Assessment of the Impact of Settlements

Analysis Results

June 2025

Research and Analysis undertaken by the IQVIA Institute for Human Data Science on behalf of AAM

Methodology & Sources

The scope of the analysis includes molecules with first generics/biosimilars launched from 2014-2024 (Q3)

Step 1: Generate list of molecules and time of their first generic/biosimilar launched

- **Source(s):** IQVIA SMART U.S. Launch and Regulatory Insights module
- **Methodology:** Identify first map to brands based on the first appearance of sales; dates also verified through FDA approval, company announcement of generic/biosimilar launch, and/or secondary sources (e.g., Optum Rx)

Step 2: Research litigation and settlement information

- **Source(s):** Ark Patent Intelligence Database, SEC filings, company announcements, newswires with information related to patent litigations, and/or court decisions (e.g., Casetext, Bloomberg Law, Robins Kaplan, JD Supra)
- **Methodology:** Obtain case filing dates, court decisions, and settlement deal information primarily from the Ark Patent Intelligence Database, but also from the other sources noted above

Step 3: Identify patent expiration date that would have constrained generic/biosimilar entry in the absence of a settlement per molecule

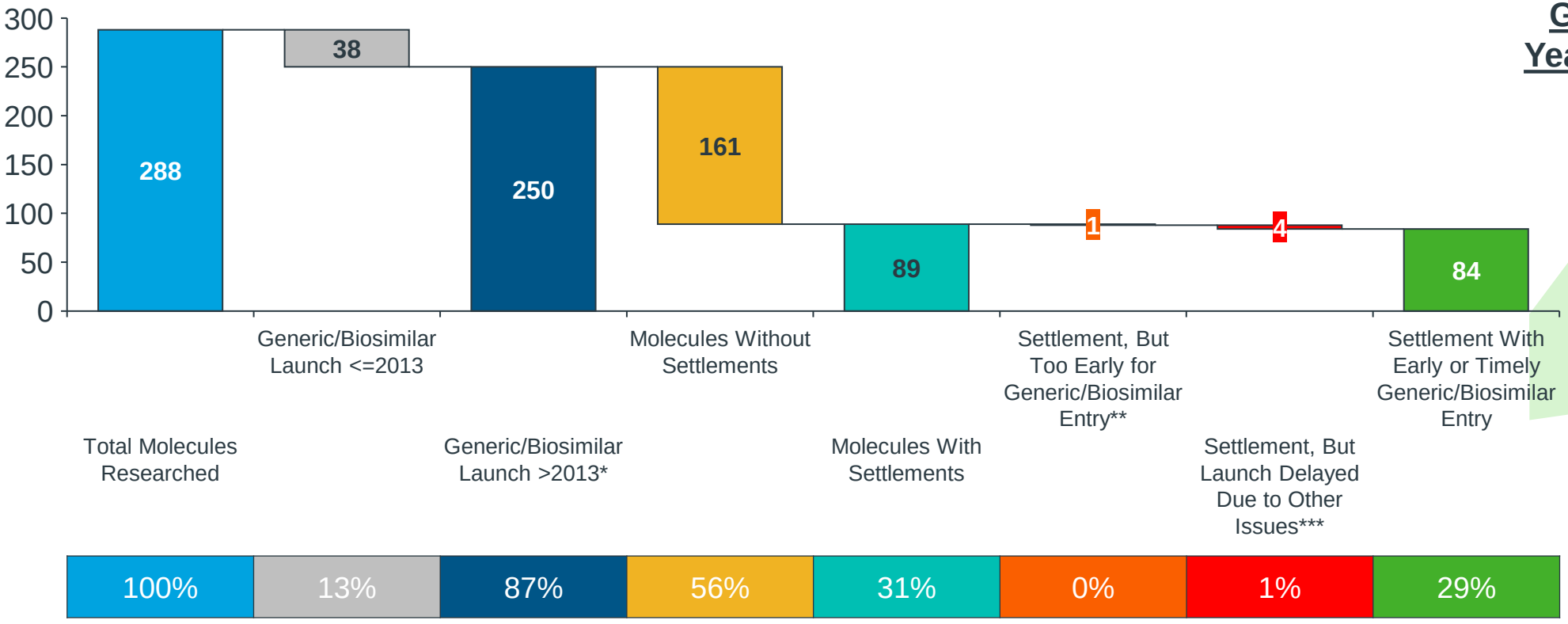
- **Source(s):** Orange Book Database, Purple Book Database, FDA Approval Letters, Ark Patent Intelligence Database
- **Methodology:** Using the patents and their expiry dates listed per molecule in the Orange Book Database, as well as cross referencing the patents listed in the Ark Patent Intelligence Database that were under dispute in the litigation, assess and determine the latest patent expiry date to consider as the “would-have-been” generic entry date in the absence of a settlement. Where applicable, the 6 months of pediatric exclusivity for a patent were included for the expiry date.

