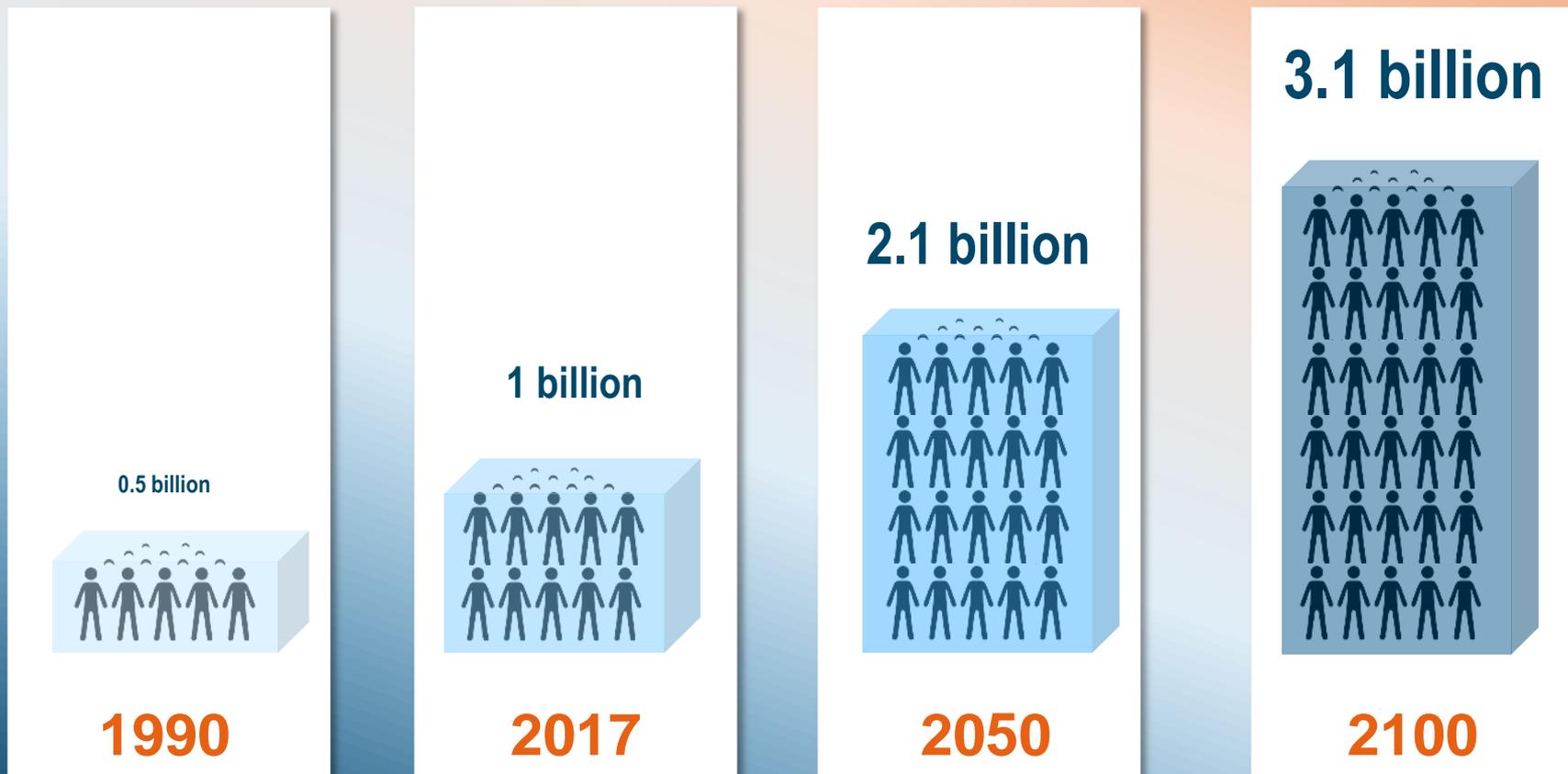


Low Cyclicity

- ▶ Health care is typically consumed by necessity e.g. to treat an underlying disease, hence it is less influenced by economic conditions.

1. Ageing

Projected global population aged > 60 years of age

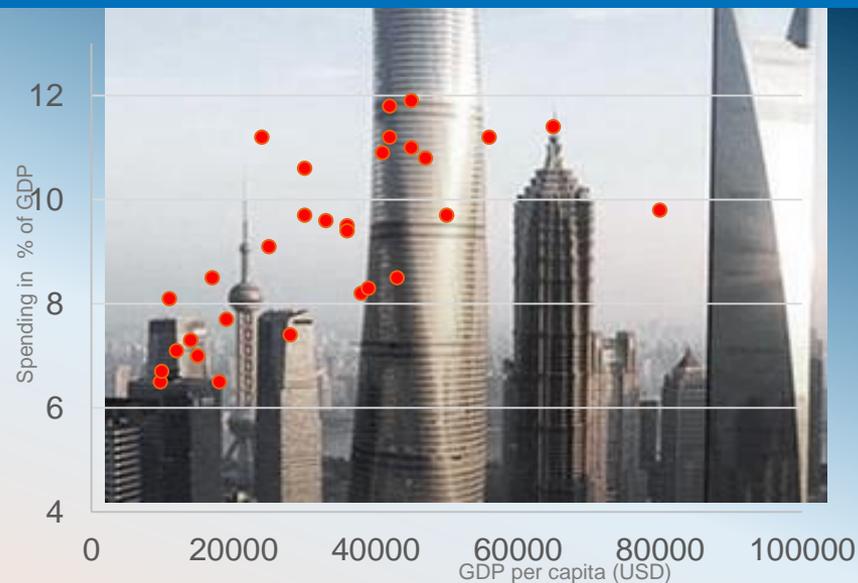


1. Ageing: Health Care spending rises with age

HEALTH CARE SPENDING RISES WITH AGE



HEALTH CARE SPENDING CORRELATES WITH GDP PER CAPITA DATA



Ageing and economic development are two powerful drivers for health care consumption

Source: Canadian Institute for Health Information

2. Innovation: Robot-assisted Surgery

Intuitive Surgical:

US healthcare equipment company,
leading robotic-assisted systems

- Minimal invasive surgical procedures have various advantages:
 - ▶ Smaller incisions
 - ▶ Reduced blood loss
 - ▶ Shorter hospitalization and discomfort
 - Minimal scarring
 - Less infections
 - Reduced pain and discomfort

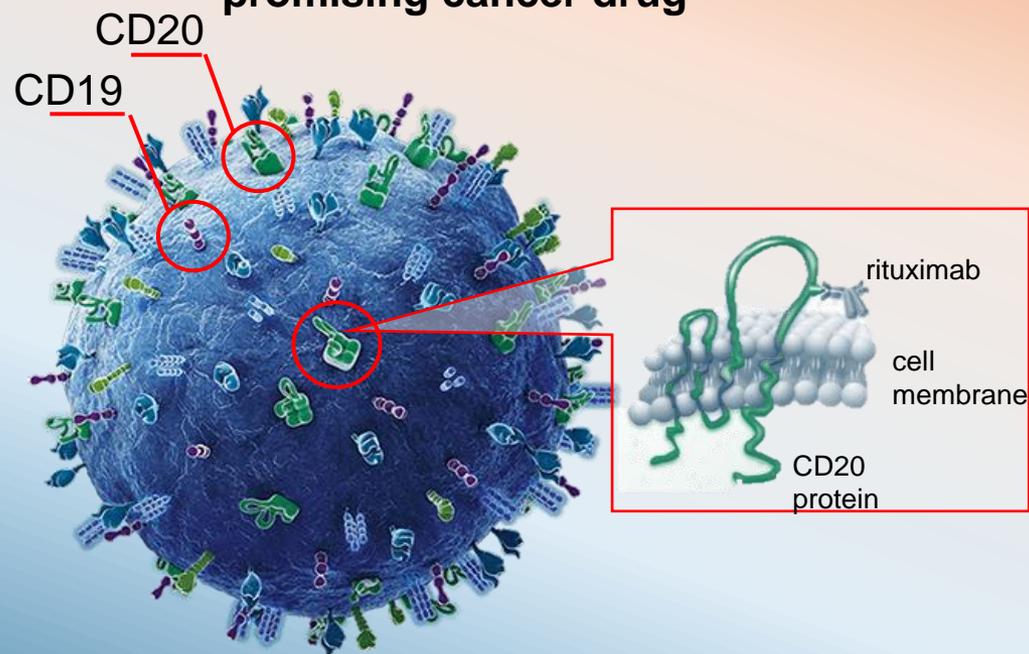


2. Innovation: Better understanding of cellular pathways

- ▶ **Non-Hodgkin's Lymphoma** involves the rapid growth of **B cells** (a form of white blood cells) in the lymph nodes
- ▶ First line treatment is a combination of chemotherapy and Rituximab, a **CD20** targeting antibody
- ▶ Cancer cells can become **resistant** by downregulating CD20, hence Rituxan can lose efficacy
- ▶ Cancer cell often over express **CD19**, which then becomes a promising target for new antibodies

