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Regulatory framework for fast track approval of Drugs in different countries

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Abstract

This review aims to analyze and compare the regulatory frameworks for fast-track drug approval in various countries, focusing on the US, Europe, Japan, and Australia. The study highlights the significance of expedited drug approval pathways in addressing unmet medical needs while ensuring safety and efficacy. A detailed evaluation of the standard approval pathways is performed to provide context, followed by a comparative analysis of fast-track mechanisms. Challenges associated with these programs are also explored. The study identifies similarities & differences in expedited drug approval pathways across countries, highlighting unique features of the Fast Track Designation in the U.S., PRIME in Europe, Sakigake in Japan, and Priority Review in Australia. Despite their effectiveness in accelerating drug availability, challenges such as balancing speed with rigorous evaluation, regulatory inconsistencies, and resource allocation are evident. Expedited approval programs significantly impact public health by improving access to innovative therapies. However, harmonizing regulatory processes and addressing associated challenges are crucial for optimizing their implementation globally.

Keywords: Regulatory Affairs, Fast track designation, Priority Medicines(PRIME) Designation, FDA, CDER, CBER, NDA, Priority review

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1. Introduction

Regulatory affairs (RA) field supervises the development, testing, manufacturing, marketing and distribution of medications, biomedical devices and medical supplies to ensure that they adhere to regulatory standards for human use. RA professionals ensure compliance with international regulatory standards at every stage of the product life cycle. They guide research, clinical trials, regulatory submissions, and approvals. RA ensures product quality, safety, efficacy, and conformity through thorough documentation. They play a key role in both pre- and post-marketing regulatory activities. (1)

1.1 Fast track designation - It refers to an approach intended to expedite the evaluation and development of pharmaceutical products to treat life-threatening conditions and address unmet medical needs, that depend on providing accurate in vitro or in vivo results.

- It was introduced in **1988** and officially codified in **1997** by the US FDA to speed up the designation of drugs that treat serious medical conditions and particularly those that offer better advantages over current medicines.
- The FDA fast-tracks drugs based on preliminary evidence of potential effectiveness. A team of scientists and medical experts review the data and proposed labeling. These drugs do not require long-term research for initial approval.
- Fast-track drugs must show clear benefits over existing treatments. This includes improved outcomes, fewer side effects, or addressing urgent health needs. They may also reduce toxicity that causes patients to discontinue current therapies. (2-5)

1.2 Regulatory governing bodies of different countries:

- **United States:** Food and Drug Administration (FDA)
- **European Union:** European Medicines Agency (EMA)
- **India:** Central Drugs Standard Control Organization (CDSCO)
- **Japan:** Pharmaceuticals and Medical Devices Agency (PMDA)

- **Australia:** Therapeutic Goods Administration (TGA)
- **Canada:** Health Canada – Therapeutic Products Directorate
- **China:** National Medical Products Administration (NMPA)
- **Russia:** Federal Service for Surveillance in Healthcare (Roszdravnadzor)
- **South Korea:** Ministry of Food and Drug Safety (MFDS)
- **South Africa:** South African Health Products Regulatory Authority (SAHPRA). (6)

2. Standard Regulatory Approval Pathway

The standard regulatory approval pathway for new drugs involves several phases, each stage designed to ensure that the drug is safe, effective and of high quality before it is made available to the public. The drug approval takes 12 to 15 years. The process is as follows (3,7-8):

a) Discovery & Preclinical research - Researchers perform laboratory and animal experiments to obtain preliminary data on a novel drug safety, efficacy and pharmacological properties before evaluating it in humans. This phase may continue for a few years.

b) Investigational New Drug Application - The sponsor applies for permission to conduct clinical trials in humans by submitting application to the concerned regulatory body. This application may be referred to as Investigational New drug application (IND) or Clinical trial application (CTA). These include preclinical data, clinical protocol, GMP guidelines & ethical considerations.

c) Clinical Trials - Once the IND/CTA is approved the drugs enters clinical trials that occur in four phases:

- Phase I - **Safety & Dosage** - To assess safety, tolerability, PK & PD of drugs in humans. Conducted in 20 - 80 healthy volunteers.
- Phase II - **Efficacy & Side effects** - To evaluate the drugs efficacy, optimal dosage & potential side effects. Conducted in 100-300 healthy volunteers or diseased patients. This phase includes randomised controlled trials(RCTs) to compare new drugs with placebo or existing groups.
- Phase III - **Confirmatory trials** - To confirm drugs efficacy, monitor side effects & collect data for final regulatory submission. Conducted in a larger population of 1000-3000+ and to compare it with existing therapies.
- Phase IV - **Post marketing surveillance** - Conducted to monitor long term safety and rare adverse effects of the approved drug in the real-world timeline.

d) New drug application (NDA) or Biologics licence application (BLA) - The sponsor compiles all pre-clinical data and clinical data and submits an application to the regulatory body. The regulatory authorities evaluate the risk benefit profile and available information of manufacturing process and quality control. This review can take 6 to 10 months.

e) Post marketing surveillance - It is also referred to as phase IV trials to check ongoing monitoring of adverse events and updating risk management strategies. (3,7-8)

3. Expedited programs for drug development in different countries

The expedited programs are based on three concepts (4):

a) Serious condition - it is defined as morbidity-related disease or condition that significantly affects day to day functions. All conditions meeting the criteria of life threatening are considered as serious conditions.
b) Available therapy - refers to the treatments, including drugs and other interventions, currently approved and accessible to healthcare providers and patients for a specific medical condition or disease.
c) Unmet medical need - is a condition for which the present therapies do not provide effective treatment or diagnosis. (4)

3.1 US

US FDA: To speed up the approval of new drugs intended to address unmet medical needs, the FDA has introduced 4 distinct programs: one pathway and three designations. (9-12)

a) Fastrack Designation: the term "fast track designation" refers to an approach intended to expedite the evaluation and development of pharmaceutical products to treat life-threatening conditions and address unmet medical needs, that depend on providing accurate in vitro or in vivo results. (9-12)

b) Breakthrough therapy: The designation of a drug as a breakthrough therapy is a process referred to to speed up the development and evaluation of drugs meant to treat serious conditions when early clinical data suggests that the medication may significantly outperform current therapies on a clinically significant endpoint or endpoints. (9-12)

c) Accelerated Approval: a drug that treats a serious condition and generally provides a meaningful advantage over available therapies and demonstrates an effect on a surrogate endpoint that is reasonably likely to determine a specific outcome or clinical benefit. (9-12)

d) Priority Review: When an application is designated as a Priority Review, the FDA intends to start working on it within six months, as compared to ten months under a regular review. It will prioritize all of attention & resources on evaluating medication applications that, if authorized, would significantly improve the safety or effectiveness of the treatment, diagnosis, or prevention of critical conditions. (9-12)

3.2 Europe

EMA - In order to speed the approval process for medications that address significant unmet medical needs or in particular urgent situations, such as public health emergencies, the EMA offers a number of expedited pathways. These routes offer a faster route to market

while ensuring that the medication has undergone a comprehensive safety and efficacy evaluation.(10,13-16)

a) Authorisation under exceptional circumstances - Only therapies that are unable to receive a standard marketing authorization because the necessary safety & efficacy data can't be provided because the disease is so rare or because a clinical endpoint is difficult to measure for ethical or scientific reasons are eligible for a marketing authorization under exceptional circumstances. (13)

b) Accelerated Assessment - This process is intended to reduce the total period of time required for evaluating a medication, usually from 210 days to 150 days. (14)

c) Conditional marketing application - For new medications that may be potential to fill an unmet medical need, the EMA additionally provides a pathway that permits approval based on a limited data set. Only medications that may be utilised in emergency situations, rare disorders, or conditions that are extremely fatal or life-threatening are eligible for conditional marketing approval. (15)

d) Priority Medicines(PRIME) Designation - PRIME is the EMA's expedited development pathway launched in 2016. It was designed to increase support for the development of medications that address unmet medical needs. The submitted application must satisfy the following eligibility requirements in order to be eligible for PRIME designation: Specifically, the investigational medicine targets conditions where there is an unmet medical need and demonstrates the way it may be able to fulfil that need. (10, 16)