Source: IQVIA Institute for Human Data Science, Nov 2024

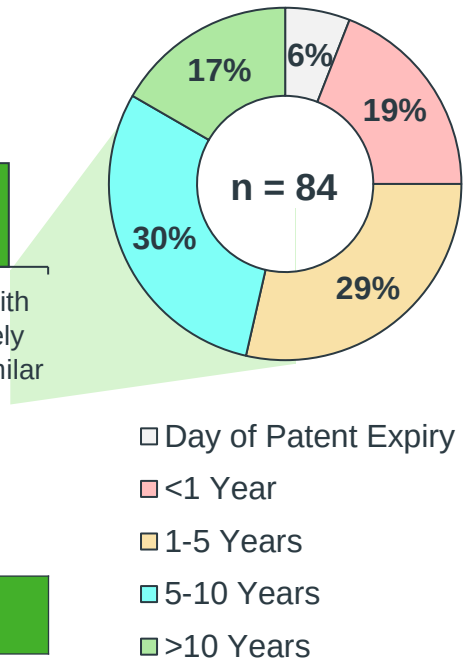
The IQVIA Institute assessed 288 molecules for settlement info; 84 had settlements and early or timely generic/biosimilar entry

The following slides will focus on the 84 molecules with settlements and early generic/biosimilar entry >2013 to consider activity only after the FTC v. Actavis, Inc. (2013) decision

Molecules Researched and Settlement Status



Early or Timely Generic/Biosimilar Entry Years Prior to Patent Expiry



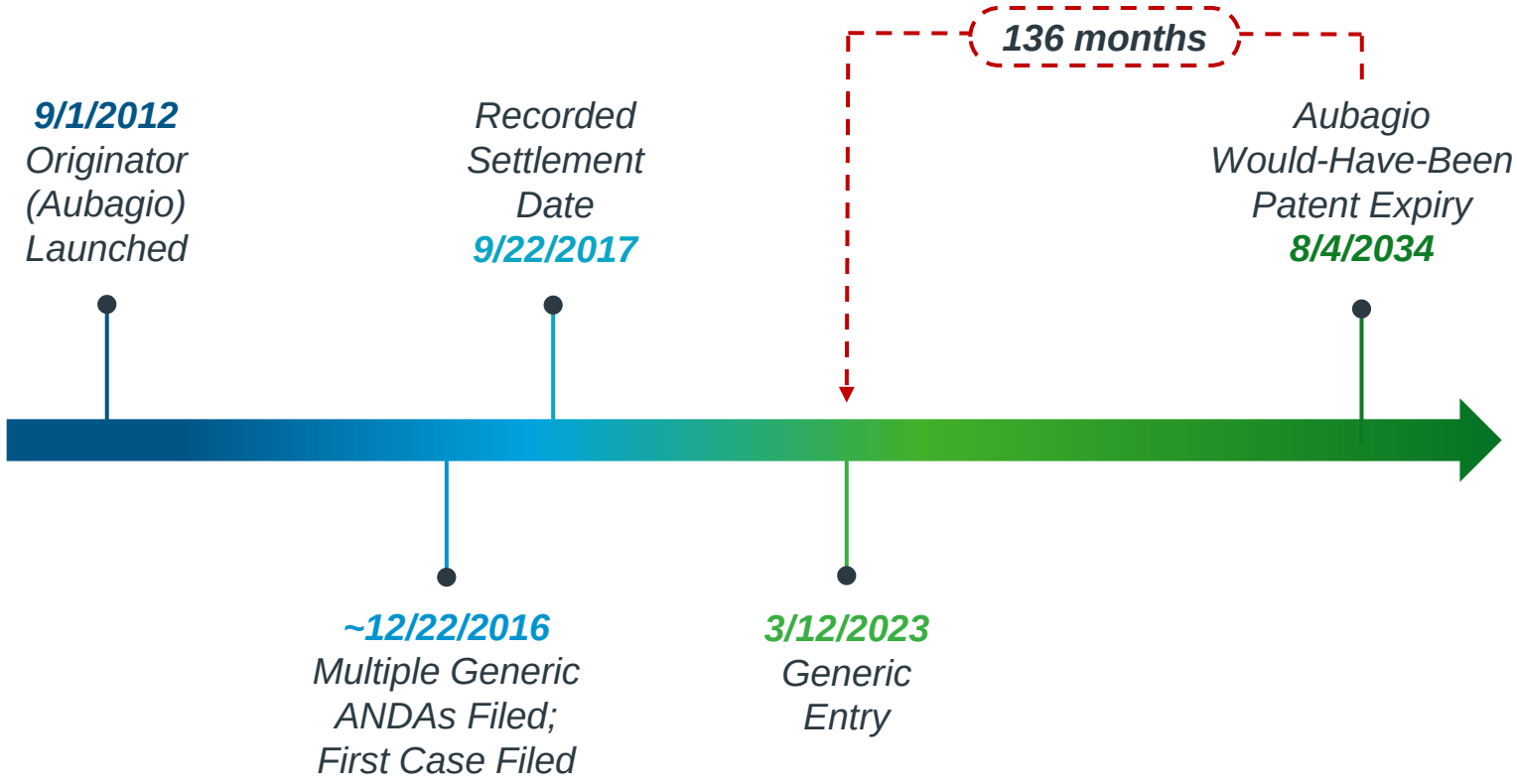
Source: IQVIA Institute for Human Data Science, Nov 2024