Morphosys

An antibody specialist developing Tafasitamab, a promising cancer drug



Source: biooncology.com - Example of a portfolio security

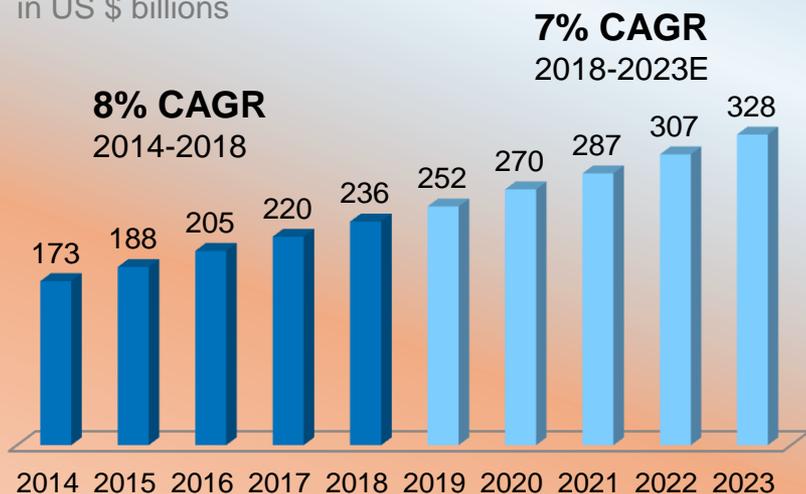
4. Emerging Markets: example of China

Per capita Health Care spending



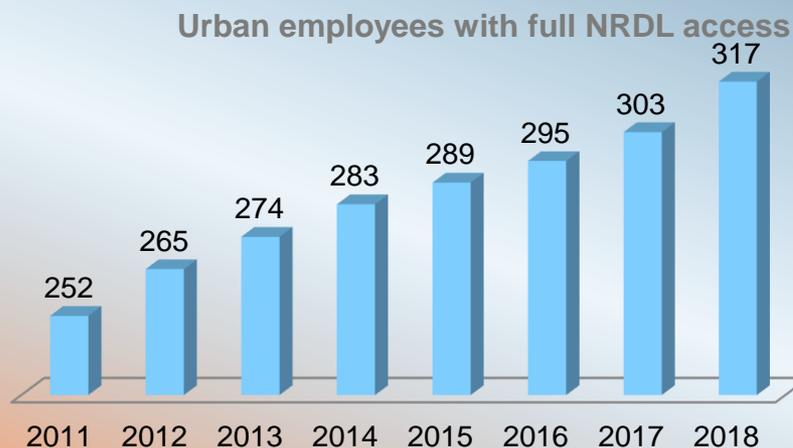
Chinese Pharmaceutical Market Size

in US \$ billions



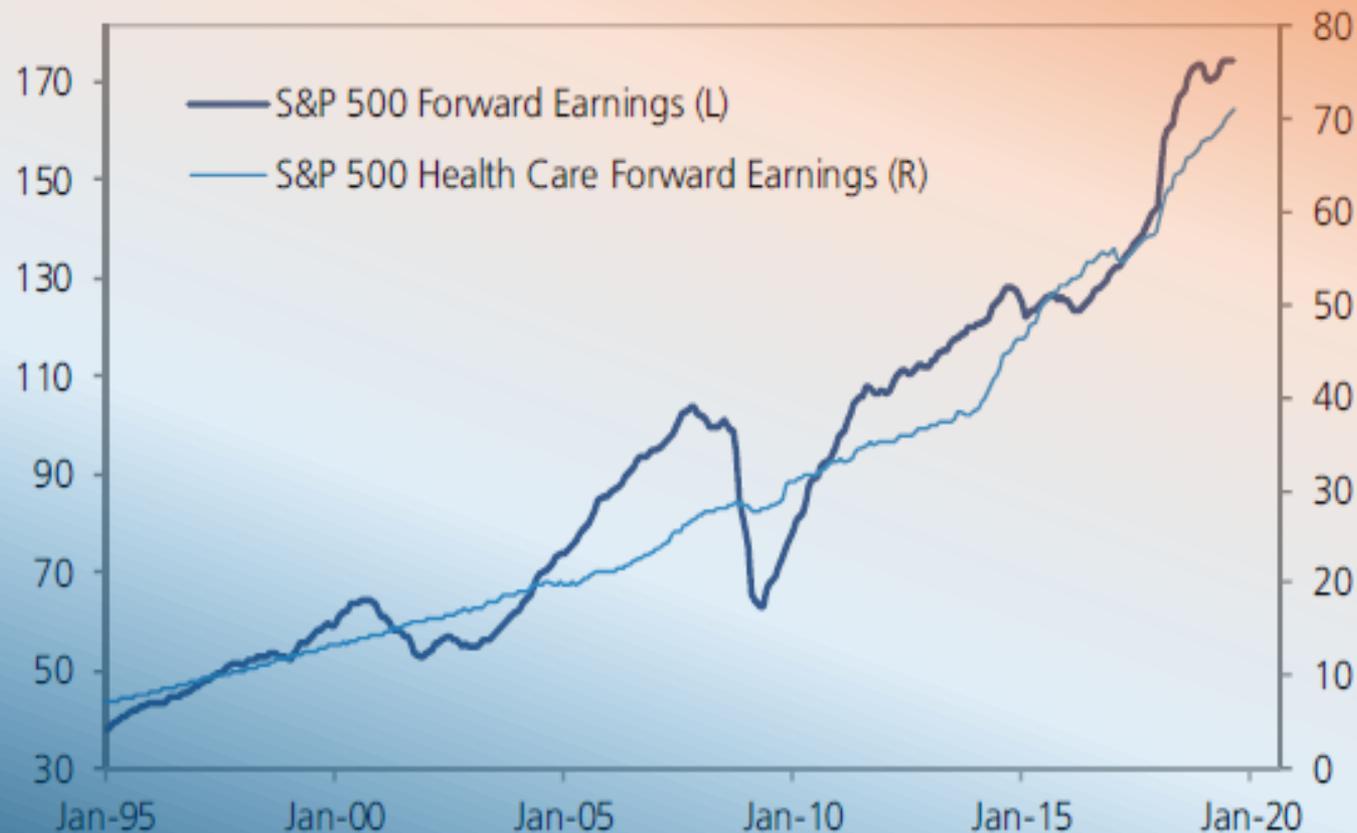
Medical Insurance Coverage

million people



Source: Frost & Sullivan 2018

5. Low Cyclical



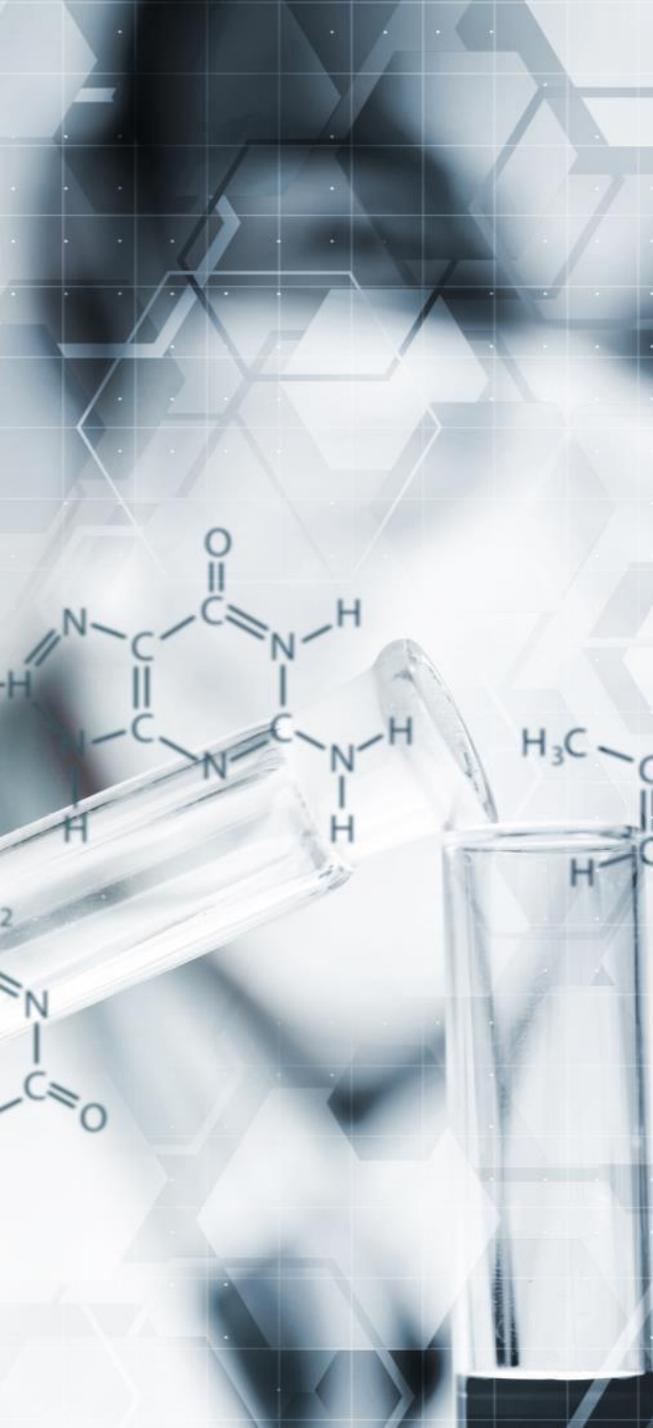
Healthcare earnings have historically been less volatile

Does it work?



