Understanding Biologics, Biosimilars, and Patient Access to Innovative Treatments
Biologics: The Basics
Biologics Have Revolutionized Healthcare

Biologics are used by more than 350 million patients worldwide to treat complex diseases including cancers, autoimmune disorders, and AIDS.

Biologics are medicines made from living organisms and are far more complex and difficult to develop and manufacture than traditional chemical drugs.

Source: PhRMA
Road to Finding Right Treatment is Long and Hard-Fought

For some patients, it can take ten years or more to receive an accurate diagnosis and find an effective biologic medicine that allows them to manage their symptoms.

For certain conditions, biologic medicines are the most or only effective treatment.

Source: PhRMA
Changes in therapy can lead to an immune response and/or a loss of response to the new and old therapy, leaving a patient with no or significantly fewer treatment options available, or leading to a more serious medical option, such as surgery.
Biologics: Complex, Sensitive Products & Diseases States
Biologics are **GROWN** not **MADE**

- Small-molecule medicines are **chemicals** made following a formula, which makes it possible for them to be exactly duplicated.

- Biologics are patterned after **proteins** the body itself produces.

Sources: EuropaBio; **NDT Plus**
Biologics Are Complex

Biologics are **COMPLEX** molecules—up to 1,000 times larger than conventional medicines.
Biologics are Sensitive to Manufacturing Changes

Changes in manufacturing process can change the product in a manner that is not discovered until it is used in humans.

Sources: Nat Biotechnol; Biopharm Int.
“Now there have been several episodes with one drug, erythropoietin, where people made antibodies based on some small manufacturing changes, and this is in the reference world, not the biosimilar world, and people then had antibodies against their own hormone erythropoietin and it resulted in something called pure red cell aplasia and meant they would be transfusion-dependent the rest of their lives.”

- Dr. Janet Woodcock, FDA
Biosimilars: The Basics
What Are Biosimilars?

• Biosimilars are **highly similar** to a particular biologic drug, but are **not the same**.
• Like snowflakes, a biosimilar **cannot exactly replicate** the reference biologic.
• Biosimilars **are not generic biologics**.
Biosimilars Are Not Generics

• Biosimilars can **never be an exact copy** of a biologic.

• This is true even if a biologic and its biosimilar start from the same **genetic blueprint**, in much the same way as **identical twins**, despite the same genes, have **different fingerprints**.

Source: Letter from FDA to Congress
Switching a Patient from a Biologic to a Biosimilar is a Change in Therapy

If one biologic or biosimilar works well for you it does not mean another will work exactly the same way.

A change from a biologic to a biosimilar is a change in therapy.
A Change in Therapy Could Provoke an Immune Response in Patients

- Immunogenicity is the ability of a particular substance, such as an antigen or epitope, to **provoke an immune response** in the body of a human or animal.
- The variations between an innovator biologic and a biosimilar could **trigger an attack** against a biosimilar by the body’s defenses.
- This could cause **unwanted and/or unsafe symptoms** or render biologic treatment options less effective.

Sources: EMA, Pharmaceutical Sciences, CDER, Biosimilar News
An Immune Response Can Impact A Patient’s Disease Stability

• If your medicine is working for you, the consequences of treatment nonadherence can include disease progression, reduced functional abilities, and a lower quality of life.

• Any change in therapy should be at the direction and discretion of the physician, in consultation with their patient.

Physicians **Oppose Switching Stable Patients Until More is Known**

“Experience outside the US with biosimilar erythropoietin has indicated that a serious adverse reaction due to immunogenicity is a valid and very real concern for biosimilar products...the ACR is concerned that, at this time, there are too many unknown variables to presume that repeated switching of biologic drugs would be safe practice.”

“Formulary-driven switching is based on the assumption that cost savings can be achieved with drugs from the same therapeutic class...Numerous studies have found this basic principal to be false in terms of both quality of care and actual cost savings as reduced effectiveness of the switched medication or the effects of medication stability disruption can cause adverse reactions and loss of effectiveness, both of which lead to higher-cost patient outcomes.”
Current Policy and Market Factors Increase Likelihood of Switching of Stable Patients

Physicians, patients, and pharmacists may be confused as the numbers of biosimilars increase.

Multiple versions of biosimilars approved for the same originator biologic medicine will present opportunity for multiple therapy switches.

Insurance companies and pharmacy benefit managers may promote switching in order to cut costs and increase profits.
Increasing Numbers of Biosimilars on the Market Could Lead to Physician, Patient, and Pharmacist Confusion

• Currently 900 biologics, biosimilars, and non-comparables in development.

• Possible to have multiple biosimilars approved for same originator biologic with some approved for different indications.

• Some biosimilars may be interchangeable, making them eligible for substitution. Others may not.
Two Biosimilars Approved in the US

Zarxio
(Biosimilar for Neupogen)
- First biosimilar approved in the US.
- Small molecule biosimilar.
- Used to help cancer patients reduce the likelihood of getting an infection.

Remsima
(Biosimilar for Remicade)
- First biosimilar monoclonal antibody approved in the US.
- Used to treat a variety of autoimmune diseases including Chrohn’s disease, rheumatoid arthritis, plaque psoriasis, and others.
Insurers May Promote Switching To Cut Costs and Increase Profits

Insurance companies are under pressure to cut costs.

Insurers may impose policy changes that effectively force switching to biosimilars by imposing tactics like limited formularies and increased copayments.

Patients may be forced to switch even if they are stable on their current biologic.
Biosimilars: Policymakers
Biosimilars Policy in the United States

In 2010, Congress passed the Biologics Price, Competition, and Innovation Act (BCPIA) which gave the Food and Drug Administration (FDA) authority to review and approve biosimilar versions of FDA-approved biologics.

The law established standards to protect patients from unsafe switching and assure biosimilar safety and efficacy.

FDA is now writing the rules biosimilars must meet to comply with the law. Early actions by FDA raise questions about whether patient safety will be adequately protected.

While the BCPIA provided for patient safety, regulators’ recent actions may put safety at risk.
FDA Implementation of Biosimilar Law: Concerns for Patient Safety

While FDA appears likely to require distinguishable names of biosimilars to reduce confusion and allow adverse event tracking and to require labeling that identifies products as biosimilars...

**FDA’s actions may threaten patient safety by:**

1. **Endorsing “one-time switching”** that could give the green light to insurers to promote multiple therapy switches.
2. **Allowing its advisors to make scientific recommendations about approval of biosimilars influenced by costs.**
Patient Groups Are Speaking Up

Already, many patient groups have spoken out about the issue, using letters to FDA and elected officials, social media posts, public events, membership surveys, and op-eds to make their voices heard.

**POLITICO Pulse**

**Patient Groups Want E&C to Talk Biosimilars, Patient Safety**
Jan. 8, 2016

“Patient groups are calling on the House Energy and Commerce Committee to convene a hearing on biosimilar drugs and patient safety.”

**Orlando Sentinel**

**Protect People from Risky Drug Swapping**
Jan. 29, 2016
By Dr. Pamela Freeman
President
Florida Society of Rheumatology

“Nonmedical switching is a breach of both trust and contract terms.”

**The Hill**

**FDA Must Put Patients First In Biosimilar Approval Process**
Feb. 4, 2016
By Larry LaMotte
Vice President, Public Policy
Immune Deficiency Foundation

“It is imperative Congress take steps to guarantee strong and clear standards for review and processes in place to protect patient safety.”
State of Play: Initial Progress on Biosimilar Awareness; More Action Still Needed to Protect Patients

Patient and provider organizations have succeeded in raising awareness among policy makers about the need for more patient protection in biosimilars approval policies.

- Patient organizations form Patients for Biologics Safety and Access (PBSA) to promote safety concerns.
- Congress has held two hearings focused biosimilars policy.
- The Alliance for Patient Access (AfPA) hosts an educational event featuring Dr. Janet Woodcock.

But MORE needs to be DONE!
# Ways To Be Involved

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<td><strong>Educate Members.</strong> Ensure that your members know about this important issue. As the ones most affected by potential biosimilar legislation, patients need to understand the implications in their lives and in their health regimens of new regulatory developments.</td>
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<td><strong>Reach Out to Elected Officials.</strong> Over the course of the year, engage elected representatives and educate them about the intricacies of the biosimilars debate and the important role that they should play in ensuring patient access to safe medicines.</td>
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<td><strong>Attend and Promote Educational Events.</strong> Take advantage of events on the issue of biosimilars by attending them and inviting others to come too. Forums, roundtables, conferences, and other gatherings are an excellent opportunity to make sure the patient story gets told before important decisions are made about these medicines.</td>
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<td><strong>Make Your Voice Heard in Local Outlets.</strong> Share your concerns about biosimilars with a wide audience through op-eds and letters to the editor in local newspapers.</td>
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<td><strong>Leverage Your Members’ Experiences.</strong> Your members are an excellent resource for advocates—they have the personal experiences that can put names and faces to the cause of patient safety. Collect the stories of your patient members, and disseminate them widely.</td>
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<td><strong>Connect with More Advocates by Widely Sharing Contact Information.</strong> Encourage others to get involved in this debate by establishing points of contact for your individual organization and the larger coalition. Building issue-based websites and leveraging social media platforms should be part of this effort.</td>
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Ways to Be Involved: Next Steps

Connect online to learn more about biosimilars and to be the first to hear about opportunities to get involved.

Connect with NMQF

- Contact [GARY SOMETHING] at National Minority Quality Forum to find out about advocacy opportunities.
- Share today’s educational handouts with your organization to get them involved in biosimilar advocacy.

Connect with PBSA

- Sign up at biosimsafety.com to learn more about biologics and opportunities to get involved.
- Follow PBSA on Twitter (@biosimsafety) and like us on Facebook (facebook.com/BiosimSafety).