*Includes molecules whose generics/biosimilars may not have yet launched as of Q3 2024. **1 molecule had a settlement that accelerated entry date, but this date has not yet passed (therefore no generics have launched yet), and patent expiry has also not passed. ***4 molecules had settlements that accelerated entry date, but the actual generic/biosimilar launches were delayed due to other issues

Teriflunomide is an example of a molecule where a settlement led to earlier generic/biosimilar entry and health system savings

Due to the settlement, generics launched 11 years prior to the would-have-been patent expiry, saving the healthcare system $1.1B in 2023 alone

Teriflunomide Timeline



Summary:

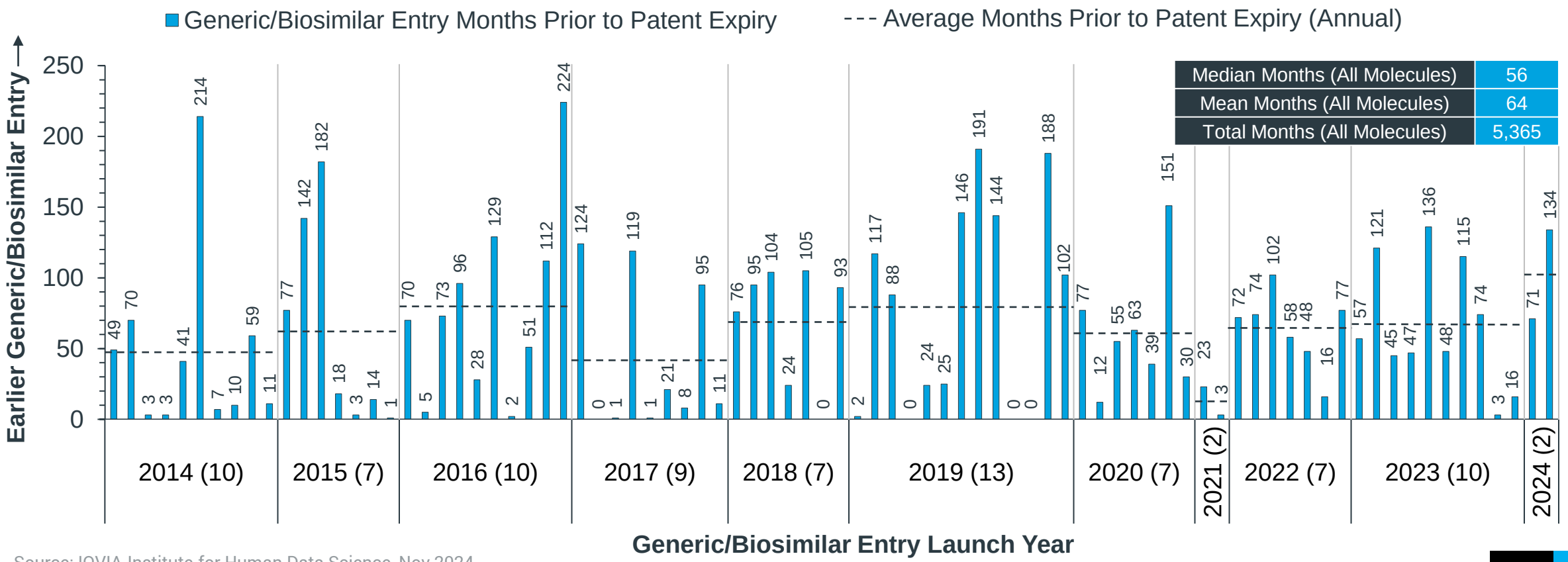
- In November-December 2016, a number of generic manufacturers separately notified Sanofi Genzyme that they had filed ANDA applications for originator Aubagio with Paragraph IV certifications challenging all three of its patents
- Sanofi Genzyme filed suit against each ANDA filer within 45 days of receipt of each notification in the US District Court for the District of Delaware
- Aventisub, Genzyme, and Sanofi's action against Glenmark was dismissed without prejudice on 9/22/2017 upon the parties' stipulation as the parties had settled the dispute between them
- Sanofi reached settlement in 2017 with all 20 generic Aubagio ANDA first filers, granting each a royalty-free license to enter the United States market on March 12, 2023