©FactSet Research Systems

The Health Care sector has outperformed the MSCI World over long timeframes



- WHY INVEST IN HEALTH CARE
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- CANDRIAM EQUITIES L ONCOLOGY IMPACT

A relevant and complementary skill set



3

Technology experts



6

Emerging Market experts



6

Financial Analysis in Thematic Global Equity



Rudi Van den Eynde

Head of Thematic Global Equity

Manager of the fund

33 years of experience



Servaas Michielssens, PhD, CFA

Senior Biotechnology Analyst

co-manager of the fund

12 years of experience

4 years with the firm



Malgorzata Kluba, PhD

Senior Biotechnology Analyst

13 years of experience

Started in January 2019



Sara Torrecilla, PhD

Senior Biotechnology Analyst

6 years of experience

Started in June 2020



Open Vacancy

Medical Technology Analyst

Indicative data which may change over time

Our expertise is recognised by multiple industry awards

Candriam Equities L Biotechnology Awards

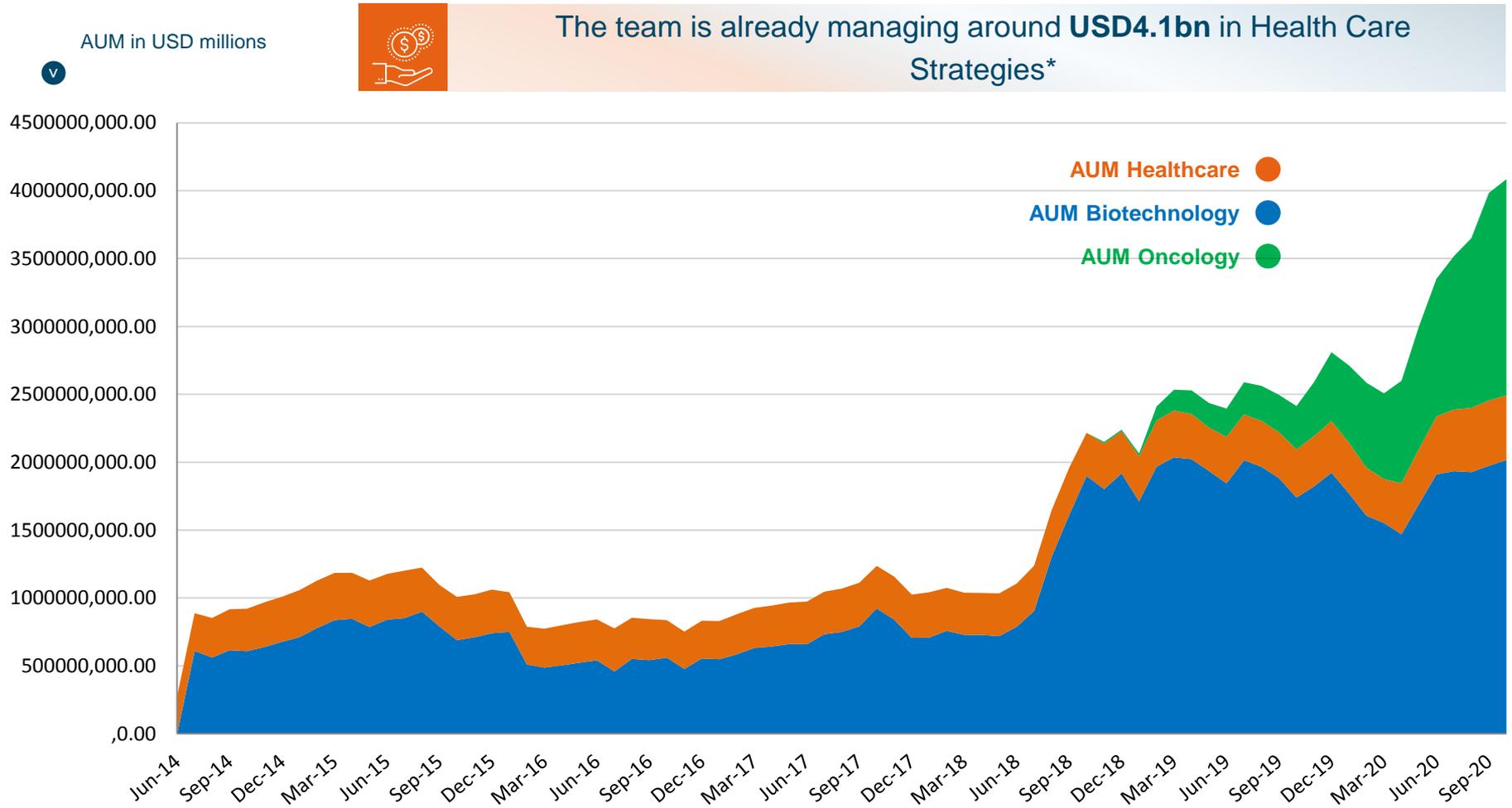


Candriam Equities L Oncology Impact Awards

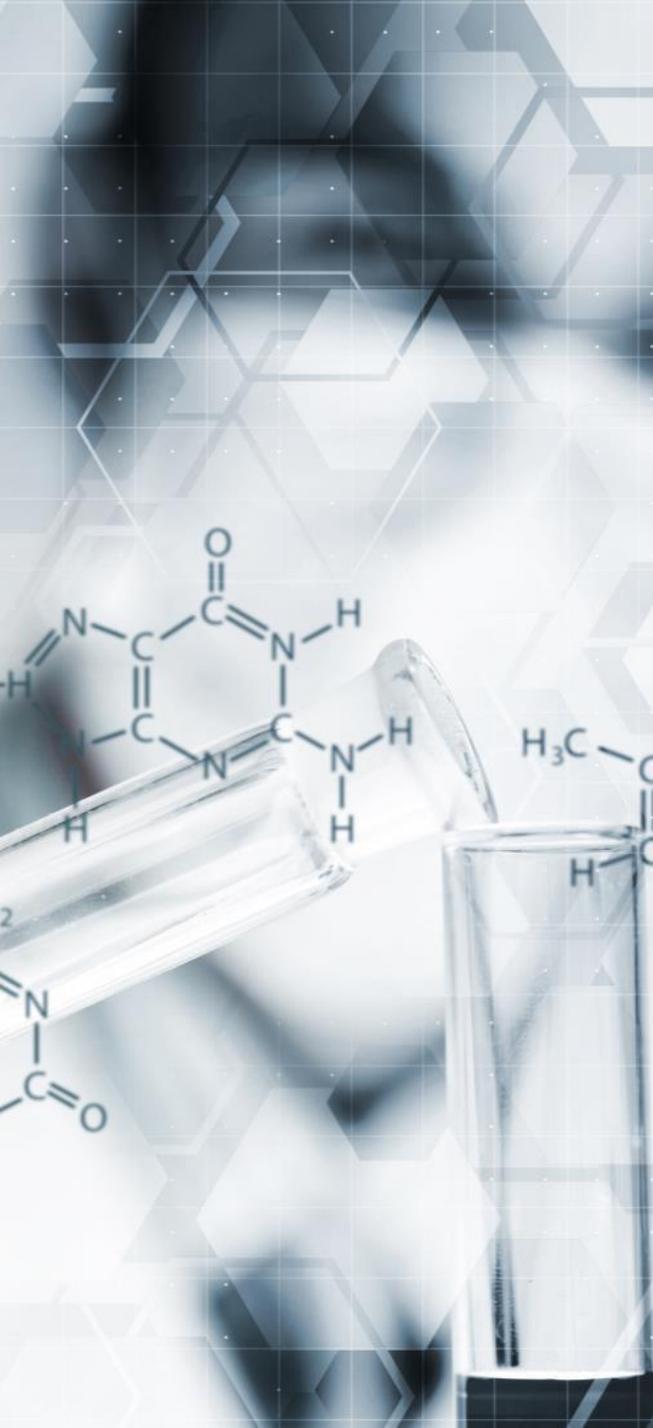


The quality of the award won by the UCI or the management company depends on the quality of the issuing institution and of acknowledgement that the award does not guarantee the future results of the UCI or management company. For details on all specific awards, please consult www.candriam.com
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Our Health Care AUM have been rising continuously



Source Candriam *: Candriam Biotechnology, Global Healthcare and Oncology strategies and portfolios under management, as at end of September 2020

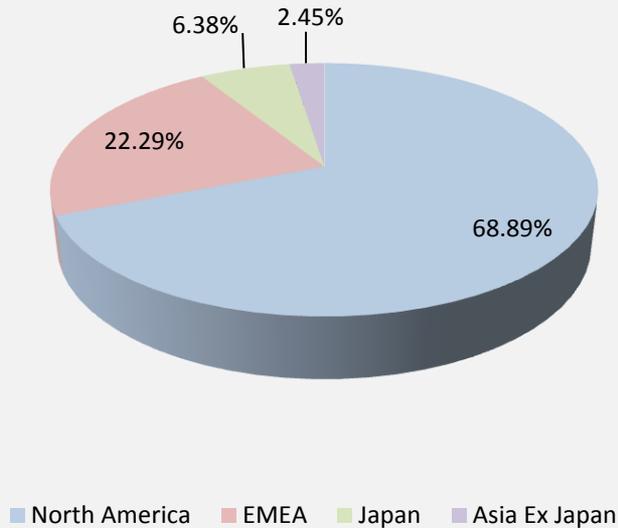


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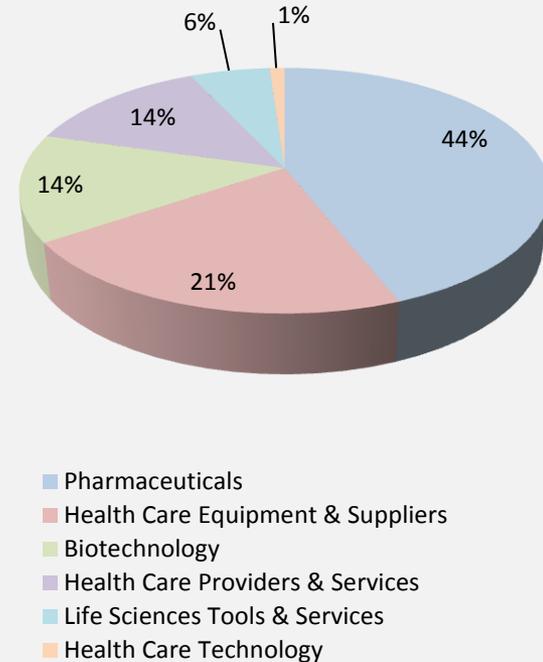
What does the sector look like ?

