Evaluating the Impacts of Specialty Pharmacist Interventions and Outcomes in Rare Lung Disease

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BACKGROUND

Rare lung diseases like Bronchiectasis, Cystic Fibrosis (CF), and Nontuberculous mycobacterial lung disease (NTM) present considerable management challenges for patients, caregivers, and healthcare professionals. Patients affected by these diseases often have complex medication regimens with frequent adverse effects. This complexity frequently leads to medication nonadherence, more frequent adverse events, and heightened medication access issues.

Challenges in this population have been described across each of these rare lung diseases. One paper discussed how the medication use burden, and transition from adolescence to adult-hood in CF contribute to lower adherence rates in our adolescent population, some being cited as low as 40%.1 Another discussed the challenges in NTM and key risks for poor outcomes given the extensive multi-drug regimens, high burden of side effects, and complexity of management.2 While many studies have been conducted showcasing the value of pharmacist interventions in specialty pharmacy, there is an absence of data examining interventions in rare lung diseases performed at personalized rare disease specialty pharmacies.. This evaluation is aimed to further understand the frequency and type of interventions performed in this population.

OBJECTIVE

The primary objective of this study is to describe the type of interventions performed by personalized rare disease specialty pharmacists at VytlOne specialty pharmacies in the rare lung disease population, and to examine the outcomes these helped achieve.

METHODS

We performed a retrospective analysis of pharmacist interventions in rare lung diseases (Bronchiectasis, CF, or NTM) across three VytlOne specialty pharmacies. The study period spans from February 1, 2025 through February 28th, 2026. An intervention was excluded if it had been associated with multiple outcomes.

Intervention Categories:

Interventions were documented under one of 6 primary intervention types:

- Adherence/Persistence
- Affordability
- Health and social maintenance/Coordination of care
- Medication management/optimization
- Safety
- Supply chain

Outcomes:

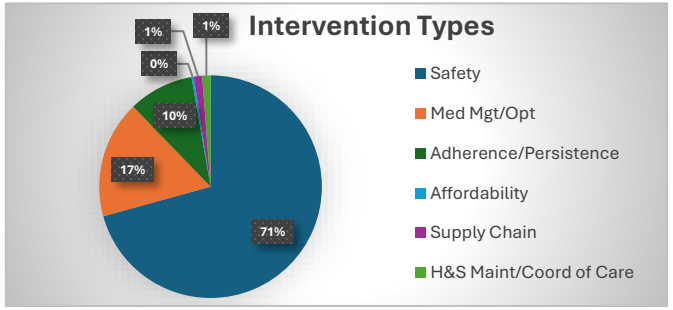
The interventions were associated with an outcome at the discretion of the reporting pharmacist. Pharmacists were asked to associate only one outcome with each documented intervention in accordance with the primary intervention. Outcomes were logged under one of fifteen predefined options shown in the results.

RESULTS

A total of 5,065 patients were identified over the predefined time window. Of these patients, a total of 958 (18.9%) had at least one pharmacist intervention documented with some having multiple interventions. Patients with performed interventions were primarily female and 65 years of age or older.

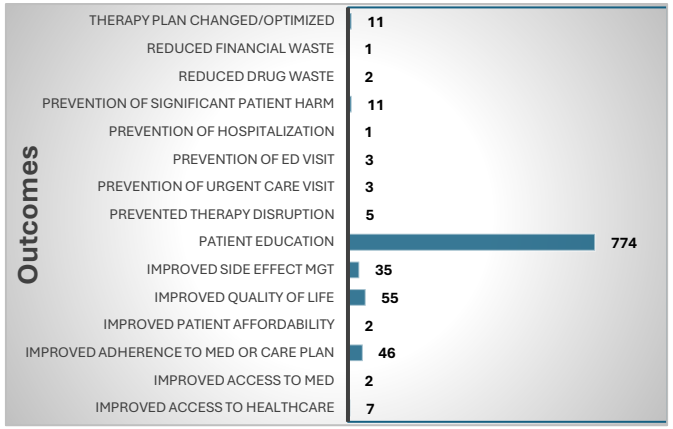
Interventions:

A total of 1,243 interventions were documented. Safety was the number one reported intervention category at 71%. Most of the reported safety interventions were regarding common side effect management.



Outcomes:

958 of the interventions were associated with an outcome. Patient education was the number one reported outcome followed by improved quality of life, and improved adherence to the medication/care plan.



CONCLUSIONS

71% of the interventions documented were under the safety category, indicating the vulnerability this population of patients faces when engaging with their treatment plans.
The most common action taken and outcome achieved was patient education, indicating that additional education and reinforcement played a vital role in meeting this population's needs.
Further investigation is necessary to identify the key areas where these patients often required additional education and support to better guide them on their care journey.
Clinical programs can be developed to provide further patient support and confidence when engaging with their treatment plans.
These findings support the value of personalized rare disease specialty pharmacists in rare lung diseases by demonstrating their strength in education , and safe treatment plan engagement.
Rare lung diseases are complex and often leave patients with more questions than answers. Rare disease specialty pharmacists are uniquely positioned to empower patients and ensure they have the knowledge to be successful.

LIMITATIONS

- This study did not include interventions where pharmacists associated their intervention with multiple outcomes which may introduce selection bias
- While outcomes were associated with these interventions, being a retrospective study a true cause and effect relationship is challenging to conclude.

References:
1. Abraham O, et al. The pharmacist's role in supporting people living with cystic fibrosis.
2. Metersky ML, et al. Current challenges in pulmonary nontuberculous