Source: IQVIA Institute for Human Data Science, Nov 2024

For molecules with settlements and early generic or biosimilar entry, the launches averaged 64 months before patent expiry

Outside of the 84 molecules shown in the chart below, 4 molecules with settlements had generics/biosimilars enter after patent expiry due to other issues

84 Settled Molecules*: Generic/Biosimilar Entry Months Prior to Patent Expiry** by Generic Launch Year



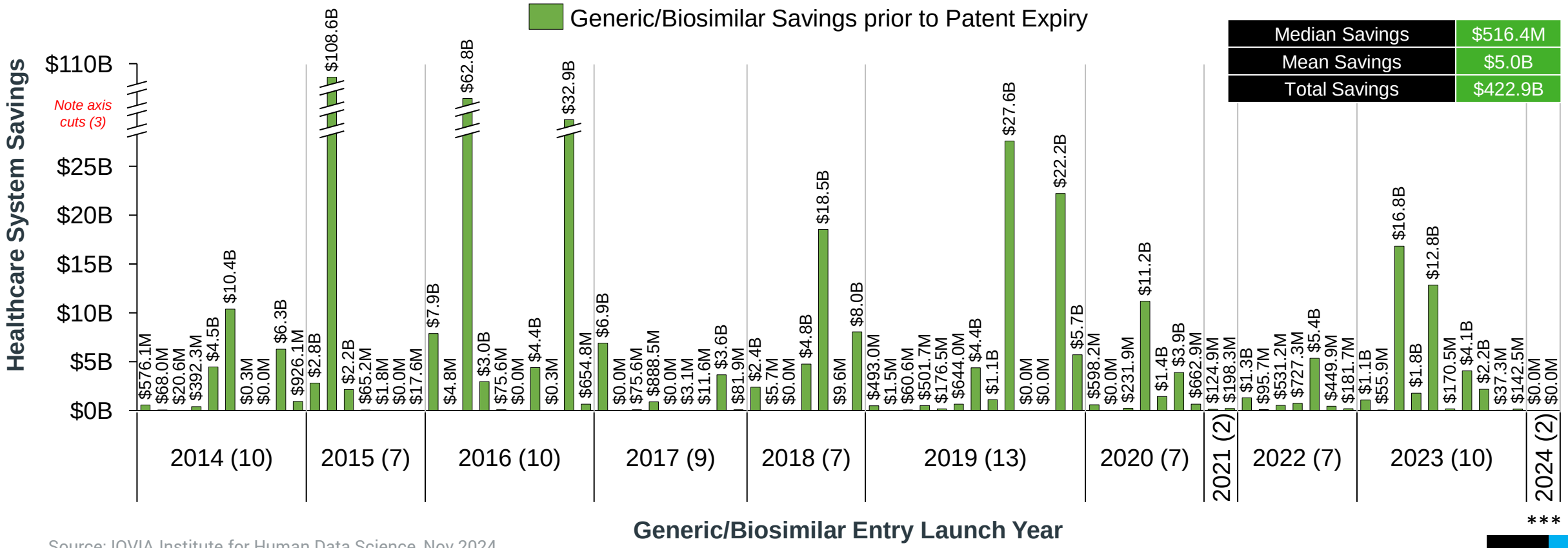
Source: IQVIA Institute for Human Data Science, Nov 2024