MSCI Health Care © breakdown

Geographic Breakdown



Industry Breakdown

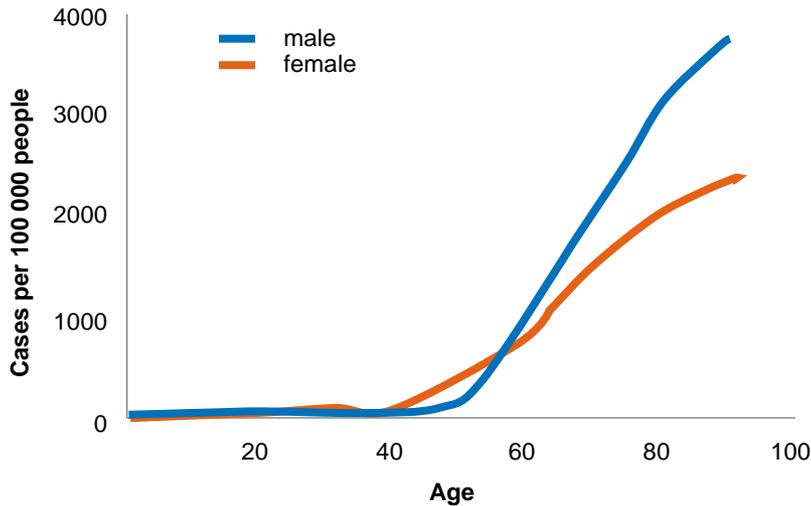




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Cancer mostly comes with age

CANCER INCIDENCE BY AGE



2018 > 2040

Worldwide cancer deaths are projected to increase by

72%

From **9.5 million** to **16.3 million**



Scientists take up the fight: More than 1573 drugs in development for cancer*

Sources: National Institute of Health (NIH), World Health Organization (WHO), Cancer Research UK, *Medicines in Development, 2018 Report

From non-specific toxic chemotherapy towards directed cellular treatments

Mustine, first chemotherapy used in lymphoma
Non-specific toxic treatment

1942



Herceptin approved in Her2 positive breast cancer
Personalized medicine

1998



Yervoy approved as immune system modulating treatment in oncology
Immuno-oncology

2011



1997

Rituxan, the first oncology anti-body to be approved by the FDA
Specific antibody therapies



2006

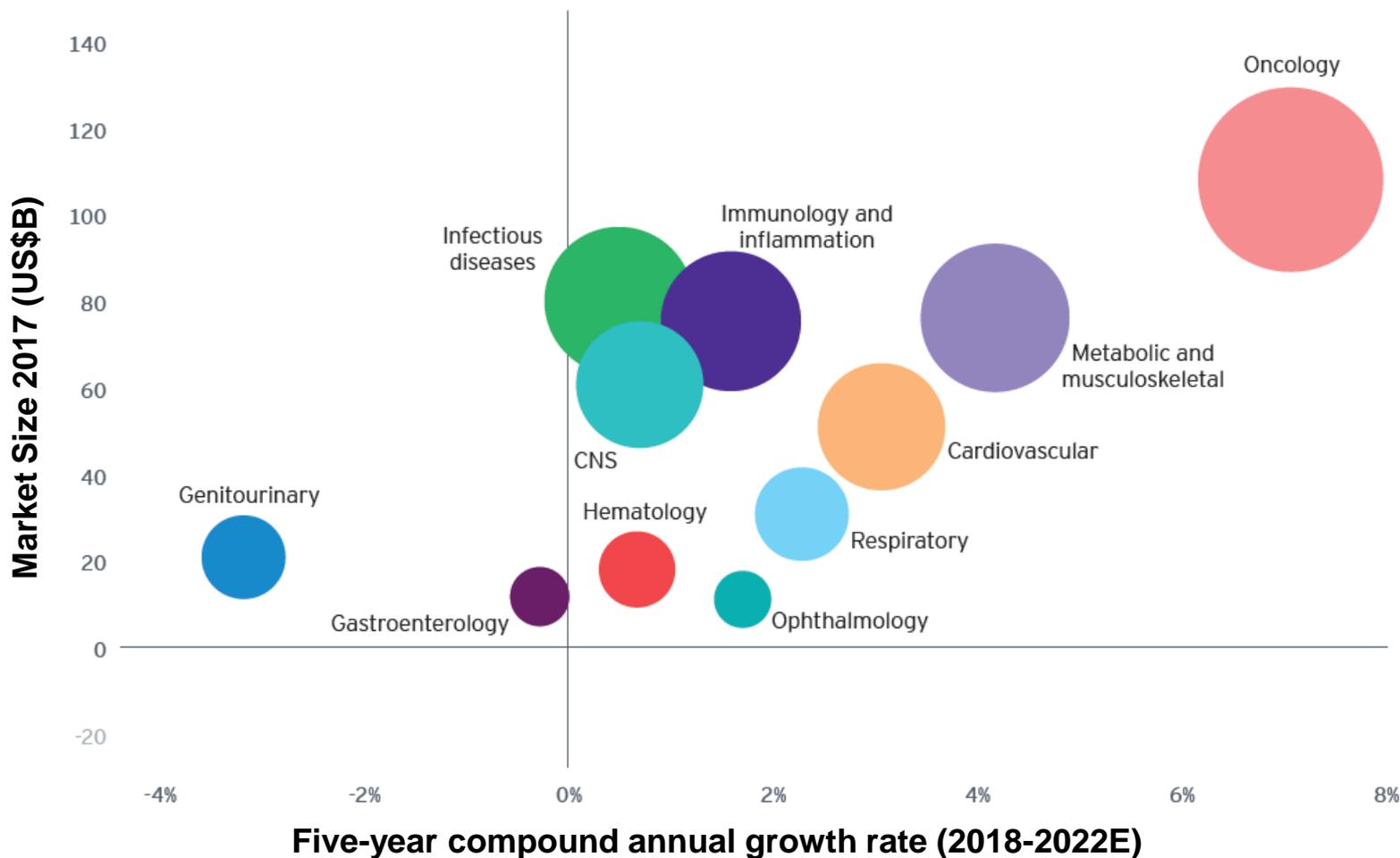
Sutent approved as a targeted therapy in renal cell carcinoma
Targeted small-molecule therapies



2017

Kymriah approved for paediatric ALL
Cellular therapy

Success in the clinic results in growing sales



Sources: EY, Capital IQ, Datamonitor Healthcare.

Progress on many fronts leading to a better outcome



Better research:

enabling better research to stimulate innovation

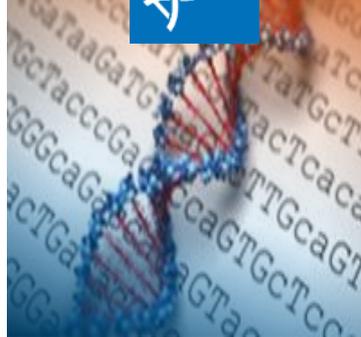
- Accurate research equipment is essential to develop novel diagnostics and drugs
- e.g. Thermo Fisher is developing assays for studying the immune system's response to cancer drugs



Better diagnosis:

early diagnosis is of vital importance

- Liquid biopsy: the convenience of a blood-based test leads to better detection
- Developing kits to detect circulating tumourous DNA: e.g. Guardant Health



Better profiling:

the right therapy for the right patient

- Establishing the genetic footprint of the cancer > personalized medicines
- Next Generation Sequencing to profile each tumor: e.g. Illumina



Better technology:

precision in radiation and surgery

- Using specific electric fields to inhibit tumor growth e.g. NovoCure
- Real-time MRI guiding the radiation beam e.g. Viewray

