



The Global Use of Medicines 2023

OUTLOOK TO 2027

JANUARY 2023

Agenda

- **Welcome and introductions**

Murray Aitken, Executive Director, IQVIA Institute for Human Data Science

- **Global outlook and drivers**

Michael Kleinrock, Research Director, IQVIA Institute for Human Data Science

- **Regional Highlights**

- U.S.
- Europe
- China
- Japan
- Latin America

- **Audience questions and moderated discussion**

Murray Aitken

- **Closing**

Today's panelists



Hannah Law
VP, Thought Leadership
and Marketing
U.S.



Sarah Rickwood
VP, Thought Leadership
and Marketing
EMEA



Howard Chen
Managing
Principal – Head
of Management
Consulting
China



Alan Thomas
Senior Director,
Thought Leadership
Japan

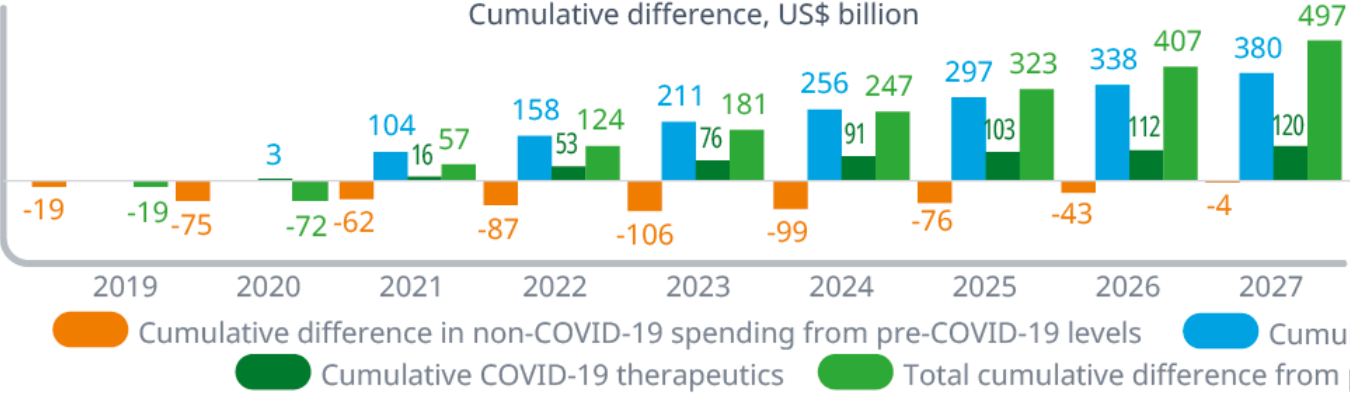
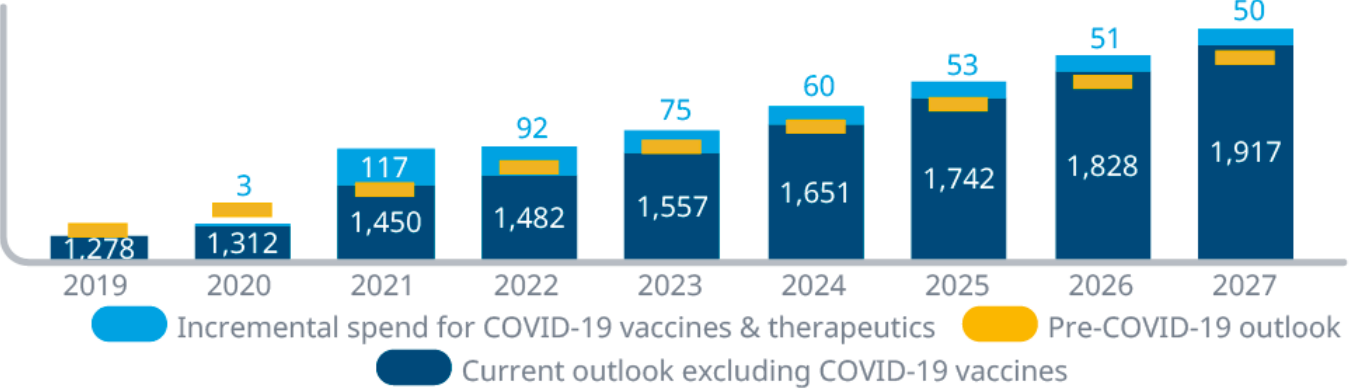


Sydney Clark
SVP
Latin America



Global outlook and drivers

Changes in the historical and projected global medicine pending model due to COVID-19, 2019–2027, US\$Bn



Spending outlook change due to COVID-19: \$497Bn, 2020–2027

=

COVID-19 vaccine spending: \$380Bn (\$315–\$42Bn)

+

COVID-19 therapeutics: \$120Bn (\$105–135Bn)

+

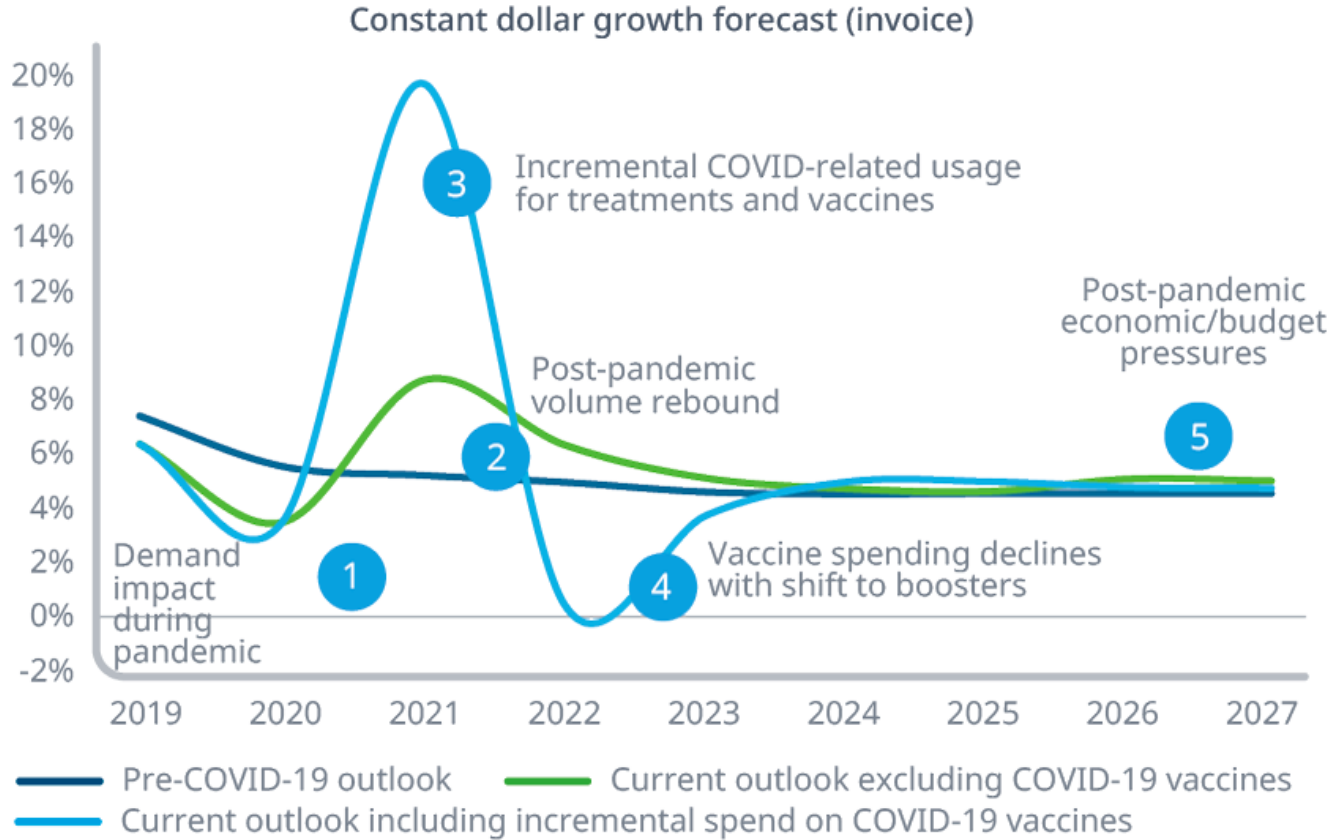
COVID-19 disruption impact: -\$4Bn 2020–2027

Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.

Notes: Estimates of pre-pandemic outlook are based on US\$ at variable exchange rates under the same ex-rate assumptions as the current non-COVID outlook. Neither outlook were modeled including COVID-19 vaccines and the estimates of vaccine spending are entirely incremental spending. Vaccine costs reflect medicine costs only and do not include costs from provider administration or government contributions to manufacturing or distribution costs. COVID-19 therapeutics are novel therapeutics including antivirals and antibody treatments new to the market but excluding existing medicines 'repurposed' for COVID-19. No confidential or proprietary information is included in these estimates.

Report: The Global Use of Medicines 2023: Outlook to 2027. IQVIA Institute for Human Data Science, January 2023.

Comparison of current outlook to pre-COVID-19 outlook



Key events in the outlook

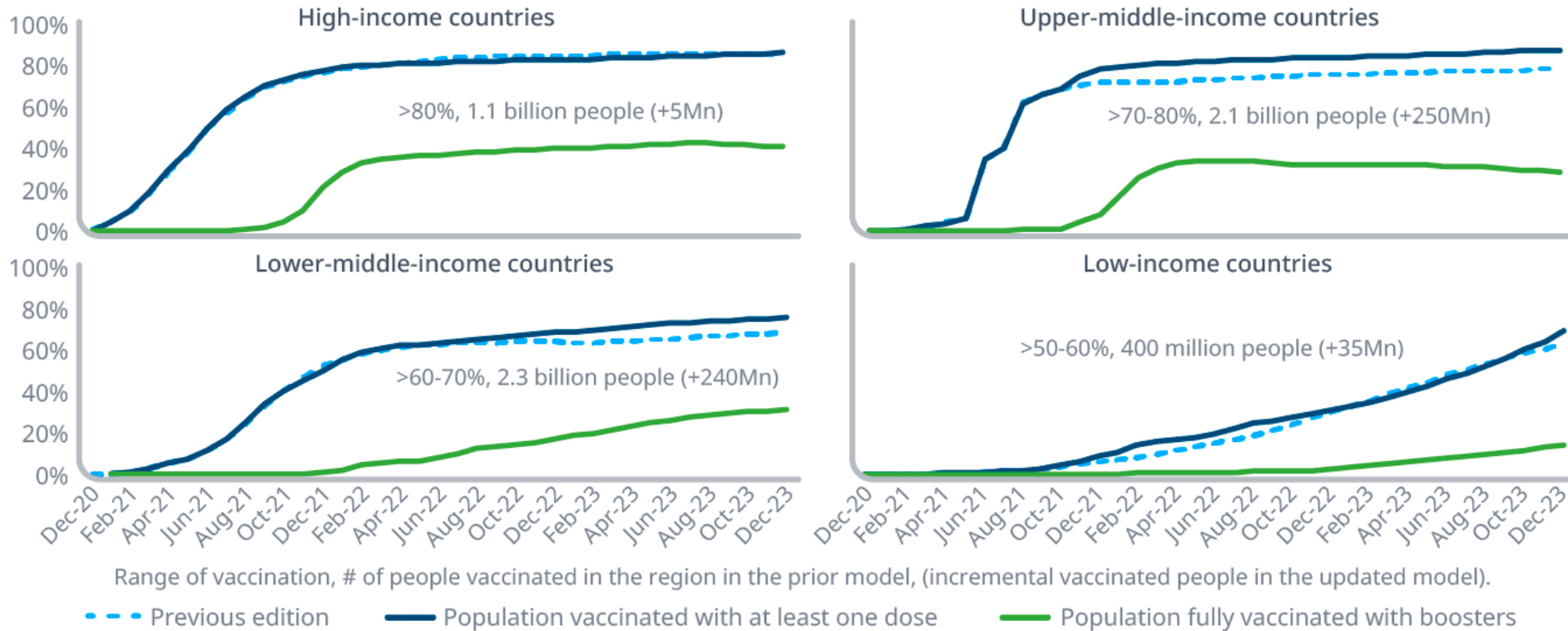
- 2020: Growth -2.0% slower than pre-pandemic projection (~\$26Bn)
- 2021: +3.4% above pre-COVID-19 growth; +5.1% above 2020 growth excluding vaccine and therapeutics
- 2021: +10.6% higher growth including vaccines and therapeutics compared to spending without them
- 2022: Significant decline in required spending for COVID-19 vaccines as much of the world is inoculated to some degree
- Expected budget pressures will emerge from longer-term pressures of sustained pandemic

Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.

Notes: Pre-COVID outlook based on IQVIA Market Prognosis, Sep. 2019 edition which included projections to 2024 and which has been extended to include the periods to 2027 with a linear projection. Current outlook based on IQVIA Market Prognosis Sep 2022 edition. Incremental COVID vaccine and therapeutic scenario based on current outlook combined with incremental spending for vaccines and novel COVID-19 therapeutics.

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Percentage of total population vaccinated by month and comparison to prior forecast



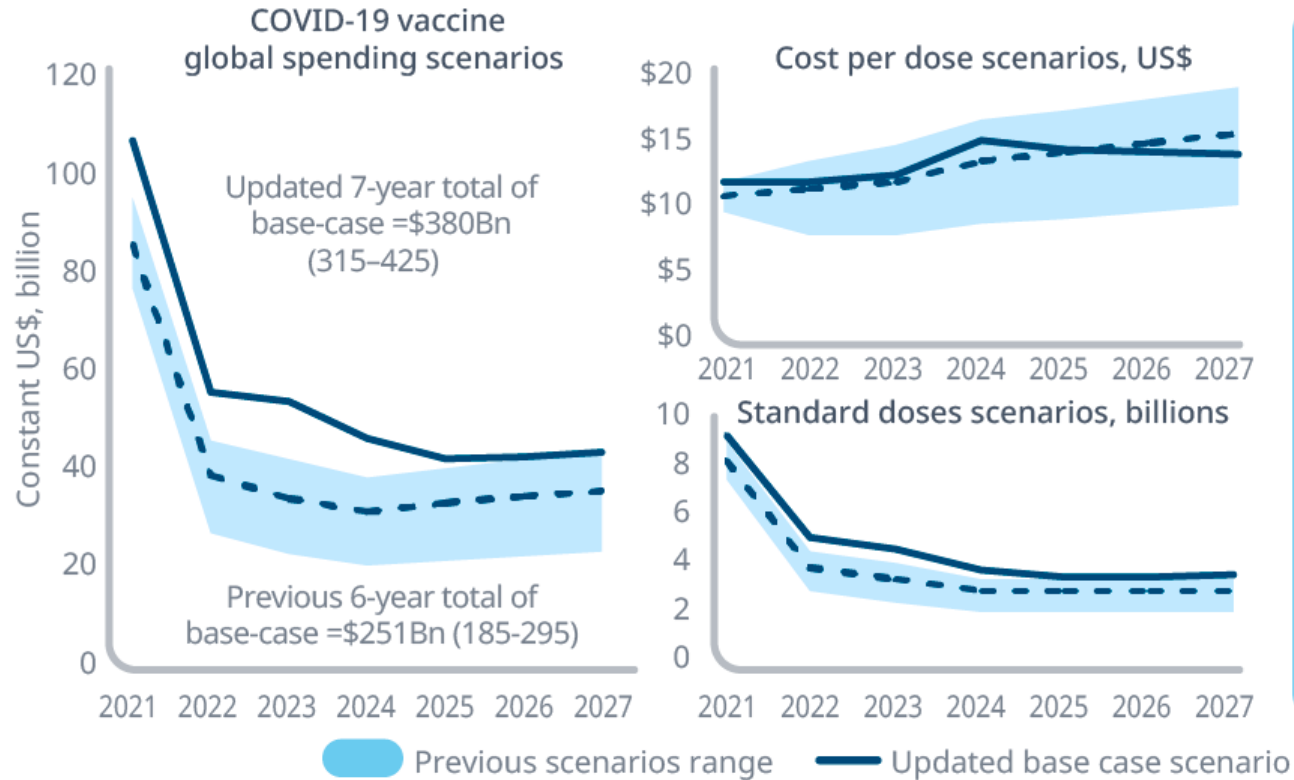
Range of vaccination, # of people vaccinated in the region in the prior model, (incremental vaccinated people in the updated model).

Source: IQVIA Institute, Nov 2022; Vaccination trends to date from Ourworldindata.org, accessed October 2022.

Notes: Estimates of vaccination rates based on reported vaccination data through October 2022. Countries within the four World Bank income bands have been projected to achieve a maximum vaccination rate by the end of 2023. The high-income and upper-lower-income countries average over 60% and will have a slowing rate of new vaccinations until they reach the projected peak. The lower-middle-income and low-income countries currently have much lower vaccination rates and widely diverging trends in the most recent months. The differences across countries are expected to narrow by the end of 2023 as global initiatives to encourage vaccination partly achieve their goals. The percentage of the population vaccinated with at least one dose is compared from the current estimates to that published by the IQVIA Institute in the prior edition of this report. The vaccinated population are relevant to the estimations of the population eligible for booster shots at a point in time used in overall volume projections. Estimates of fully vaccinated population with boosters are an estimate of the population with a current booster in the prior 12 months in addition to initial vaccination.

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COVID-19 vaccination spending and volume forecasts



Base case key assumptions

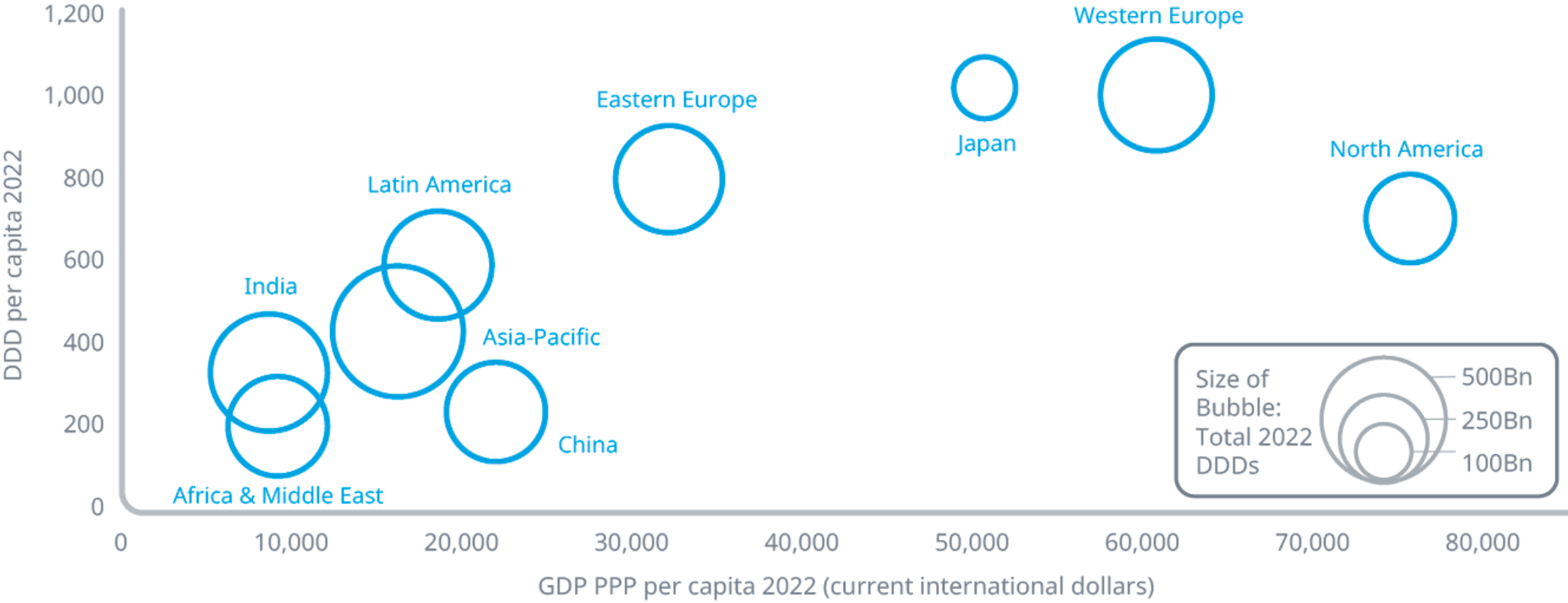
- Higher income countries achieved higher than expected vaccination rates earlier in the pandemic while the slower early pace in the developing world has been significantly improved to date, though the overall vaccination rate is still far below wealthier countries
- Previous modeling had expected half-size booster doses taken by more of the initially vaccinated. Information to date suggests that booster doses will be the same size as an initial dose but will be taken by fewer people
- Although increased competition will drive down cost per standardized dose later in the period, the preference in developed markets for mRNA vaccines resulted in higher-than-expected cost per dose through 2024, and slower booster uptake is a factor in some companies stated plans for future pricing

Source: IQVIA Institute, Nov 2022; Pricing information from public disclosures as of October 2022; Vaccination trends to date from Ourworldindata.org.