*Not included in this chart are 4 molecules with settlements that accelerated entry date, but the actual generic/biosimilar launches were delayed due to other issues, and 1 molecule with no approved generics yet (though patent expiry has not yet passed for this molecule). **For generics/biosimilars that launched a day after patent expiration (3 molecules), the PTO has previously stated that a patent expires at midnight on the expiration date, so launching the next day is considered a launch as of patent expiration

Overall projected healthcare system savings due to early generic and biosimilar launches is an estimated $422.9B

For molecules with patent expiry after 2023, savings were projected until the future year of patent expiry using the 2023 savings amount

84 Settled Molecules*: Generic/Biosimilar Savings Prior to Patent Expiry** by Launch Year



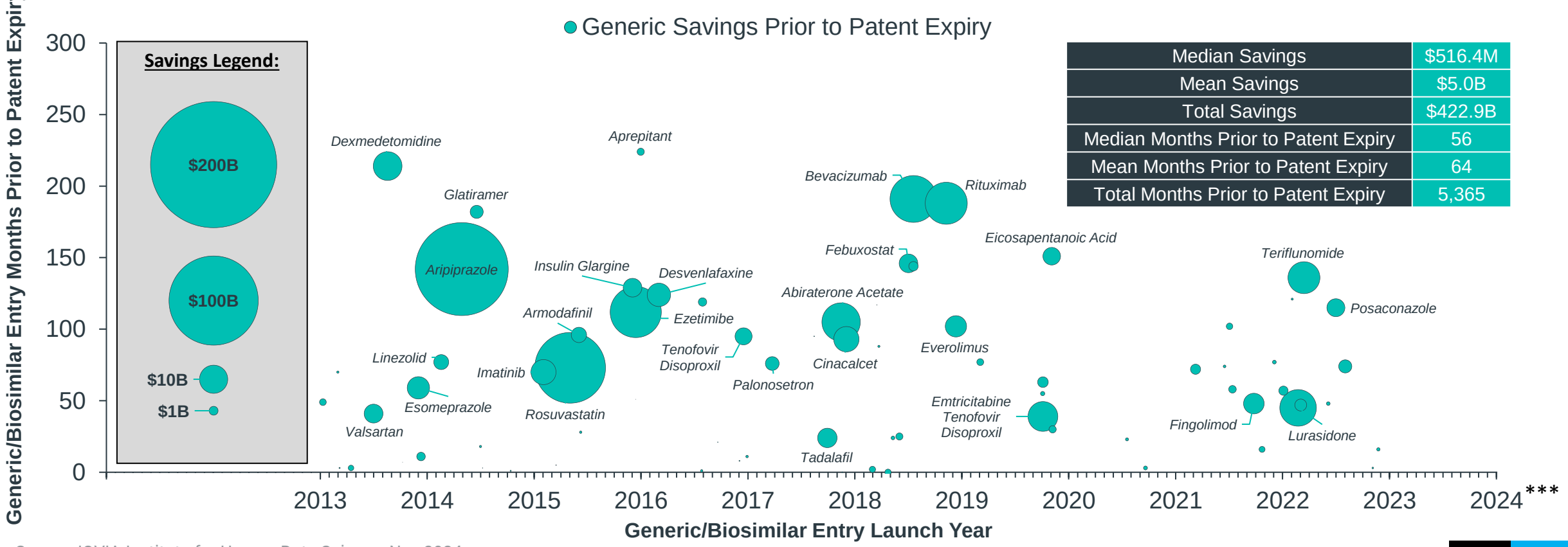
Source: IQVIA Institute for Human Data Science, Nov 2024

*Not included in this chart are 4 molecules with settlements that accelerated entry date, but the actual generic/biosimilar launches were delayed due to other issues, and 1 molecule with no approved generics yet (though patent expiry has not yet passed for this molecule). **Savings estimates are annualized and therefore include all savings within the calendar year that the generic entered, regardless of proximity to patent expiry date. ***Note that savings estimates have not yet been calculated for generics/biosimilars that have launched in 2024

