



# TRIANGLE INSIGHTS GROUP

INSIGHTS THAT INSTILL CONFIDENCE

Insights and Perspectives Series

September 2016

## THE U.S. BIOSIMILAR MARKET:

### Do analysts have it wrong?

- Consistency in analyst market penetration forecasts indicates that differentiating characteristics are not being adequately considered
- Penetration rates will vary significantly across indications and geographies
- Analysts are dramatically underestimating biosimilar penetration for some products facing loss of exclusivity

#### Authors:

Barrett Rankin, Partner  
Gautam Aggarwal, Partner  
Alex Sherman, Strategy Consultant  
Rachel Clare, Strategy Consultant

## Introduction

With the looming loss of exclusivity for several key biologic brands, Wall Street analysts are beginning to project the market impact of the first wave of US biosimilars. In our view, analysts are being short-sighted in predicting an overly-standard 40-50% biosimilar penetration rate across molecule types and therapeutic areas – and in using that biosimilar penetration rate to predict the drop-off in sales of reference products. Should all biosimilars be expected to have the same penetration rate? We suggest a more sophisticated

approach be used to account for nuances of different markets and disease states. As we have seen through the uptake of biosimilars in Europe, penetration levels will differ across therapeutic areas and indication.

In this paper, Triangle Insights proposes a framework to more accurately predict biosimilar penetration by accounting for key factors influencing physicians, patients, and payers.

## Current Wall Street View

As the starting point, Triangle Insights pulled several investment analyst reports from the past three years that made specific estimates of US biosimilar penetration or adoption rates. For the purpose of this analysis we focused on three drug classes with varying characteristics: oncology therapeutics (e.g., Avastin, Herceptin), oncology supportive care - namely the granulocyte-colony stimulating factors (e.g., Neulasta, Neupogen), and TNF- $\alpha$  inhibitors (e.g., Humira, Remicade).

Analysts have offered several estimates for market penetration of biosimilars across drugs in these classes (Table 1). Strikingly, these penetration rates generally fall within a tight range of ~40-50%, despite the very different market characteristics for these products.

Triangle Insights believes analysts are not taking into account differences in the underlying molecules and the conditions they treat. Not only are analysts using what we believe to be “blanket” estimates for penetration across a heterogeneous set of opportunities, in some cases they are also significantly underestimating the opportunity for certain biosimilars.

Our opinion is supported by extensive project experience including discussions with more than one hundred physicians, dozens of payers, and several biosimilars manufacturers. While peak penetration may take several years to achieve, Triangle Insights believes that current analyst forecasts grossly underestimate biosimilar penetration for both TNF- $\alpha$  inhibitor and G-CSF classes of products.

If company market values reflect the estimates of Wall Street analysts, there could be substantial upside to biosimilar manufacturer share prices, and a potential for downside pressure for branded manufacturers in the future.

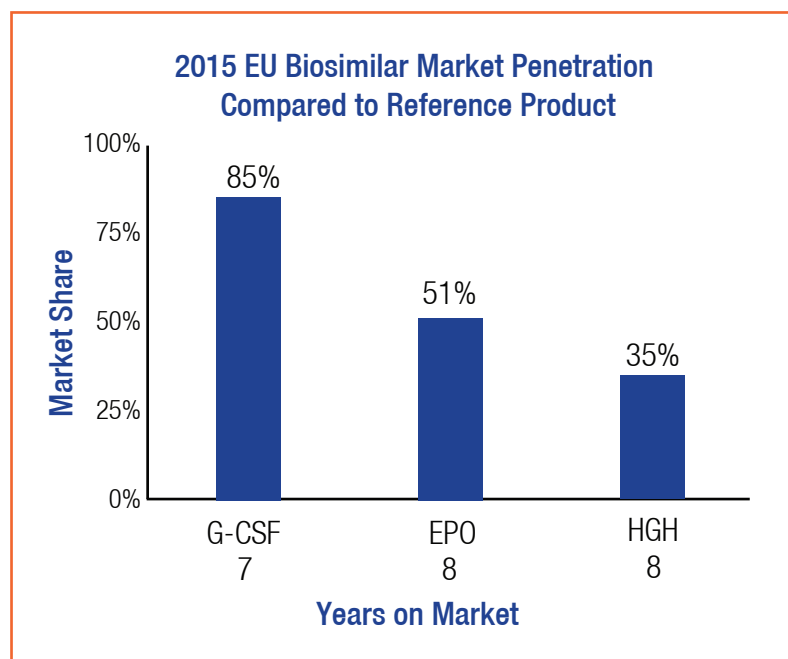
Drug Class	Typical Therapeutic Use	Major Biosimilar Opportunities (2015 US Sales)
Oncology therapeutics	Cancer treatment	Avastin (\$3.2 B) Herceptin (\$2.5 B)
G-CSFs	Supportive Care (following chemo)	Neupogen (\$0.8 B) Neulasta (\$3.9 B)
TNF- $\alpha$ inhibitors	Autoimmune diseases	Humira (\$8.4 B) Remicade (\$4.5 B)