Notes: Scenario modeling was conducted by the IQVIA institute based on public information as of October 2022. Estimates of future vaccination trends include input from the public statements of responsible agencies and manufacturers, as well as modeling by the IQVIA Institute. Estimates of cost per patient are based on assumptions of the number and mix of doses of available vaccines, the published prices, and IQVIA Institute estimates of the prevailing prices that will exist across geographies through 2027. As costs are based on public statements, they may overstate the true costs after negotiated discounts. Doses are based on the expected dosing including booster shots.

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Defined Daily Doses (DDD) per capita by region compared to per capita gross domestic product PPP, current international dollars

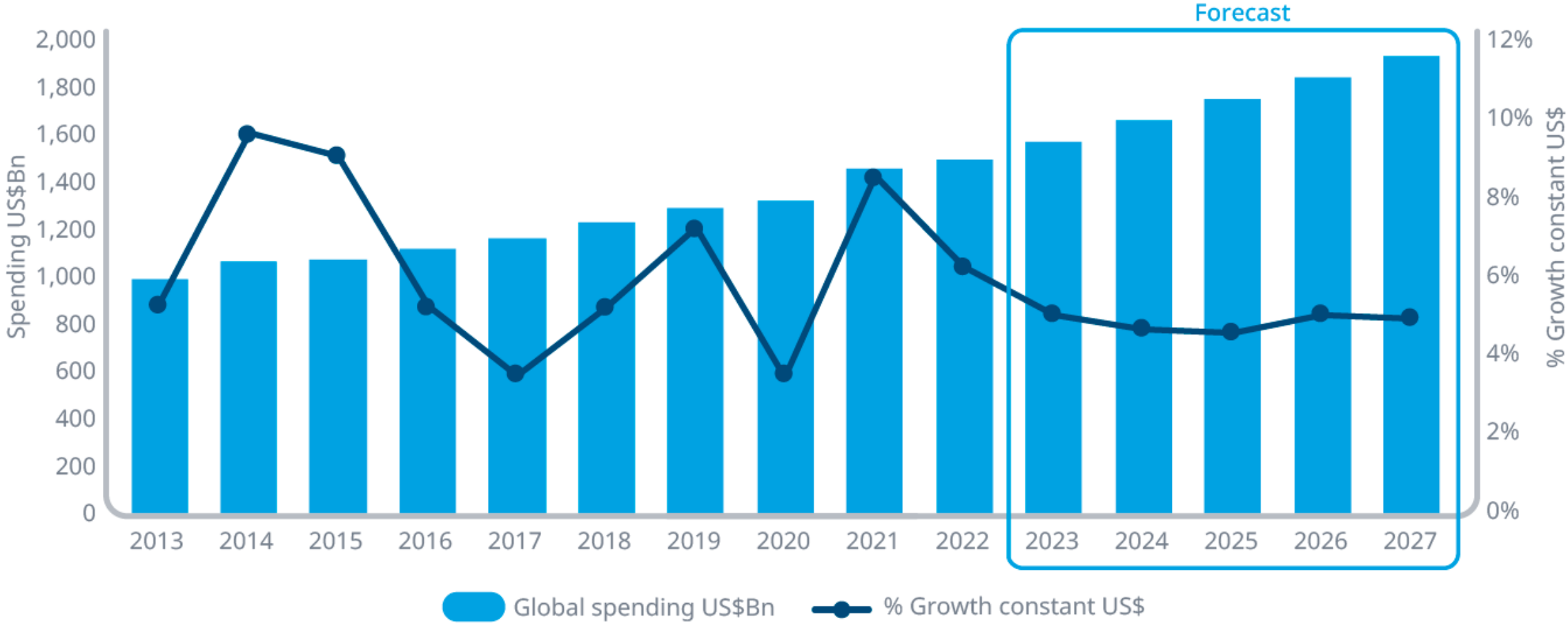


Source: IQVIA MIDAS, Jun 2022; IQVIA Institute, Dec 2022; The World Bank, Jul 2022; International Monetary Fund, Oct 2022.

Notes: Chart represents IQVIA Institute estimates of global defined daily doses (DDD). These estimates are based on IQVIA audited data and application of WHO-DDD factors in IQVIA MIDAS as well as additional DDD calculation assumptions developed by the IQVIA Institute (see Methodology). Asia-Pacific does not include China, India, and Japan which are reported separately.

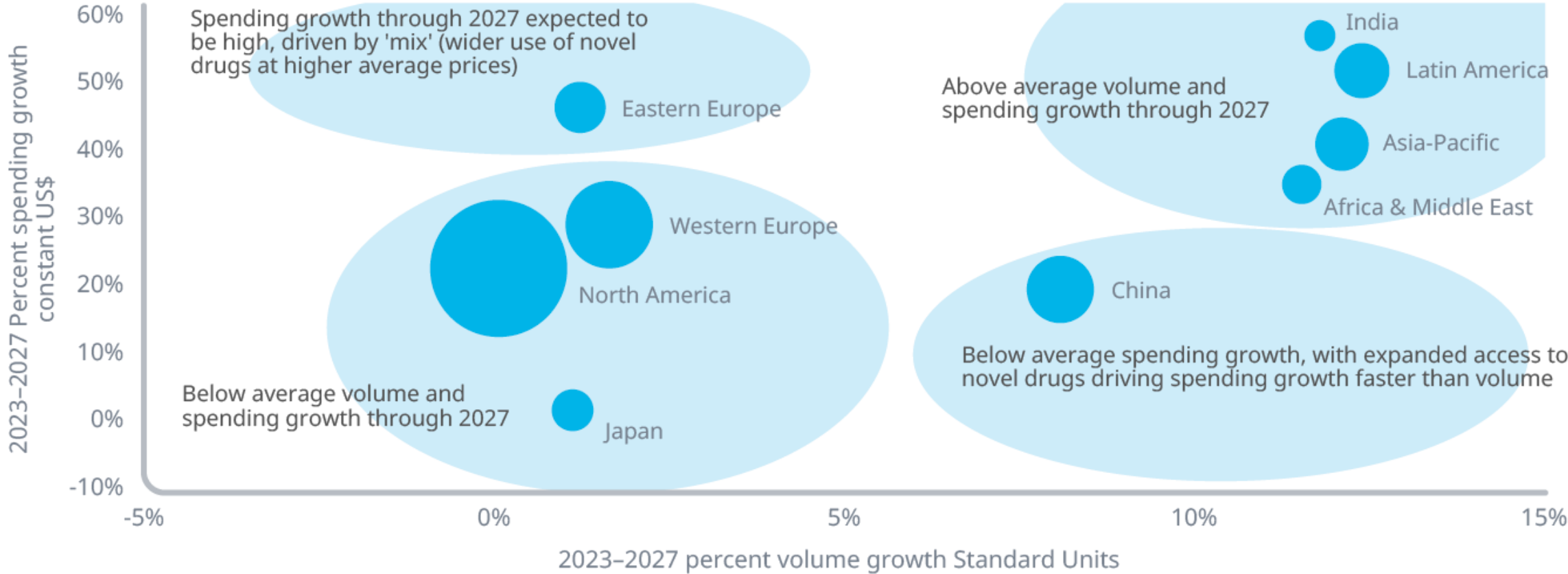
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Global medicine market size and growth 2013–2027



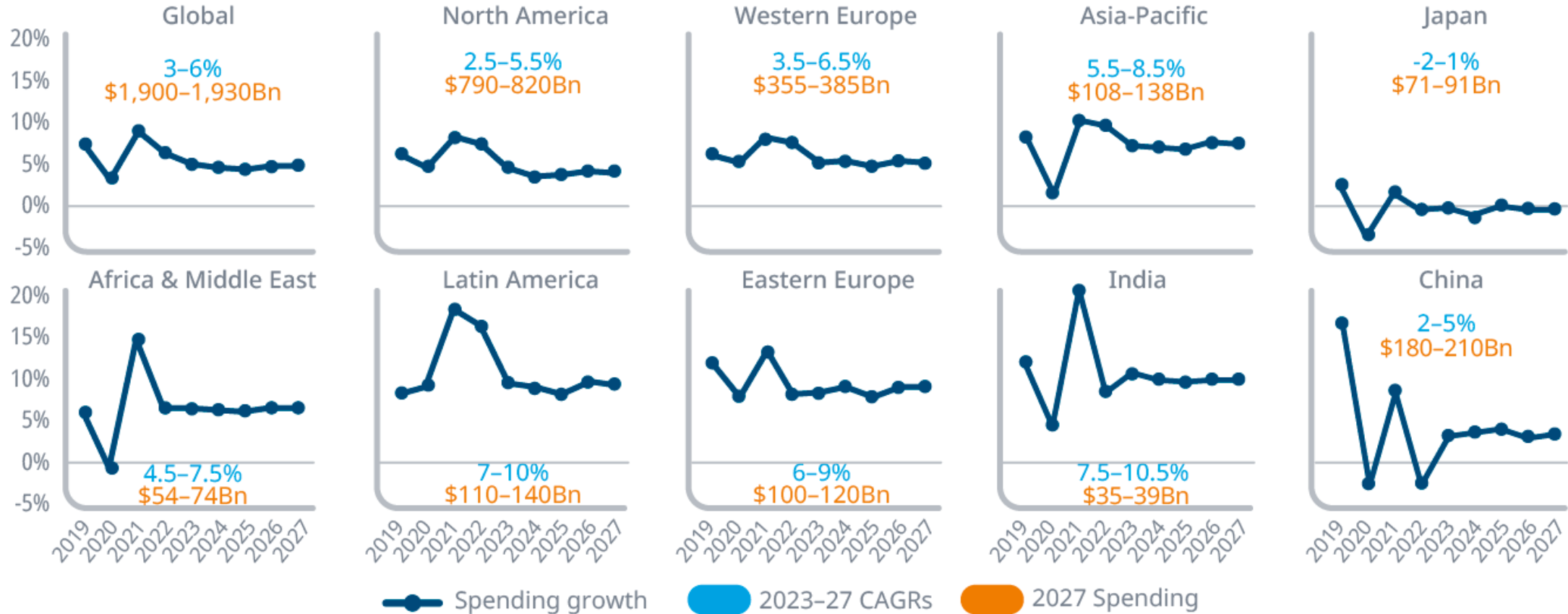
Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.
 Notes: Does not include estimates for COVID-19 vaccines and therapeutics.
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Spending and volume growth by region



Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.
 Notes: Does not include estimates for COVID-19 vaccines and therapeutics. Asia-Pacific does not include China, India, and Japan which are reported separately.
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Spending growth globally and in 9 regions, total market, const US\$ 2019–2027

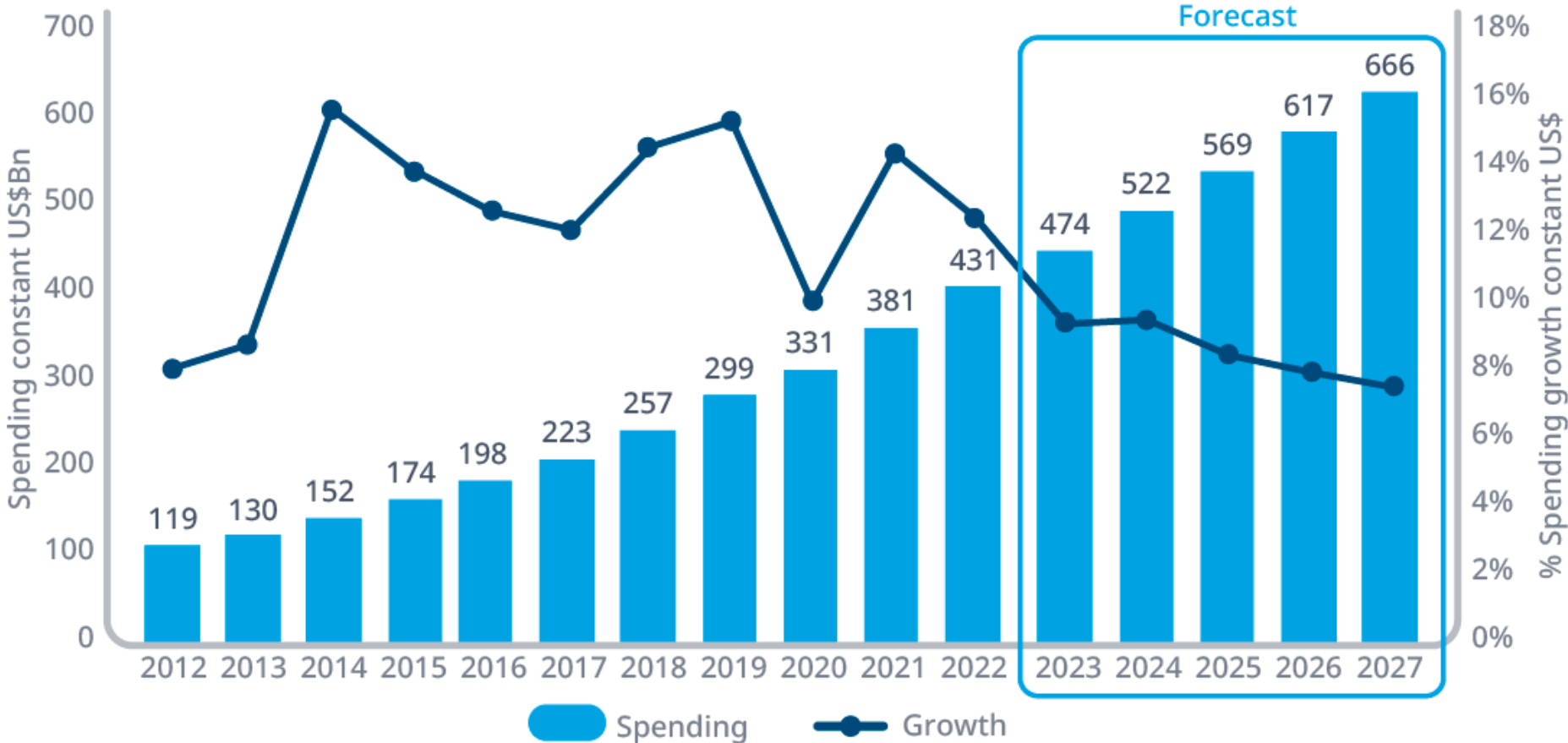


Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.

Notes: 2019 is included to show the impacts of the pandemic on spending growth. Asia-Pacific does not include China, India, and Japan which are reported separately.

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Global biotech spending and growth



2023-2027 Key metrics

+54% total spending growth (7.5-10.5% CAGR)

+\$235Bn

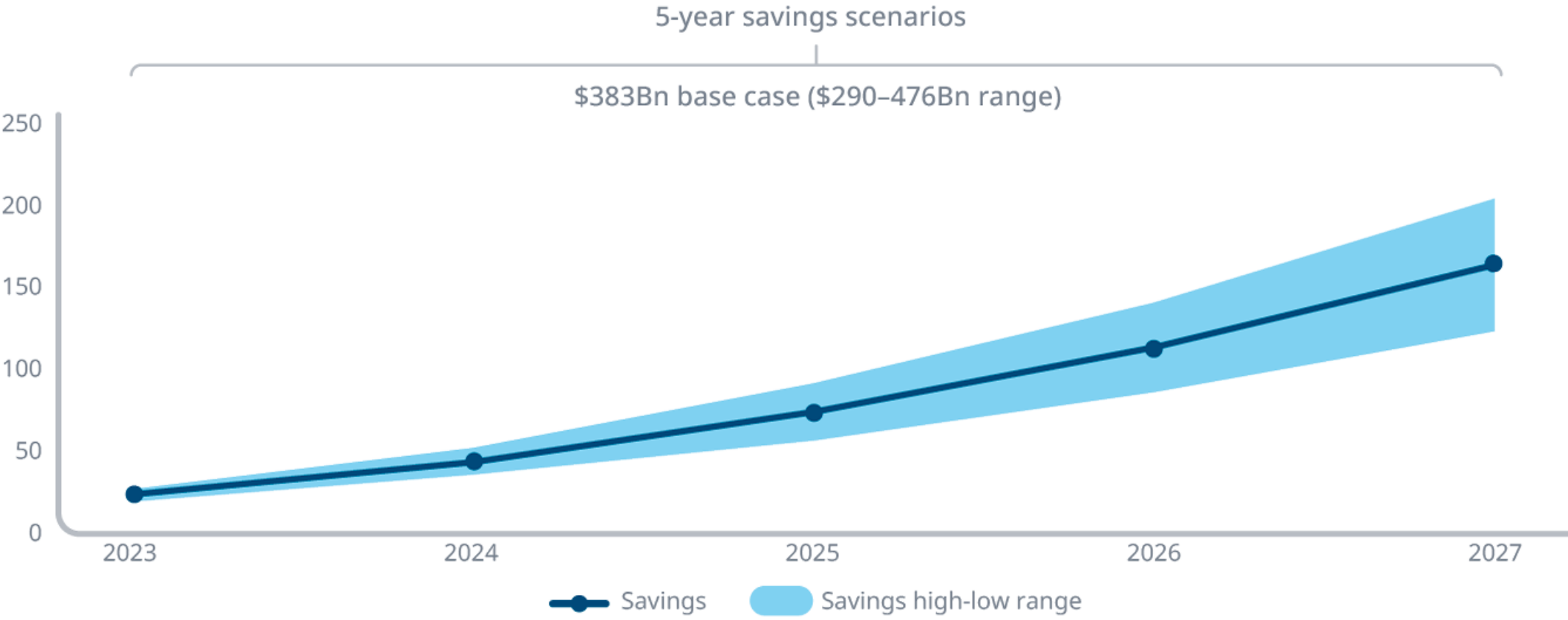
\$65Bn impact on brands from biosimilars

Source: IQVIA Institute, Nov 2022.

Notes: Biotech medicines defined as those produced through recombinant DNA technology.

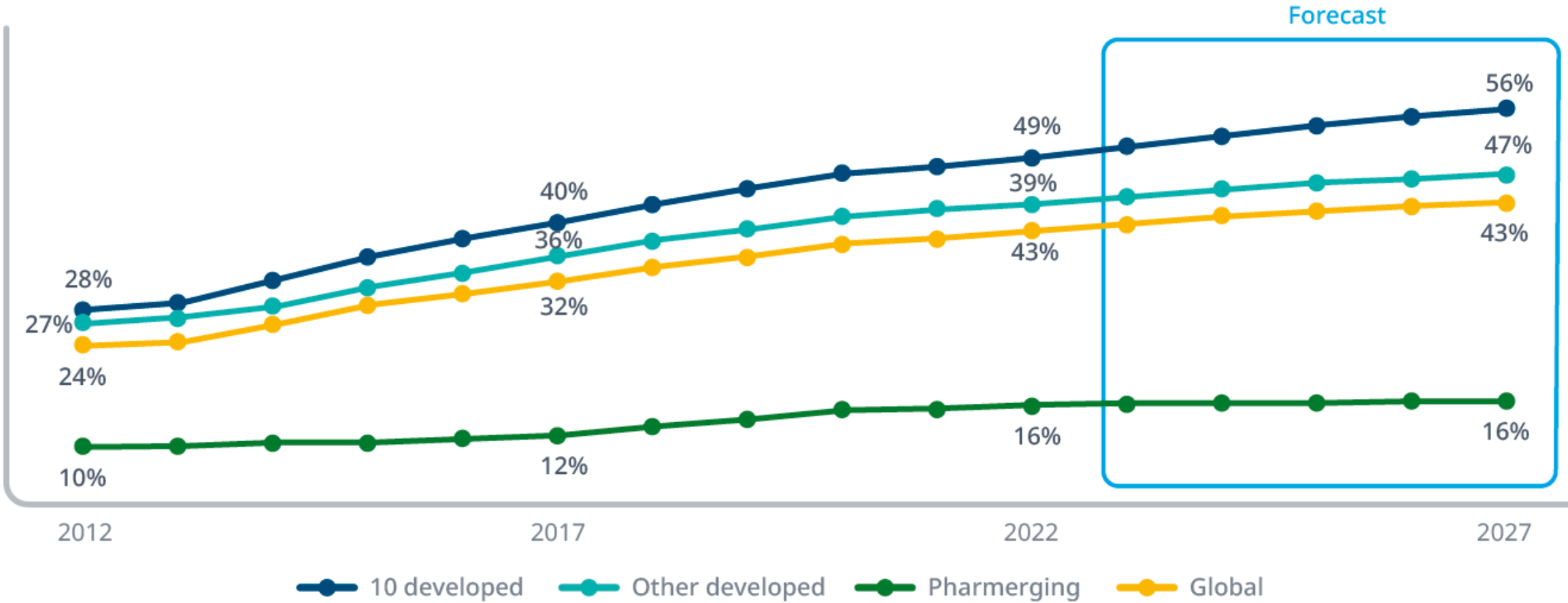
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Global savings from biosimilars 2023–2027



Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.
 Notes: Savings estimated by calculating spending in a scenario where historic trends continue and compared to modeled impact of brand losses of exclusivity and biosimilar uptake. Range reflects uncertainty of the level of uptake, price deflation, and incremental volume after LOE. Modeling includes the impact in the 5-year period of savings from earlier biosimilar introductions.
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Specialty medicines share of spending

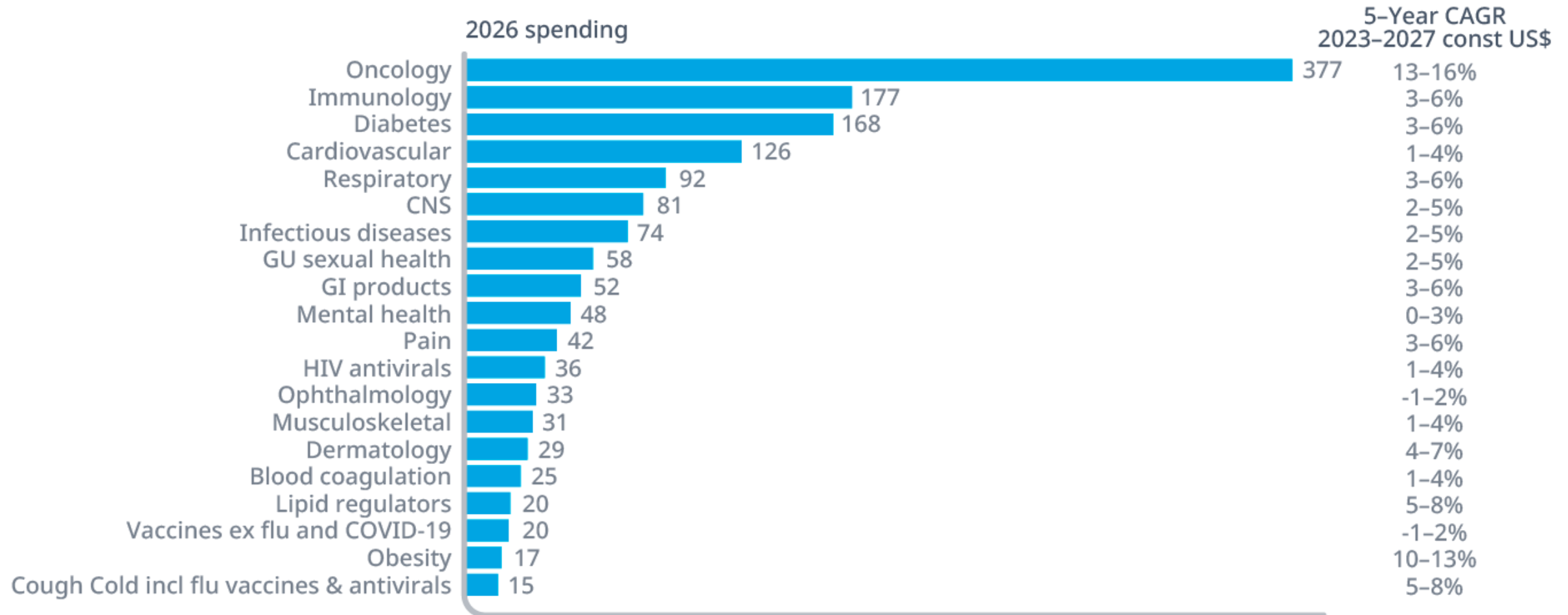


Source: IQVIA Institute, Nov 2022.