Generics and biosimilars that have entered the market early due to settlements have accrued an average of $5.0B per molecule

There is no immediate trend between healthcare savings and how early generic/biosimilar entry was; however, note that older generics/biosimilars have had more time to accrue health system savings

84 Settled Molecules*: Generic/Biosimilar Entry Months and Savings** Prior to Patent Expiry by Launch Year



Median Savings	$516.4M
Mean Savings	$5.0B
Total Savings	$422.9B
Median Months Prior to Patent Expiry	56
Mean Months Prior to Patent Expiry	64
Total Months Prior to Patent Expiry	5,365

Source: IQVIA Institute for Human Data Science, Nov 2024

*Not included in this chart are 4 molecules with settlements that accelerated entry date, but the actual generic/biosimilar launches were delayed due to other issues, and 1 molecule with no approved generics yet (though patent expiry has not yet passed for this molecule). **Savings estimates are annualized and therefore include all savings within the calendar year that the generic entered, regardless of proximity to patent expiry date. ***Note that savings estimates have not yet been calculated for generics/biosimilars that have launched in 2024

4 molecules with settlements saw delayed generic/biosimilar entry, though these may have been due to approval issues/shortages

Long FDA approval timelines, as well as shortages, for complex products can result in slower generic/biosimilar launches even when patent issues have been settled

Welchol (colesevelam):

- In November 2010, Daiichi Sankyo/Genzyme filed a patent infringement suit against Impax and Glenmark as they filed separate ANDAs to manufacture colesevelam
- **In June 2011, Impax and Glenmark announced that they reached settlements with Daiichi Sankyo/ Genzyme and could launch their generics beginning in March of 2015**
- Branded colesevelam's last patent was set to expire in June 2015; however, Impax's generic was only approved and launched nearly three years later in May 2018 (though the FDA originally received their ANDA nine years prior in 2009)[1]

Result: ***Settlement accelerated potential generic entry by 3 months before patent expiry, but approval issues prevented launch until 35 months after expiry***

Integrilin (eptifibatide):

- In February 2009, Millennium filed a patent infringement suit against Teva following Teva's filing of an ANDA to manufacture generic eptifibatide
- **In December 2011, the proceedings were dismissed as a settlement agreement (per IPD Analytics) permitted Teva to launch its generic in June 2015, and the FDA approved Teva's generic that month**
- However, Teva's generic only launched six months later in December 2015, three months after the brand's last patent expiry
- Eptifibatide was noted to have been in shortage in 2015[2]

Result: ***Settlement accelerated potential generic entry by 3 months before patent expiry, but shortage may have prevented launch until 3 months after expiry***

Aggrastat (tirofiban):

- In November 2018, Medicure filed a patent infringement suit against Gland Pharma after the latter filed an ANDA to manufacture generic tirofiban for injection
- **In August 2019, Medicure announced that it reached a settlement with Gland Pharma that allowed Gland's generic product to launch in March 2023**
- Branded tirofiban's last patent was set to expire on May 1st, 2023; however, Gland's generic was only approved in April 2023 and launched at the end of May 2023 (four weeks after branded tirofiban's last patent expiry date)[3]

Result: ***Settlement accelerated potential generic entry by 2 months before patent expiry, but approval/launch issues prevented launch until 1 month after expiry***

Istodax (romidepsin):

- In April 2014, Celgene/Astellas filed a patent infringement suit against Fresenius Kabi following an ANDA filing to manufacture romidepsin
- **In October 2015, the proceedings were dismissed as a settlement agreement provided Fresenius a sublicense to launch its generic in February 2018**
- Branded romidepsin's last patent was set to expire in August 2021; however, Fresenius' generic was only approved in October 2021 (though the FDA originally received their ANDA eight years prior in 2013) and launched in July 2022 (ten months after patent expiry)[4]

Result: ***Settlement accelerated potential generic entry by 42 months before patent expiry, but approval issues prevented launch until 10 months after expiry***

Source: IQVIA Institute for Human Data Science, Nov 2024

[1]Impax Colesevelam Approval Letter, [2]ASHP Eptifibatide Shortage Notice, [3]Gland Pharma Tirofiban Approval Letter, [4]Fresenius Kabi Romidepsin Approval Letter; *: