Impact of a virtual pharmacy service on biosimilar conversion, total cost of care, and the provider experience

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Background

- Despite growing availability of biosimilar products in the United States, utilization rates remain lower than anticipated.[1]
- Delayed uptake in prescribing of biosimilars is likely multifactorial, including limited payer financial incentives, patient and/or provider knowledge gaps, and a cumbersome utilization management process driven by formulary variations and cost to the patient.[2–5]
- A 6-month pilot program was developed between a large national specialty pharmacy and a community-based rheumatology clinic. The pharmacist virtually completed a formulary evaluation, drafted the appropriate adalimumab biosimilar based on payor preference and patient cost, and the provider reviewed, signed and sent prescription to patient's preferred pharmacy. This model centralized patient education and coordinated PA management (Figure 1.).
- This study evaluates how a centralized model impacts operational processes and patient access to therapy.

Objectives

Evaluate the impact of streamlining the adalimumab biosimilar prescribing process on the quadruple aim, including patient experience, population health, total cost of care, and provider experience.

Methods

Study design

A retrospective, observational study with Southwest Medical Associates (SMA) and Optum Specialty Pharmacy from February 2025 – March 2026. This study was deemed exempt by UnitedHealth Group Institutional Review Board.

- Individuals were followed 7 months after the index date for retention outcomes.

Data source

Optum Specialty Pharmacy prescription dispensing system database and SMA electronic health records (EHR).

Patient selection criteria

- Age ≥18 years as of the index date.
- New to therapy or previously on originator adalimumab .
- FDA-approved indication for adalimumab.
  - Index date was assigned on first shipped date of adalimumab.
- Scheduled appointments at pre-specified rheumatology clinics with referral to the clinical pharmacist for biosimilar evaluation.

Study outcomes

- **Patient experience and population health were measured by:**
  - Initial conversion rate = change from originator adalimumab to biosimilar products.
  - Prior authorization (PA) submission rate = proportion of prescriptions requiring PA.
  - PA approval rate = proportion of prescriptions with approved PA.
  - Turnaround time = time to shipment from 1) pharmacy service referral and from 2) pharmacy prescription receipt.
- **Total cost of care was measured by:**
  - Biosimilar utilization = total number of biosimilar dispenses.
  - Biosimilar retention = proportion of patients maintained on biologic at each fill.
  - Payer cost savings = difference in plan originator adalimumab to biosimilar wholesale acquisition cost (WAC).
- **Provider experience was measured by:**
  - Provider acceptance rate = provider accepted biosimilar recommendations / total pharmacist biosimilar recommendations.
  - 5 question Likert-scale survey administered at end of pilot.
- **Statistical analysis**
  - Descriptive statistics were used to analyze outcomes.

Results

Table 1: Patient baseline characteristics

Demographics	Overall study population (N=207)
Age, mean ± SD	56.3 (13.7)
Age group	**N (%)**
18-29	7 (3.4)
30-49	50 (24.2)
50-64	93 (44.9)
65-79	46 (22.2)
80+	11 (5.3)
Gender	
Female	145 (70)
Therapy status	
New to therapy	66 (31.9)
Refill	141 (68.1)
Insurance type	
Commercial	131 (63.3)
Medicaid	26 (12.6)
Medicare	50 (24.1)

Figure 1: Biosimilar and PA rates

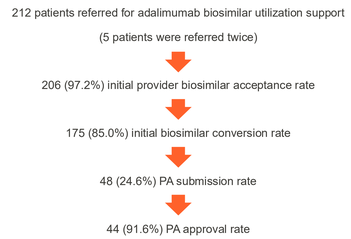

Figure 2: Virtual pharmacist biosimilar service and timeline of prescription processing

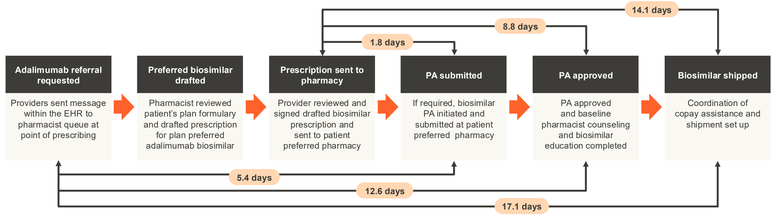

Figure 3: Biologic retention (N=159, shipment data available)

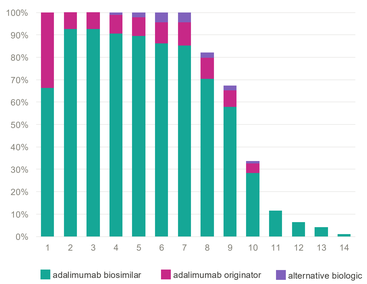

Table 3: Payer cost savings (N= 159, shipment data available)

958
Total adalimumab biosimilar dispenses

$5.4 million
Change in WAC between adalimumab biosimilar and originator

30% WAC reduction
To account for unknown factors such as contract prices and rebates

$1.6 million
Total payer savings opportunity

Table 2: Provider satisfaction survey (N=3, 60% response rate)

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I feel this pilot saved me time, N (%)				1 (33)	2 (67)
2. This pilot has decreased my workload, N (%)				1 (33)	2 (67)
3. This pilot has improved the patient-provider experience, N (%)			2 (67)	1 (33)	
	Strongly Dissatisfied	**Dissatisfied**	**Neutral**	**Satisfied**	**Strongly Satisfied**
4. Overall, how satisfied are you with the pilot? N (%)				2 (67)	1 (33)
	0 minutes	**5-10 minutes**	**15-30 minutes**	**45-60 minutes**	**> 1 hour**
5. How much time do you feel this pilot saved you per patient? N (%)		3 (100)			

Conclusion

- The study findings present real-world evidence of a 6-month pharmacist-led virtual biosimilar conversion pilot.
- Initial conversion rate was higher than national trends[1] at 85%, with the majority of those not resulting in conversion due to patient preference vs. provider hesitancy.
- The collaboration with a pharmacy team optimized the end-to-end process, from biosimilar selection based on formulary preference to PA support, and time to dispense.
- Identification of formulary preferred products eliminated 76% of prescriptions from requiring a PA submission, reducing time until the prescription was ready to dispense.
- Embedding pharmacist PA workflows directly into operations reduces administrative delays that occur when responsibility is placed solely on the providers.
- When comparing the difference in WAC between originator adalimumab and an adalimumab biosimilar, a cost difference of approximately $5.4 million was identified.
- To account for unknown factors such as contract prices and rebates, an assumption of payer sayings opportunity was reduced to 30% WAC, equating to approximately $1.6 million cost reduction.
- Providers agreed or highly agreed that this pharmacy service saved provider time, decreased their workload, and were overall satisfied with service offering.
- This model could be scaled through partnership with care delivery organizations and payers, while leveraging a remote pharmacist team to help guide the work.
- Although the pilot utilized manual workflows, future automation of routine operational tasks could improve scalability and efficiency. By directing only exception-based cases to pharmacists, the model would enable pharmacists to focus on high-value clinical activities, including patient care, medication optimization, and provider support.

Limitations

- The pilot was completed at a single rheumatology care delivery organization and therefore, may not be generalizable to other populations.
- Initial biosimilar conversion rate was determined by dispense data from a large mail order specialty pharmacy, therefore the actual initial biosimilar conversion rate may be higher.
- Claims data could not be obtained to confirm 'true' payer savings. However, the approximation is a conservative approach to demonstrate the financial potential of biosimilar conversion without fully understanding all factors at play.

Learn more

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