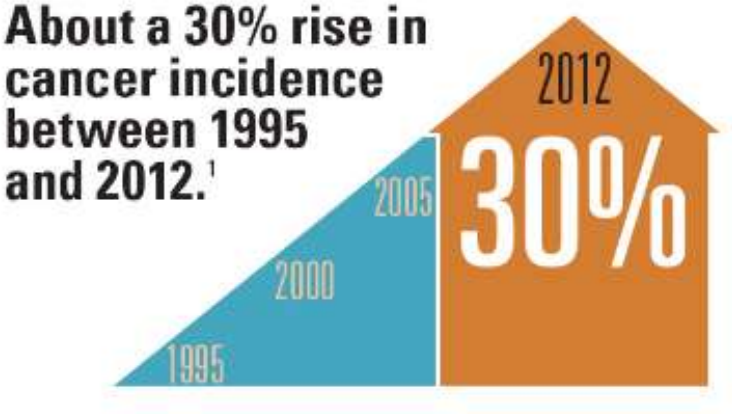
CANCER ECONOMICS: BALANCING ACCESS, QUALITY AND AFFORDABILITY

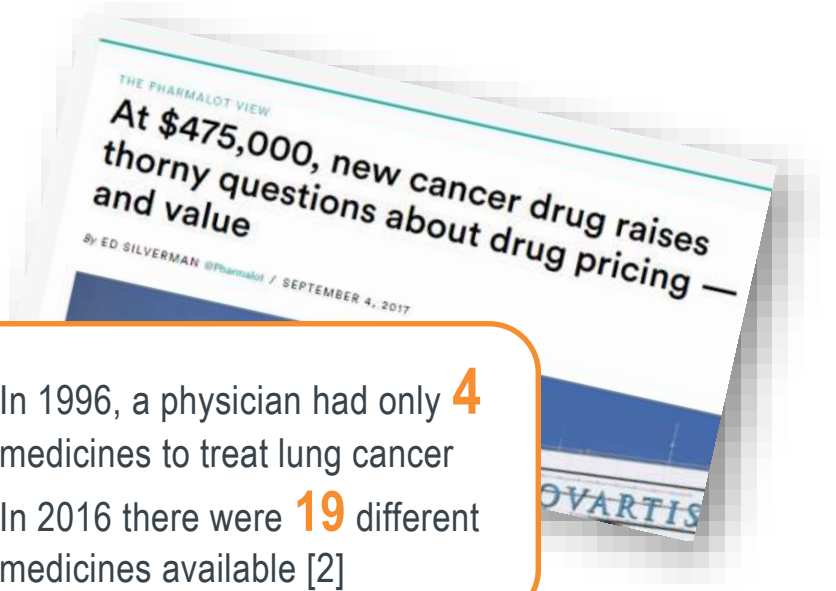
17/10/2019

Policy and Economic Conference Cancer & Personalized Medicine

Antonis Karokis

The cancer challenge: How to balance burden of disease, access, and incentives for innovation



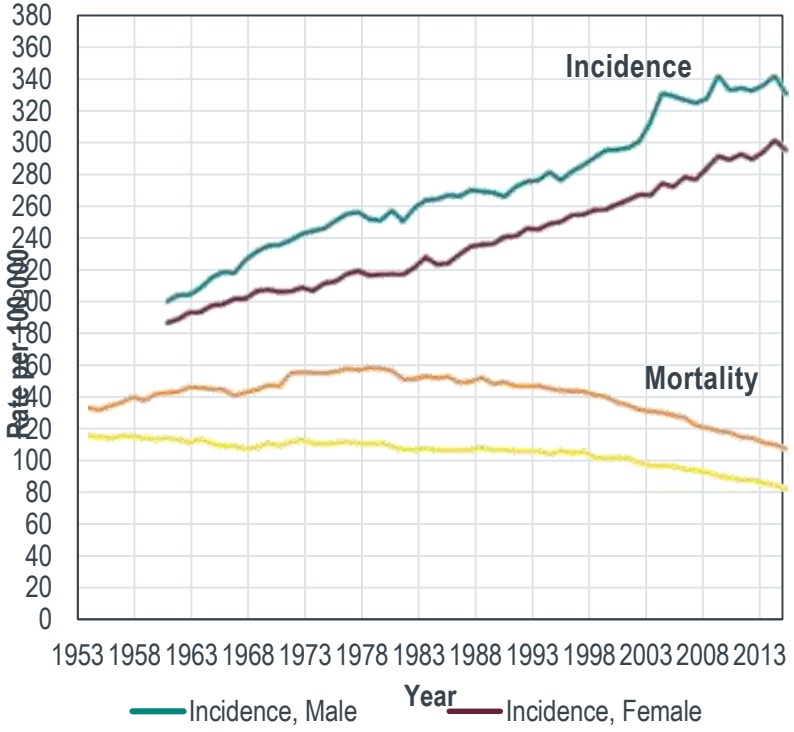


- In 1996, a physician had only **4** medicines to treat lung cancer
- In 2016 there were **19** different medicines available [2]

Sources: [1] Jönsson B et al. (2016), Comparator Report on Patient Access to Cancer Medicines in Europe Revisited; http://ihe.se/en/publicering/cancer-medicines-in-europe-2/; [2] IQVIA Institute (2017), Global Oncology Trends 2017; https://www.iqvia.com/institute/reports/global-oncology-trends-2017-advances-complexity-and-cost

MSD INVENTING FOR LIFE

Despite increasing cancer incidence, there is decreasing mortality due to advances in prevention, screening, diagnosis and treatment



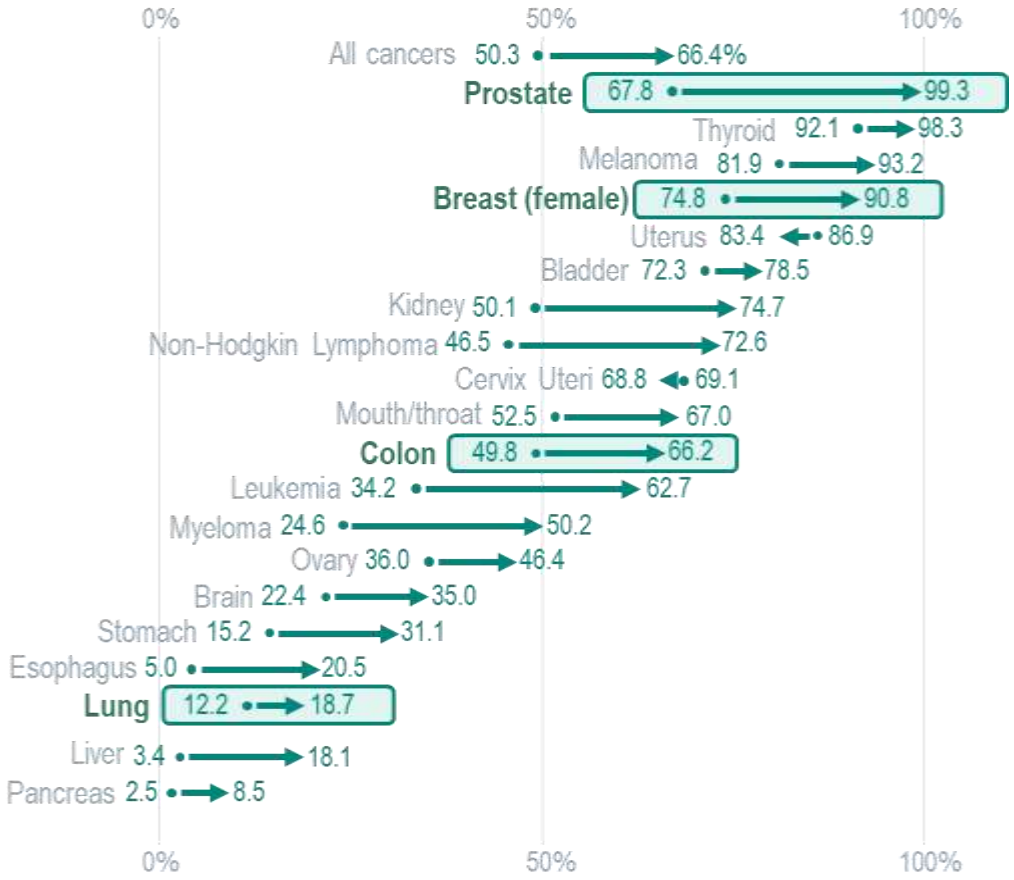
- **Cancer is set to become the #1 disease burden**, especially given trends in demographic changes and lifestyle
- As drug prices and incidence continue to grow, **payers are concerned with the burden of innovation** on the healthcare system
- **However, cancer mortality is decreasing due to innovation**
  - i.e. advances in prevention, screening, diagnosis and treatment

Sources: [1] Jönsson B et al. (2016), Comparator Report on Patient Access to Cancer Medicines in Europe Revisited; http://ihe.se/en/publicering/cancer-medicines-in-europe-2/; [2] IQVIA Institute (2017), Global Oncology Trends 2017; https://www.iqvia.com/institute/reports/global-oncology-trends-2017-advances-complexity-and-cost

MSD INVENTING FOR LIFE

Survival has increased for three out of the four high incidence tumour types
Lung Cancer is the last frontier

Evolution of Five-Year Survival Rates for Most Common Cancer Sites[1]



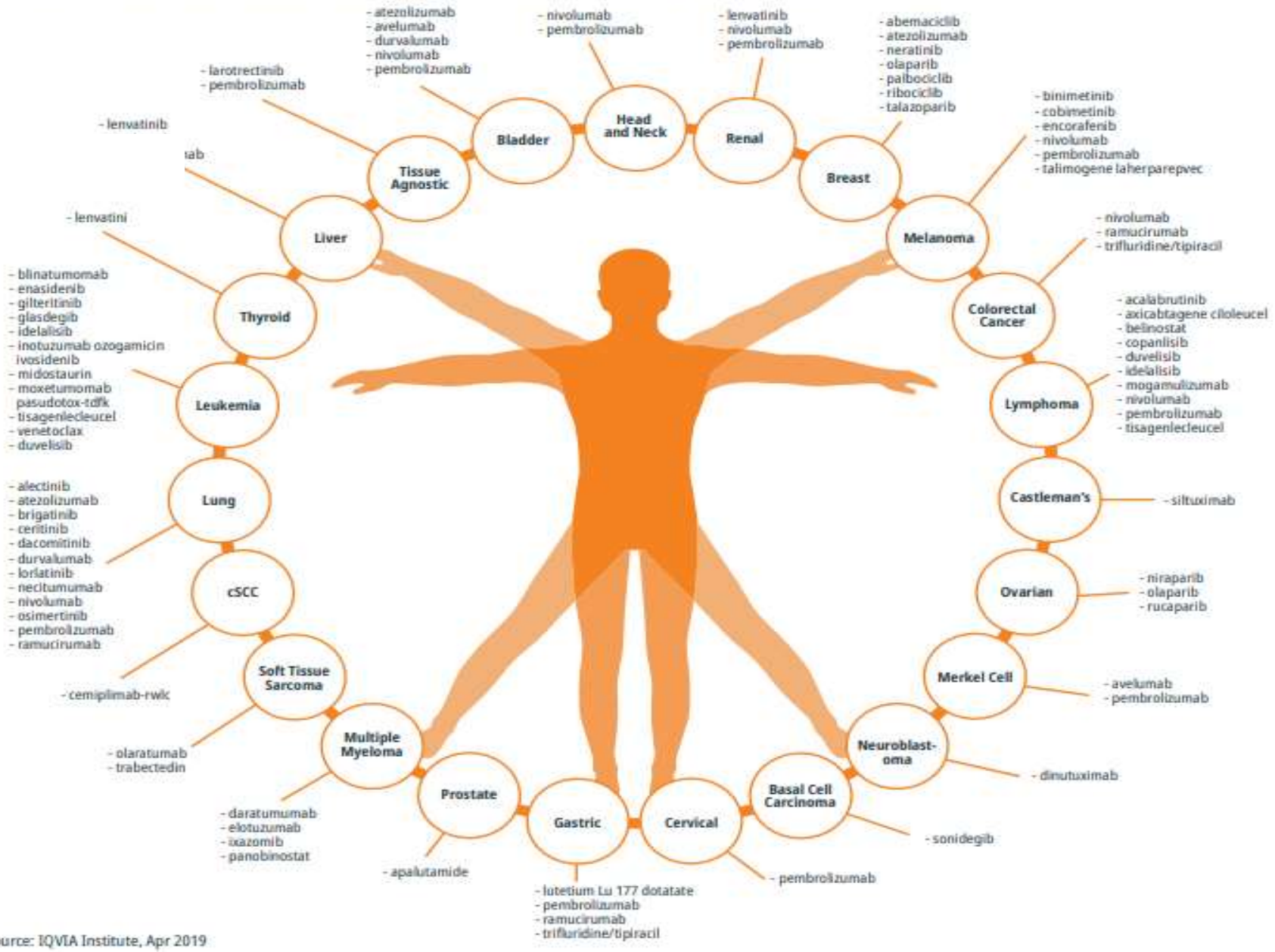
Immuno-oncology is revolutionizing this sector.

Lung cancer is the last major killer, with very poor survival rates.

Source: Cancer Statistics, Surveillance and HealthServices Research, American Cancer Society 2018
Note: 1 - Avg. for yrs '75-77 and '06-12

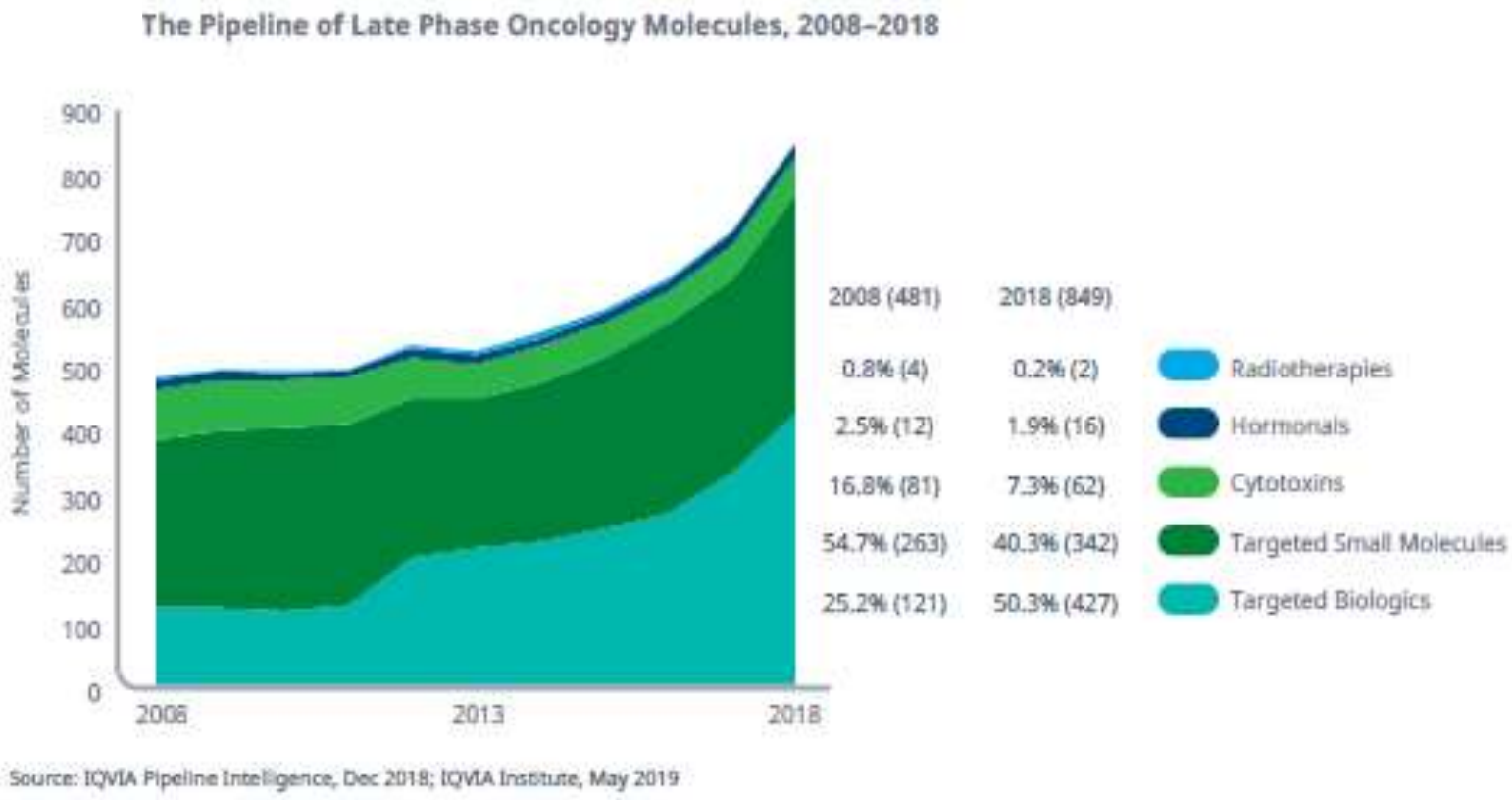
MSD INVENTING FOR LIFE

New Active Substance Approvals in Oncology by Tumor Type, 2014–2018



Source: IQVIA Institute, Apr 2019

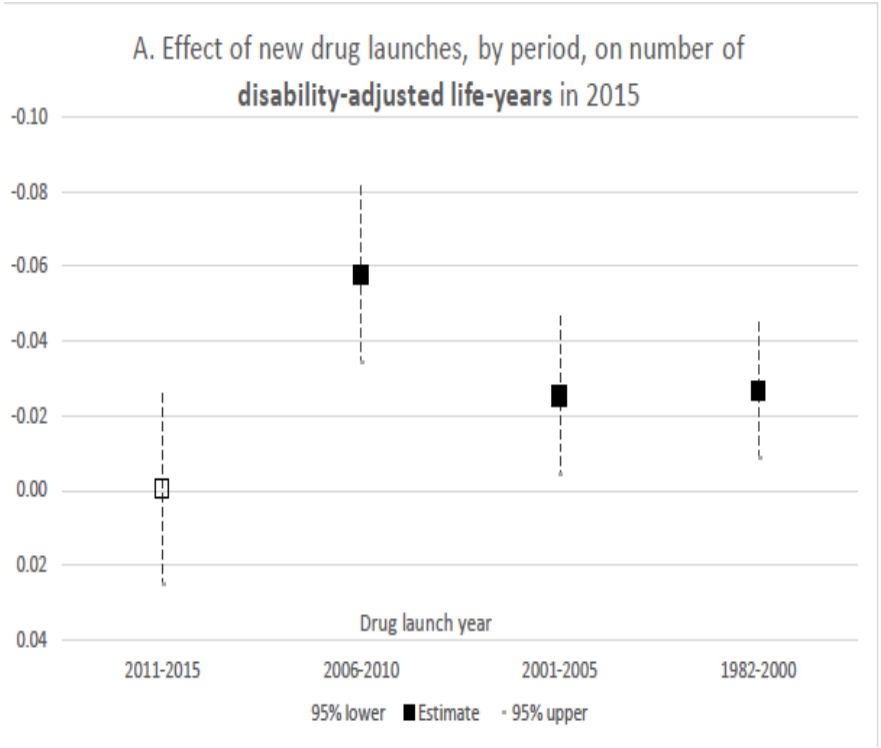
The late-stage oncology pipeline included 849 molecules in 2018, up 77% since 2008, due to the increasing number of targeted therapies

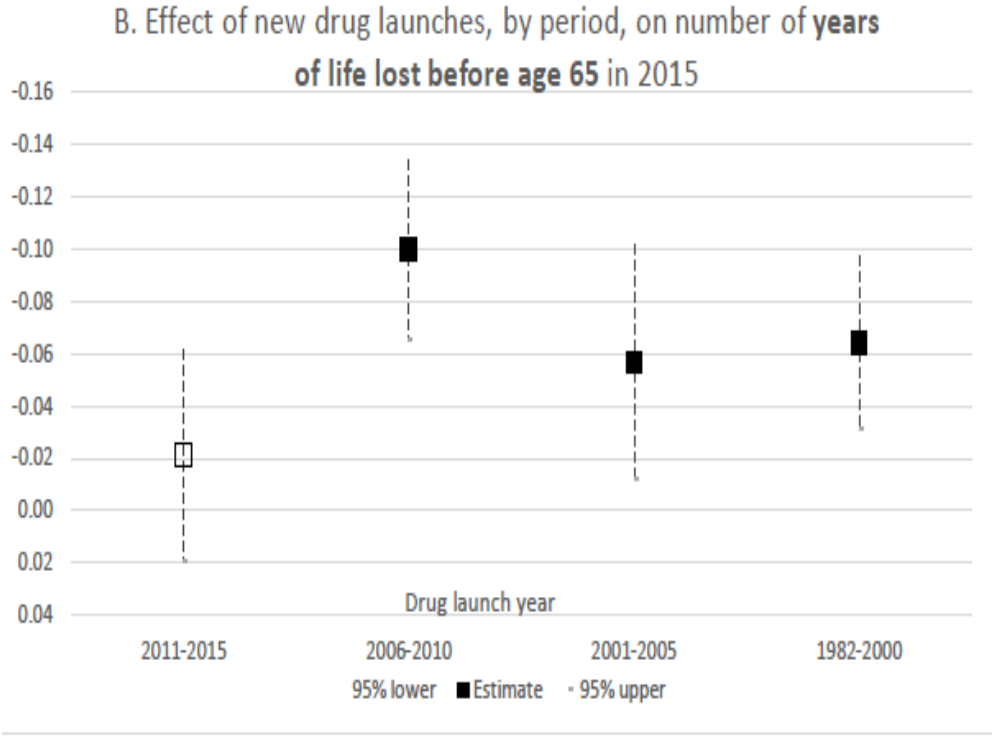


Drugs launched during the entire 1982-2010 period reduced the number of cancer DALYs lost in 2015 by about 23%.

In the absence of new drug launches during 1982-2010, there would have been 26.3 million additional DALYs lost in 2015.

Estimated effects of new drug launches on DALYs and YLL65 in 2015



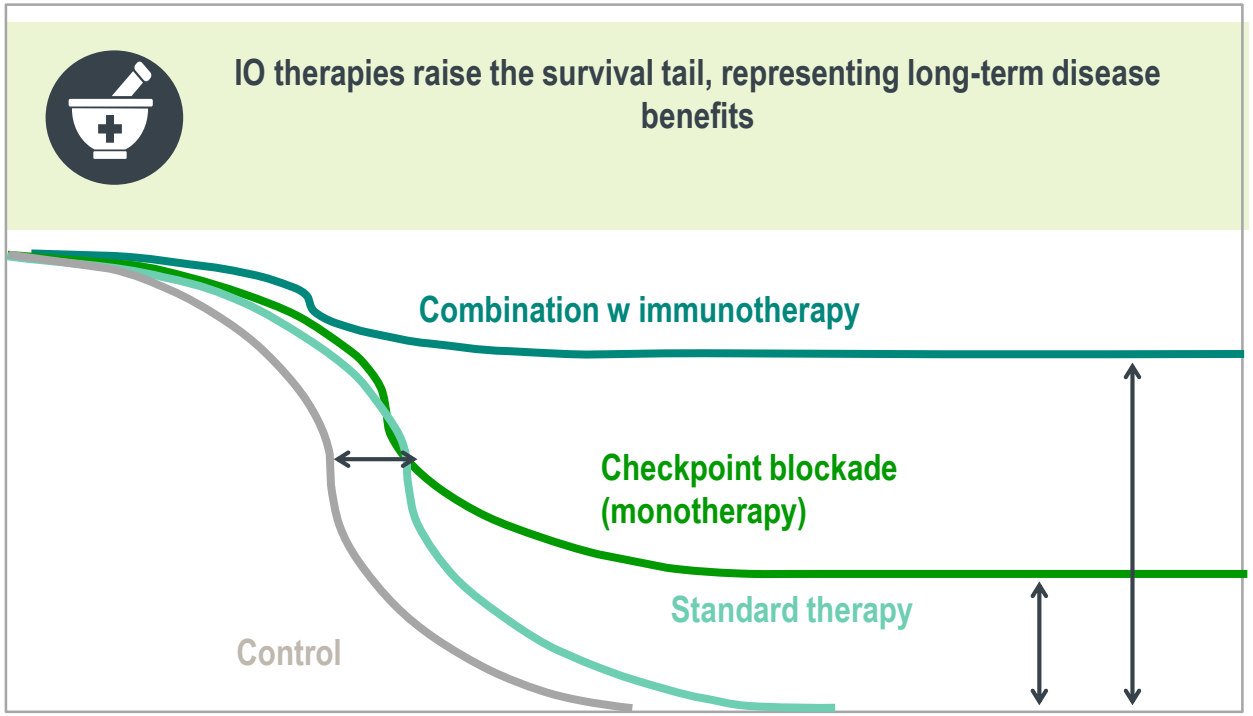


Vertical scale is inverted. Solid markers indicate significant (P-value < .05) estimates; hollow markers indicate insignificant estimates.

Frank R. Lichtenberg, 2018. "THE IMPACT OF NEW DRUG LAUNCHES ON LIFE-YEARS LOST IN 2015 FROM 19 TYPES OF CANCER IN 36 COUNTRIES." Journal of Demographic Economics, vol 84(03), pages 309-354.

MSD INVENTING FOR LIFE

Immunotherapy represents an important health innovation providing durable response and long term survival



Source: https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Life-Sciences-Health-Care/gx-lshc-top-10-health-care-innovations-web-friendly.pdf

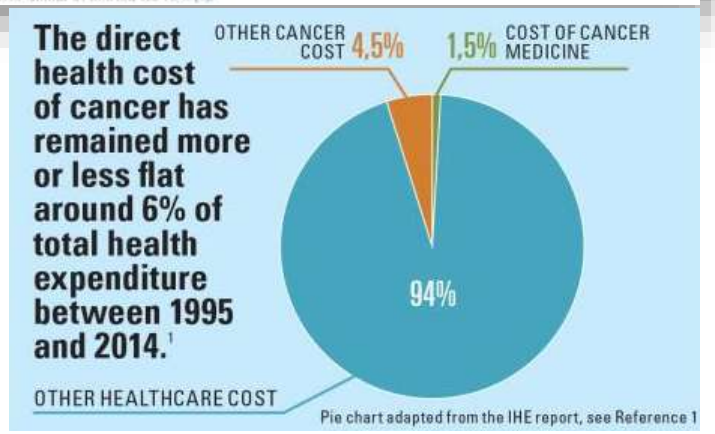
MSD INVENTING FOR LIFE

The share of health expenditure devoted to cancer has been mostly constant over 20 years

Table 1
Health expenditure on cancer in the EU (current prices), 1995 and 2014.

Country	Year									
	1995					2014				
	% of THE	Total (M€)	Total (M€, PPP)	Per capita (€)	Per capita (€, PPP)	% of THE	Total (M€)	Total (M€, PPP)	Per capita (€)	Per capita (€, PPP)
Austria	6.0%*	1049	901	132	113	6.8%*	2396	2154	281	253
Belgium	5.6%*	927	814	92	80	6.2%*	2722	2415	244	216
Bulgaria	6.6%*	35	135	4	16	6.8%*	210	466	29	65
Croatia	6.9%*	79	147	17	31	6.9%*	213	337	51	80
Cyprus	6.3%	21	25	32	38	6.3%	74	88	86	103
Malta	6.3%*	10	16	27	48	6.3%*	44	57	102	132
The Netherlands	4.6%	1228	1069	79	69	5.7%	4507	4096	268	243
Poland	6.2%	361	814	10	21	6.3%	1737	3031	46	79
Portugal	3.9%	263	332	26	33	3.9%	639	795	61	76
Romania	6.6%*	61	230	3	10	6.8%*	534	1048	27	53
Slovakia	6.2%*	56	140	11	26	6.2%*	376	564	69	104
Slovenia	6.7%	80	108	40	54	6.7%	225	283	109	137
Spain	5.6%	1903	2203	48	56	5.8%	5319	5961	116	130
Sweden	5.0%	1030	876	119	99	6.4%	2746	2119	283	219
United Kingdom	5.1%	3082	3338	53	58	5.4%	9554	8298	148	128
EU	5.9%	35,747	35,747	74	74	6.1%	83,184	83,184	164	164

M = million; TH… health expenditure; PPP = purchasing power parity; EU = European Union.
Notes: cancer is defined as ICD-10 C00-D48.
The sum of all PPP-adjusted estimates does not equal the estimate for the EU because the different shares of cancer-specific health expenditure change the weighting of the national estimates.
* Estimated share based on data from similar countries; see Ref. [1].



- Health expenditure on cancer increased continuously from **€35.7 billion in 1995 to €83.2 billion in 2014 in the EU.**
- Spending on cancer drugs has also increased **from €7.6 billion in 2005 to €19.1** billion in 2014 (current prices).
- However, the share of total health expenditure devoted to cancer **was mostly constant** (~6%).

Source: Jönsson B et al. (2016), The cost and burden of cancer in the European Union 1995-2014; Eur J Cancer 66; 162-170
Jönsson et al. (2016) Comparator Report on patient access to cancer medicines in Europe revisited IHE Report

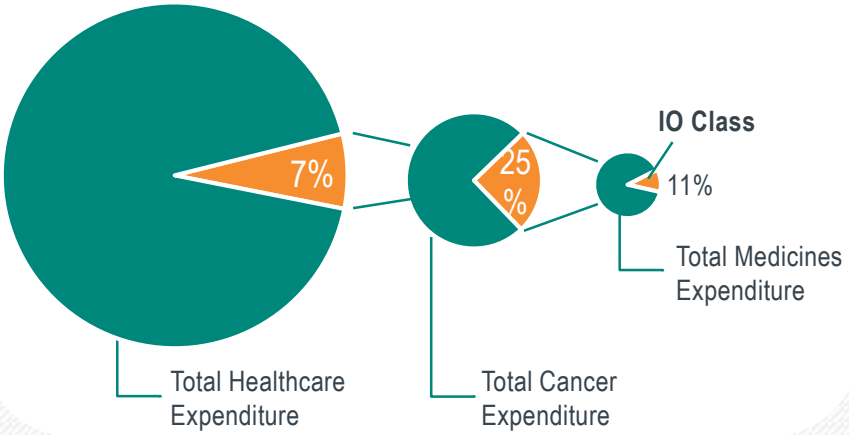
MSD INVENTING FOR LIFE

More than 11,000 life years could be gained with IOs in the next 5 years, with manageable healthcare expenditure

The budget impact of the IO class may only be a small portion of healthcare expenditure...

Example

Budget impact of the PD-1/PD-L1 class in Austria: 0.2% of the total healthcare expenditure



...but offer significant health benefits vs. SoC over 5 years

Example

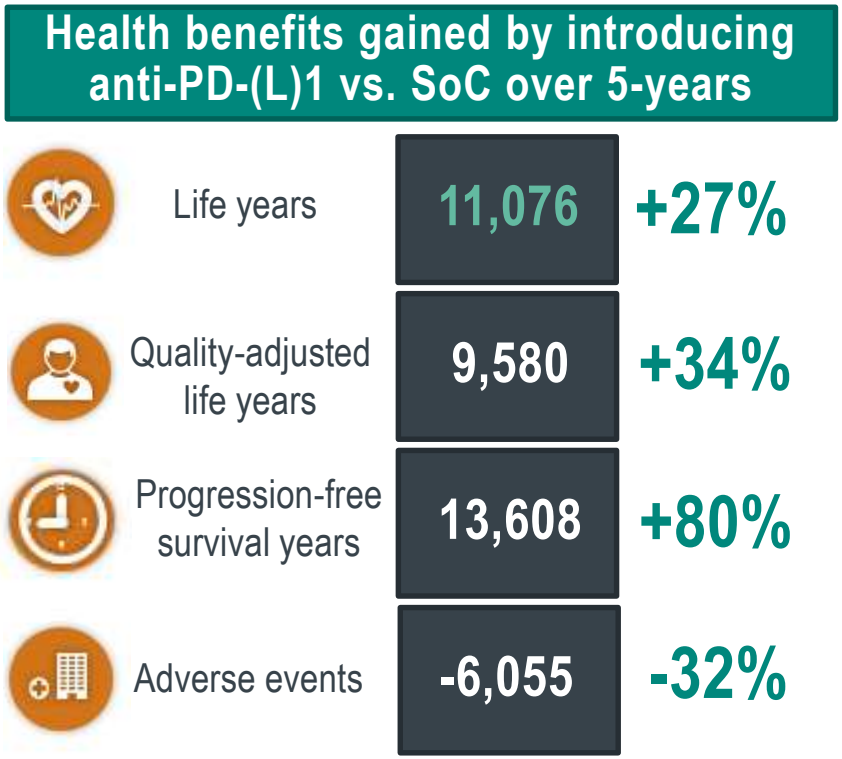
Health benefits gained by introducing anti-PD-(L)1 vs. SoC over 5-years

Life years	11,076	+27%
Quality-adjusted life years	9,580	+34%
Progression-free survival years	13,608	+80%
Adverse events	-6,055	-32%

Source: Van Bavel J et al. (2018), Modelling the Budget Impact and Health Outcomes of the Anti PD-1/PD-L1 Class in Cancer Care in Austria; Poster at EUPHA 2018; Van Bavel J et al. (2018), Modelling the Budget Impact and Health Outcomes of the Anti PD-1/PD-L1 Class in Cancer Care in Belgium; Poster at EUPHA 2018;

MSD INVENTING FOR LIFE

In Belgium anti-PD-(L)1 therapies provide patients with significant benefit by increasing life years gained by 27%

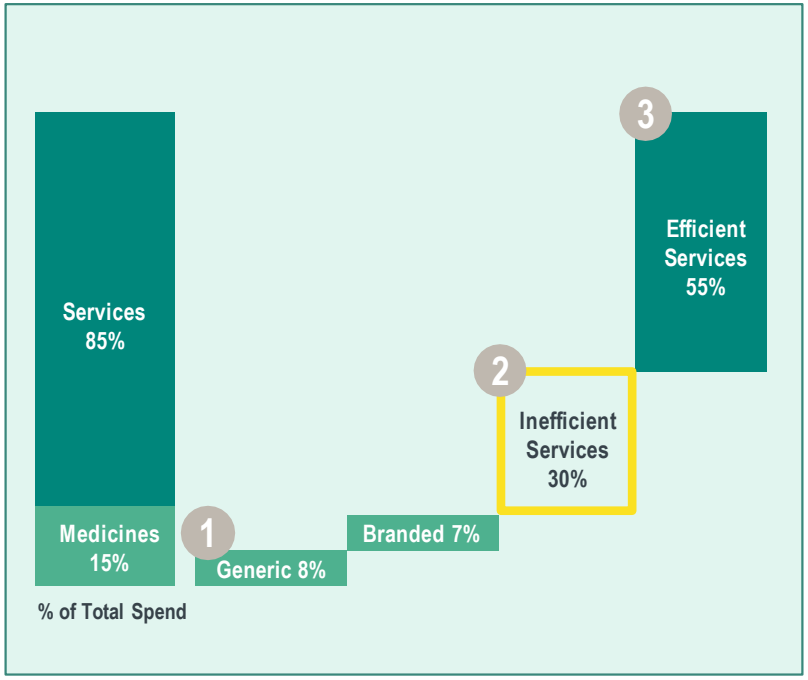


Conclusions:

1. **22,000 patients** will benefit from innovative life-saving IO therapies over the next 5Y
2. The use of anti PD-1/PD-L1 is estimated to lead to **by approximately 10,000 more qualitative life years** over the next 5 years
3. The **rapid reimbursement decided by the MoH increased the LY gained with 66%** compared to the traditional P&R process
4. The **expected budget impact** of the anti-PD-(L)1 class represents a limited share of medicines expenditure, ranging from around 3% to 8% of total medicines budget (2018-2022)

Source: Julie Van Bavel et al (poster). 11th European Public Health Conference, 28th November-1st December 2018, Ljubljana

Creating budget headroom for innovation to promote sustainable healthcare



There are three areas to seek headroom and identify ways to promote sustainable healthcare:

1. **More than half of medicines spend are on generics**, but uptake can be poor
2. Non-medicines spend carries an estimated 30% inefficiency; **significant opportunity exists** to fund innovation
3. Health spend benefits accrue in other areas such as: reduced unemployment, greater tax revenues, and **budget re-appropriation**

Source: https://data.oecd.org/healthres/pharmaceutical-spending.htm; http://dx.doi.org/10.1787/9789264266414-en

MSD INVENTING FOR LIFE

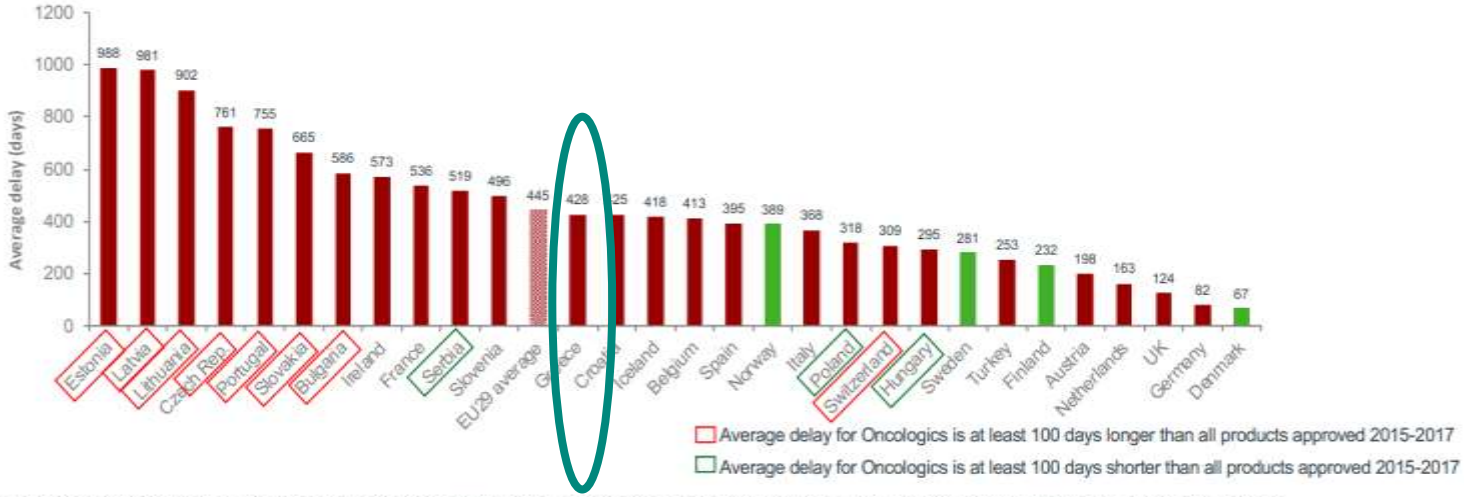
Addressing affordability

Medicines cost increase may lead to savings to other parts of the health care system	Innovative contracting agreements can minimize payer risk and ensure predictability	Addressing system inefficiencies can lead to budget reallocation
Oncology is a stable portion of total health care spending Medicines spending increases coincides with less hospital or other health system use Prevention and access to medical innovation can save lives and reduce cancer costs	Financial performance agreements can reduce payer risk: (Discounts, PVAs, Multi Year Multi Indication Agreements) Performance based agreements are difficult to implement because of high administrative costs Coverage with evidence generation and RWE generation can shape IO reimbursement landscape in the medium to long run	Increasing use of generics can free up space for innovation Addressing inefficiencies in the non medicines sector can lead to savings up to 30% (i.e. AMR, optimizing resource use, addressing LoS) Prevention and earlier diagnosis can lead to cost savings. Reducing access may increase costs in the overall economy

MSD
INVENTING FOR LIFE

However, the average delay between market authorisation and patient access for Oncology products is between 2 months to over 2.5 years

The **average time between marketing authorisation and patient access** - the number of days elapsing from the date of EU marketing authorisation (or effective marketing authorisation in non-EEA countries) to the day of completion of post-marketing authorisation administrative processes



In most countries patient access equates to granting of access to the reimbursement list, except for hospital products in DK, FI, NO, SE where some products are not covered by the general reimbursement scheme and so this shorter delay is artificially declining the median and average.

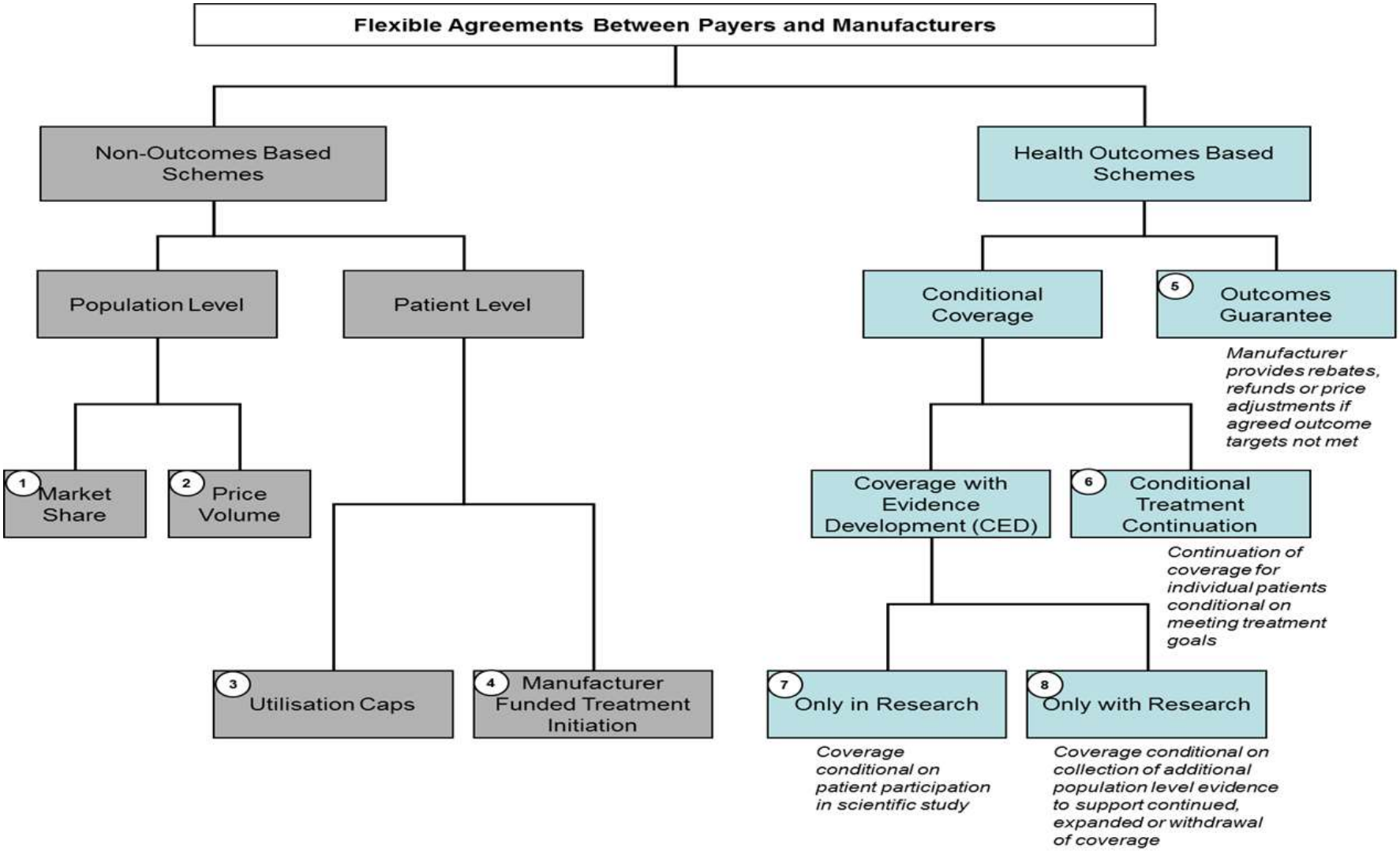
- In France, some innovative products without competitors can be made available prior to market authorisation under the system of Temporary Authorisations. As these are not taken into account in the analysis, the average for France is higher than in reality.
- Average of 29 European countries in the analysis (excludes Macedonia)
- Oncology market definition: L1&L2&V3C&Revlimid&Xgeva&Proleukin&Pomalyst

IQVIA

EFPIA Patient W.A.I.T. Indicator Study 2018 Results 030419

MSD INVENTING FOR LIFE

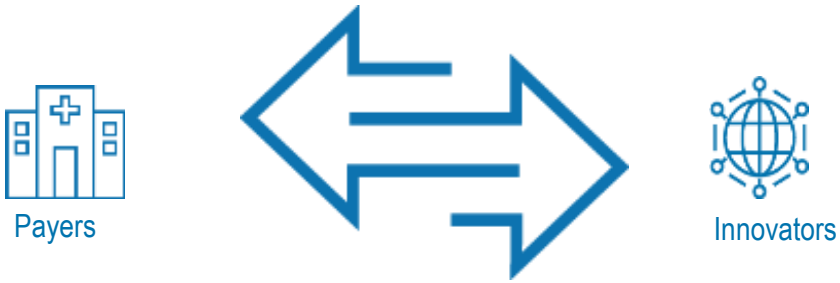
There is a great variety of performance-based agreements to enable affordability in healthcare systems



Spurce: Carlson JJ, et al. Linking payment to health outcomes: A taxonomy and examination of performance-based reimbursement schemes between healthcare payers and manufacturers. Health Policy (2010), doi:10.1016/j.healthpol.2010.02.005

Multi – Year – Multi – Indication (MYMI) agreements are a new form of agreements that re-define value

New form of agreement between payers and manufacturers that goes across multiple indication and years



Agreement component	Description
Value assessment	• Initial agreement anticipates future indications • No or light-touch assessment of subsequent indications • There can be re-assessment using RWE
Access	• Agreement allows for immediate or accelerated access to indications
Pricing	• Agreement includes a pricing arrangement that covers all indications and is set for the agreement period
Duration	• Agreement is for a set duration after the initial P&R approval

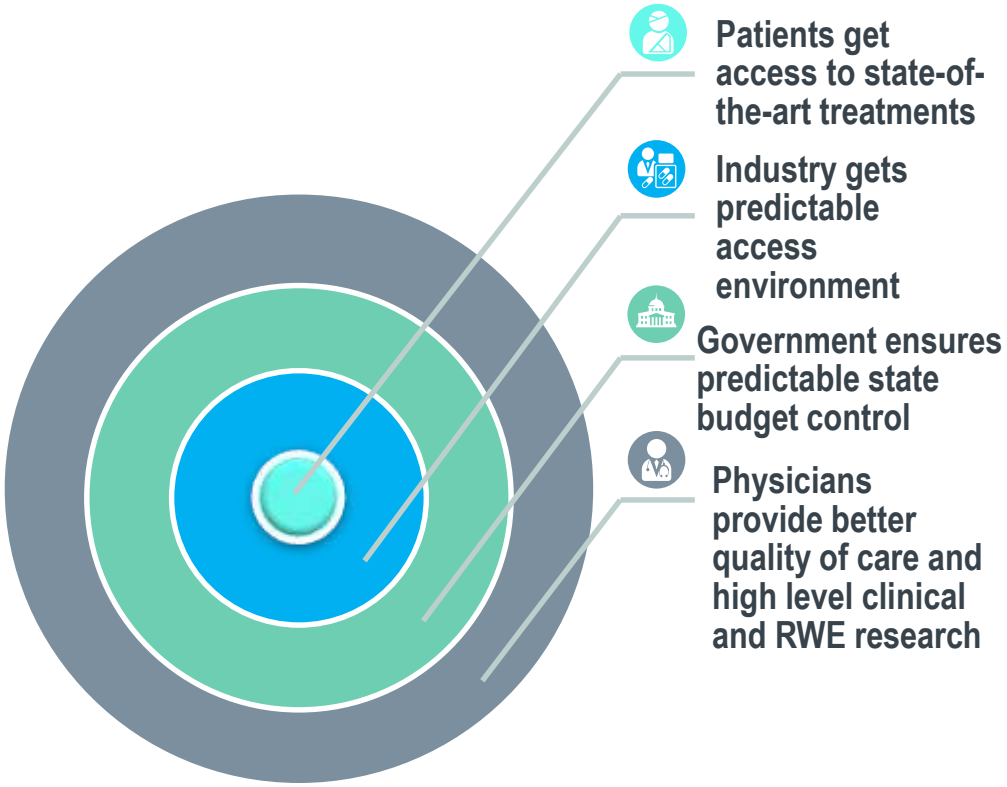
MSD INVENTING FOR LIFE

The benefits of MYMI agreements span across all stakeholders

Multi-year-multi-indication (MYMI) agreements

- New form of agreement between payers and manufacturers
- Goes across multiple indications and years
- Light-touch or no assessments for new indications
- Price and budget impact of new indications is discussed at the beginning of the agreement

This can help ensure patients have access to state-of-the-art treatments within a **predictable, controlled, and sustainable policy setting**



Source: Charles River Associates 2018 A White Paper on alternative approaches to assessing and reimbursing medicines with multiple indications, Final Report

MSD INVENTING FOR LIFE

The implementation of risk-sharing agreements requires collecting appropriate data through registries

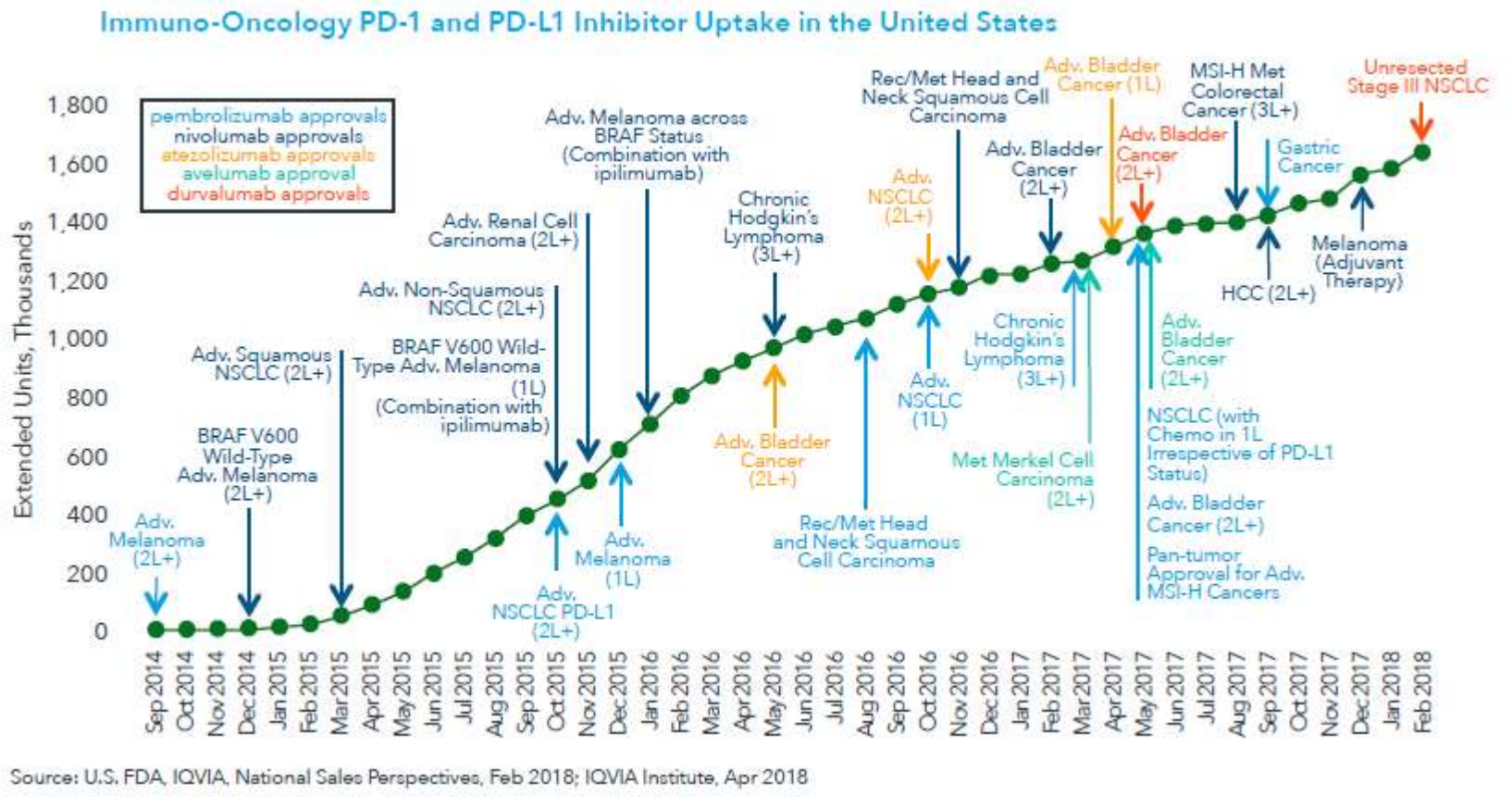
Minimum data required for implementing risk-sharing agreements.

	Field	Description
Patient information	Anonymised patient ID	Unique patient identification, anonymised
Disease information	Identification of disease	Diagnosis (e.g. early disease, metastatic, unresectable, locally advanced)
	Mutational status	The existence of certain mutations can be important to complete diagnosis and/or opt for certain therapy (e.g. KRAS, RAS, HER2, EGFR, BRAF, ALK)
Medicinal product information	Main medicinal product/co-medicinal product	Identification of the medicinal product administered/medicinal product administered in combination
	Amount administered (main medicinal product/ co-medicinal product)	Total dose administered in a given cycle
	Date of administration (main medicinal product/ co-medicinal product)	Date on which the administration occurred
	Presentation of the medicinal product administered (main medicinal product/co-medicinal product)	e.g. Medicinal product A 150 mg vial
	Number of units administered (main medicinal product/co-medicinal product)	e.g. 2 vials
Treatment information	Line of treatment	e.g. first line metastatic treatment, second line of metastatic treatment, adjuvant, neoadjuvant treatment
	Treatment status*	Not started, ongoing, finished
	Treatment cycle number	e.g. 1, 2, 3, 4,...
	Date of evaluation of response (intermediate or final evaluation)*	Date of evaluation of response to treatment
	Evaluation of response to treatment (intermediate or final evaluation)*	Description of response to treatment (e.g. complete response, partial response, stable, disease progression, death, not assessable)
	End of treatment date*	Date of the end of treatment with a given medicinal product
	Reason for end of treatment*	Reason for interruption of certain treatment (e.g. treatment completed, progression, death, toxicity, patient decision)

*Information required for agreements based on clinical outcomes

Francisco R Gonçalves et al Risk-sharing agreements, present and future ecancer 2018

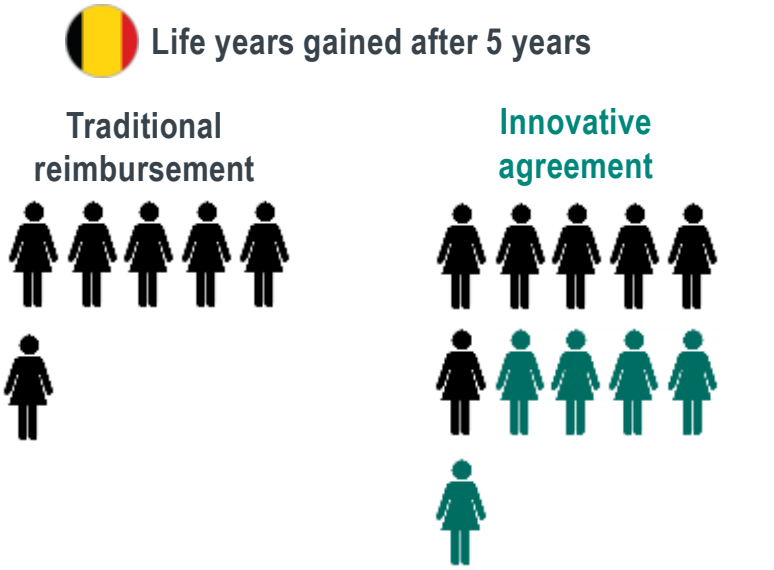
The sustained uptake of checkpoint inhibitors demonstrate their remarkable clinical profile and continued expansion of indications



Source: U.S. FDA, IQVIA, National Sales Perspectives, Feb 2018; IQVIA Institute, Apr 2018

MSD INVENTING FOR LIFE

The most important benefit of innovative agreements is increasing life year gain by 83% for cancer patients



- New cancer treatments may add over **6,000 life years** in the next five years in Belgium
- Innovative agreements, which provide earlier access, **could increase life year gained to 11,000**

Source: Van Bavel J et al. (2018), Assessing the impact of PD-1/PD-L1 inhibitors on health and budget in Belgium; 11th European Public Health Conference: Poster Displays ; MSD HIPP

MSD INVENTING FOR LIFE

THANK YOU