Table 1. Analyst US Biosimilar Penetration Projections for Three Biosimilar Drug Classes

	ISI - 2015	Barclays - 2016	Credit Suisse - 2016	Jefferies - 2016
Oncology	-	40%	50%	36%
G-CSF	45%	45%	50%	-
TNF- $\alpha$ inhibitors	-	40%	50%	45%

Triangle Insights' point of view is also backed by evidence of the more developed biosimilar market in Europe<sup>1</sup>. Here, we observe both significant differences in biosimilar penetration across drug classes and the potential for very high levels of biosimilar adoption. As an example, biosimilar products account for ~85% of the European market for G-CSFs.

<sup>1</sup>IMS Health, 'The Impact of Biosimilar Competition', June 2016.

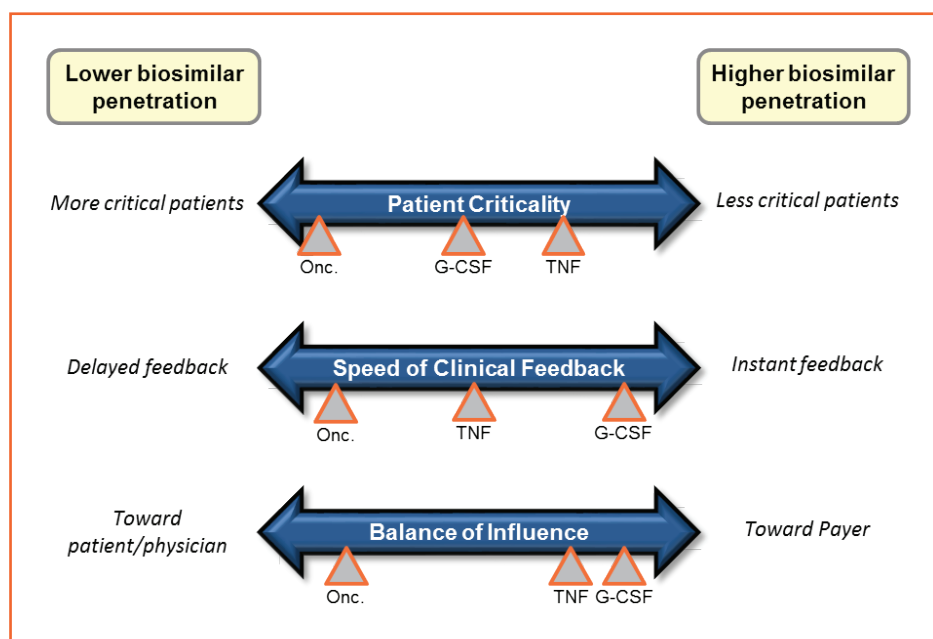


Source: Adapted from IMS Health, 'The Impact of Biosimilar Competition', June 2016.

## Triangle Insights Biosimilar Framework

Factors including but not limited to stakeholder influence and characteristics of the condition being treated drive market receptivity to biosimilar products. To anticipate the influence of these factors, Triangle Insights proposes using a framework that classifies

products based on three characteristics: patient criticality, speed of clinical feedback, and balance of stakeholder influence. Through the consideration of these factors, a more accurate prediction of biosimilar penetration by drug-type will be achieved.



Source: Triangle Insights

**Patient Criticality:** The criticality of the condition being treated can affect market receptivity to a biosimilar, with those products targeting less critical patients likely to achieve higher market penetration. We've developed this hypothesis through interviews with physicians and payers for a variety of biosimilar opportunities. Physicians and payers alike will be less willing to transition patients to biosimilar products in situations such as oncology therapeutics where the product's efficacy is directly linked to survival outcomes. The more critical a patient's condition, the more sensitive a treating physician will be to preferring a tried-and-true solution rather than a potentially unknown biosimilar. Accordingly, payers will be less willing to dictate product choice to a physician under these circumstances.

In the words of payers, “We don’t want to have an uncomfortable life-or-death conversation with the treating physician.” Conversely, for biosimilars that treat less critical patients, both physicians and payers will be less apt to stick with the known reference product.

**Speed of Clinical Feedback:** The ability to quickly measure and assess a patient’s response to a biosimilar will also influence market acceptance. Biosimilar products that result in an efficiently measured response, such as the increase in white blood cell counts following administration of G-CSFs, allow practitioners to alter treatment if desired outcomes are not achieved (perhaps back to the reference product). This notion is strengthened for conditions in which timing of therapeutic response is less clinically relevant.

The flip side of this notion could be represented by oncology therapeutics for a rapidly advancing cancer. Oncologists will be more likely to shy away from using an unknown biosimilar for a quickly-progressing disease – especially if they know getting reliable feedback quickly is difficult and they may have only one chance to treat.

**Balance of Stakeholder Influence:** The setting in which care is provided, market dynamics, and therapeutic area can heavily influence stakeholders’ roles in determining choice of treatment.

For example, hospital administrative personnel can influence product selection to lower cost products in less-critical areas, such as supportive care G-CSF treatments - even though the physician may prefer a branded product. In the world of TNF- $\alpha$  inhibitors, where payers have begrudgingly accepted year-over-year double-digit price increases from leading manufacturers, you can bet they’re ready to exert a very strong influence in the transition to biosimilars. In the words of Express Scripts Chief Medical Officer Steve Miller,

“The importance of biosimilars is this: For the last five years, the drug spend in the U.S. has been fairly flat because for every patient that needs to go on one of these new expensive drugs, we’ve been able to move 10 patients to generic drugs. Now that generic fill rates are over 80%, there’s no longer that opportunity to move patients to generics. The savings for America from biosimilars over the next decade could be \$250 billion. That buys a lot of hepatitis treatment, a lot of cancer treatment, a lot of cholesterol treatment. So biosimilars can do great things for this country because they can make the same headroom that generics made in the past.”<sup>2</sup>

---

<sup>2</sup>A Conversation with Steve Miller, MD: Come in and Talk with Us. Managed Care Magazine, April 2015.

## Pricing and Competition

---

Beyond considerations of market uptake, there are also assumptions being made about pricing for biosimilars. Stakeholders generally agree on price discounts offered by biosimilar manufacturers in the early years following biosimilar launches. Company management teams, payers, analysts, and physicians have all suggested a 20% to 30% initial discount to brand pricing. This discount percentage is somewhat obfuscated by the lack of transparency of true net price (due in part to manufacturer-PBM contracting and rebates). Regardless, there is concern that as more players enter the market, pricing will be substantially depressed, leading to unfavorable economics for biosimilar manufacturers over the longer term. This outcome is unlikely to be widespread as the number of competitors will be limited for the majority of biosimilar molecules.

Considering the high cost of entry, required development and manufacturing expertise, and potential legal barriers, we believe the majority of biosimilars will face fewer than five competitors. In the small-molecules generics market, pricing discounts have been observed to remain competitive until the number of manufacturers is greater than five<sup>3,4,5</sup>. Among the forty biologic products that are anticipated to have over a billion dollars in worldwide sales prior to their loss of exclusivity, only six face five or more biosimilars that have advanced to clinical trials. Fewer competitors, and cognizance of the costs of developing a biosimilar, should lead to greater stability in the biosimilar pricing environment.

---

<sup>3</sup>Owen, Luke M. and Wendling, Brett W. ‘The Effect of Generic Drug Competition on Generic Drug Prices During the Hatch-Waxman 180-Day Exclusivity Period’. Working Paper No. 317. Bureau of Economics Federal Trade Commission. April 2013.

<sup>4</sup>FDA. ‘Generic Competition and Drug Prices’. Last updated 5/13/2015.

<sup>5</sup>Grabowski et al. ‘Entry and Competition in Generic Biologics’. Managerial and Decision Economics. 2007.

## Closing

Our work within the biosimilars space as well as an examination of historical performance of biosimilars in Europe leads us to assert that uptake of biosimilars may vary dramatically, but in line with identifiable characteristics of the product and market. Using a framework that accounts for patient criticality, the speed with which

physicians receive clinical feedback, and the balance of stakeholder power/incentives can help pharmaceutical and biotech decision-makers tailor their estimates of the penetration rate of different biosimilars when evaluating potential opportunities.

## About Triangle Insights Group

Headquartered in Research Triangle Park, Triangle Insights Group, LLC is a strategy consulting firm providing guidance on the most critical business issues to leaders in life sciences organizations. The firm's approach combines deep knowledge of the industry across therapeutic areas and functional groups, with a dedication to creativity and disciplined critical thinking. Recommendations from Triangle Insights Group are original, relevant to the industry environment, and supported by rigorous analytics. Clients of

Triangle Insights Group include large pharmaceutical companies, emerging biotechnology firms, diagnostics manufacturers, medical device companies, and private equity investors.

**For more information about Triangle Insights Group, visit [www.triangleinsights.com](http://www.triangleinsights.com) or call (919) 813-6079.**

This document includes or might include certain statements, estimates and forward-looking projections with respect to anticipated future performance. Such statements, estimates or forward-looking projections reflect various assumptions made by TIG that might or might not prove to be correct and involve various risks and uncertainties, including adverse market and economic conditions, legal and regulatory uncertainties, product competition and the occurrence of adverse safety events. TIG does not undertake to update these forward-looking statements to reflect the occurrence of events after the date of this document. The analyses provided by TIG in this document or otherwise are based on data that has been consolidated from a variety of third-party sources, may not have been independently verified by TIG, may not constitute a large enough sample size to produce reliable results, and is subject to uncertainty, constant change and a multitude of factors not all of which are addressed by these analyses. All analyses provided by TIG in this document or otherwise are provided "as is" and without any representation, guarantee or warranty of any kind, express or implied, including, without limitation, warranties of merchantability, fitness for a particular purpose or use, title or non-infringement.


**Gautam Aggarwal, Partner** [gaggarwal@triangleinsights.com](mailto:gaggarwal@triangleinsights.com)

Has thirteen years of pharmaceutical and consulting experience. Gautam focuses on providing strategic guidance to clients within life sciences organizations. His recent engagements have involved commercial assessment, indication prioritization, white-space strategy, commercial model design and in-licensing/out-licensing support.

Gautam has provided strategic advice to a wide range of clients, spanning Top-5 pharmaceutical manufacturers, emerging biotechnology manufacturers, bio-pharmaceutical investors, and service providers to bio-pharmaceutical companies. He has spoken at several industry conferences (LES, CED, EBD, BIO-Windhover, CHLA, Banff Venture Forum) and has published a peer-reviewed article on deal timing.

His previous employers have included GlaxoSmithKline, Boston Consulting Group and Campbell Alliance, where he was a Senior Practice Executive and led business/corporate development efforts for the central region. Gautam received his M.B.A. from the Fuqua School of Business at Duke. He holds an M.S. and a B.S. in Bio-Statistics from UNC-Chapel Hill.


**Chris Apolito, Partner** [capolito@triangleinsights.com](mailto:capolito@triangleinsights.com)

Has over fifteen years of pharmaceutical and biotechnology experience, with positions in discovery research, business development, and management consulting. His previous employers include GlaxoSmithKline, AVOS Life Sciences, and Campbell Alliance.

Chris has worked as a Senior Practice Executive with Campbell Alliance where he led the company's Business/Corporate Development efforts for the NY and NJ region. His recent management consulting experience has centered on corporate strategy and market opportunity assessments for life science companies and investors.

While at GlaxoSmithKline, Chris's scientific accomplishments led to multiple patent authorships and peer-reviewed publications, as well as discoveries resulting in over \$30 million in company cost savings. In business development roles, Chris was responsible for corporate strategy and reviewing in-licensing and out-licensing opportunities. Chris earned an M.B.A. from the University of North Carolina Kenan-Flagler Business School as a member of Beta Gamma Sigma academic honor society. He has an M.S. from the University of Buffalo and a B.S. in Biochemistry from the University of Rochester.


**Ben Bonifant, Partner** [bbonifant@triangleinsights.com](mailto:bbonifant@triangleinsights.com)

An experienced consultant to leaders of global pharmaceutical and biotechnology organizations, and to decision makers of large private equity funds. Ben has been a management consultant for more than twenty years. His perspectives on developments in the life sciences market are frequently published in industry and strategy journals.

Recent by-lined articles have appeared in Pharmaceutical Executive, InVivo, Nature Biotech, RPM Report, and Scrip. In addition, Ben's case studies on the pharmaceutical industry have been used in graduate business programs.

Ben is the chairman of the Life Sciences Sector of the Licensing Executive Society. He has also been a member of the program committee for the BIO International Convention. Prior to the founding of Triangle Insights Group, Ben was the leader of the Business Development Practice at Campbell Alliance and a partner in the Strategy practice at Oliver Wyman (formerly Mercer Management Consulting/Strategic Planning Associates). Ben earned an M.B.A. from the Stanford Graduate School of Business and a B.S. from Duke University.


**Kate Kitsopoulos, Principal** [kkitsopoulos@triangleinsights.com](mailto:kkitsopoulos@triangleinsights.com)

An experienced life science consultant with original industry roots in pharmaceutical development. She has managed and led numerous global projects across a broad spectrum of therapeutic areas, including: oncology, orphan disease, gene therapy, diabetes, infectious disease, pain, psychiatric disease, women's health. She has developed a product and portfolio strategy focus and expertise across the biotechnology, pharmaceutical (branded and generic), biosimilar, diagnostic and medical food industries. Her recent project experience includes opportunity identification and assessment, portfolio and franchise vision and planning, competitive assessment and planning, customer prioritization and conversion (patient, provider and payer), partnering support, and the identification and prioritization of promotional targets and messaging.

Kate's previous strategic consulting experience includes: Platform Advisors, Campbell Alliance, and Deloitte. Kate also has research experience in discovery and development at AlphaVax, Inc., Research Triangle Institute, and Walter Reed Army Institute of Research.

Kate received her M.B.A. from Kenan-Flagler Business School at UNC Chapel Hill. She also holds an M.S. in Biotechnology from Pennsylvania State University and a B.S. in Biology from Texas A&M University.


**Barrett Rankin, Partner** [brankin@triangleinsights.com](mailto:brankin@triangleinsights.com)

Has led a wide spectrum of strategic engagements with life science industry clients ranging from large multinational pharmaceutical companies to venture-backed start-ups. Recent engagements have included orphan drug commercial assessments and diligence, an oncology franchise strategy, and biosimilar opportunity assessments.

Barrett's previous management consulting positions in the life sciences industry were with Campbell Alliance and Boston Healthcare Associates. He also founded an independent life sciences consulting firm prior to the founding of Triangle Insights.

His background also includes client-side experience within the pharmaceutical industry. For plasma manufacturer Grifols Therapeutics (previously Talecris), Barrett led market intelligence for the pulmonary franchise including Prolastin-C, an orphan drug indicated for alpha-1 antitrypsin deficiency. Barrett received his M.B.A. from the Tuck School of Business at Dartmouth College. He holds a B.A. from the University of Virginia. He has been a lecturer at several life science industry conferences.