3.3 JAPAN

PMDA - Japan has an initiative set up to speed up the regulatory assessment and approval of new medications, especially those that address serious health issues or unmet medical requirements. The methods are intended to ensure safety and efficacy while expediting the availability of novel therapies.

a) Sakigake system - To enable practical use of innovative drugs or medical devices or regenerative medicines that was developed in japan. The criteria for designation is:

- Products that include novel mechanisms or significantly outperform current treatments.
- Must target serious illnesses, address for unmet medical needs, or provide preliminary efficacy proof. (17-19)

b) Priority Review system - To expedite drugs addressing severe illnesses or public health emergencies, such as pandemics. Features include:

- Shortened review period (targeted at 9 months compared to the standard 12 months).
- Applies to drugs with significant clinical benefits or those targeting diseases with high mortality or morbidity. (17-19)

c) Orphan Drug Designation - To encourage the development of treatments for rare diseases affecting fewer than 50,000 people in Japan. Features include:

- The new drug must offer significant improvement over existing options.
- The drug's potential development must be feasible and commercially viable. (17-19)

d) Conditional Early Approval system - To allow early market access for drugs addressing severe or life-threatening diseases where standard clinical trials are challenging to conduct. Features include:

- Approval is based on limited clinical evidence, such as surrogate endpoints, if comprehensive data collection is not feasible. Primarily applied to regenerative medicines and drugs for rare diseases.
- Post-marketing surveillance is mandatory to confirm the drug's efficacy and safety. (17-19)

3.4. Australia

TGA - Australia has few expedited drug approval pathways that are intended to address urgent medical needs, give people early access to advanced therapies, and speed regulatory procedures.

a) Priority Review Pathway - The priority review pathway intends to evaluate an extensive collection of data in 150 working days instead of the standard 255 working days needed for a regular approval. It involves a full dossier based on clinical trial results. Criteria include:

- The medicine treats serious, life-threatening, or rare conditions.
- Demonstrates potential to offer a major therapeutic advantage. (20)

b) Provisional Approval Pathway - Provide early access to promising medicines based on preliminary clinical evidence, particularly for life-threatening conditions. An earlier access to medicines that don't yet have a full dossier of clinical data, but where there is potential for a substantial benefit to patients. This can make the medicine available up to two years earlier than the standard pathway. (21-22)

Table 1. Difference between Standard regulatory pathway & Fast track Pathway (10)

Criteria	Standard regulatory approval	Fast track regulatory approval
Objective	To Make sure all data is thoroughly evaluated for efficacy and safety.	To expedite the availability of treatments for conditions lacking effective therapies
Eligibility	All drugs that fulfil the conditions for regulatory submission are eligible.	drugs having the potential to address unmet medical needs and designed to treat severe or life-threatening illnesses.

Review timeline	It takes 10–12 months on average following the submission of a NDA or BLA.	Response to the submitted request should be done within 60 calendar days
Preclinical & clinical requirement	The conclusion of Phase I, II, and III studies as well as preclinical and clinical trials should be provided.	Flexibility is allowed; if validated by surrogate endpoints, phase II trials can provide sufficient validation for approval.
Regulatory submissions	It requires detailed preclinical, clinical, and manufacturing data that need to be submitted	Submission is more focused, and continuous data submission is acceptable.
Rolling review	Not permitted; the entire application needs to be submitted at once.	Permitted; can submit parts of the application as they are finished
Surrogate endpoints	usually depends on solid evidence of clinical benefit from endpoints.	Surrogate or intermediate endpoints which serve as an acceptable indicator of clinical benefit may be used as evidence for approval
Post approval obligations	Post marketing surveillance is required for long term safety	Often subjected to accelerated approval requirements, such as post-marketing confirmation studies to confirm clinical benefit.
Interaction with regulators	periodic interaction through assessments and meetings.	Regulators' frequent communication and advice to address issues early and speed up the process
Examples of applicable drugs	Broad range including those for common diseases or conditions	Drugs for rare diseases, oncology drugs, antiviral drugs or orphan drugs