Notes: For details on specialty medicine definition, see the methodology and definitions section.

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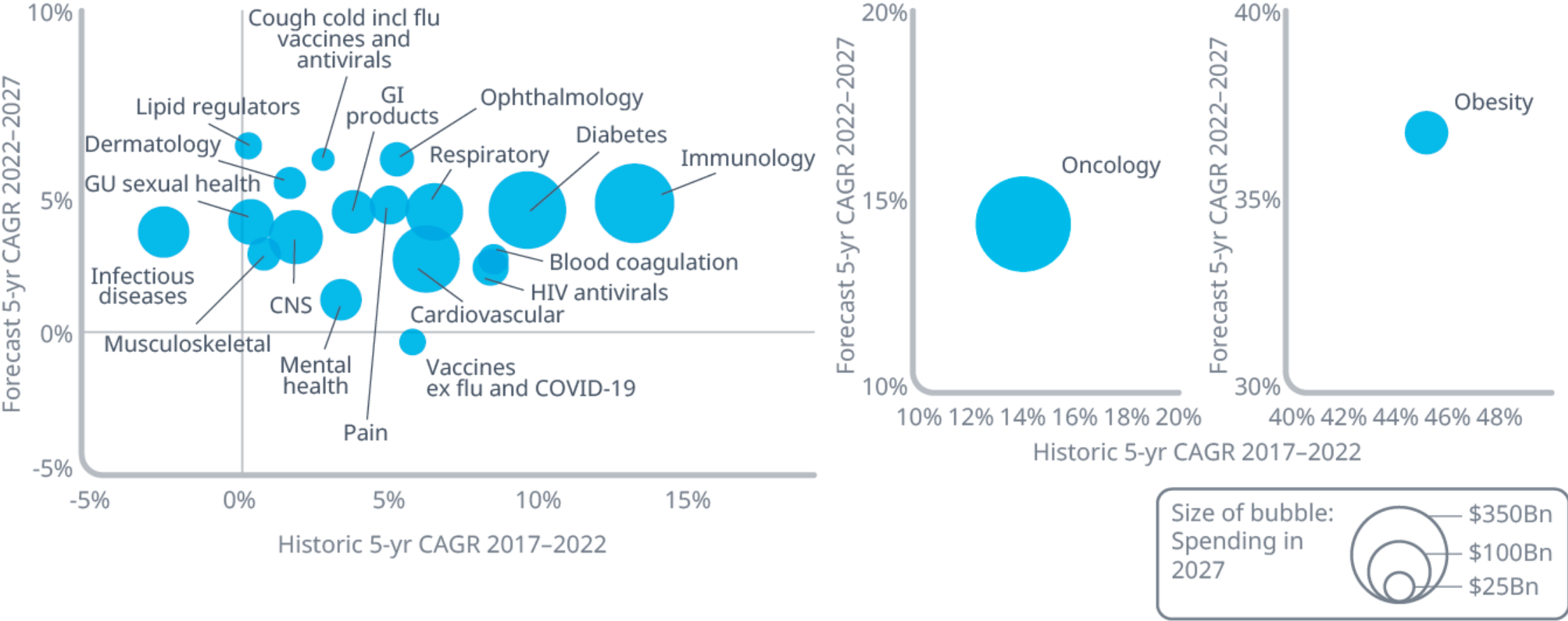
Top 20 therapy areas in 2027 in terms of global spending with forecast 5-year CAGRs, const US\$



Source: IQVIA Forecast Link, IQVIA Institute, Nov 2022.

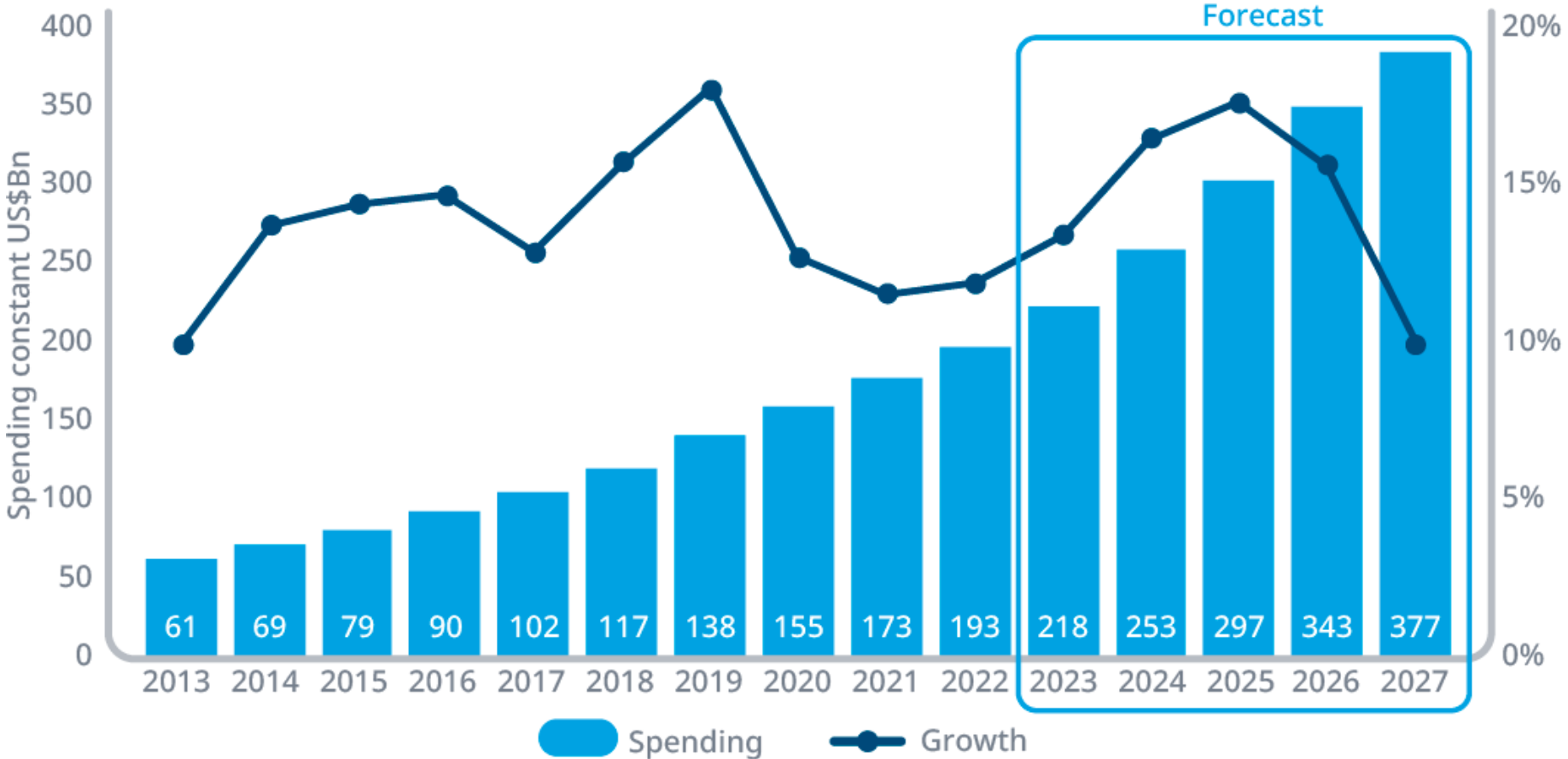
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Global historic and forecast growth for top 20 therapy areas



Source: IQVIA Forecast Link, IQVIA Institute, Nov 2022.
 Notes: COVID vaccine and therapeutics are not included. Oncology and obesity plotted separately.
 Report: The Global Use of Medicines 2023: Outlook to 2027. IQVIA Institute for Human Data Science, January 2023.

Global oncology spending and growth



2023-2027 Key metrics

+95% total spending growth (13-16% CAGR)

+\$184Bn

~+100 new oncology drugs

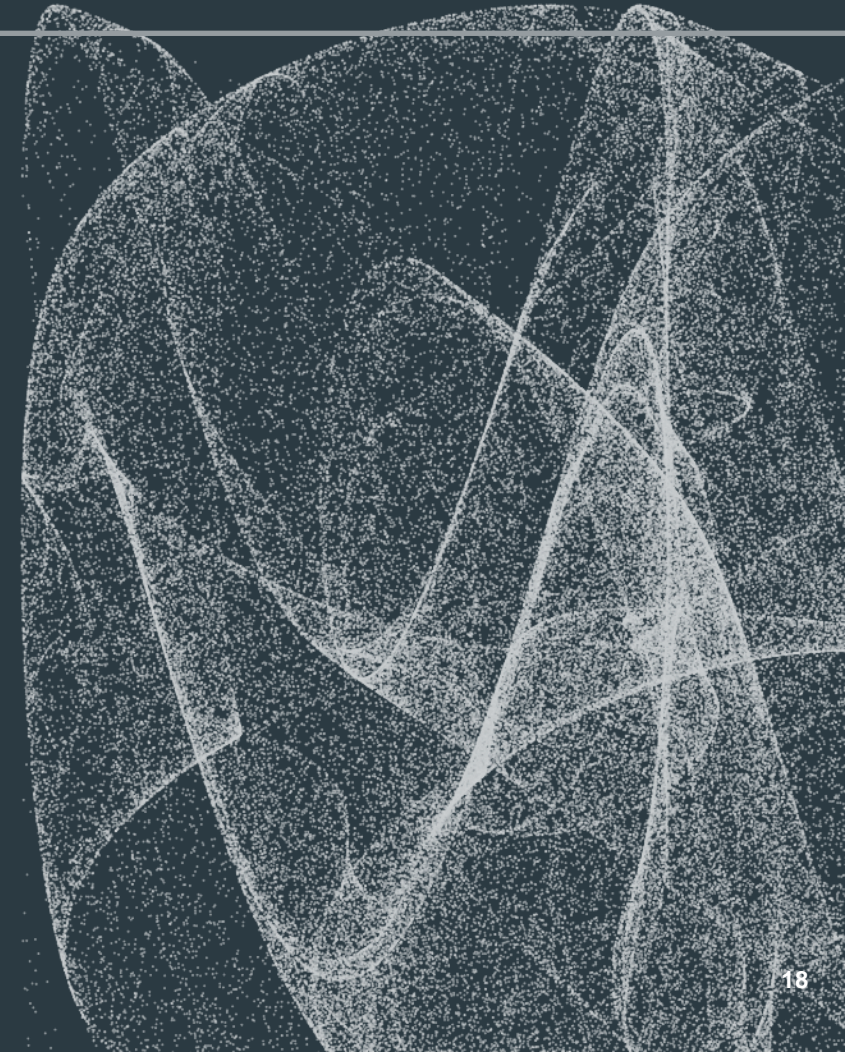
Source: IQVIA Forecast Link, IQVIA Institute, Nov 2022.

Notes: Oncology includes therapeutics only, excluding supportive care treatments.

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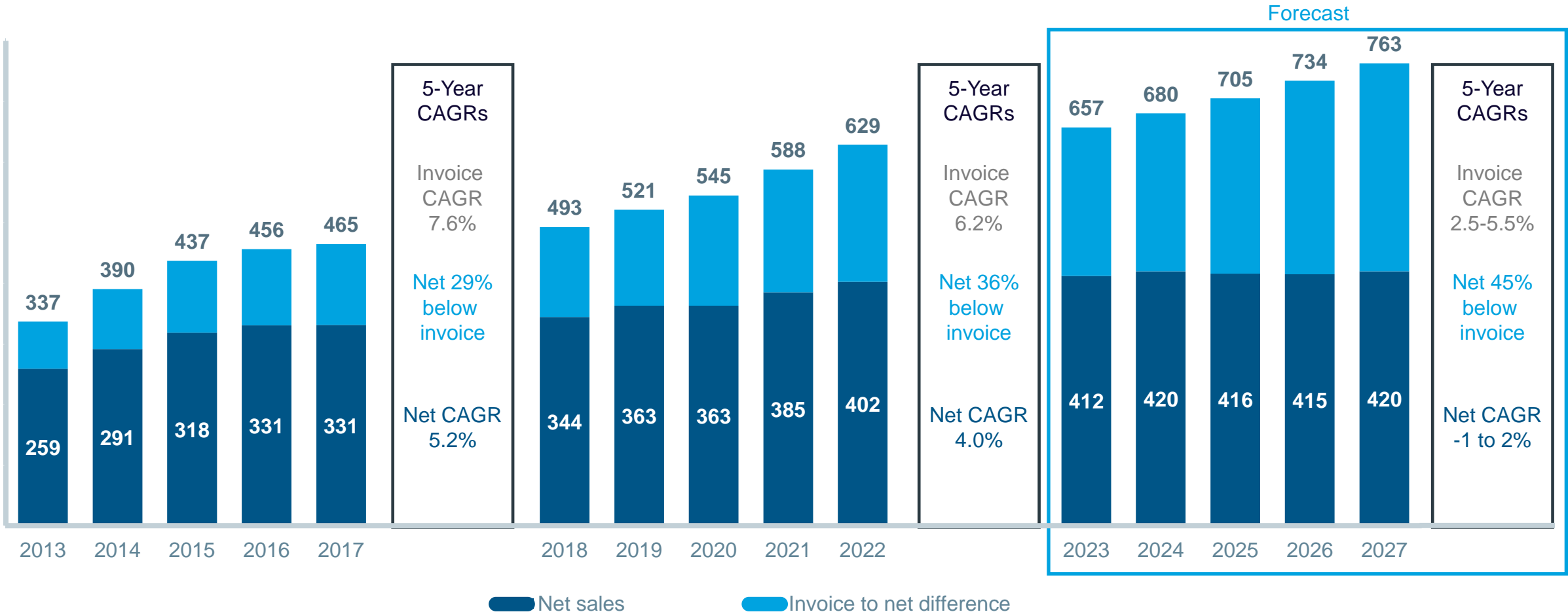


United States



Spending growth in the U.S. declines over the next five years

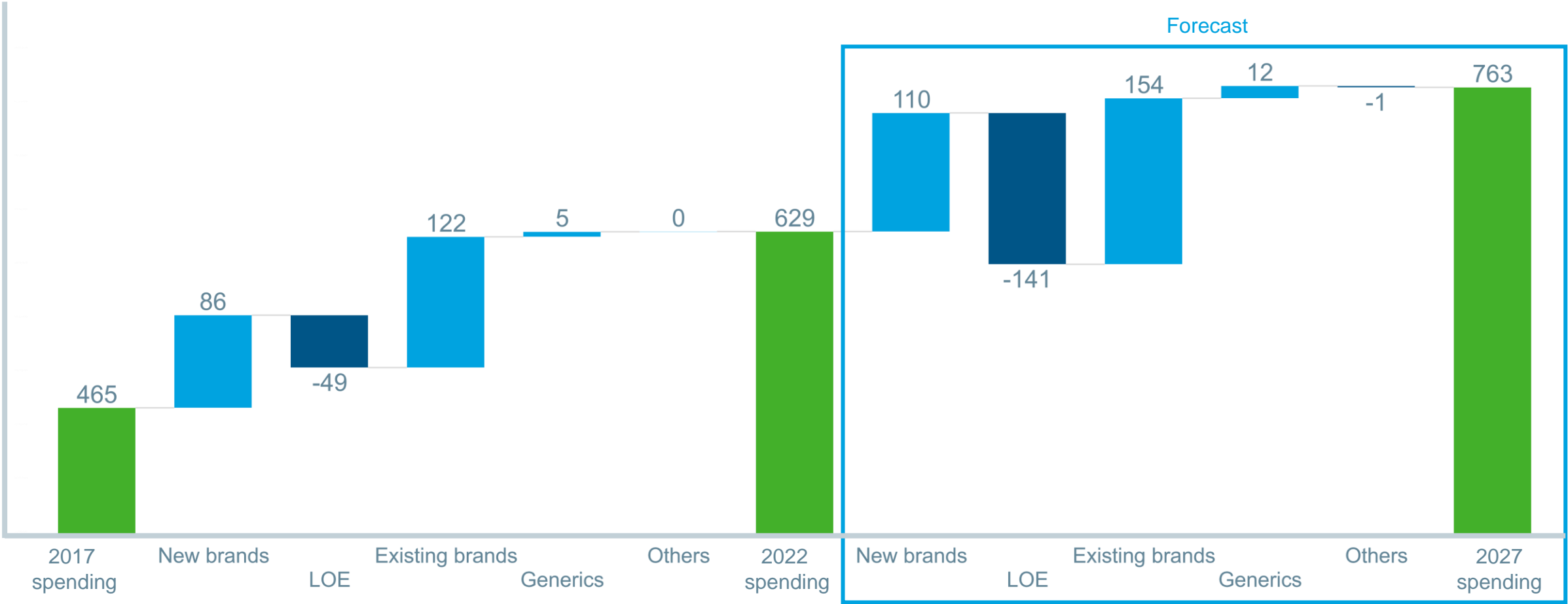
On a net price basis, CAGR over 5 years drops from 4% to -1-2%



Source: IQVIA Institute, Nov 2022. The Global Use of Medicines 2023: Outlook to 2027. Report by the IQVIA Institute for Human Data Science.

Spending driven by brands, but offset by loss of exclusivity

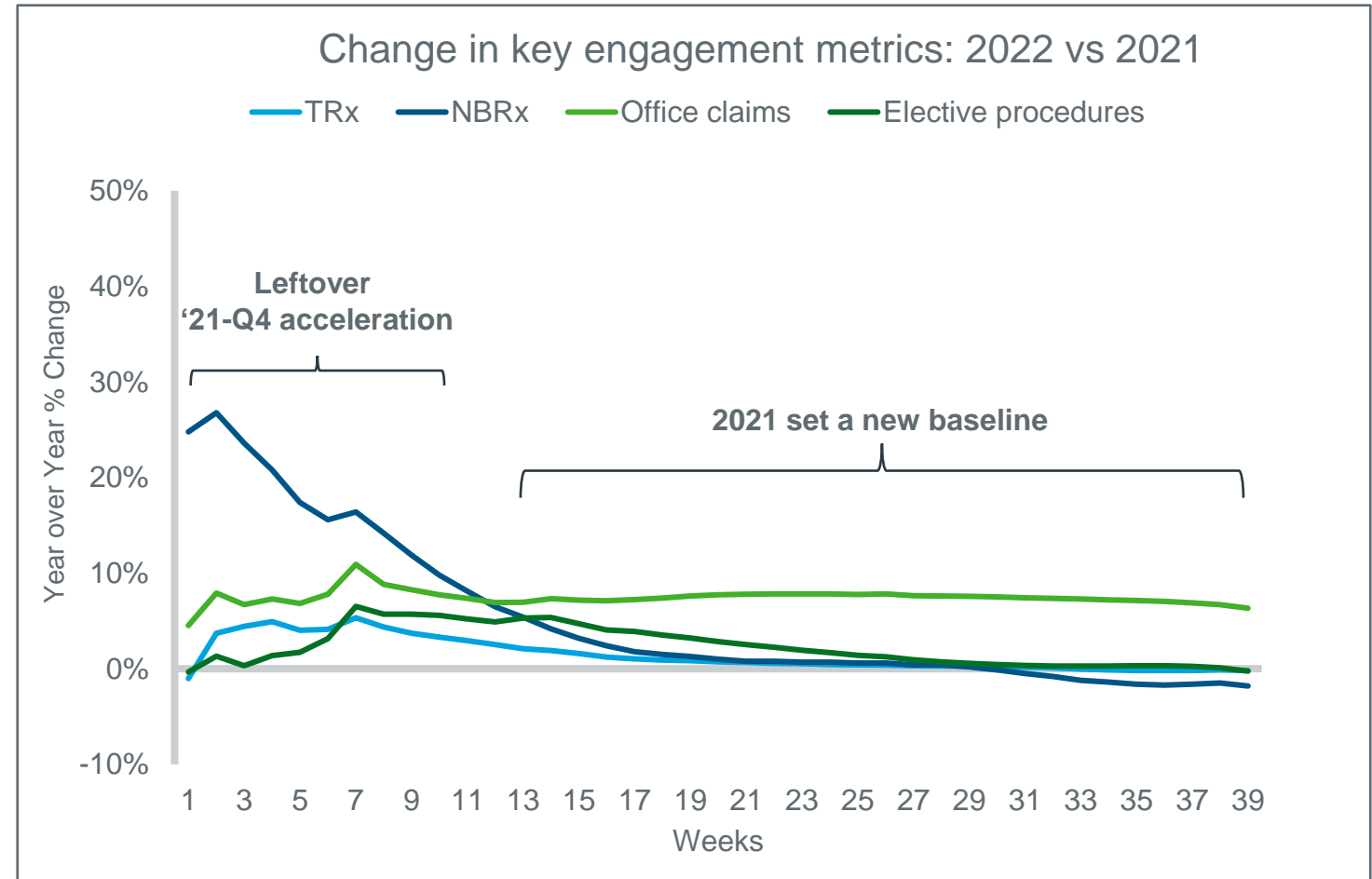
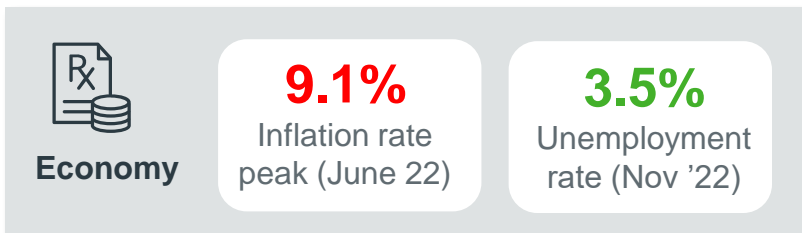
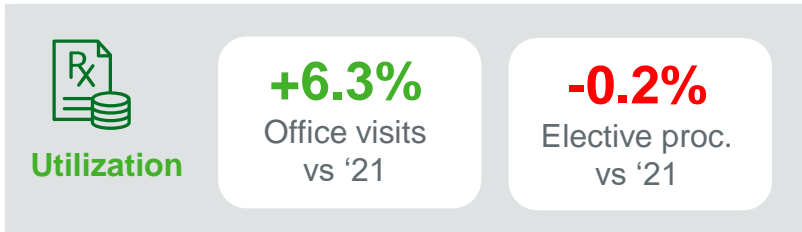
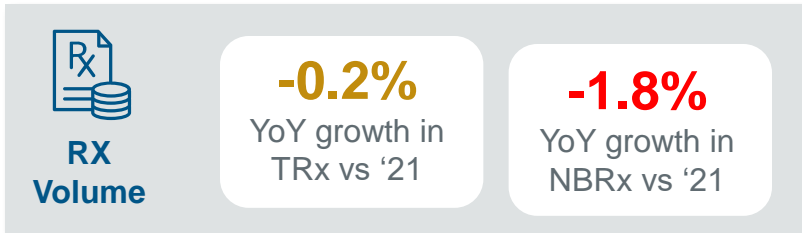
Spending and growth drivers in US 2017–2027, Const US\$Bn



Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.
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Reluctant patient engagement signals space for change

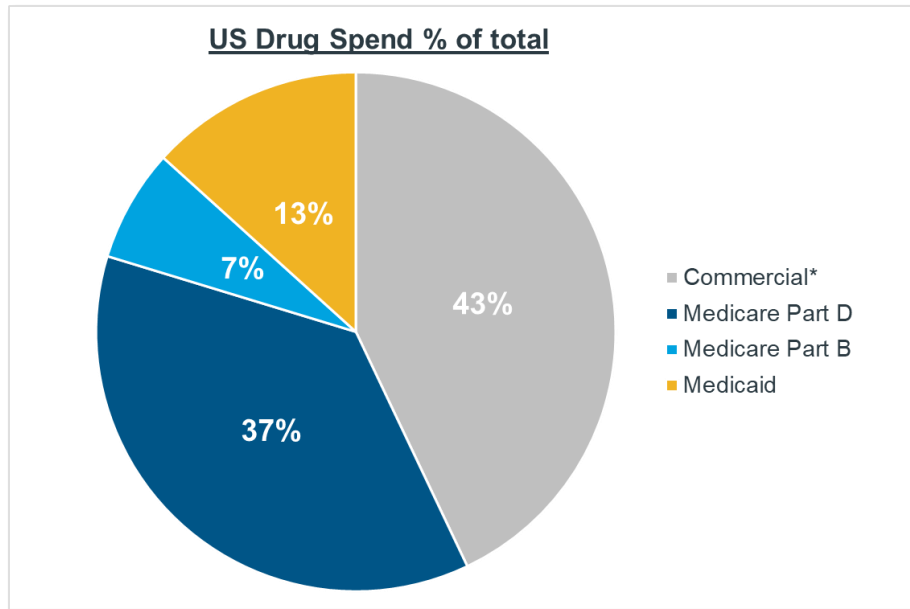
Economic factors can impact choice to seek care, but a new normal has arrived



Here's the inflation breakdown for December 2022 — in one chart (cnbc.com); Source: National Prescription Audit (NPA); Medical claims data, IQVIA
 Notes: Channel prescriptions not normalized for Rx size. Week 39 2022 = 09/30/2022; Week 39 2021 = 10/01/2022; Health services: 5Deals 2022 midyear outlook: PwC; The Economics Daily: U.S. Bureau of Labor Statistics (bls.gov)

New laws create historic disruption

Target and components of the Inflation Reduction Act (HC provisions)



- **64M** people covered by Medicare
- **55%** US Spend in specialty medicine (disproportionately used by Medicare)

1 | Price Negotiation

- CMS can **negotiate 10 Pt D drugs** in '26 (pt B+pt D in '28)
- Targets high expenditure, older medicines
- Considers innovation, unmet need, effectiveness

2 | Benefit Redesign

- CMS liability in catastrophic phase **80%→20%**
- Changes full offset by payers and mfcts
- Consumer premium capped at 6%

3 | Patient Eligibility and Spend

- Elimination of coverage gap
- Patient **OOP capped at \$2,000**
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4 | Inflation Rebates

- Rebates for prices that grow faster than inflation

*Commercial calculated from NSP total drug sales by subtracting CMS-reported total spend in Medicare and Medicaid
Source: CMS Total Drug Spending tables, IQVIA National Sales Perspectives, IQVIA US Market Access Strategy Consulting

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Proposed design demands a completely new business model

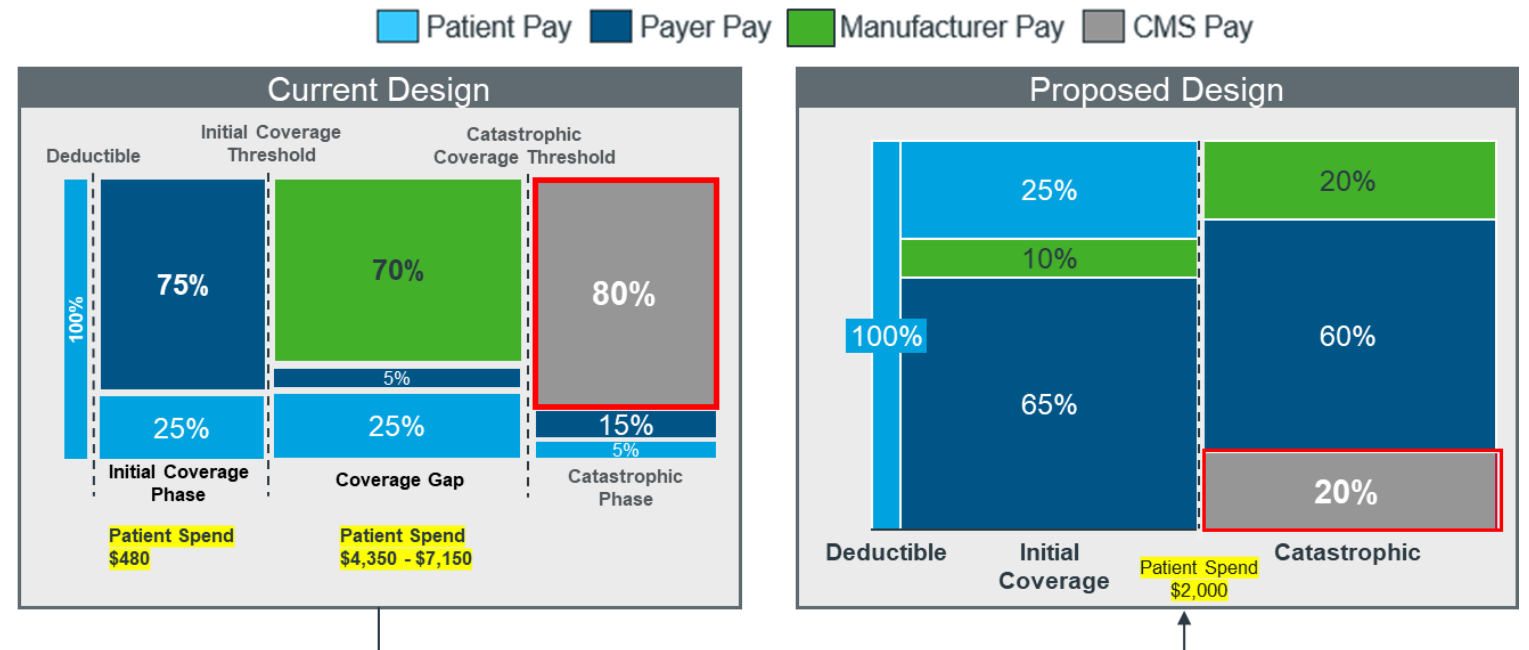
1 Price Negotiation

Medicare Part D

| Drug | Expenditure (\$B) | Eligibility |
|-----------|-------------------|------------------|
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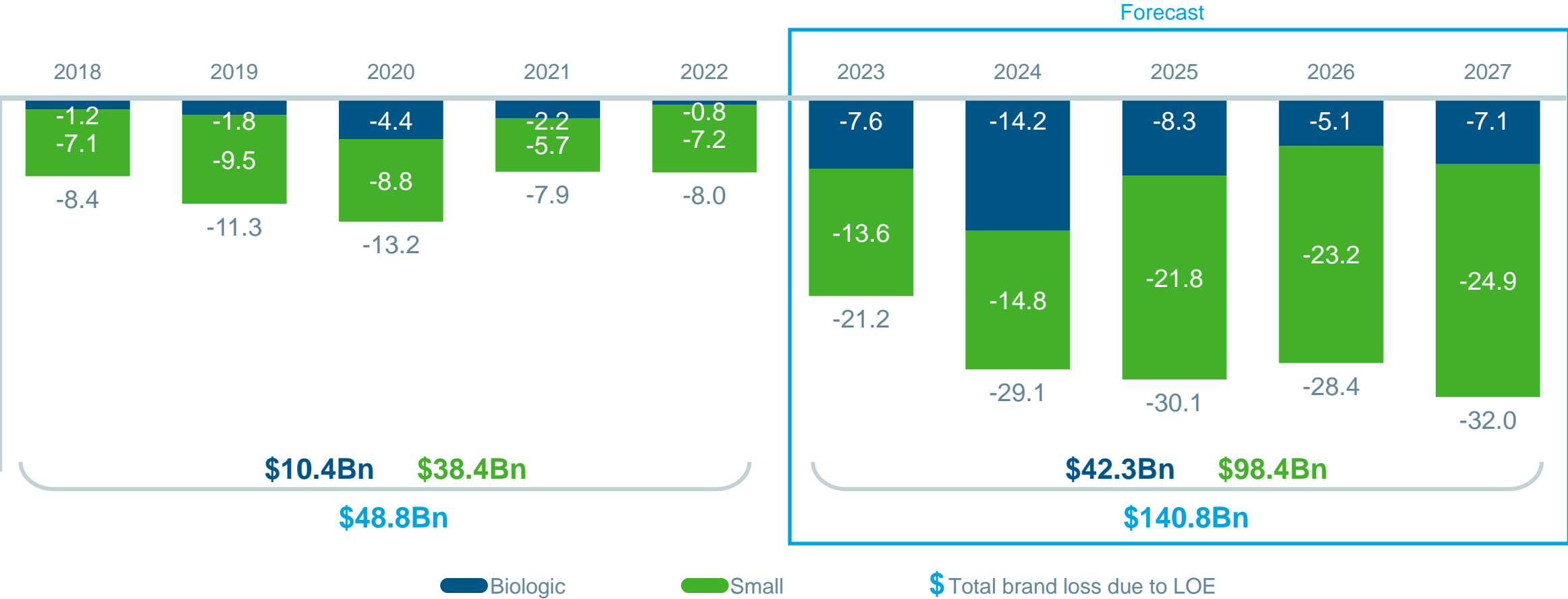
2 Benefit Redesign



- Patients move to catastrophic faster
- Wholly new burden for payers and manufacturers

Imminent LOE of big brands and entry of biosimilars reshapes spending trends

U.S. impact of brand losses of exclusivity 2018–2027, US\$Bn



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U.S. market dynamics to watch

Areas of high impact on system spend and patient care

PARTICIPATION



Stable but reluctant patient engagement signals space for change

POLICY



The Inflation Reduction Act creates historic disruption across stakeholders

PORTFOLIO



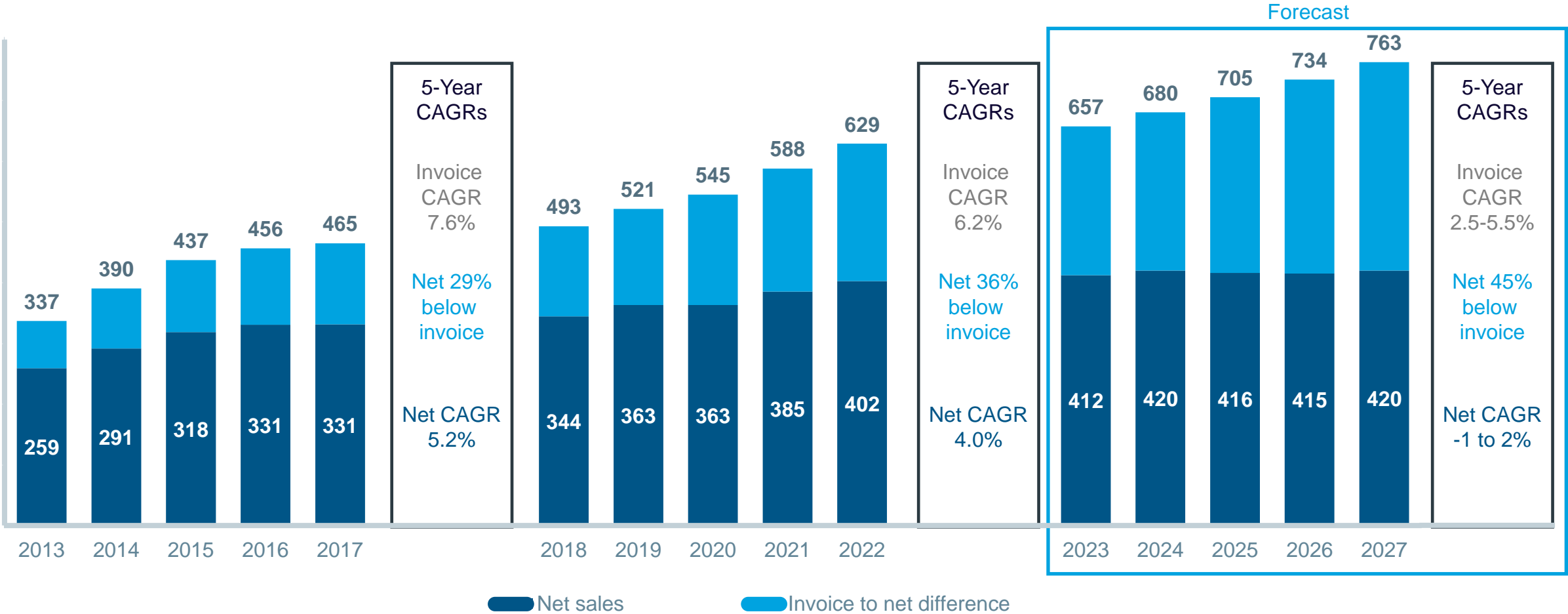
LOE and biosimilars reshape and spending (and treatment) trends

2023 is an inflection point

- ✓ System-wide change disrupts the status quo, for everyone
- ✓ Open space for innovations in patient access, treatment, and care

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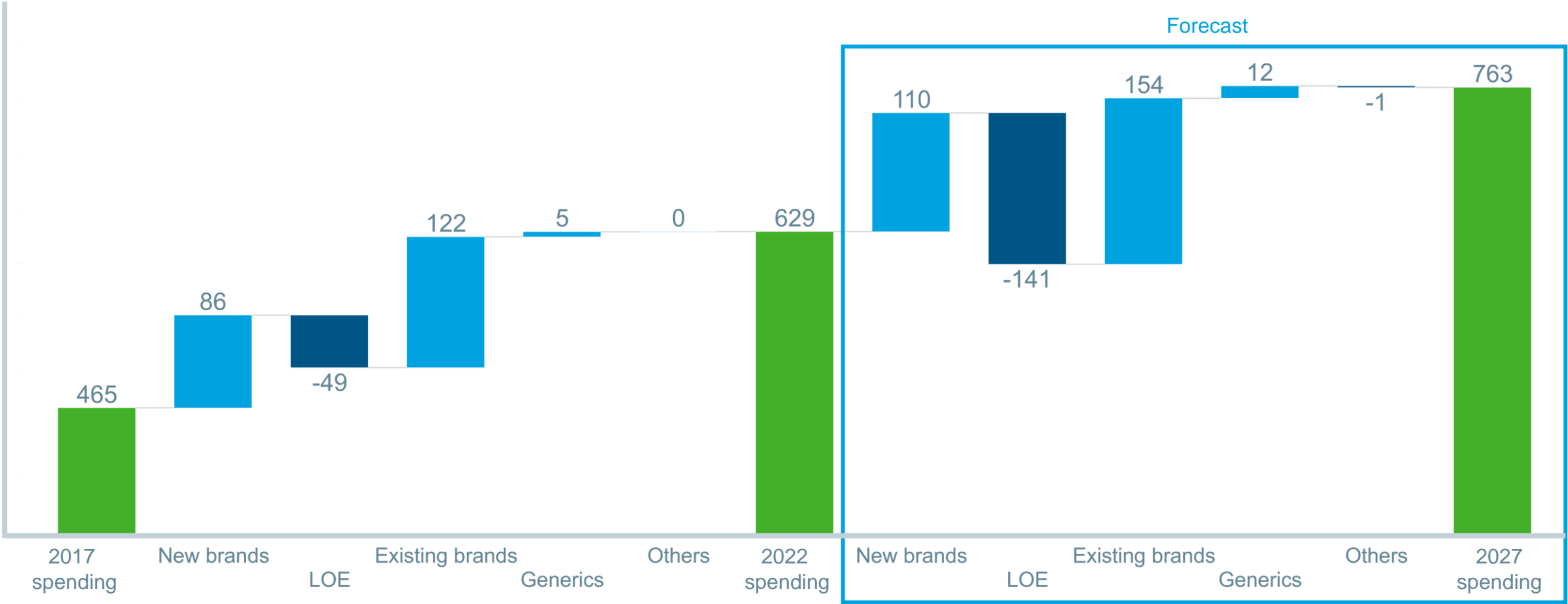
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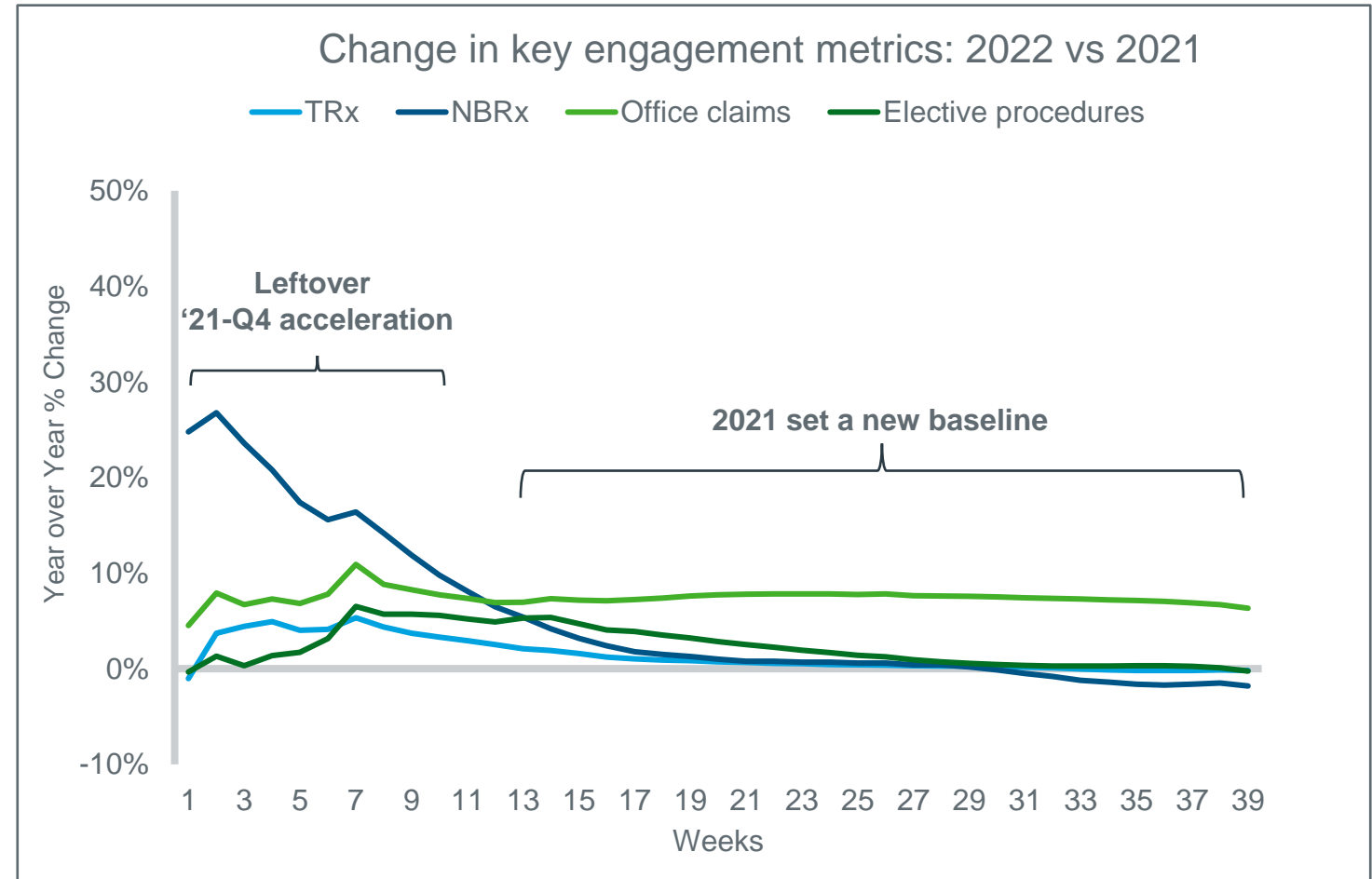
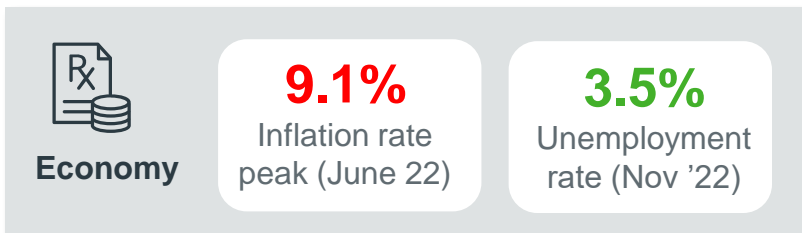
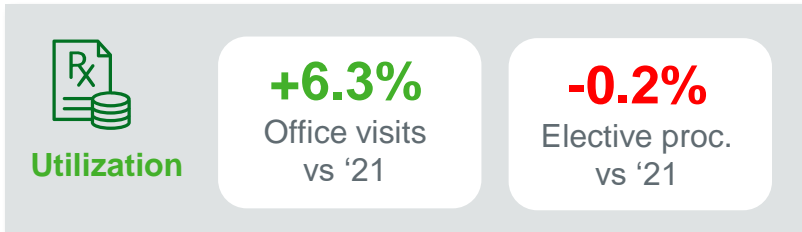
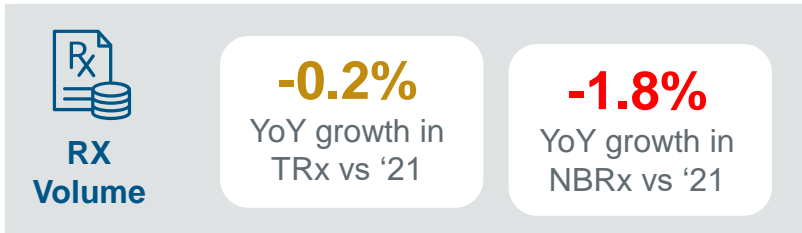
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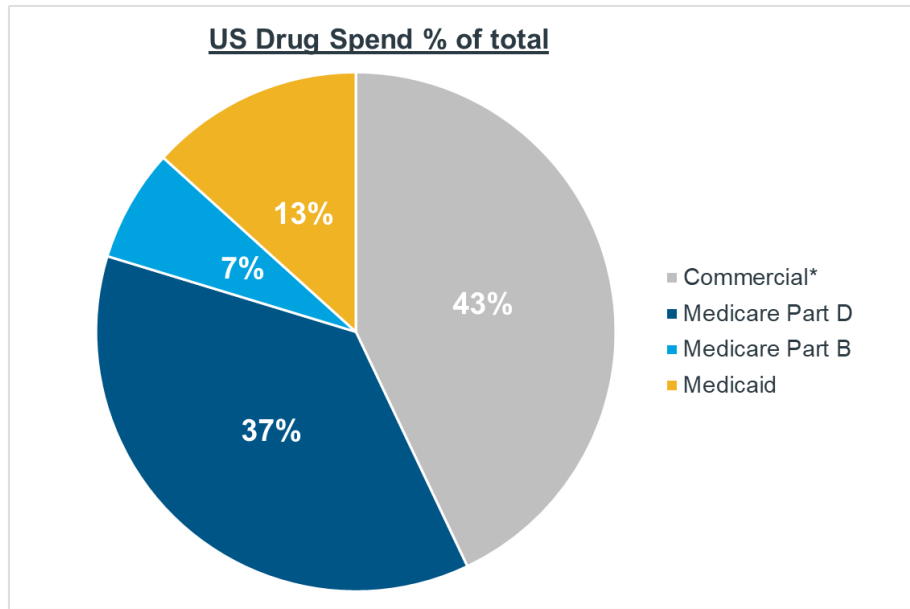
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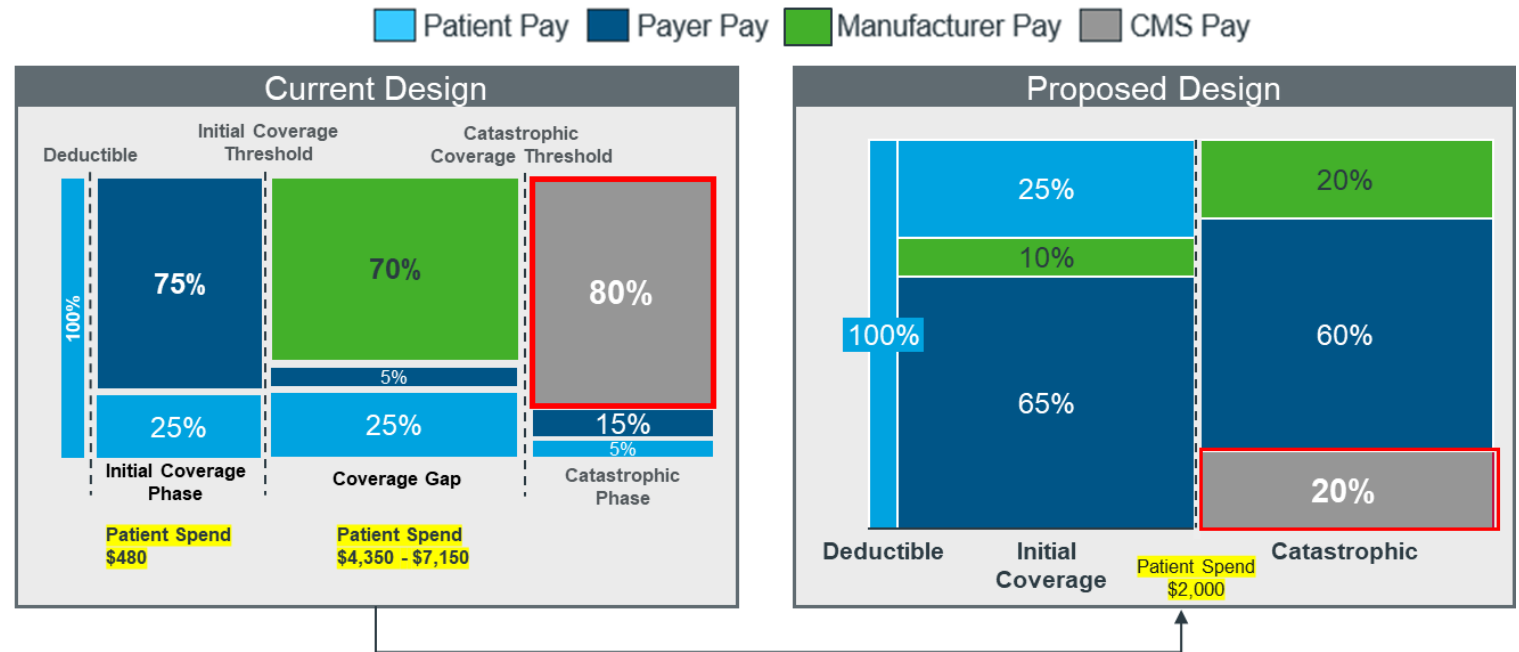
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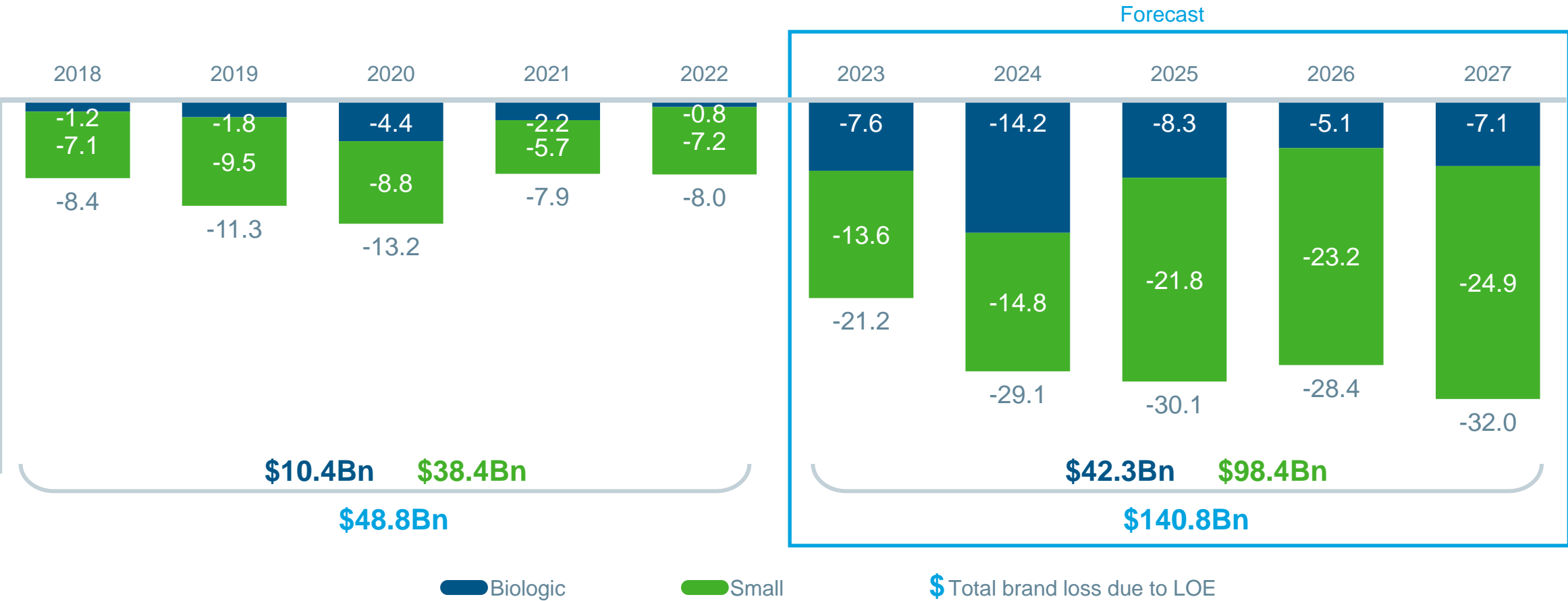


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- Wholly new burden for payers and manufacturers

Sources: US Market Access Strategy Consulting analysis; American Action Forum <https://www.americanactionforum.org/insight/competing-proposals-to-reform-medicare-part-d/>; <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/TR2019.pdf>
 *Projected for 2022 when plans would begin; Source: Kaiser Family Foundation Drug Price Negotiation Simulation, IQVIA Institute Net Sales Adjustment, US Market Access Strategy Consulting, IQVIA
 **List represents high spend drugs in Medicare. Not negotiated drug list, which is not released as of 1.24.22

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U.S. impact of brand losses of exclusivity 2018–2027, US\$Bn



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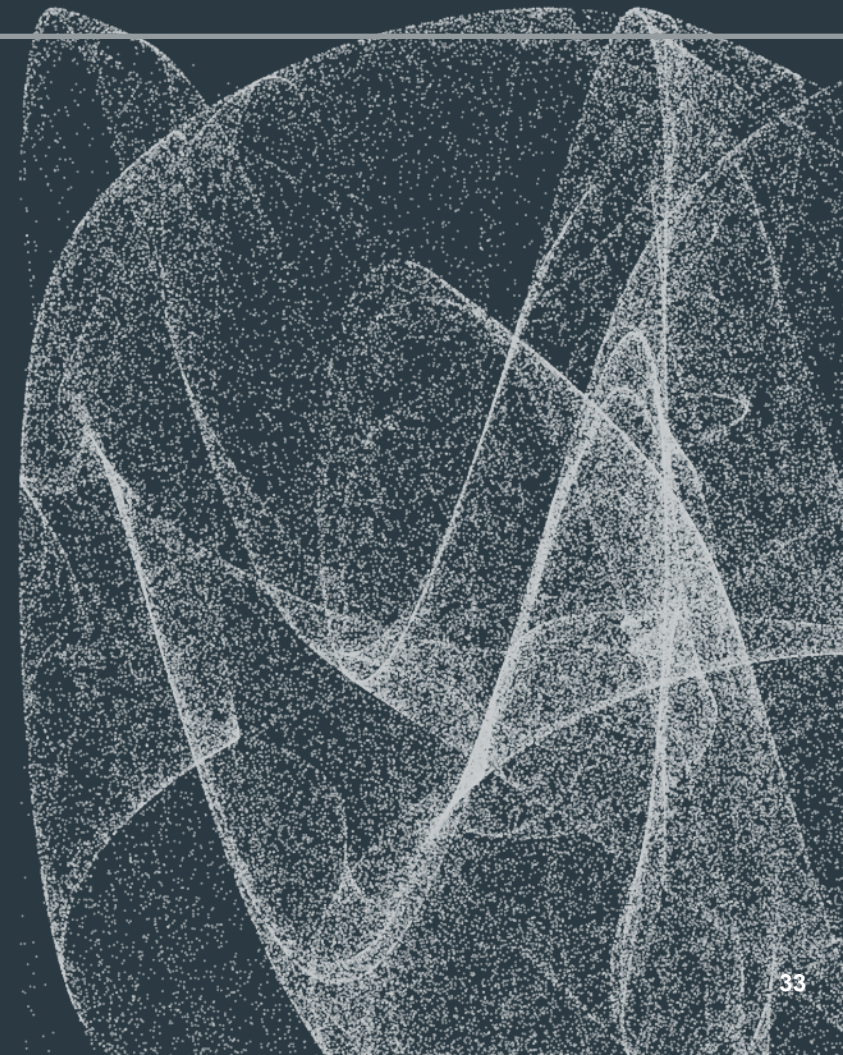
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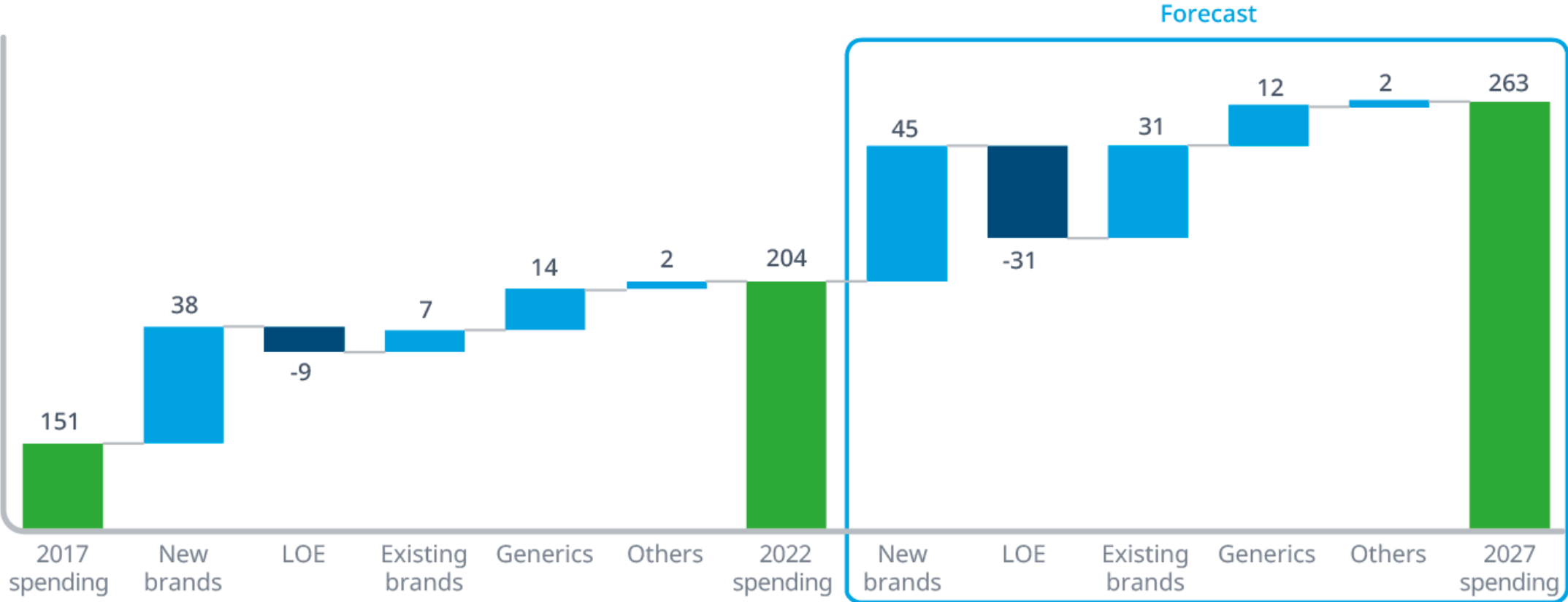
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Europe



Spending and growth drivers in France, Germany, Italy, Spain, and UK 2017–2027 const US\$Bn

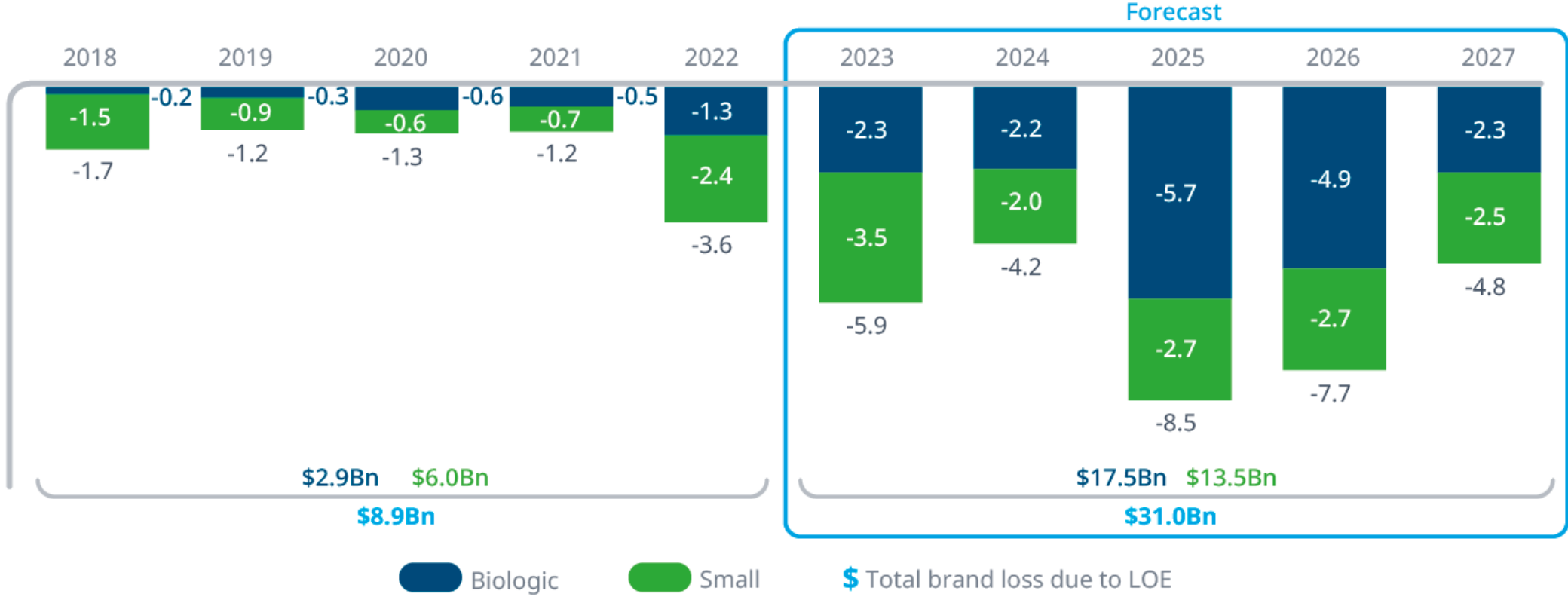


Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.

