At a glance:

The FDA is approving record numbers of generic drugs. It sees generic approvals as a key way to lower drug costs.

Approvals are being accelerated by new regulatory authority and process improvements at the FDA.

However, generics are not a panacea. Relatively few drugs are losing patent protection in the years ahead, reducing the impact of generics.

Many drugs are biologics and won’t be affected by generic competition, and will instead require biosimilar competition.

The FDA is approving more generic drugs than ever before, faster than ever before. Is it enough to lower drug costs?

The FDA has substantial new authority, resources and resolve to make it easier for generics to come to market, viewing competition as a key way to bring down drug prices. These efforts likely will succeed in bringing new generics to the market more quickly and predictably, but significant competitive hurdles may limit their impact on drug pricing or competition without complementary efforts to address the biologics market.

Already, the FDA is setting records for the number and speed of its generic drug approvals. The FDA fully approved 763 generic drugs in fiscal year 2017, according to an analysis by PwC’s Health Research Institute (HRI). That is 86.5 percent more than in fiscal year 2014, the first full year the Generic Drug User Fee Act was in effect, when it approved 409 (see Figure 1). And the agency is approving these drugs faster than it was even a few years ago. For some generics, approvals are coming in as few as eight months instead of the previous standard of 15 months in fiscal year 2016.

Contacts

Benjamin Isgur (Health Research Institute Leader)
benjamin.isgur@pwc.com

Trine Tsouderos (HRI Regulatory Center Leader)
trine.k.tsouderos@pwc.com

Alexander Gaffney (HRI Regulatory Center, Life Sciences/New Entrants)
alexander.r.gaffney@pwc.com

Kevin Muench (HRI Regulatory Center, Research Analyst)
kevin.p.muench@pwc.com

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Source: PwC Health Research Institute analysis of FDA generic drug approvals

* FY 2018 data from October 2017 through April 2018

Note: “First generics” refer to the first time a particular drug has been approved in generic form.
President Donald Trump, HHS Secretary Alex Azar and FDA Commissioner Scott Gottlieb have touted increased competition from generics as a way to reduce drug prices. “While FDA doesn’t control drug pricing, our policies do affect competition in the market,” Commissioner Gottlieb wrote this year in reference to generic drugs. “This is the nexus of our current efforts on drug pricing.”

But a swelling number of new generics may affect drug prices less than regulators and policymakers hope because biological medicines have a growing influence on the market, and the number of patent expirations is decreasing. Generic competition won’t affect 46 percent of the estimated sales revenue of the top 100 drugs through 2023, according to an HRI analysis.

**Figure 2: The FDA has introduced expedited reviews for priority generics**

Applications can be approved in as little as 8 months, compared with 15 in FY2016

<table>
<thead>
<tr>
<th>Application type</th>
<th>Standard review</th>
<th>Priority review</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Original generic drug applications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original ANDA</td>
<td>10 months</td>
<td>8 months</td>
</tr>
<tr>
<td>With preapproval inspection</td>
<td>10 months</td>
<td>8 months*</td>
</tr>
<tr>
<td>Major ANDA amendment</td>
<td>8 months</td>
<td>6 months</td>
</tr>
<tr>
<td>With preapproval inspection</td>
<td>10 months</td>
<td>8 months*</td>
</tr>
<tr>
<td>Minor ANDA amendment</td>
<td>3 months</td>
<td>3 months</td>
</tr>
<tr>
<td><strong>Supplemental generic drug applications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior approval supplement (PAS)</td>
<td>6 months</td>
<td>4 months</td>
</tr>
<tr>
<td>With preapproval inspection</td>
<td>10 months</td>
<td>8 months*</td>
</tr>
<tr>
<td>PAS amendment</td>
<td>6 months</td>
<td>4 months</td>
</tr>
<tr>
<td>With preapproval inspection</td>
<td>10 months</td>
<td>8 months*</td>
</tr>
<tr>
<td>Minor PAS amendment</td>
<td>3 months</td>
<td>3 months</td>
</tr>
</tbody>
</table>

*Applications subject to two-month delay if necessary facility inspection information not submitted on time.

The FDA also has the authority to grant six months of marketing exclusivity for new generic drugs in product areas that the agency determines lack adequate competition, known as competitive generic therapy exclusivity. Though the exclusivity period is relatively short, it’s available to any drug for which a competitive need exists. Previously, the FDA was able to grant exclusivity to a generic drug only the first time it was approved (see Figure 3).
**Figure 3: Generic drugmakers have a new option to protect their investments**

Six months of exclusivity for new “competitive” generics without adequate competition

Source: PwC Health Research Institute analysis

Note: Infectious disease product and pediatric study exclusivities add on to most branded-drug eligible exclusivity periods.
Note: Patent term extensions under the Hatch-Waxman Act are up to five years in length. May be less.
Note: Interchangeable exclusivity may be extended to 42 months if the product is subject to extensive litigation.

Also, new fees on generic drug applications and facility inspections will let the FDA collect $493 million in funding for generic drug program activities in fiscal year 2018, up from $299 million in fiscal year 2013, the first year FDA collected user fees (see Figure 4). Generic user fees account for 7 percent of the FDA's annual budget and allow the regulator to hire more review staff and make infrastructure improvements such as new computer and data analysis systems that have helped accelerate review target times and meet targets more consistently. The new staff are needed to help implement some of the more ambitious changes under FDARA, including faster generic reviews, earlier facility inspections and new ways to encourage generic competition.

**Figure 4: The FDA has a substantially different user fee structure in 2018**

The fees allow for the hiring of additional staff, resulting in faster reviews

<table>
<thead>
<tr>
<th>Generic Drug User Fee Act (GDUFA) application type</th>
<th>Required user fee amounts, by year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbreviated new drug application</td>
<td>$171,823</td>
</tr>
<tr>
<td>Prior approval supplement</td>
<td>$0</td>
</tr>
<tr>
<td>Drug master file</td>
<td>$47,829</td>
</tr>
<tr>
<td>Finished dosage form facility (domestic)</td>
<td>$211,087</td>
</tr>
<tr>
<td>Finished dosage form facility (foreign)</td>
<td>$226,087</td>
</tr>
<tr>
<td>Active pharmaceutical ingredient facility (domestic)</td>
<td>$45,367</td>
</tr>
<tr>
<td>Active pharmaceutical ingredient facility (foreign)</td>
<td>$60,367</td>
</tr>
</tbody>
</table>

**New user fees under the GDUFA II legislation**

| Contract manufacturing organization (domestic)     | $70,362 |
| Contract manufacturing organization (foreign)      | $47,829 |
| GDUFA program fee: Large size operation            | $1,590,792|
| GDUFA program fee: Medium size operation           | $636,317 |
| GDUFA program fee: Small size operation            | $159,079 |

**Annual GDUFA target for cumulative user fees**

| $493,000,000 | $323,000,000 | $316,000,000 | $312,000,000 | $306,000,000 | $299,000,000 |

Source: PwC Health Research Institute analysis of FDA Federal Register data
Note: All years fiscal. The reauthorization of the Generic Drug User Fee Act went into effect in 2018.

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**Years of exclusivity, by type of exclusivity**

<table>
<thead>
<tr>
<th>Exclusivity available to branded drugs</th>
<th>Exclusivity available to generic drugs</th>
<th>Exclusivity available to biosimilar drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: PwC Health Research Institute analysis
Note: Patent extension for FDA review periods
Note: Patents term extensions under the Hatch-Waxman Act are up to five years in length. May be less.
Note: Interchangeable exclusivity may be extended to 42 months if the product is subject to extensive litigation.

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Cumulatively, changes made by the FDA have resulted in substantial benefits for the generics industry, including faster approvals, new exclusivity, new guidance documents and new staff with which to review applications. A comparison of the last five years shows just how substantial those changes have been (see Figure 5).

These changes may have effects beyond the traditional pharmaceutical industry, allowing new entrants to address drug costs. In January 2018, a group of health organizations including Intermountain Healthcare, Ascension, SSM Health and Trinity Health announced they were going to launch their own not-for-profit generic drug company.9

While plan details remain scarce, the organizations said in a statement that their aim is to manufacture—either directly or through subcontracts—essential generic medications to make them more available and affordable, reducing costs for hospitals and their patients.10

“If the only way to provide our communities with affordable drugs is to produce them ourselves, then that is what we will do,” Richard Gilfillan, CEO of Trinity Health, said in a statement.11 The group may find itself aided by the FDA’s regulatory improvements, which likely will allow their drugs to be approved far more quickly than they would have been just a few years ago.

Figure 5: The FDA has made significant changes to its generic approvals process
How a new generic drug manufacturer might benefit from recent FDA changes

<table>
<thead>
<tr>
<th>2014</th>
<th>Compared with…</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant backlog of more than 1,000 ANDA filings and correspondence</td>
<td>No backlog of ANDA filings or correspondence</td>
<td></td>
</tr>
<tr>
<td>15-month target review time for ANDAs</td>
<td>10-month standard review for ANDAs</td>
<td></td>
</tr>
<tr>
<td>No priority review of generics</td>
<td>8-month review for priority generics</td>
<td></td>
</tr>
<tr>
<td>No market exclusivity for any generic that has already been approved</td>
<td>6 months of exclusivity for competitive generics</td>
<td></td>
</tr>
<tr>
<td>304 new or revised product-specific guidances in 2012-2014</td>
<td>541 new or revised product-specific guidances in 2015-2017</td>
<td></td>
</tr>
<tr>
<td>FDA does not provide information about which drugs lack generic competition</td>
<td>FDA regularly updates list of drugs lacking generic competition</td>
<td></td>
</tr>
<tr>
<td>539 FTEs at the FDA’s Office of Generic Drugs</td>
<td>1,257 FTEs at the FDA’s Office of Generic Drugs</td>
<td></td>
</tr>
</tbody>
</table>

Source: PwC Health Research Institute analysis

Work ahead

Despite the FDA’s emphasis on generics, the industry faces ongoing issues with their applications’ quality, according to an HRI analysis of FDA data. In fiscal year 2017, for example, just 15 of 100 generic drugs reviewed by the FDA were approved, on average. The remaining 85 were returned to manufacturers for additional—sometimes substantive—action, including running new studies or responding to questions about their applications.12

Some drugs didn’t even make it through the FDA’s front door. From fiscal year 2015 through fiscal year 2017, an average of 21 percent of ANDA applicants received refuse-to-file decisions from the FDA indicating that the applications had obvious problems that would forestall approval. These issues included inadequate stability, an issue cited in 31.1 percent of cases; failure to meet “sameness” requirements, cited in 4.6 percent of cases; and inadequate English translation of documents, cited in 17.8 percent of cases (see Figure 6).

These numbers are expected to improve over time. “Every time a generic manufacturer goes through the FDA review process, they gain experience and context that can help inform subsequent application filings,” said Chester “Chip” Davis Jr., president and CEO of the generic and biosimilars trade group Association for Accessible Medicines, in an interview with HRI. Before the generic user fee legislation, less than 1 percent of applications were granted approval after the first review cycle. As of fiscal year 2017, more than 10 percent were approved.13
Finally, some drugs—such as “complex” generics with complex chemical structures, delivery mechanism, dosing and sites of action, among other criteria—are simply difficult to develop. The FDA has explained that these complexities introduce novel scientific and regulatory issues that make them harder to approve as easily as, for example, a simple oral generic product. The FDA has issued two guidance documents to help ease development.14

Can generics solve drug prices?

But even as President Trump and the FDA look to generics as one way to bring down drug prices, the agency’s actions can only do so much.15 The value of drugs going off-patent will decrease from 2018 through 2020, and relatively few blockbuster products are projected to go off-patent until 2022, when 11 are expected to lose patent protection, according to HRI’s analysis (see Figure 7).
Increased competition isn’t just about speeding up access to never-before-approved generics, but also providing more options for existing generics. In part, the FDA is trying to increase competition in markets where there is only one generic. This could create significant price competition for some products. At present, many drugs lack competition on the market. An HRI analysis of data from Medicare Part D, which covers almost all pharmaceuticals, shows that 2,009 drugs (71 percent) have just one manufacturer. Industry consolidation—by generic manufacturers and retail channels—and low margins may reduce or eliminate the incentive to compete in some of these areas, leading to scarcity of competition.

Other noted barriers to competition exist as well. A prime example is Risk Evaluation and Mitigation Strategies (REMS) plans, which are used to control the risks—and supplies and prescribing—of 74 drugs. The FDA has said some companies are “gaming” these plans to prevent potential generic competitors from obtaining supplies of their drugs or coming to market.

Not all drugs going off-patent will be eligible for traditional generic competition. Many are biologics approved through the Public Health Service Act and the FDA’s 351(a) pathway, not the Federal Food Drug and Cosmetic Act and the FDA’s 505(b) pathway. That means those drugs will require biosimilar, not generic, competition. An HRI analysis shows that generic competition would have no effect on 41 percent of the top 100 drugs by revenue, worth more than $600 billion (see Figure 8). This trend is likely to accelerate in the years ahead as the FDA approves an increasing number of biologics each year. The FDA’s Center for Drug Evaluation and Research approved 50 biologics from 2013 through 2017 compared with 28 from 2008 through 2012. Biological drugs also are a primary driver of pharmaceutical cost trend.

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**Figure 8: Most high-selling drugs won’t see competition from traditional generics**

41 of the top 100 projected best-selling drugs of 2018–23 require biosimilar competition.

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**Biosimilars slow to launch**

So far, the biosimilars commercial space has been slow to develop. In December 2017, the FDA reported that drug companies were seeking approval for just 59 biosimilar products. The FDA has approved 11 biosimilar products as of June 2018 (see Figure 9). As of June 2018, three are being marketed. Another five have been subject to extensive litigation, according to an HRI analysis.
But even if the FDA were to begin approving more biosimilars, and their manufacturers were able to get them to market more quickly, additional hurdles remain to them being able to be prescribed or bring down costs. The three biosimilars being marketed are being sold for between 15 and 35 percent off their branded equivalents’ prices. Generic drugs, in contrast, often have discounts in excess of 50 percent in the first year they come to market.25

Many doctors lack familiarity with biosimilars, and would be wary of prescribing them. Sixty percent of clinicians surveyed by HRI in 2018 said they were familiar with biosimilars; 35 percent said they had never prescribed them.26 Sixty-five percent of clinicians told HRI they would be more willing to prescribe biosimilars if there was a meaningful cost difference for their patients; 42 percent said they would if they had a higher degree of confidence in the safety. Forty-one percent said they would be more likely to prescribe if they had a high degree of confidence in its efficacy.27

Many states also have put up legal or regulatory barriers preventing pharmacists or pharmacy benefit managers from automatically substituting brand-name biologics for biosimilar products unless they are found to be interchangeable.28 To date, no biosimilar has been found by the FDA to be interchangeable.29

**Implications:**

**Generics have a new pathway for faster approvals, but generic manufacturers need to invest in operations and quality.** Priority reviews, new exclusivity and additional resources designed to elicit more efficient and expedited reviews can pay dividends for generic companies, but only if they have made sufficient investments in their staff, processes and technological capabilities. More than 80 percent of generic drug companies fail to obtain approval during the first review cycle, indicating that major efficiencies have yet be found.30 As the number of opportunities increases in the complex generics space, companies may find development even more difficult, requiring better-trained staff, new scientific and regulatory capabilities, and new commercialization capabilities to promote their products.

**Branded commercial pharmaceutical teams will need to be able to adapt to consider the impacts of faster generic approvals on revenue cycles.** Faster, more efficient or more high-impact regulatory approvals mean branded drugs may lose sales more quickly than in the past, which could push down sales or result in unanticipated erosion. If companies use new regulatory pathways to specifically target high-priced branded chemical drugs that don’t currently have...
adequate competition, this could have an especially high impact on revenues. But not all products or companies will be affected equally by the FDA’s efforts.

Some generics will experience the same amount of competition. Some products won’t be affected because of patents or exclusivity. Though there will be broader effects, many products will see little or no effect because of market segmentation and existing competition. Generics companies should figure out which opportunities these changes open up, how to capitalize on them and how to prioritize their portfolios.

**Biosimilars companies should invest in physician and patient education and detailing to accelerate biosimilar uptake.** Few physicians and even fewer patients know what biosimilars are. Eighty-three percent of consumers were unable to correctly define what a biosimilar was in a 2016 HRI survey, and 55 percent of clinicians said they weren’t familiar enough with biosimilars to prescribe them (see Figure 10).

The biosimilars market is similar in some ways to the early generics market, requiring greater knowledge and familiarity to help increase prescribing while regulatory and legal issues are ongoing. For some biosimilar manufacturers, hiring detailers may help increase physician knowledge and prescribing. However, that will add costs for biosimilar manufacturers, which are already spending an estimated $100 million to $250 million per biosimilar approval. Companies also should work with insurers to help biosimilar products get preferred placement on formularies. Some biologics with biosimilar competitors are still prescribed because of preferential rebates.

**Figure 10: What’s preventing doctors from prescribing biosimilars?**
A lack of familiarity and access remain top issues for doctors

<table>
<thead>
<tr>
<th>Why have you not prescribed any biosimilar drugs to your patients when prescribing a biologic drug?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I am not familiar with biosimilars</td>
<td>55%</td>
</tr>
<tr>
<td>There are no biosimilars available for the biologic drugs I prescribe</td>
<td>32%</td>
</tr>
<tr>
<td>Concerns about the safety of the biosimilar</td>
<td>20%</td>
</tr>
<tr>
<td>Concerns about the efficacy of the biosimilar</td>
<td>20%</td>
</tr>
<tr>
<td>I am not comfortable with biosimilars</td>
<td>17%</td>
</tr>
<tr>
<td>Lack of patient comfort or familiarity with biosimilars</td>
<td>18%</td>
</tr>
<tr>
<td>The cost difference is not significant enough to warrant it</td>
<td>9%</td>
</tr>
</tbody>
</table>

Source: PwC Health Research Institute survey of 270 clinicians, April 2018. Question: “Why have you not prescribed any biosimilar drugs to your patients when prescribing a biologic drug? Select all that apply.”

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To have deeper conversations about how this subject may affect your business, please contact:

Karen Young  
US Pharmaceutical and Life Sciences Leader  
karen.c.young@pwc.com  
+1 973 236 5648

PwC Health Research Institute

Benjamin Isgur  
Health Research Institute Leader  
benjamin.isgur@pwc.com

Trine Tsouderos  
Health Research Institute Regulatory Center Leader  
trine.k.tsouderos@pwc.com

Alexander Gaffney  
Senior Manager  
alexander.r.gaffney@pwc.com

Kevin Muench  
Health Research Institute Analyst  
kevin.p.muench@pwc.com

Advisory team

Karla Anderson, Principal  
Michael Gordie, Principal  
Erinn Hutchinson, Principal  
Dinkar Saran, Principal  
Philip Sclafani, Principal  
William Suvari, Principal
Endnotes


7 PwC Health Research Institute analysis of FDA FY2017 budget data, when the FDA collected $323 million in generic drug user fees compared with an overall budget of $4.66 billion.


10 Ibid.

11 Ibid.


13 Kathleen Uhli, “Generic Program Drug Update,” small business and industry assistance generic drug forum, April 11, 2018


19 Food and Drug Administration, “Statement from FDA Commissioner Scott Gottlieb, M.D., on new agency efforts to shine light on where situations where drug makers may be pursuing gaming tactics to delay generic competition,” May 17, 2018, https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm607930.htm

20 Food and Drug Administration, “Cumulative number of biosimilar development programs in the BPD Program through the month of May 15, 2018.”

21 Source: PwC Health Research Institute survey of 442 clinicians, April 2018. Question: “What would motivate you to prescribe (more) biologicals?”


26 PwC Health Research Institute analysis of FDA data and company public filings. Biosimilars defined as products having obtained approval through the 351(k) pathway. Current as of May 15, 2018.


28 Source: PwC Health Research Institute survey of 442 clinicians, April 2018. Question: “Are you familiar with biosimilars?”

29 PwC Health Research Institute analysis of FDA data and company public filings. Biosimilars defined as products having obtained approval through the 351(k) pathway. Current as of May 15, 2018.


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