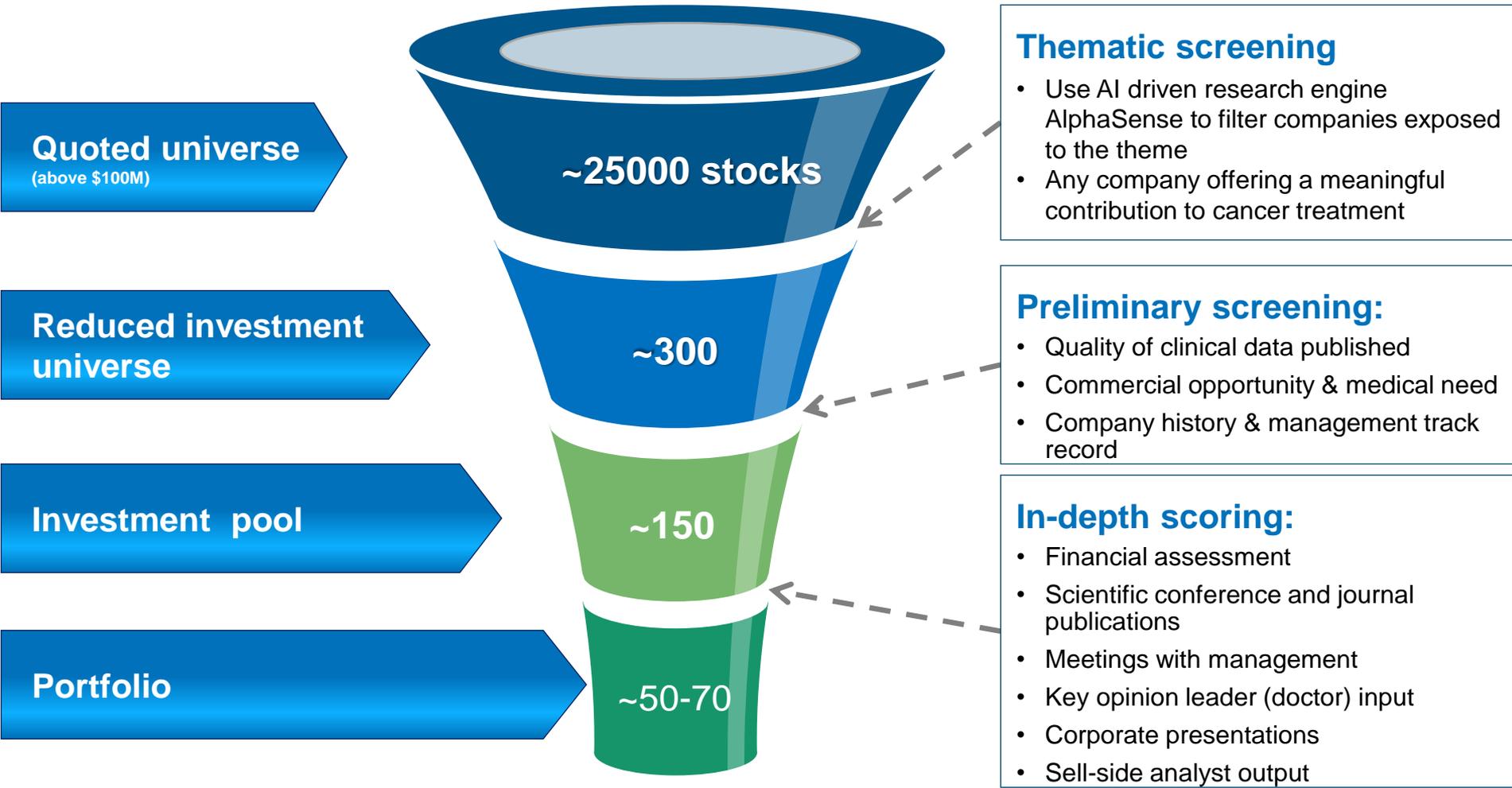


Better drugs:

targeted immuno-oncology is the way forward

- Making the immune system the vanguard of our defence
- Cancer-specific targets result in more efficacious and safer drugs

Bottom-up investment process



Indicative data which may change over time

Rooted in 20 years' experience managing health care strategies

In-depth analysis based on **scientific and fundamental criteria:**

Drug characteristics



2 1 0

Therapeutic landscape



2 1 0

Market potential



2 1 0

Quality of management



2 1 0

Financials



2 1 0

Rigorous vetting and scoring (0-2) of each pillar based on a comprehensive set of parameters

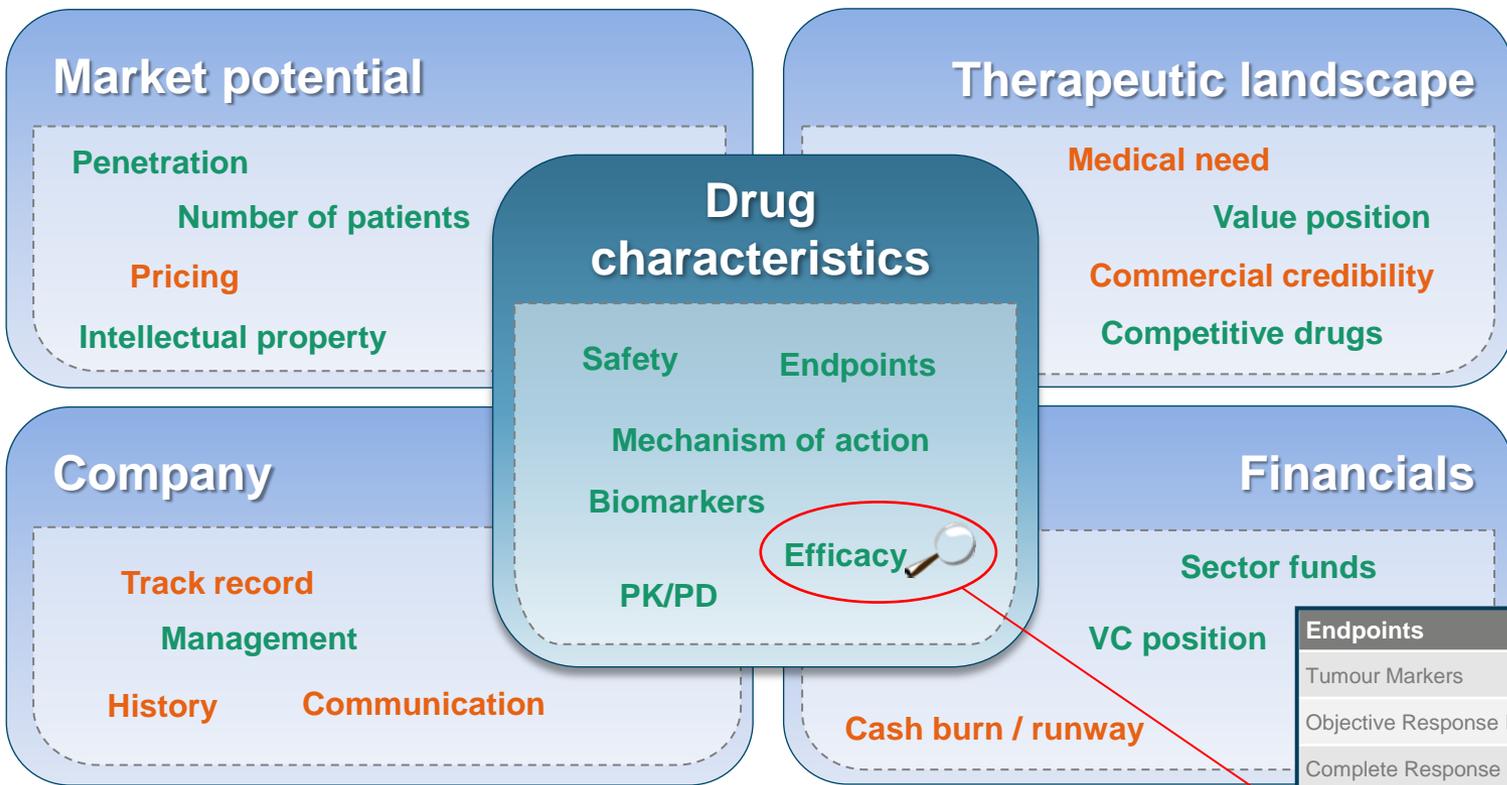
Determining a fair-value target requires a different approach for non-profitable companies:

- Probability-adjusted estimated peak sales based on scoring system (*cfr., scoring system*)
- **Valuation criteria:** we determine a **fair value of the market cap / sales** based on those estimated peak sales

The clinical assessment of a pipeline drug is the critical factor in determining ultimate investment returns. A valuation model is important, but of limited use if the above is not well mastered

Indicative data which may change over time

This is part of the company check-list



Overall score + sales potential

Rigorous vetting and scoring (0-2) of each pillar

based on **a comprehensive set of industry-dedicated parameters**

Endpoints	Scoring		
Tumour Markers	0	1	2
Objective Response Rate (ORR)	0	1	2
Complete Response Rate (CR)	0	1	2
Partial Response Rate (PR)	0	1	2
Disease Control Rate (DCR)	0	1	2
Progression-Free Survival (PFS)	0	1	2
Overall Survival (OS)	0	1	2
Duration of Response (DOR)	0	1	2

Indicative data which may change over time

Finding one's way in a myriad of data



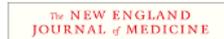
SCREENING AND IDEA GENERATION



Bloomberg



ASSESSMENT



VETTING



Key opinion leader input



Corporate access

Example of a portfolio security

Asking the right question to appropriate experts

World leading experts provide additional info that can support the investment decisions