Notes: Spending in US\$ with constant Q2 2022 exchange rates. New brands growth contribution defined as the growth during periods when products had been marketed for less than two years. Growth from products defined as new in each year of the five-year period are aggregated together. Existing brands are those which are no longer new and not yet off-patent. Off-patent brands have faced Loss of Exclusivity (LOE). Generics includes non-original branded products or 'branded generics' as well as biosimilars. Other includes OTC/other products.

Report: The Global Use of Medicines 2023: Outlook to 2027. IQVIA Institute for Human Data Science, January 2023.

EU4+UK impact of brand losses of exclusivity 2018–2027, US\$Bn



Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.

Notes: Does not reflect offsetting spending increases from generic or biosimilar competitors. Losses in future periods are modeled based on expected pre-expiry growth for the brand and subsequent post-expiry loss of sales for the brands. The rates of loss are based on historic averages in each country and inclusive of adjustments for products with expiries in progress from historic periods where losses extend into the forecast periods. Historic period analyses are based on audited data. Expected loss of exclusivity dates are highly variable and can change due to outcomes of litigation, granting of new patents or changes in the expectation of launch of biosimilars. Information is current as of September 2022.

Report: The Global Use of Medicines 2023: Outlook to 2027. IQVIA Institute for Human Data Science, January 2023.

European markets will see major changes to contain spend, and face greater uncertainty

Spending in Top 5 European markets is expected to increase by \$59 Bn through 2027



UK

- Pharma concerns new VPAS, due 2024 could require **payment percentage rebate >26% of sales**
- Payment percentage for 2023 is 26.5% - some companies have already announced they will withdraw from VPAS to statutory scheme
- Innovative Licensing and Access Pathway (ILAP)
- Innovative Medicines Fund and CDF



France

- PLFSS 2023 – setting growth of Rx products to 2.4% in '22-'24
- **€1.1Bn savings - €900Mn from price cuts and €200Mn from payback scheme**
- From 2023 a changed scope for health economic evaluations



Spain

- Approval of Hospital-developed Cell Therapy
- Promote wider Gx and Bx Usage
- **2023 elections=> Uncertainty and risk**



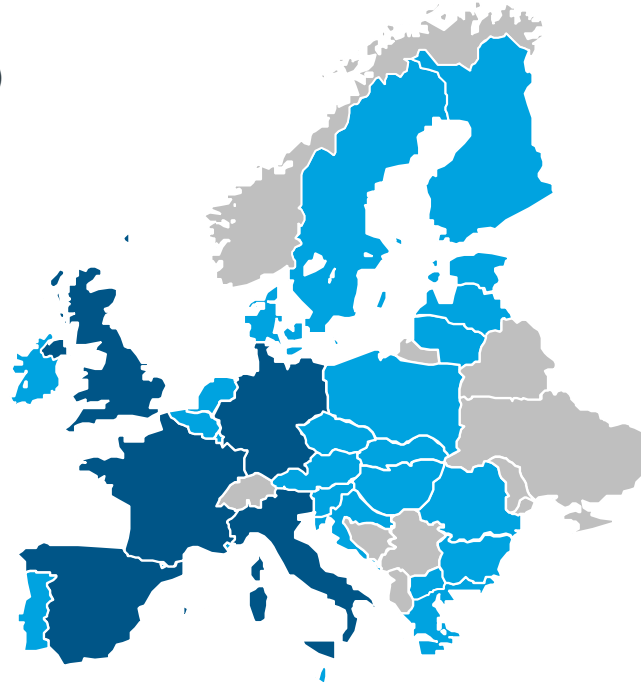
Germany

- **Price freeze maintained until 2026, mandatory rebate increased from 7% to 12%**
- **GKVFinStG** has now been passed – aims to create €17 Bn in savings
 - Price cannot exceed appropriate comparator if drug assigned unquantifiable or minor added benefit
 - Reduction of free pricing from 12 to 6 months
 - Orphan sales threshold reduced to €30Mn
 - Pharmacy level biosimilar substitution
 - Penalties for uneconomical pack sizes that induce wastage



Italy

- Healthcare expenditure as % of GDP to **fall from 7% in 2022 to 6% in 2025**
- €600Mn additional funding for The Innovative Drug Fund
- The pharmaceutical expenditure ceiling will be raised to 15.5% by 2024



High energy prices and inflation impact Europe in the short-term as healthcare systems plan for the long-term

Wholesale electricity prices impact manufacturing costs, notably of APIs and generics.

Medicines for Europe states that **transportation costs** increased by up to **500%**, whilst **manufacturing inputs** were up by **50-160%**.

Indian and **Chinese** and other suppliers exist, but a reduced supply will drive up prices and **risk shortages**.

“[The crisis threatens to] debase the continent’s pharmaceutical sector for good for some medicines”

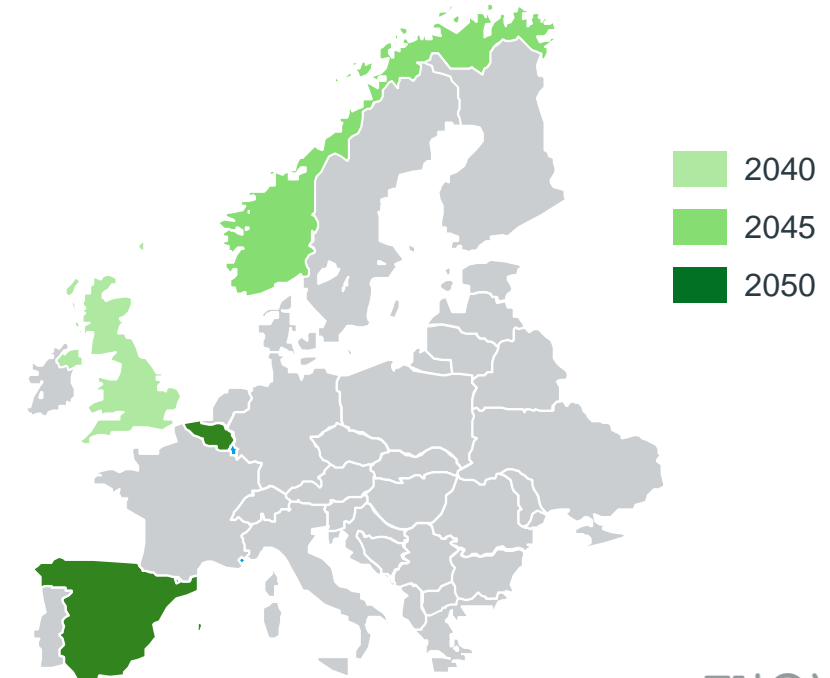
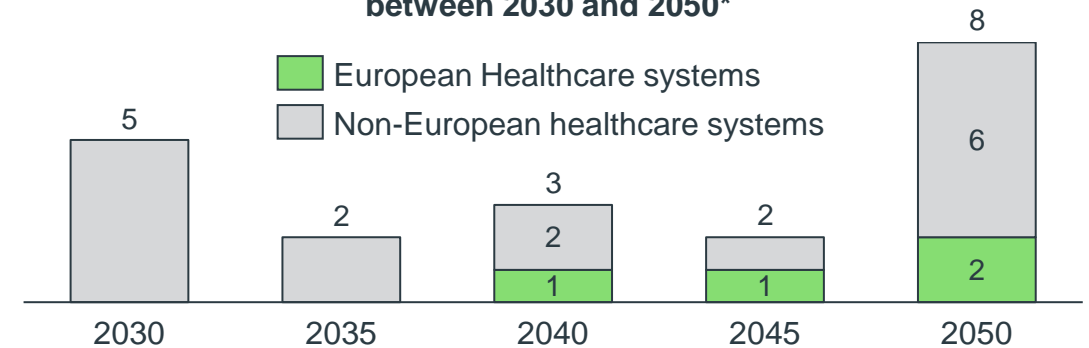
- Teva, “Addressing Europe’s Essential Medicines Exodus”

Healthcare systems are increasingly committing to **eliminating greenhouse gas emissions** in the long-term, with European healthcare systems playing a role

Organisations are increasingly looking to adopt **digital** and **remote technologies** to reduce patient travel, and are limiting **single-use items** where possible

Requirements to limit **Scope III emissions** for healthcare systems further **incentivises** drug manufacturers and pharma to reduce their own emissions

Health systems commitment to achieve net zero between 2030 and 2050*

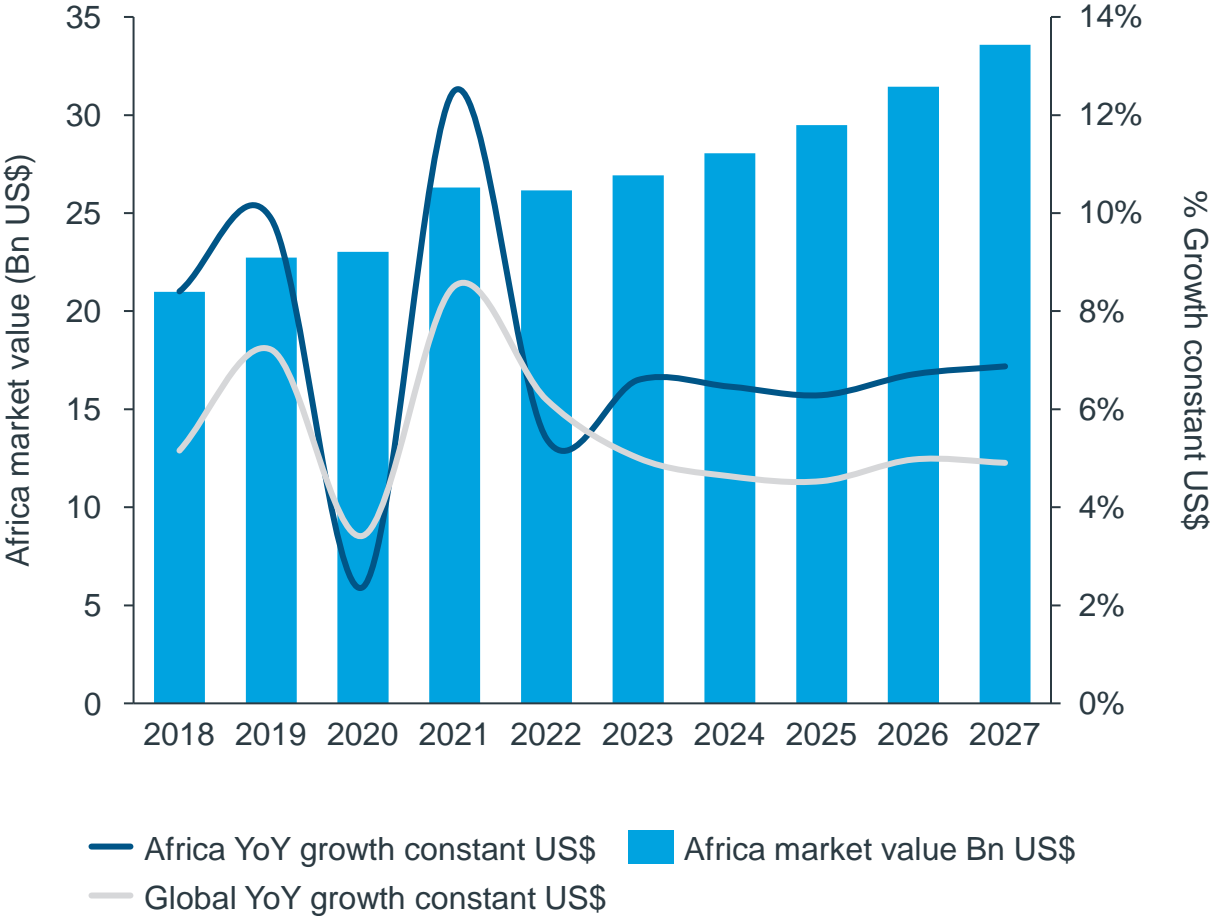


Notes: *Only includes countries with specific Net Zero target year

Source: IQVIA Thought Leadership, WHO ATACH Dec 2022; Company ESG reports; Medicines for Europe Open Letter to EPSCO; <https://ember-climate.org/data/data-tools/europe-power-prices/>, Teva “Addressing Europe’s Essential Medicines Exodus” - https://www.tevapharm.com/globalassets/tevapharm-vision-files/manufacturing-report-final_31_10.pdf, New York Times: <https://www.nytimes.com/2021/09/20/world/asia/india-covid-vaccine-exports.html>

Africa as a whole shows consistently higher future growth than the global average, with progress being made on local manufacturing capacity, harmonisation, and innovation

Africa market growth and growth rates
(Rx markets, invoice prices)



Africa-wide trends

- By 2050, **25%** of the world's population will live in Africa
- Increased expansion of **universal healthcare** is a continent-wide priority
- Further pan-African cooperation on regulation, and pandemic preparation
- **Non-communicable** diseases will be most common cause of death by 2030
- Africa has the most **genetically diverse** populations, who are underserved by current pharmacotherapies



New **Africa CDC HQ** in Addis Ababa has opened, signifying a new era of **intra-continental cooperation**



Egypt leads Rx growth, with a CAGR of 12% through to 2026



S. Africa to improve registration timelines for Bx and Gx



Morocco, Tanzania & Ethiopia aim to have nationwide UHC by 2024, 2030, 2035 respectively

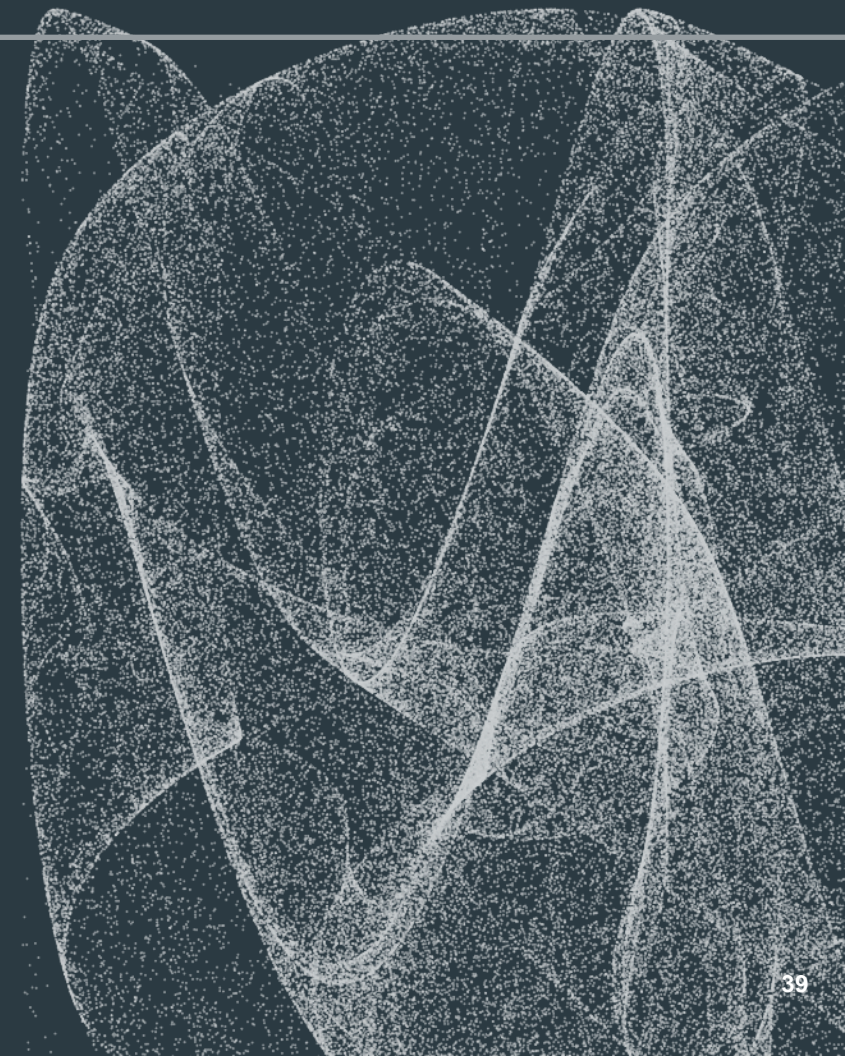


Algeria met goal to produce 70% of national demand domestically in 2022

Source: IQVIA EMEA Thought Leadership, IQVIA Institute Global use of medicines 2023, IQVIA Market Prognosis September 2022.



Japan



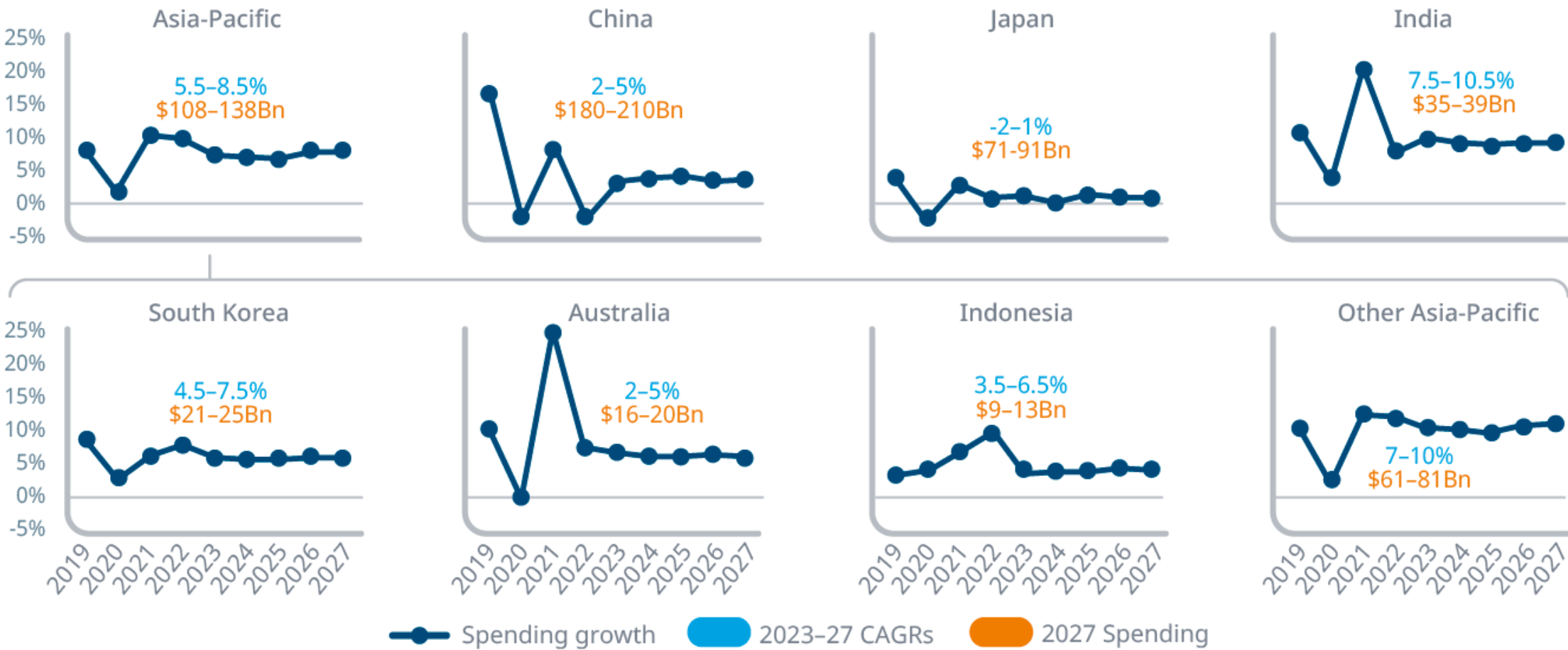
As Japan enters endemic stage of COVID-19, there is a rebound in patient visit numbers and treatment journeys are advancing

| | Higher Impact | Mild Impact | Minimal Impact | Signs of Recovery | Continued Recovery | Stronger Recovery |
|------------------------------|--|-------------|--|-------------------|---|-------------------|
| | Patient Visits | | Dispensed Prescriptions | | Pharmaceutical Spend | |
| 2020 ~ mid 2022 v. pre-COVID | Decrease in number of Patient visits impacted by higher decline in new Patient starts (and timed with SoE) | | Decline in total number of prescriptions offset in part by increased average treatment days per prescription | | Impact from March 2020 with lower but on-going cumulative impact though 2020 and into early-2021 | |
| mid 2022 ~ | Recovery but numbers slightly below pre-COVID levels but significant recovery over Q2 2020 ~ Q2 2022 | | Longer-term prescribing (and increased treatment days) remain and prescription volume rebounding YoY | | Returning patient numbers and stable prescription usage resulted in YoY growth in 2022 highest since 2015 | |

Source: IQVIA Solutions Japan K.K. Japan Thought Leadership analysis. Japan Rx Data, JPM and MDI.

Japan is the 2nd largest Asia-Pacific market behind China (and 3rd globally) but with lower top-line growth through 2027

Spending growth in select Asia-Pacific countries 2019–2027, total market, const US\$



Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022
 Notes: 2019 is included to show the impacts of the pandemic on spending growth. Asia-Pacific excludes China, India and Japan which are shown separately.
 Report: The Global Use of Medicines 2023: Outlook to 2027. IQVIA Institute for Human Data Science. January 2023

Healthcare policy initiatives over the last 10 years have positively impact development and launch timelines, and Patient access to innovation

Objective: Increase prescriber choice, and earlier patient access to safer, more effective therapies and improved outcomes

Result: Decrease in Japan Drug Lag to ~14 months average over last 3 years (vs. ~33 months in 2012)



Active involvement in global / regional clinical trial and ICH guideline development and implementation



Introduction of Sakigake (Japan's equivalent program to Breakthrough Therapy designation)



Expansion of Fast Track and Priority Review in terms of access to and reduced timelines



Introduction of "Conditional Early Approval" for areas of unmet/under-served need and development hurdles



Pricing policy elements to reward price at launch and investment in innovation and outcomes with price protection ("Price Maintenance Premium")

Healthcare policy initiatives over the last 10 years have positively impact development and launch timelines, and Patient access to innovation

However, proposed pricing measures and pricing reform designed to manage pharmaceutical spend will potentially impact growth

Potential pricing measure changes being discussed

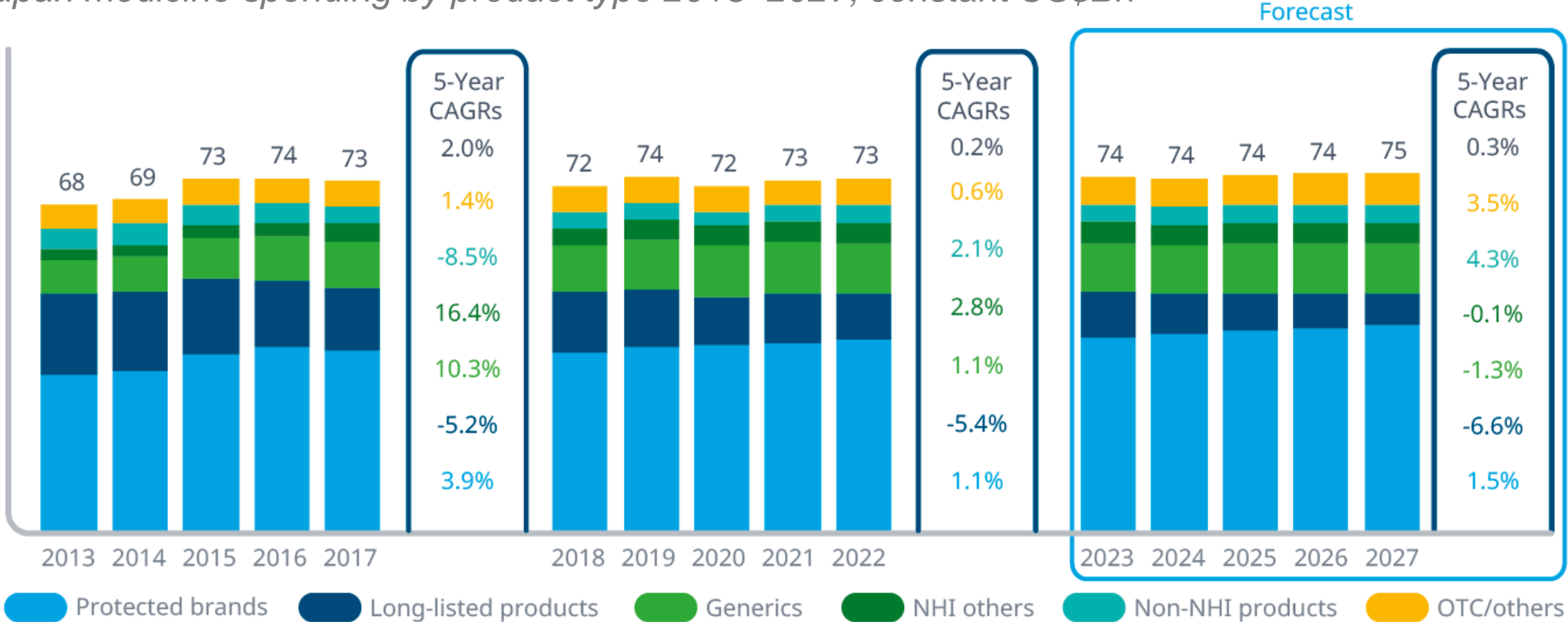
- ⊗ Expansion in scope of Repricing measures including Cost Effectiveness Assessment and HTA
- ⊗ Increase in frequency of Repricing measures including Cost Effectiveness Assessment and HTA
- ⊗ Revision to eligibility criteria for price protection under “Price Maintenance Premium” system

Already assumed in IQVIA’s Outlook to 2027 forecast due to trial implementation in 2021 and 2023

- ⊗ “Out-of-Cycle” / “Off-Year” NHI Price revisions in odd-numbered years (in addition to current biennial revisions in even-numbered years)

Japan top-line spend managed with savings from Long-Listed Products / Generics supporting growth in Protected Brands

Japan medicine spending by product type 2013–2027, constant US\$Bn



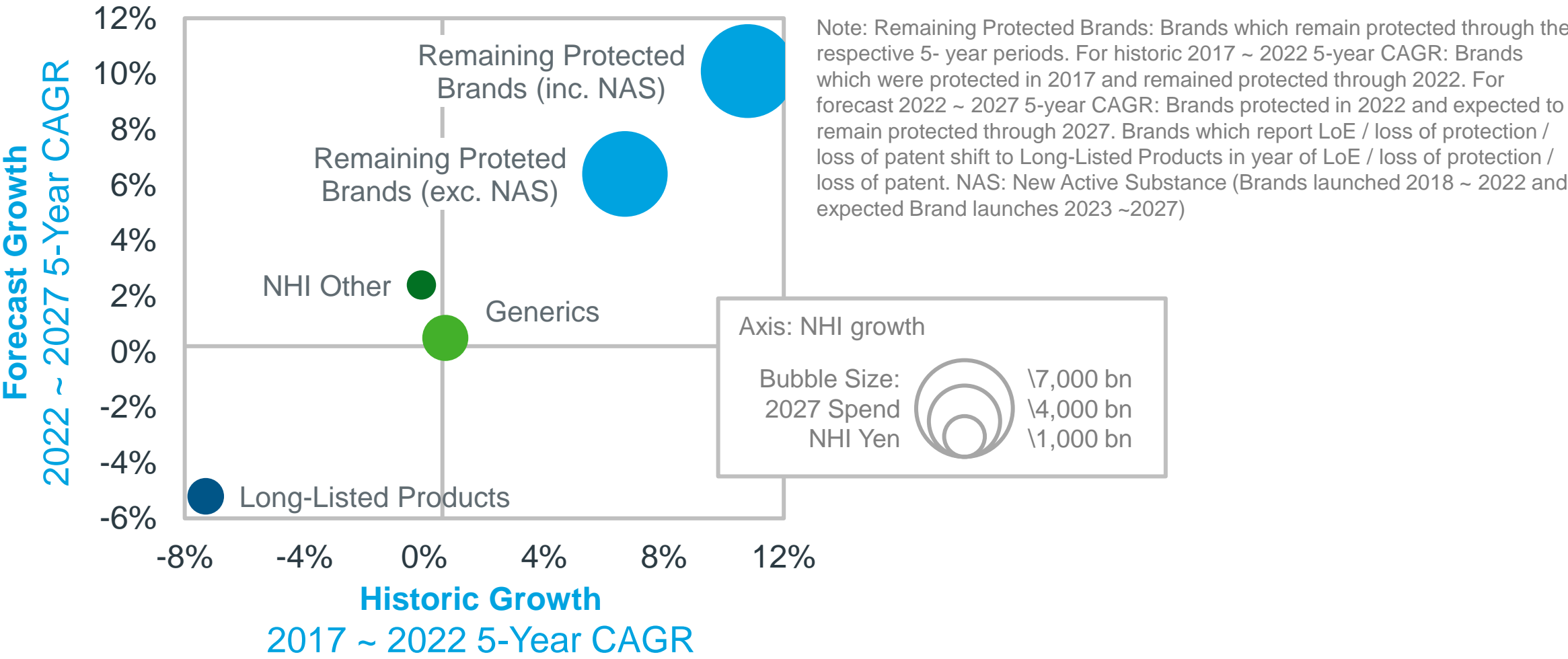
Source: IQVIA Market Prognosis, Sep 2022; IQVIA Japan, Sep 2021; IQVIA Institute, Nov 2022.

Notes: Medicine spending at ex-manufacturer level, segmented according to Japan-specific product types which differ from segmentations used elsewhere in the report and webinar presentation. Price revisions historically have taken effect in April, every other year.

Report: The Global Use of Medicines 2023: Outlook to 2027. IQVIA Institute for Human Data Science. January 2023

Japan top-line spend managed with savings from Long-Listed Products / Generics supporting growth in Protected Brands

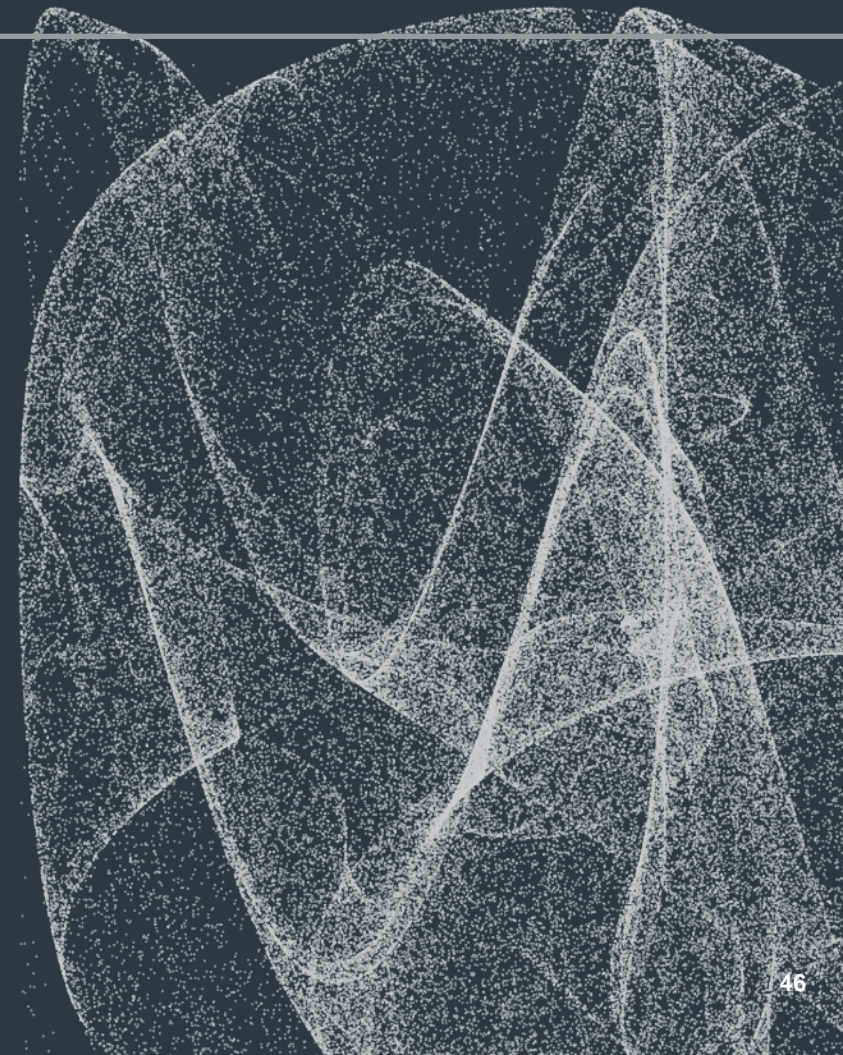
Product type growth, NHI list reimbursement price, Yen



Source: IQVIA Japan K.K.. Japan Thought Leadership. Report: Japan Pharma Market Insights: Outlook to 2027



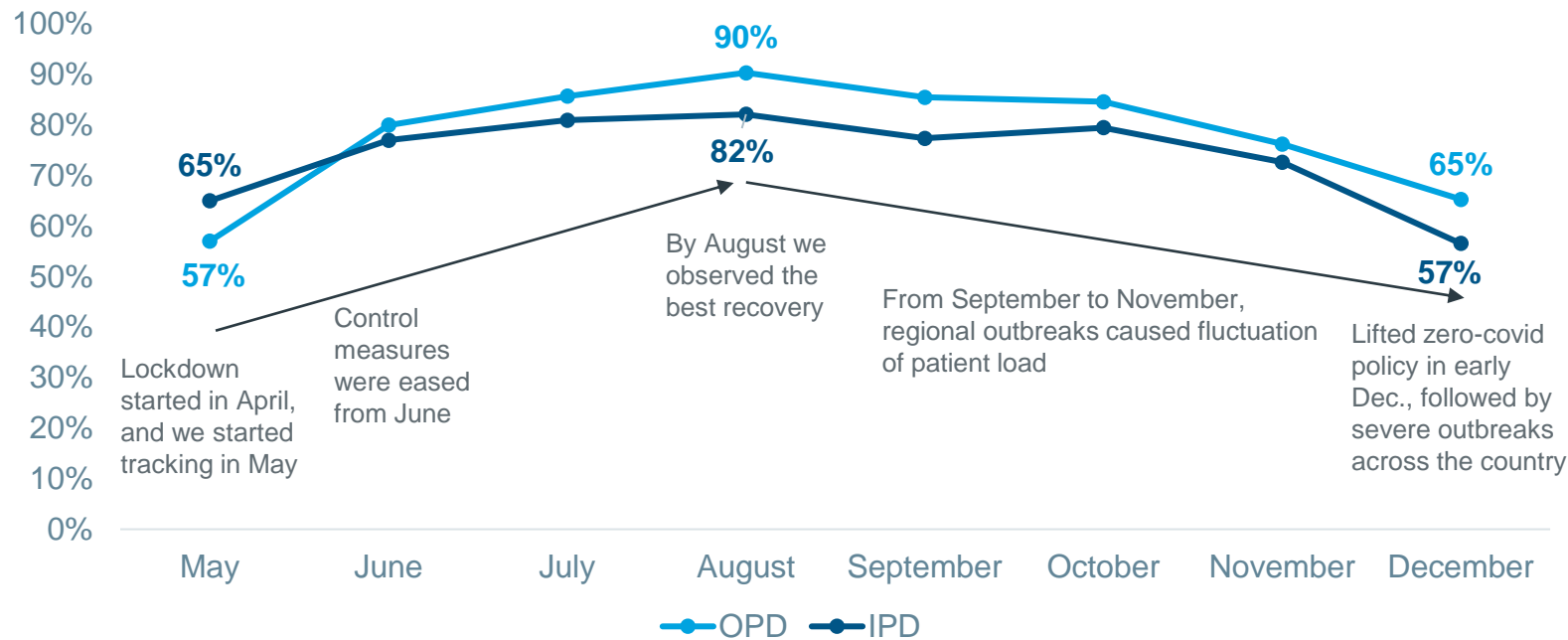
China



COVID-19 severely affected the China pharma market in 2022 and will have long-tail effect to 2023 even though the country has been opened up

2022 China Hospital Patient Load Overview

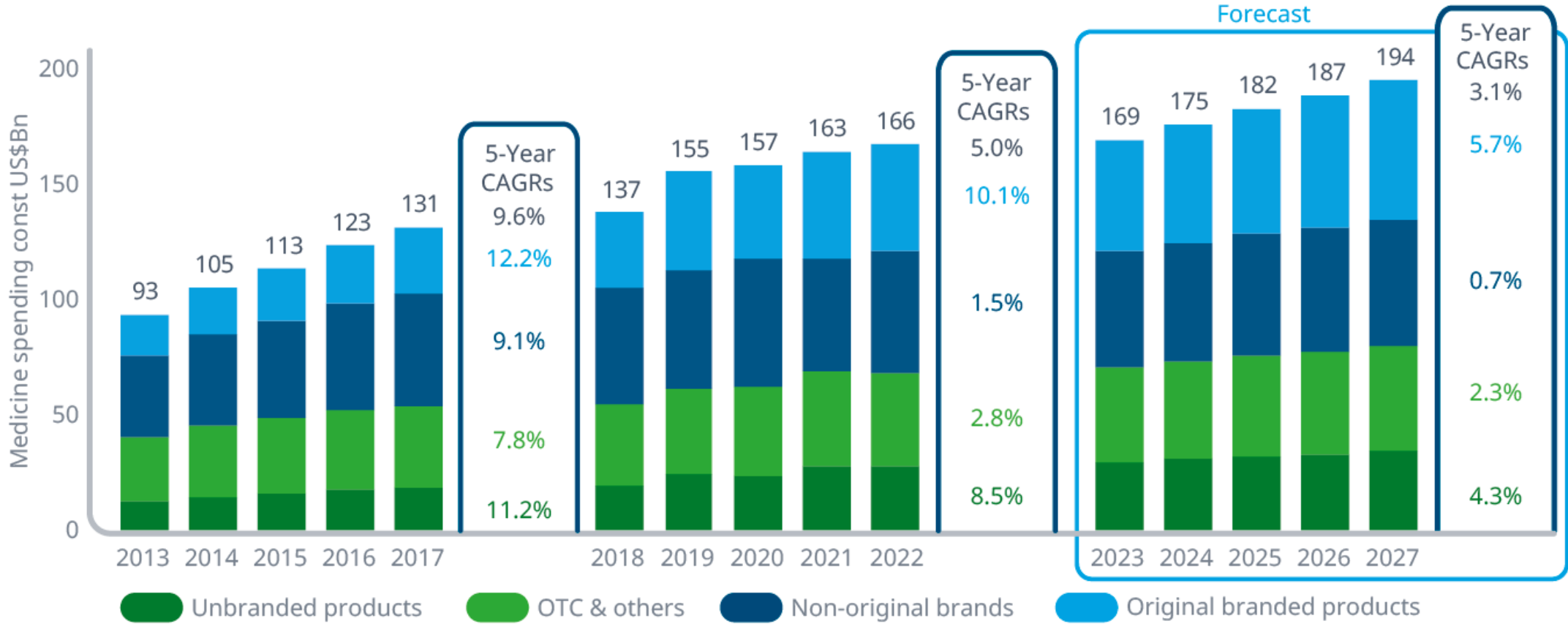
(% of patients, benchmarking the patient load in 2021.12)



Outlook to 2023

- Starting from Jan. 8th, China dismissed the quarantine requirement for entering the country, **symbolizing its full open**
- Economic activities will gradually be normalized
- Pharma market recovery is a certain trend but, **in a few months, there will still be some fluctuation** due to infection cases occupying medical resources and conservative attitude to go to hospital

With short-term impact by Omicron, spending in China is being flattened in 22&23, but will continue to grow 2024 onwards, with innovation remaining as a key driver



Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.

Notes: Original brands are those marketed by their originator (or licensed partner) and includes vaccine products by all manufacturers. Analysis does not include COVID-19 vaccines.

Report: The Global Use of Medicines 2023: Outlook to 2027. IQVIA Institute for Human Data Science, January 2023.

Meanwhile, China is shifting its development focus to quality and innovation, driving profound opportunities for higher-standard healthcare

2003 - 2013

2013 – 2022 & Beyond

Timeline

Political

“Rapid development”, emphasizing fast growth



Regional coordinated development, people centric, and social equality

“Our future focus is to **improve people’s quality of life**, ...enhance a well-rounded **social security system**, promote equal education, and **deepen healthcare reform**.”