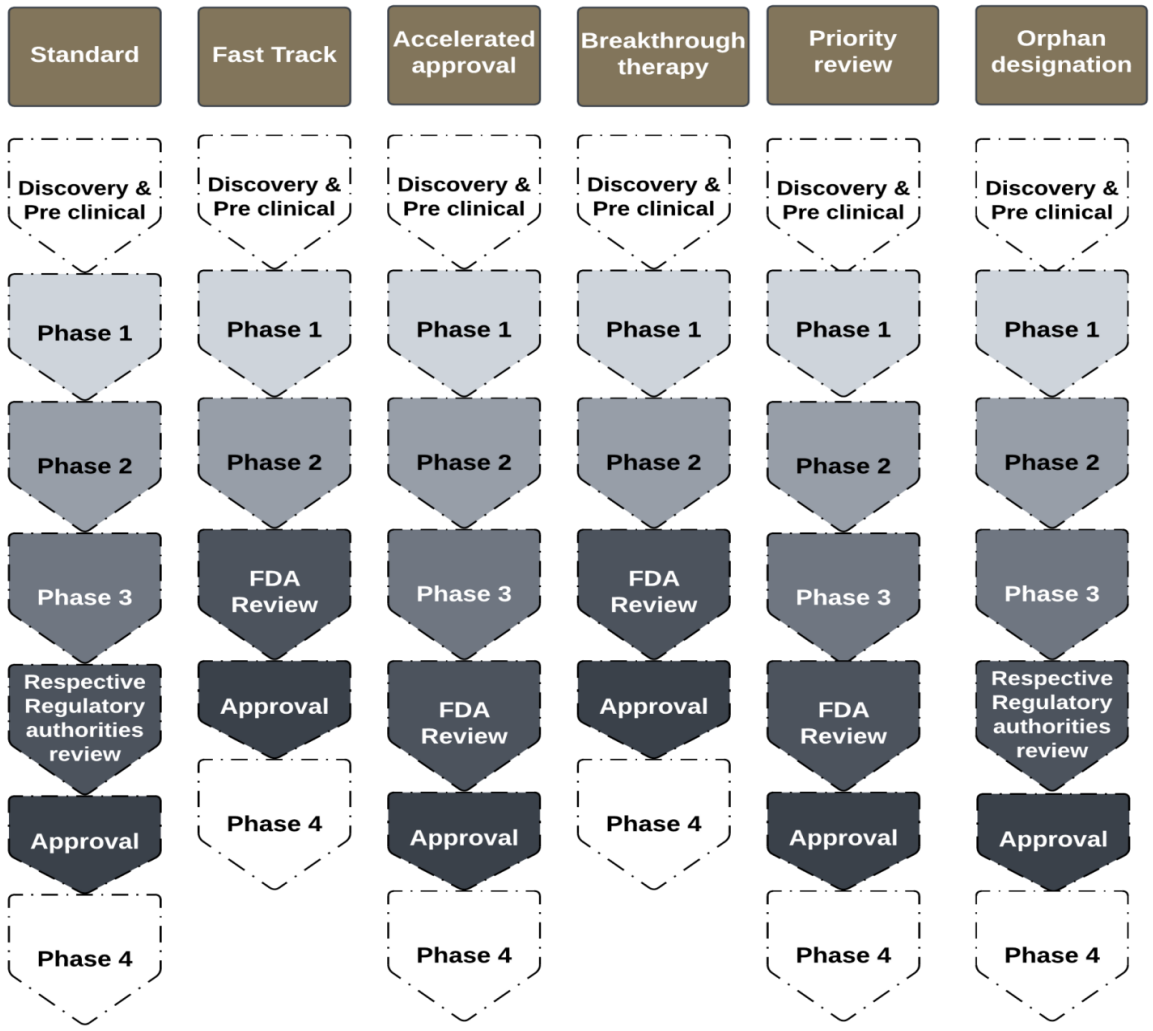

Figure 1. Different stages involved in Expedited approval pathways (23)

