Fast-Tracking Rare Diseases: Use of FDA Expedited Pathways for Orphan Drugs

Authors

Sam Dean, MBA,[1] Kristen A. Cribbs, PhD, MPH[1]

Background

- Regulatory designations for orphan conditions and expedited review pathways are designed to accelerate access for innovative therapies.[1]
- This study examined how frequently expedited review pathways are used for orphan-designated drugs over the past decade.

Methodology

- We searched FDA databases to identify orphan drugs with FDA indication approval via an expedited pathway (i.e., Priority Review, Fast Track, Breakthrough Therapy, Accelerated Approval) between January 1, 2015, and December 31, 2024.[1-5]
- For identified drug indications, we reviewed FDA letters to abstract data on approval status, drug type, therapeutic area, and expedited pathway.
- Descriptive analyses were conducted.

Results

- Among the 338 orphan indications approved during the study period, 180 were approved via an expedited pathway (53.3%), encompassing 144 unique drugs. (Fig. 1)
- Expedited pathway approvals were most frequent (percentage based on drugs approved for respective year) in 2018 (61.5%; 24/39) and 2024 (60.0%; 3/5).
- Most approved indications were small molecules (67.2%; 121/180), followed by biologics (22.2%; 40/180) and nucleic acid/RNA therapies or monoclonal antibodies (10.6%; 19/180). (Fig. 2)
- Expedited approvals were heavily concentrated in hematologic/circulatory diseases (31.7%; 57/180), followed by brain and nervous system disorders (10.6%; 19/180), and immune system disorders (9.4%; 17/180).
- Among expedited indications, the majority (83.3%; 150/180) were reviewed under >1 pathway; 2 pathways was the most common number used (50.7%; 76/150), with an average of 2.37 pathways per indication. (Fig. 3)
- Of indications with a single pathway (18.2%, 30/180), Priority Review was the most common (56.7%, 17/30), and Fast Track was the least common (6.7%, 2/30). (Fig. 4)

Conclusions

- Over the past decade, more than half of orphan drug indications were approved through an FDA expedited pathway, with Priority Review used most frequently.
- Future analysis should assess the impact of these regulatory incentives on drug development timelines and access.

References

1. U.S. Food and Drug Administration. Fast track, breakthrough therapy, accelerated approval, priority review. Updated June 12, 2023. Accessed April 28, 2026. https://www.fda.gov/patients/learn-about-drug-and-device-approvals/fast-track-breakthrough-therapy-accelerated-approval-priority-review
2. U.S. Food and Drug Administration. Priority NDA and BLA approvals. Updated March 2, 2026. Accessed April 28, 2026. https://www.fda.gov/drugs/nda-and-bla-approvals/priority-nda-and-bla-approvals
3. U.S. Food and Drug Administration. Fast track approvals. Updated January 13, 2025. Accessed April 28, 2026. https://www.fda.gov/drugs/nda-and-bla-approvals/fast-track-approvals
4. U.S. Food and Drug Administration. Breakthrough therapy approvals. Updated February 27, 2026. Accessed April 28, 2026. https://www.fda.gov/drugs/nda-and-bla-approvals/breakthrough-therapy-approvals
5. U.S. Food and Drug Administration. Accelerated approvals. Updated August 29, 2025. Accessed April 28, 2026. https://www.fda.gov/drugs/nda-and-bla-approvals/accelerated-approvals

Acknowledgements

The authors thank Praburaman Mohan and Robert Lahue for supporting poster development.

Affiliations

1. Alkemi LLC, Manchester Center, VT, USA

Orphan drug indications are commonly approved via FDA expedited pathways, reducing the time available to prepare for payer access negotiations following clinical development.

Understanding use of expedited pathways can help stakeholders evaluate their impact on access and development timelines for rare disease therapies.

ALKEMI

Figure 1:
Expedited Pathway Use in Orphan Drug Approvals (2015 - 2024)

Figure 2:
Approved Orphan Indications by Therapy Type

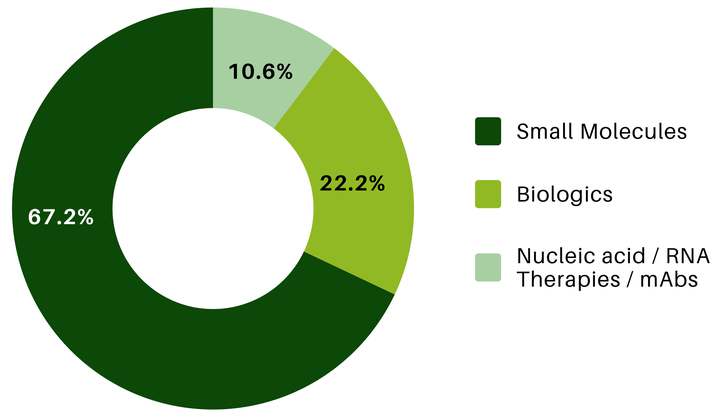

Figure 3:
Number of Expedited Pathways Used Among Multiple Pathway Approvals (n=150)

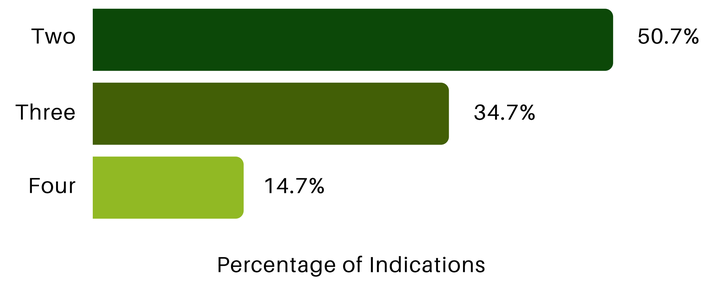

Figure 4:
Expedited Pathways Used Among Single Pathway Approvals (n=30)