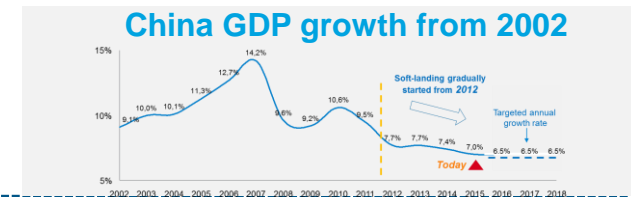
2015 Gov’t Annual Debriefing Report

Economic

>10% GDP growth, focusing on infrastructure development and export



“High-quality Development” and “High-standard Opening-up”



Social

Relatively younger population



Initiatives to address the aging population issue

A rapidly aging population in China



Technological

Labor intensive industries, focusing on manufacturing



Innovation driven; increasing R&D¹ involvement

- R&D expenditure among GDP increase **~4 times** from 1996 to 2016 (0.56% to 2.1%)
- Number of Internet user achieved **800 million**
- **Online payment achieved 50 trillion USD**
- **Innovative applications (eg. internet hospital)**

1. R&D: Research and Development
Source: IQVIA analysis

Streamlined regulatory pathways significantly shortened CN/US launch time lag, accelerating new product launch in China

By now FDA and China approvals can happen very close to each other



- National Medical Products Administration **NMPA** oversees both Clinical Trial Application **CTA** and New Drug Approval **NDA**
- Main focuses during NMPA assessment are **Safety, Efficacy and Quality Control**



CTA Process

27 mos.
(Before 2015) >> **3 mos.**
(after new CTA regulation)



NDA Process

26 mos.
(before 2015) >> **6 mos.**
(after new NDA regulation)

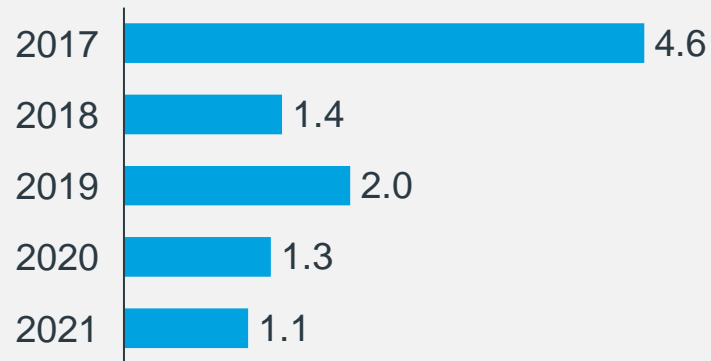


CN & US Launch Time Lag

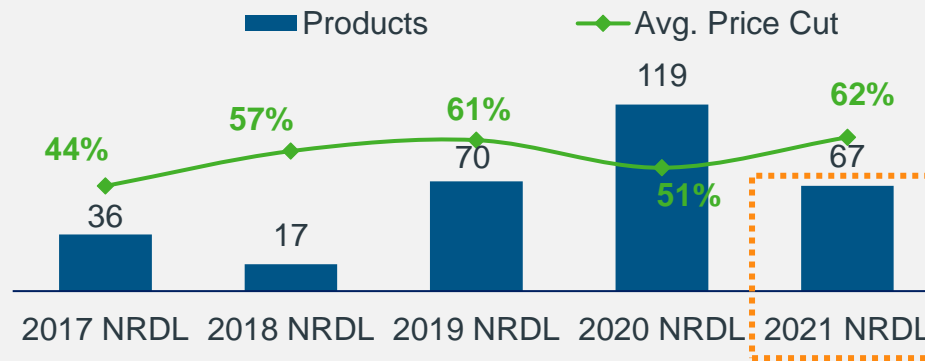
5-7 yrs.
(before 2015) >> **Sync.**
(after 2015)

Timeframe from launch to reimbursement has been shortened with sales on average peaking in a year after listing, accelerating market access in China

From Launch to NRDL Inclusion (yrs)



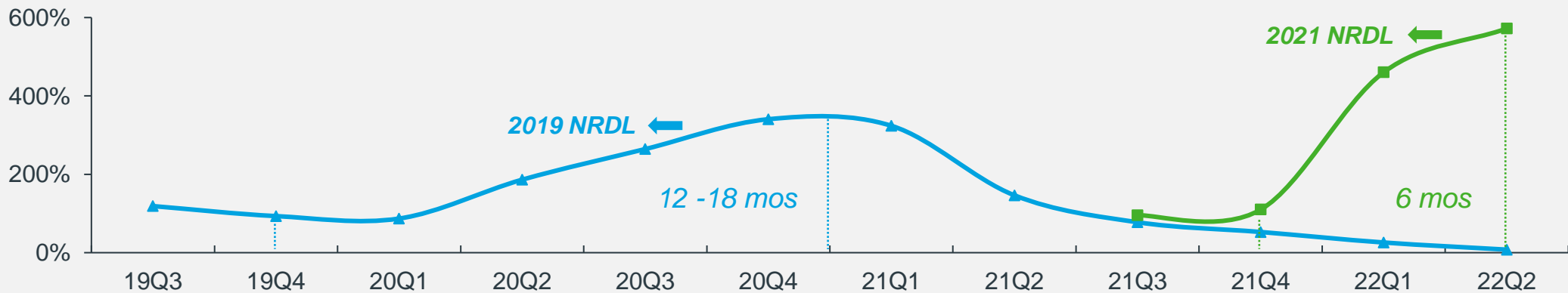
NRDL Price Cut 2017-2021



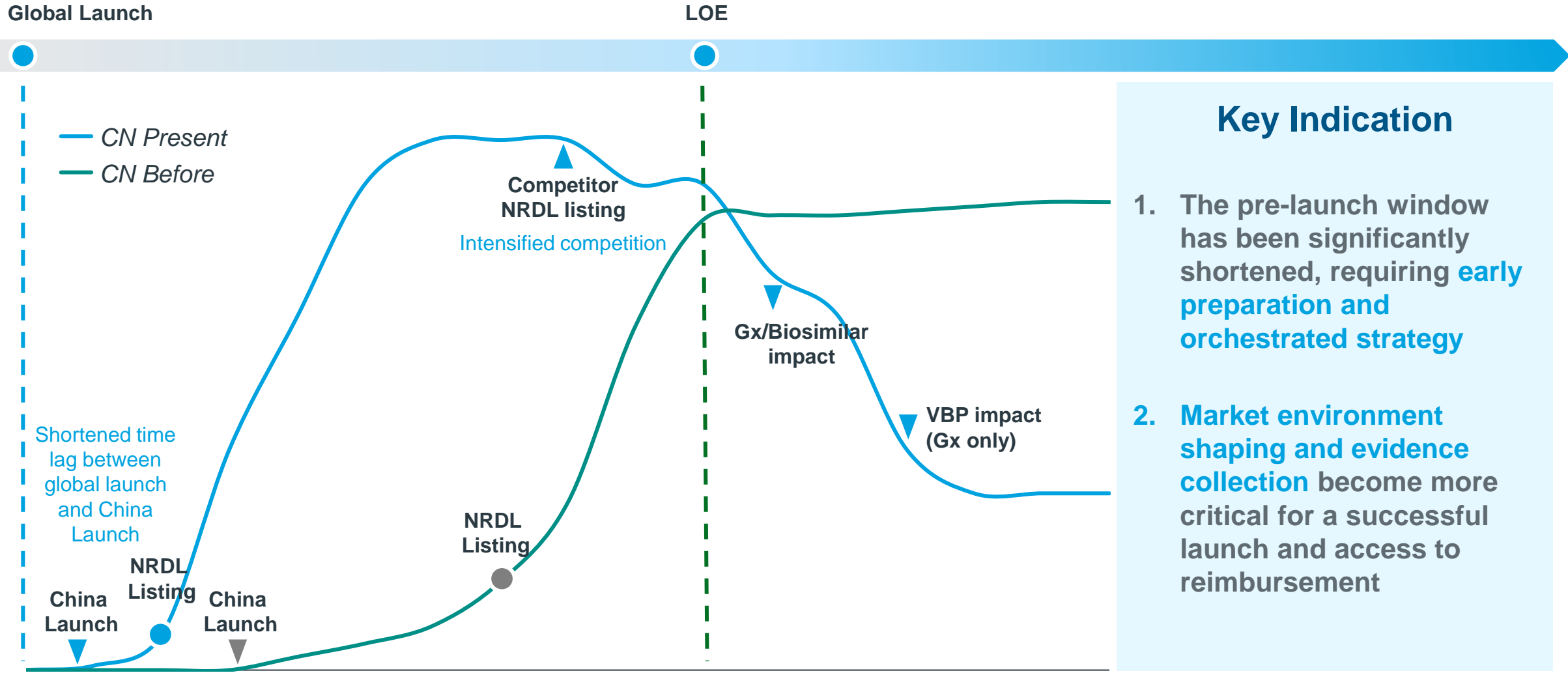
• Among the **67** succeeded, 66 were launched in 2020

* The 2022 negotiation result has not been released yet

Sales Performance Leaped after Being Included in NRDL (curve by growth rate)



The new environment has transformed product lifecycle in China, requiring early preparation and orchestrated strategy

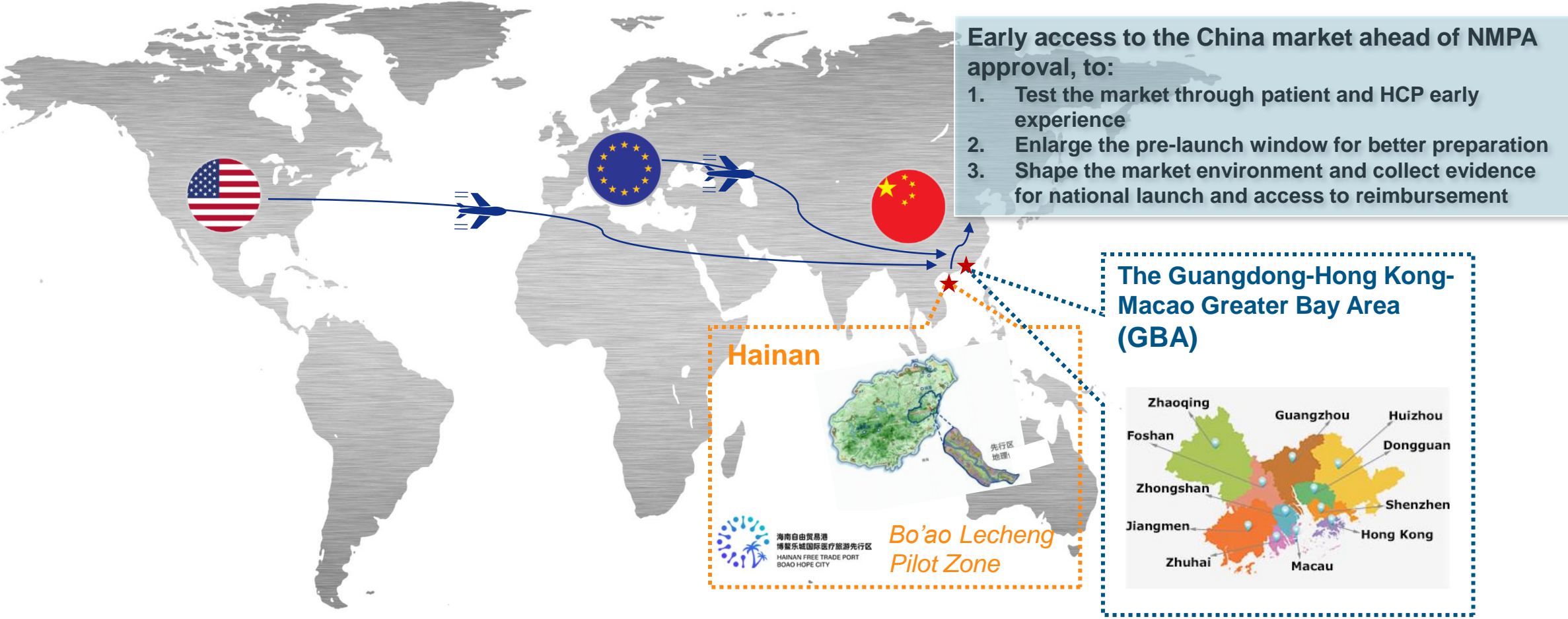


Key Indication

1. The pre-launch window has been significantly shortened, requiring **early preparation and orchestrated strategy**
2. **Market environment shaping and evidence collection** become more critical for a successful launch and access to reimbursement

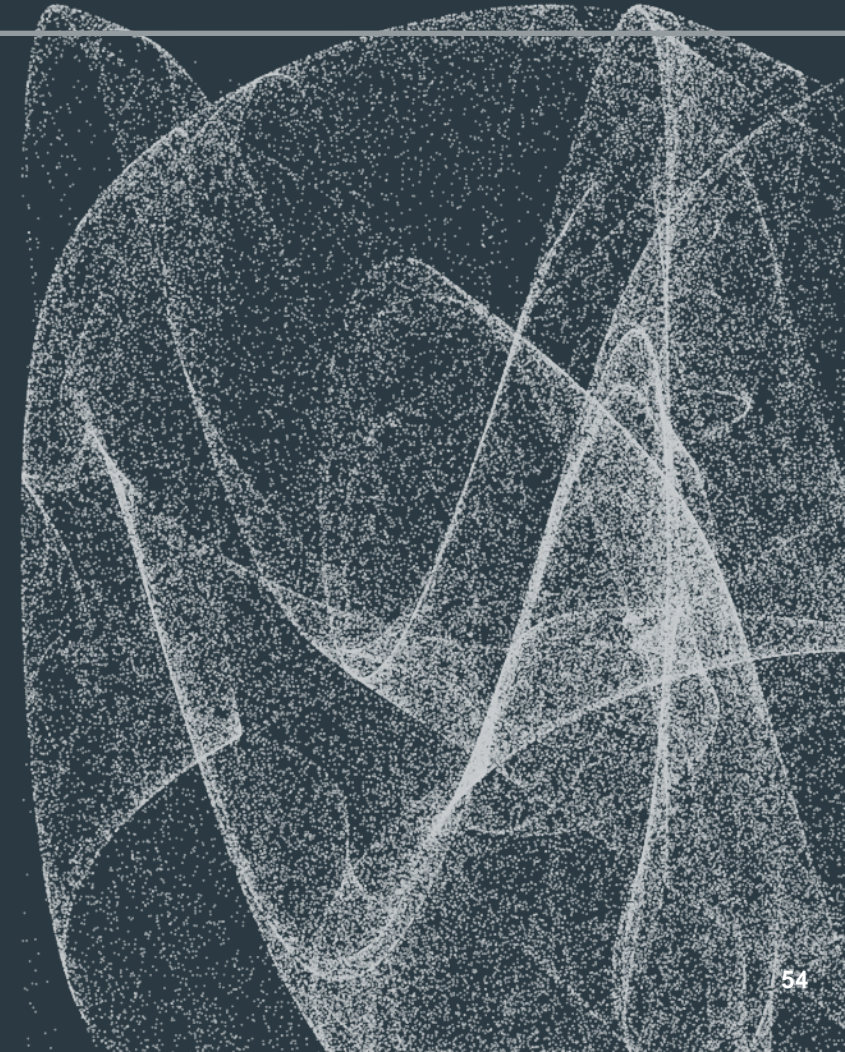
NRDL: National Reimbursement Drug List; VBP: Volume-based Procurement
Source: IQVIA analysis

Early market access is an emerging pathway to realize China's potential: leverage favorable policies in Hainan and GBA for commercial success

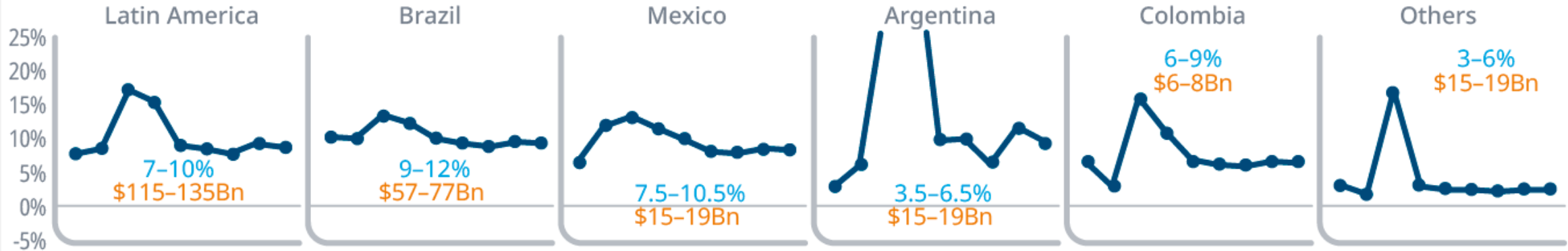




Latin America



Spending growth in select Latin American countries 2019–2027, total market, const US\$*



* Note: due to high inflation in Argentina, variable USD used to calculate growth rates

● Spending growth ■ 2023-27 CAGRs ■ 2027 Spending

Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.

Notes: 2019 is included to show the impacts of the pandemic on spending growth. Argentina growth in 2021 (25.4%), 2022 (37.2%) and Turkey 2022 (-6%) not plotted.

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Spend growth drivers by channel and therapy area in LatAm

Spend, funding and growth dynamics by drug type / therapy area in Latin America

Non Retail Channel
Prescription Drugs

Pharmacy Retail Channel
Prescription Drugs

Pharmacy Retail Channel
OTC / Consumer Health

% of total drug spend

~40% of total spend

~40% of total spend

~20% of total spend

Drug funding model

Mostly Payer Funded
(public and private payers)

Mostly Out of Pocket
(limited payer funding)

Mostly Out of Pocket
(limited payer funding)

Top Spend Therapy Areas and expected growth

- **Oncology** and **immunology** drive spending growth
- **Vaccines**: gradual recovery of NIPs; less weight on COVID
- Continued growth in **diabetes** and **CNS**

- **Diabetes** and **CNS** drive spending growth
- **Respiratory** recovery; demand increase post-COVID
- **CV** and **Women's Health** moderate growth

- **Dermatology** continued expansion
- **Cough & Cold** and **VMS** likely to stabilize or reduce
- Continued expansion in **Pain** and **GI**

Underlying growth drivers

- Innovation
- Payer dynamics
- Ageing population
- Vaccine budget & PNI strategy dynamics

- Ageing population
- Lifestyle habits
- Mental health
- Innovation

- Post pandemic market accomodation
- Economic recovery
- Prevention

Country highlights

- **Recently elected left wing President** promised a **health reform to improve access** to high-quality healthcare, through a **single public healthcare system**
- **Increased pressure on drug price controls** – adjusted methodology approved in Aug 2022
- **Demand for generics will rise** as financial pressure on healthcare payers and patients intensifies in the current economic climate
- **Increased coverage of medicines in the PBS** (Health Benefits Plan) has led to **switch from the retail to the institutional channel**. Trend expected to continue as gov't intends to guarantee universal access to quality drugs

- **Presidential Elections in 2023** with center-right opposition leading polls
- **PAMI agreement renewed until 2024** and “*Precio PAMI*” will be maintained resulting in erosion of average price of pharmaceutical products
- MoH has granted access to new ultra high-cost medicines through **price agreements with manufacturers**



- **Elections in 2024** – healthcare not a priority for incumbent left-wing gov't
- **Escalated bureaucracy at COFEPRIS**, undermining innovation
- **Focus on primary attention in the public segment**, FONSABI's budget for high-cost diseases has significantly reduced compared to SP
- **Centralization of public healthcare administration** and uncertain timelines complicate consolidated purchases
- **Generic growth [BGx & Gx]** will be further stimulated by increased inflation and slow economic recovery
- **Limited investment in healthcare digitalization** across public segment

- **Newly elected left-wing gov't** will increase spending on healthcare, strengthening **public sector**
- Growth, consolidation and verticalization of the **private sector**, driving efficiencies and greater payer control
- **HTA and innovative contracting** to play a greater role in market access for high-cost drugs
- MoH to invest in **healthcare digitalization** across public and private systems
- Increased **role of pharmacies** in healthcare provision



Moderated discussion and Q&A



Concluding thoughts

Download the full report and accompanying exhibits

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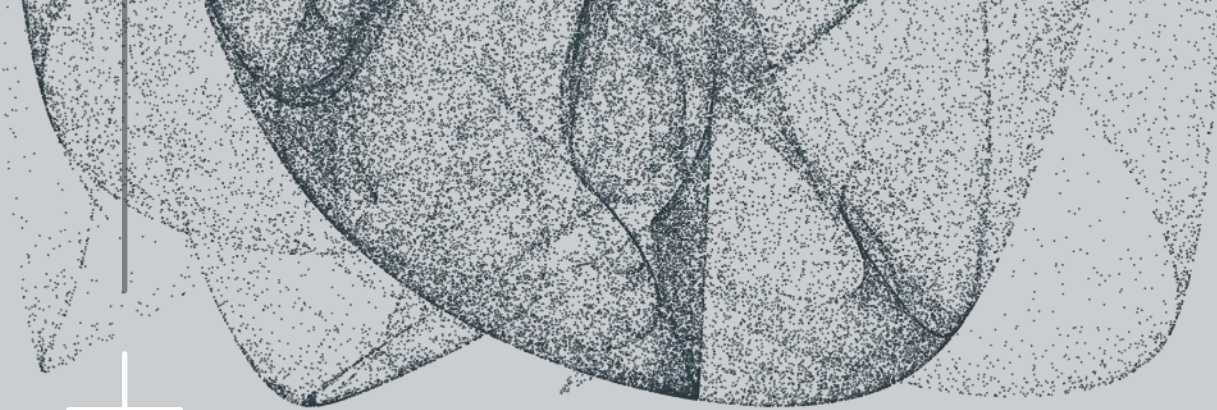
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Thank you