4. Fast Track Designation

4.1 Criteria for designation:

The Food, Drug, and Cosmetic Act's Section 506(a)(1) states that a medication product considered to be a fast track drug is meant to treat a serious or life-threatening

illness and demonstrates that it is feasible to meet the unmet medical needs for the condition.

The criteria required include (24-25):

a) Serious or life-threatening condition - According to 21 CFR 312.81(a), any situation qualifies as a life-threatening condition and needs to be considered a serious condition. FDA determines if a given medication is intended to treat a serious condition. The benefits of fast track designation apply to medications for both serious & life-threatening disorders.

b) Potential to deal with unmet medical needs -

- An unmet medical need is defined as a medical need that is particularly not adequately met with an existing therapy. Whether the drug has the potential to address unmet medical needs and whether the drug development program has been described to evaluate this potential is evaluated by the FDA Agency.
- The drug is expected to provide significant benefits over current treatments, such as improved efficacy, fewer side effects, or better quality of life.

c) Potential to provide clinical benefit - The information necessary to demonstrate how a new medication product might address unmet medical needs will depend on drug product development.

Preliminary clinical or preclinical data should show that the drug has the potential to Improve disease outcomes, or address limitations of current therapies. (24-25)

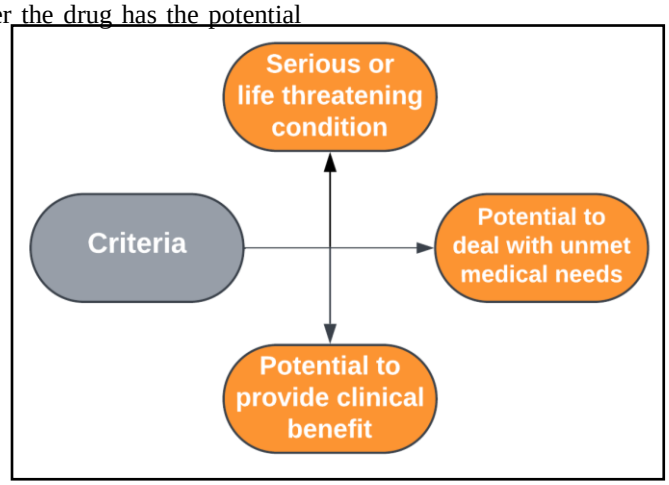

Figure.2. Criteria for Designation (24-25)

4.2. Fast track designation process:

a) Determine Eligibility

- Confirm the drug targets a **serious or life-threatening condition**.
- Assess if it addresses an **unmet medical need** or has the potential to provide significant benefits over existing therapies. (26-28)

b) Designation submission

- Prior to receiving marketing approval for its NDA or biologics licence, a sponsor can submit a request for fast-track designation.
- The potential of fast track designation is considered during the pre-IND meeting before the filing of the IND application; however, the submission of the IND would be sufficient to make a final decision on fast track designation.
- Perks associated with fast track designation might arise at any stage of the drug development process, from early IND submission to marketing application assessment. (26-28)

c) Receiving fast track request

- In order to expedite the process, the sponsor must file an amendment to FDA Form 1571.
- The IND or amendment will specifically identify the submission as a Request for Fast Track Designation and will be submitted to a relevant division of the Center for Drug Evaluation and Research (CDER) or the Center for Biologics Evaluation and Research (CBER) for review.
- Requests for BLAs and NDAs must be made using FDA Form 356h. The request may be granted or denied. (26-28)

d) Content of designation submission

To be eligible for the fast track, the following information must be included:

- The cover letter should characterise the submission as a **REQUEST FOR FAST TRACK DESIGNATION** in bold block capital letters.
- The cover letter should comprise the sponsor's name, contact person's name, contact person's address, phone number, fax number, email address etc., if applicable, the IND application number.
- The trade name and correct name for biologicals, if appropriate; the trade name and active ingredient for drug active substance. (26-28)

e) FDA response - The FDA must respond to the fast-track designation request within 60 days of receiving it. The FDA issues out two types of letters in response to the request: designation letters and non-designation letters. (26-28)

- ***Designation letter*** - The fast track designation letter will be issued if the FDA determines that the requirements for fast track designation for drug development have been met. Advise the applicant to

meet the necessary requirements in order to receive a fast track designation.

- ***Non-Designation letter*** - The FDA agency can issue a non-designation letter if they are not satisfied with the NDA application. Additionally, the justifications might be declared as the medication did not fulfil the requirements for fast track designation.

f) Approval

The new drug is approved in case of receiving a designation letter and meeting the criteria required. (26-28)

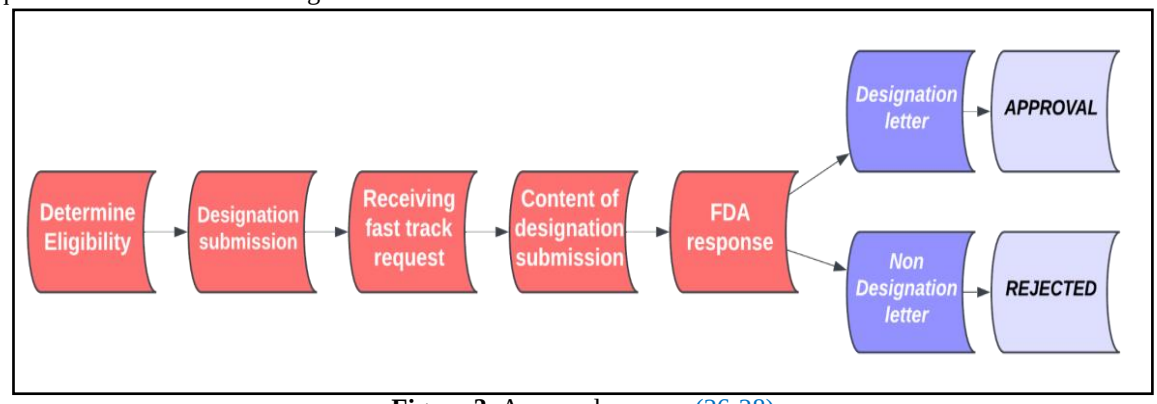

Figure 3. Approval process (26-28)

4.3. Review Timeline (Days):

- **Day 0**: A fast track designation request is received by the CDER/CBER Document Control Center.
- **Day 3**: A preliminary regulatory review is conducted by the Regulatory Project Manager (RPM), who additionally initiates the routing process.
- **Days 3–5**: RPM completes the review and notifies the team.
- **Days 5–40**: completion of the clinical review
- **Days 40–50**: fast track letter is drafted by RPM
- **Days 50–60**: The letter is finalised (29-31)

Table 2. CDER fast track designation requests received (32-33)

Fiscal year	Total requests received	Granted	Denied	Other
2023	272	149	74	49
2022	291	171	104	16
2021	263	173	78	12
2020	280	187	84	9
2019	255	151	72	32
2018	217	145	63	9
2017	181	115	54	12

Note: As of 30/09/2024 there are 21 Novel drugs that have been approved under fast-track designation. (32-33)

Figure 4. Standard regulatory approval VS Fast track approval (29)

5. Challenges with fast-track designation

The FDA granted 114 anticancer medications for 250 indications between 2015 and 2024. The majority of these approvals were predicated on endpoints distinct from overall survival. Many opponents of accelerated approval argue that it undermines safety and that it is unethical to approve a medicine based on insignificant data since it lacks evidence supporting it. According to Olson et al. 's 2008 investigation, a medication approved through expedited review has greater side effects than a

substance that underwent the standard drug review process. The most recent study validating the statement was published in the BMJ in 2015 by Aaron S. Kesselheim et al. After evaluating the patterns of expedited drug approval from 1987 to 2014, researchers concluded that the procedure did not follow guidelines and authorized insignificant compounds with minimal efficacy, but also severe side effects. (34-35)

5.1. How does the potential risk of approving new drugs under expedited pathways vary in the context of determining whether the condition being treated is rare, serious, or both?