- ▶ We work with **Gerson Lehrman Group (GLG)** to provides access to world leading scientist and medical doctors
- ▶ GLG provides rapid access to a global network of over **650.000 experts**
- ▶ GLG has over 100 of leading life sciences companies among its clients, including **8/10 largest pharma companies** and **7/10 largest biotech companies**
- ▶ GLG checks relationship of the expert with the companies and guarantees the **independence** of the experts



Medical and scientific experts can **extend our knowledge** about:

- ▶ **Diseases** and their experience and treatment algorithms
- ▶ Novel **biochemical pathways** and their relevance
- ▶ Key **unmet needs** for patients

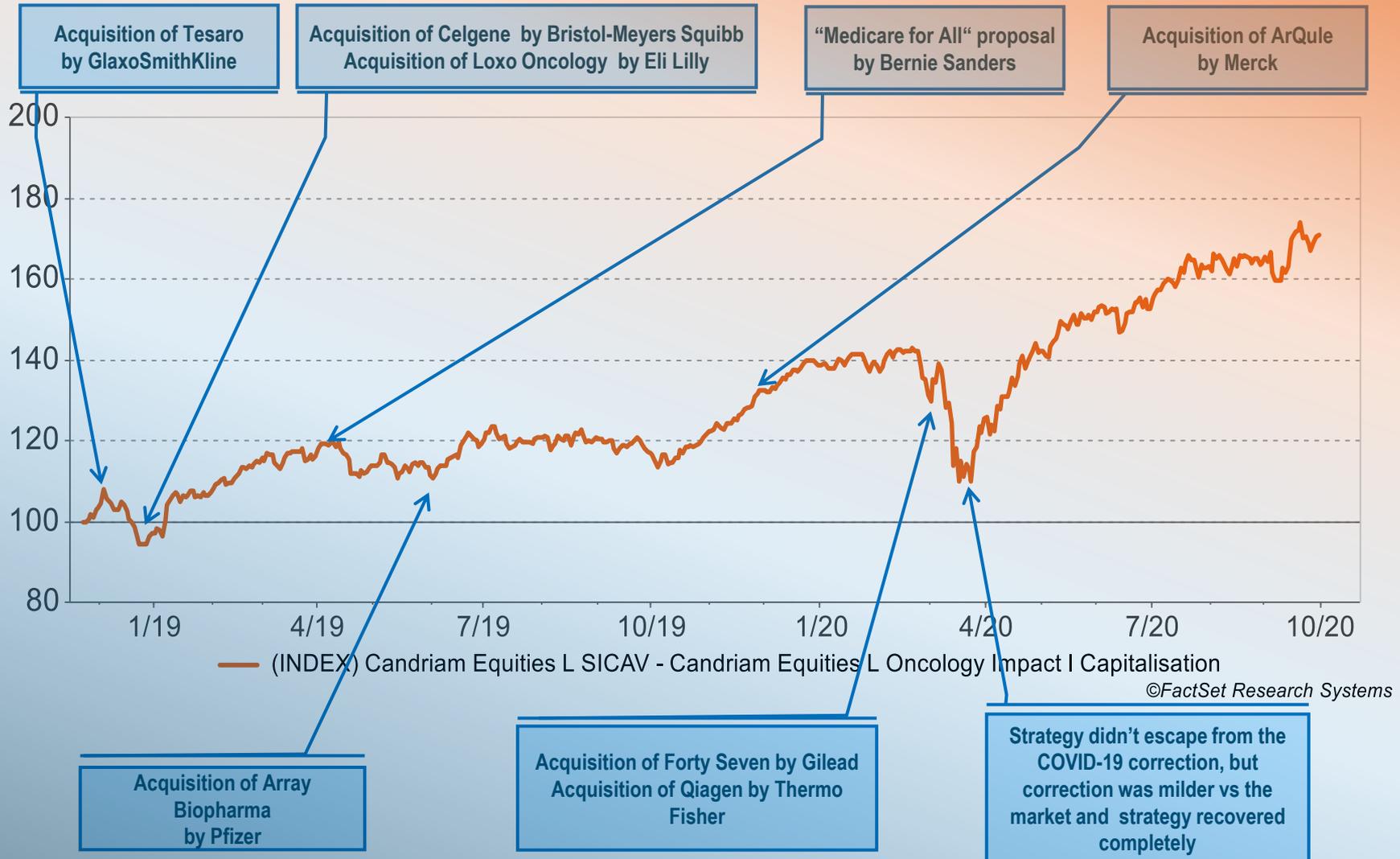


Vetting of our assessments:

- ▶ Medical doctors can provide insight in their practice and the **value added of a novel treatment**
- ▶ Medical doctors can help to identify the patients in which they would use a novel drug, this enables us to **refine our sales estimates**

Indicative data which may change over time

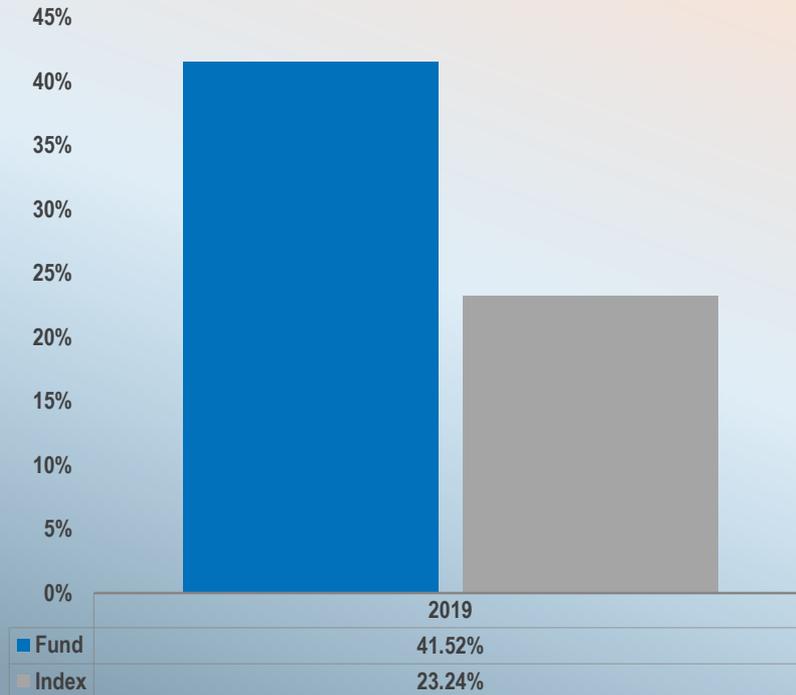
First 2 years: performance and drivers



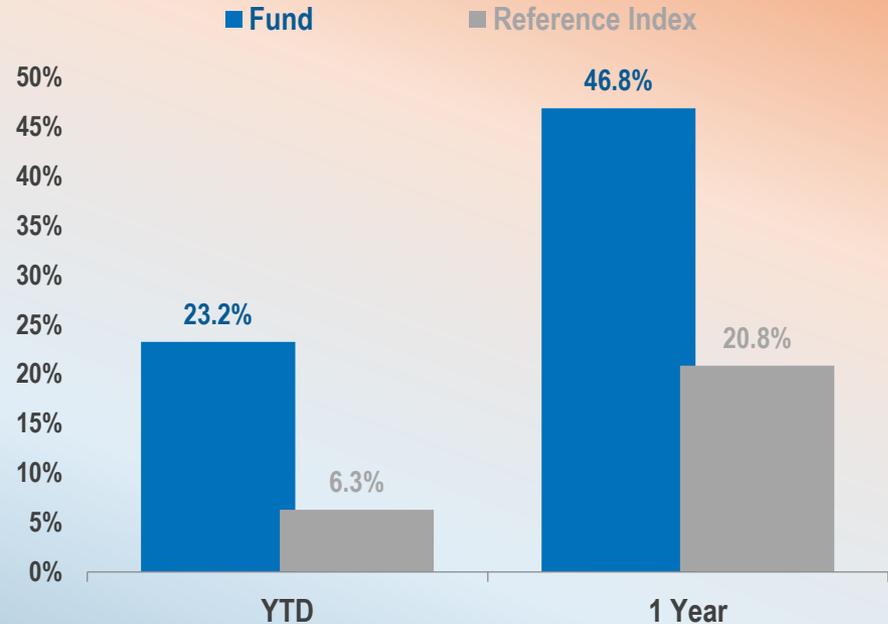
Past performance is no guarantee of future results and is not constant over time

Performance since inception

Historical performances



Total Returns



Source Candriam - Data as of 30/10/2020 - The fund is actively managed and the investment process implies referring to a benchmark index (MSCI World Health Care (Net Return)©). Past performance is no guarantee of future results and is not constant over time.
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Performance since inception



©FactSet Research Systems

Source: Factset

The fund profit from the ongoing high M&A activity

2020

Siemens
Healthineers+24%
Varian

Gilead

+95%
Forty
SevenThermo
Fisher+23%
Qiagen

Meranini

+147%
Stemline

Gilead

+108%
Immuno
medics

2019

Merck

+107%
Arqule

Eli Lilly

+68%
Loxo

BMS

+69%
Celgene

Pfizer

+60%
Array

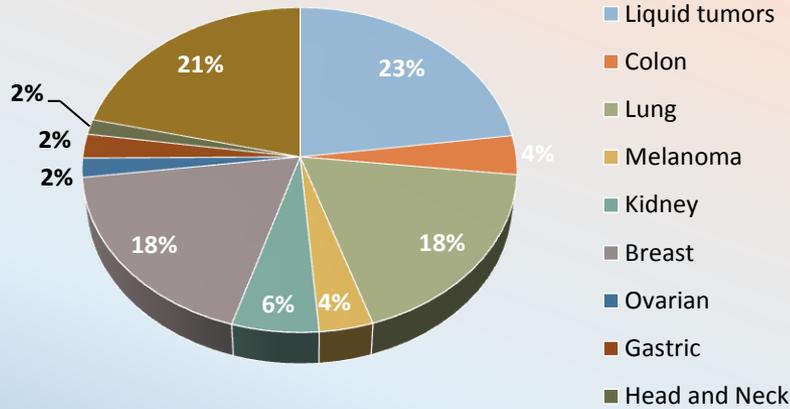
2018

GSK

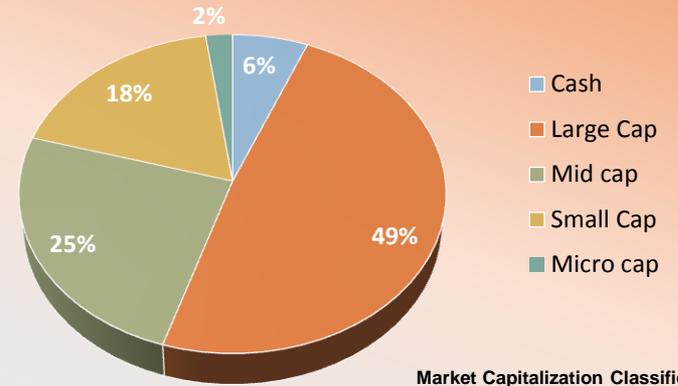
+110%
Tesaro

Portfolio properties

SPLIT BY CANCER TYPE

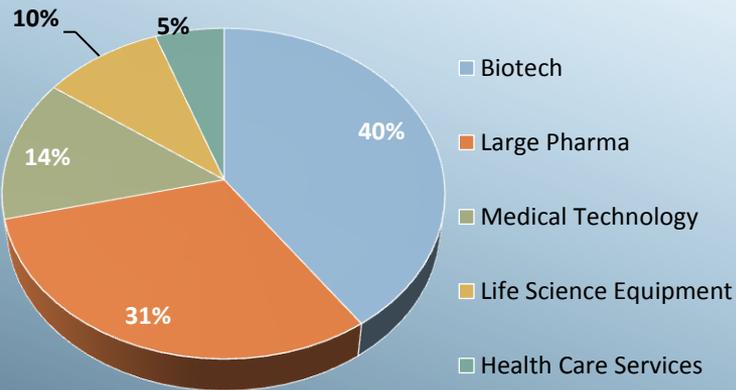


SPLIT BY MARKET CAP

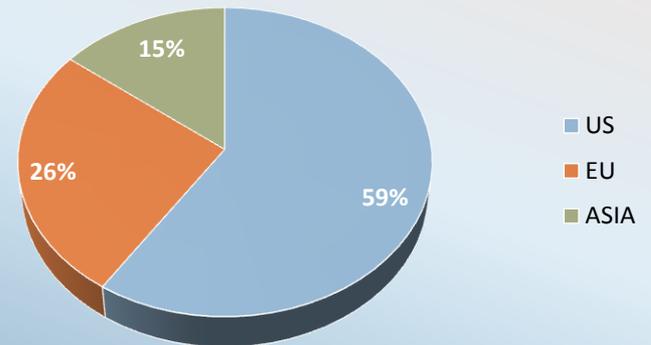


Market Capitalization Classification
 Micro-Cap : 100m USD – 500m USD
 Small-Cap : 500m USD – 5bn USD
 Mid-Cap : 5bn USD – 25bn USD
 Large-Cap : > 25bn USD

SPLIT BY SUB-SECTOR



SPLIT BY REGION



Indicative data which may change over time

Candriam supports cancer research



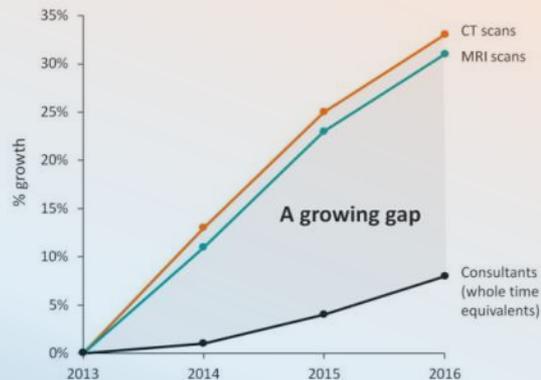
10%

Candriam pledges maximally
10% of the net management fees*
of the **Candriam Equities L Oncology Impact** sub-fund
to leading cancer research institutes



* maximum amount per year that can be repaid

Siemens healthineers: AI assisted cancer detection



Growth in the number of consultant radiologists and imaging examinations in England

Source: The royal College of Radiologist (2017):
UK workforce census 201

- Siemens Healthineers has more than 40 offerings on the market that are AI powered
- They have access to a database of 325Mio medical images to train their algorithms
- In house high performance computing capabilities (supercomputer “Sherlock”, 20 petaFLOPS runs 500AI experiments per day)

- There is an explosion in the need for medical images, but limited capacity by radiologist
- Smart algorithms can help the radiologist with faster and more accurate image interpretation
- The combination of men and machine leads to better detection

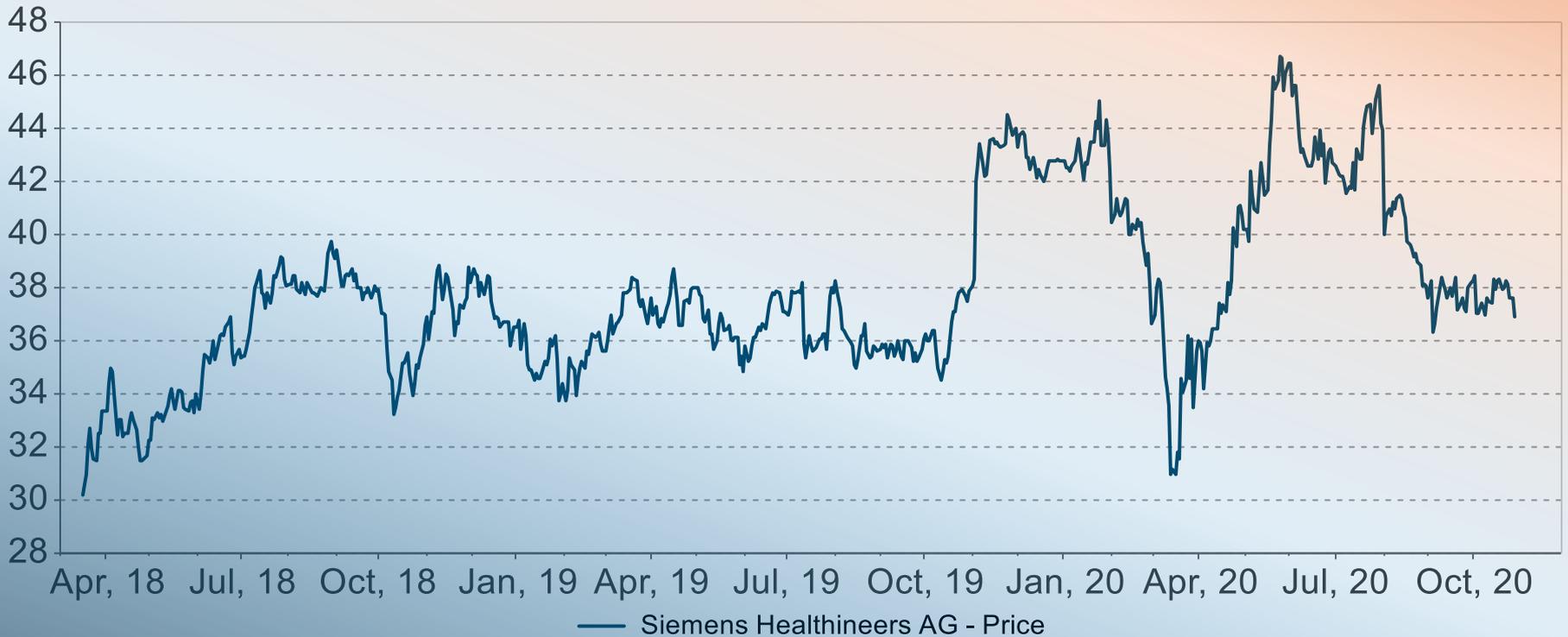
Source: “Deep Learning for Identifying Metastatic Breast Cancer”
arXiv preprint arXiv:1606.05718, 2016



Sources: company data, Candriam estimates - Example of a portfolio security

Siemens healthineers: AI assisted cancer detection

Siemens Healthineers - a recent spin-off from Siemens - a leader in medical imaging, dedicated toward developing AI to improve image interpretation

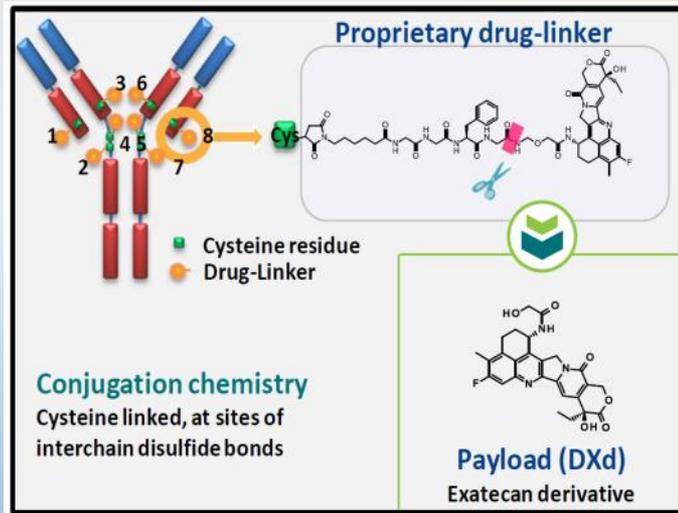


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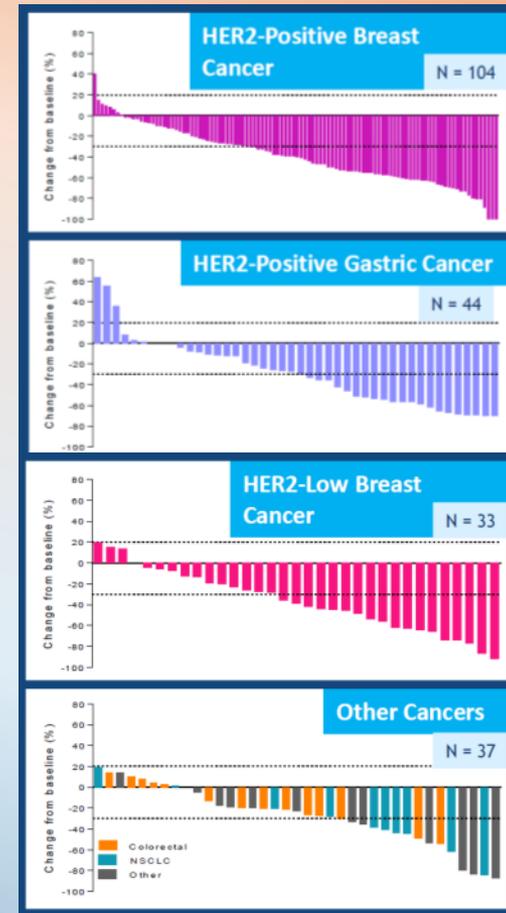
Source: Factset - Example of a portfolio security

Daiichi-Sankyo: A game-changing antibody-drug conjugate (ADC) platform

- **DS-8201a:** Unprecedented level of activity across breast, gastric, CRC, and NSCLC in Her2-positive and low cancers



- Payload features:
Highly potent
Stable tumor-specific cleavable linker
- Data summary:
Confirmed ORR 49.3% across entire population
86.3% of subjects experienced tumor shrinkage



Daiichi-Sankyo: A game-changing antibody-drug conjugate (ADC) platform



©FactSet Research Systems

Source: Factset - Example of a portfolio security

Hologic: Breakthrough diagnostic and medical imaging solutions



- Mammograms can help find an early stage breast cancer, years before physical symptoms appear, leading to them most successful treatments*
- 3D Mammography system is the fastest and highest resolution breast tomosynthesis system on the market
- Thanks to sharper images and smarter technologies 3D Mammography has been proven to detect 20-65% more of invasive cancers than 2D systems**
- Proven to be superior in women with dense breasts



Sources: www.hologic.com and www.3dimensionssystem.com

* American Cancer Society: "Breast Cancer Early Detection and Diagnosis"
www.cancer.org/content/dam/CRC/PDF/Public/8579.00.pdf

** Friedewald, SM, et al. "Breast cancer screening using tomosynthesis in combination with digital mammography." JAMA 311.24 (2014): 2499-2507 Candriam estimates - Example of a portfolio security

Hologic: Breakthrough diagnostic and medical imaging solutions

Steady growth in mammography



©FactSet Research Systems

Source: Factset - Example of a portfolio security

The ultimate goal is to make cancer a fully curable disease

1. Early diagnosis via annual blood screening



2. Tumour profiling: what drives the tumour?



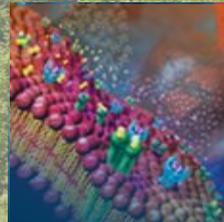
3. AI-assisted personalized treatment protocol



4. Technology assisted tumour removal



5. Personalized combination therapy



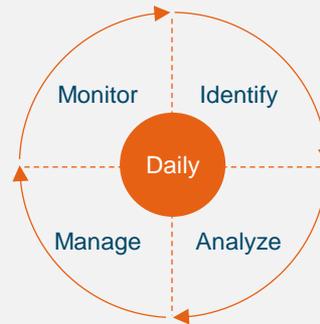
6. Cancer-free and monitoring



A dedicated and independent risk management team

INDEPENDENT RISK MANAGEMENT

- Risk identification for each investment strategy & Set-up of risk limits
- State of the art tools to monitor risks (RiskMetrics©, CharlesRiver©)
- Independent reporting to the CEO and the Executive Committee



INVESTMENT MANAGEMENT

- Disciplined risk management techniques tailored to each specific strategy
- Consider risk at all stages of the investment process
- Robust sell discipline

MONITORING AND FOLLOW UP
COMMITTEES

Risk and Reward Profile



The fund presents a risk of capital loss, the net asset value of the fund may decrease in particular because of its exposure to the risk associated with to derivative financial

Main risks the fund is exposed to:

- ✓ The risk level shown reflects the fund's historical volatility, completed where applicable by that of its reference framework. The volatility indicates the extent to which the value of the fund may fluctuate upwards or downwards.
- ✓ The historical data may not be a reliable indication for the future.
- ✓ The indicated category may vary over time.
- ✓ The lowest category does not mean "risk-free".
- ✓ There is no guarantee or mechanism to protect the capital.

The investor needs to be aware of the following significant risks which are not necessarily adequately taken into account by the indicator:

- ✓ **Risk related to financial derivative instruments:** their use implies risk associated with the underlying assets and can accentuate downward movements via the resulting leverage effect. Hedging strategies using derivatives may not be perfect. Some derivatives may be difficult to value under exceptional markets circumstances.
- ✓ **Emerging countries risk:** emerging countries may experience political, legal or fiscal uncertainties or other events that could impact negatively on the assets of the fund. The assets traded in these countries may be subject to market movements that are potentially more rapid than in the major international markets and listing differentials that may be considerably bigger under certain market conditions. These assets may prove to be less liquid and may not be able to be sold quickly and at reasonable prices. Exchange rate fluctuations involving the currencies of emerging countries may be sudden and substantial.
- ✓ **Liquidity risk:** the fund may invest in securities and/or market segments which may prove to be less liquid, particularly under certain market conditions, and it may therefore be the case that the securities cannot be sold quickly and at reasonable prices.
- ✓ **Concentration risk:** given the significant concentration of assets in one market segment and a limited number of issuers, the risks potentially associated with a deterioration of the fundamentals and/or the liquidity of this segment would have a greater impact on the assets compared to a more diversified portfolio of assets.

Risk and Reward Profile

MAIN RISKS THE FUND IS EXPOSED TO

Capital Loss Risk

Equity Risk

Currency Risk

Derivatives Risk

Liquidity Risk

Concentration Risk

External factors risk

Counterparty Risk

Fund characteristics

CANDRIAM EQUITIES L ONCOLOGY IMPACT																November-20				
Legal Form	UCITS - SICAV										Recommended investment horizon				6 years					
Domicile	Luxembourg										Frequency of valuation				Daily					
Launch date	November 15, 2018										Subscription				D before 12:00 PM (CET)					
Management Company	Candriam Luxembourg										Redemption				D before 12:00 PM (CET)					
Auditors	PricewaterhouseCoopers										Settlement				D+3					
Depository bank	CACEIS Bank, Luxembourg Branch										Fund currency				USD					
Transfer agent	CACEIS Bank, Luxembourg Branch										Fund AUM				1 673 million					
Fund administration	CACEIS Bank, Luxembourg Branch																			
Registered for sale in	All or some of the fund share classes are authorized in the following countries (orange coloured points)																			
	AT	BE	CH	CL	DE	DK	ES	FI	FR	GB	IE	IT	LU	NL	NO	PT	SE	SK	SG	KR
	●		●		●		●		●	●		●	●	●		●				

To fully understand the fund's risk profile, we advise investors to carefully review the official prospectus and the description of the underlying risks.

Sources: Candriam

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Candriam consistently recommends investors to consult via our website www.candriam.com the key information document, prospectus, and all other relevant information prior to investing in one of our funds, including the net asset value ("NAV) of the funds. This information is available either in English or in local languages for each country where the fund's marketing is approved.

Specific information for Swiss investors: The appointed representative and paying agent in Switzerland are respectively CACEIS (Switzerland) SA, Route de Signy 35, CH-1260 Nyon and CACEIS Bank, Paris, succursale de Nyon/Suisse, Route de Signy, 35, CH-1260 Nyon. The prospectus, the key investor information, the articles of association or as applicable the management rules as well as the annual and semi-annual reports, each in paper form, are made available free of charge at the representative and paying agent in Switzerland.



CLIENT RELATION
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