- The process of approving drugs has risks both for the individuals taking part in the trials and for the large number of people who will utilize the medications after they are approved.
- It is well-known that medications such Elixir Sulfanilamide and recent COX-2 inhibitors have caused tragedies in the past. Both were approved under fast-track designation, with the later one leading to an increase in cardiovascular events.
- Diabetes is a common condition, and there are five types of proven, evidence-based oral anti-diabetic medications available. Between 2011 & 2014, the US FDA approved 7 molecules of sodium glucose lumen transport inhibitors and dipeptidyl peptidase IV inhibitors, despite the fact that these treatments are effective.
- It has been demonstrated that DPP-IV inhibitors have been associated with angioedema, renal dysfunction, & severe mouth ulcers and SGLT2 inhibitors may lead to urosepsis and ketoacidosis.
- There was no requirement to support an unmet need in this instance, and the FDA has not provided an explanation for why these compounds were granted fast approval rather than standard review. Reasons why this can be risky:
- Surrogate endpoints may not guarantee real patient benefits like longer survival or improved quality of life. They can lead to approvals without clear evidence of meaningful outcomes.
- Accelerated approval may overlook long-term safety due to limited clinical data. This increases the risk of serious side effects and post-marketing study failures. (34-36)

5.2. Is it on the right path?

- The fast-track approval of drugs has shown promise in addressing urgent medical needs, but whether it's on the "right path" depends on various outcomes, as in case of Hepatitis C, HIV, AIDS, cancer it showed significant outcome as there were no specific drugs. But as in case of diabetes and other treatments it failed to show significant outcome. It also depends on factors like
- Faster Access for Patients and Long-Term Effectiveness
- Encouragement for Innovation, Transparency and Oversight
- Regulatory Flexibility and Ethical Concerns
- Compromised Safety and Efficacy Evaluation (37-38)

5.3. What was the fate of the drug after it was approved?

The success or challenges of a drug after approval through a pathway like Fast Track designation depends on various factors. Here are typical scenarios of how medications could perform after they are approved.

a) Positive Outcomes:

- Demonstrated Benefit in Post-Marketing Studies
- Breakthrough for Rare Diseases & Adoption in Clinical Practice
- Example: **Imatinib** - With a very high success rate, it is used to treat Chronic myeloid leukemia (CML) along with two additional molecules, Dasatinib and Nilotinib, in cases of imatinib resistance. This medication is still a remarkable treatment for CML & it was approved for several cancer types. It became the standard treatment for CML after it was approved and showed long-term survival improvements.

b) Negative Outcomes:

- Failure in confirmatory studies
- Withdrawal from the Market & Safety concerns
- Example: **Ponatinib** - In December 2012, the FDA approved ponatinib for the same indication i.e Chronic myeloid leukaemia and granted it fast-track status. Ponatinib was discontinued in October 2013 after widespread exposure caused fatal veno-occlusive disease. Due to an uncertain interpretation of a single Phase II trial, it is completely unconvincing to expose patients to an unsafe substance.

c) Uncertain or Neutral Outcomes:

- Mixed Results from Confirmatory Studies
- Side Effects or Risk Management
- Limited Adoption (30,34,38-39)

5.4. Is the path becoming uncertain?

The Fast Track designation accelerates the pathway for innovative treatments, but because it relies on early evidence and surrogate markers, the journey after approval can be unpredictable. This can be due to:

- Uncertainty in Longterm Efficacy & Safety i.e Limited data at approval & unexpected side effects.
- Dependence on Post-Marketing Studies
- Variable Outcomes Across Patient Populations
- The Risk of Overpromising
- Example: **Natalizumab**, an anti-integrin molecule used to treat IBD, has been responsible for the development of progressive

multifocal leukoencephalopathy, which is fatal, and **Fingolimod** causes hemophagocytic syndrome, a rare condition. There is sufficient data to warn us that biologics need more time to be reviewed in order to predict their complex biological effects. Rapid approval could trigger a new autoimmune disease while curing an existing one. (37,39-40)

5.5. Is it a reliable trajectory or a misleading one?

In the 1990s, fast track approval contributed to combating HIV, AIDS, and some types of cancer. **Lamivudine, imatinib, erlotinib, oxaliplatin**, and **levofloxacin** are a few medications that were developed as fast track drugs are still widely used today. Fast-track processing should currently only be used in situations where the medicine is absolutely necessary. Whether it's **effective** or **deceptive** depends on its context and implementation.

a) Effective When:

- It accelerates access to promising treatments for patients suffering from serious diseases.
- The regulatory agency maintains rigorous oversight to ensure the drug's safety and efficacy.
- Example: **Remdesivir** - It is a Antiviral drug repurposed to target COVID-19. It was approved under Fast Track Designation & Emergency Use Authorization (EUA). Remdesivir has demonstrated the ability to shorten recovery times in hospitalized COVID-19 patients.

b) Deceptive or Problematic When:

- Safety/Efficacy is compromised- If a drug gets approved too quickly without sufficient testing, safety risks may arise.
- There is insufficient evidence of efficacy to justify approval.
- Example: **Cangrelor** - It is an antiplatelet medication that has been approved as a percutaneous intervention adjunct, is the most recent concern that sparked this opinion. In studies comparing cangrelor with clopidogrel, this medication has not demonstrated any further advantages apart from increased bleeding during the surgery. (41-44)

5.6 What strategies can be implemented to minimise the occurrence of drug withdrawals with fast track designation?

- Many anti-HIV medications, like lamivudine, and anti-cancer medications, including platinum analogues, have received expedited approval since the 1980s. Several compounds in the last quintile that were granted fast approval have been shown to do more harm than good.
- The FDA and other international regulatory bodies should take this issue seriously and choose lesser medications for expedited assessment.
- Furthermore, rather than focusing on just one parameter, the review needs to consider all other required parameters. It is necessary for one to reconsider the practice of approving a request based on the statistical significance of endpoints or a decrease in surrogate markers.
- To minimize the occurrence of drug withdrawals following fast-track designation, several strategies can be implemented at different stages of the drug development and approval process like:
  - ✓ Enhanced Pre-approval trials & Post-Approval Trials
  - ✓ Use of vigorous surrogate endpoints & Long-Term Monitoring
  - ✓ Ongoing & Real-Time Data Collection
  - ✓ Enhanced Regulatory Oversight and Transparent Decision-Making
  - ✓ Risk Mitigation Strategies & Clear Communication of Risks
  - ✓ Balancing Innovation and Safety (38-46)

Table 3. Fast track designation drugs that received potential adverse effects (34-35)

Drugs	Category	Reason for withdrawn
Ponatinib	Anti-neoplastic	veno-occlusive disease
Vemurafenib	Anti-neoplastic	cutaneous tumour
Linagliptin, saxagliptin, alogliptin	Dipeptidyl peptidase IV inhibitor	Renal failure, mouth ulceration
Dabigatran	Factor Xa inhibitor	GIT bleeding
Ezogabine	K+ channel blocker	Retinal damage, loss of vision
Dasabuvir, telaprevir, ombitasvir, paritaprevir	Anti hepatitis C	Hepatic failure, hypersensitivity
Sofosbuvir, simeprevir	Anti-hepatitis C	Cardiac arrhythmia, bradycardia

6. Conclusion

In this conclusion, I would like to conclude that, fast-track processing will work effectively in the following circumstances:

- When the newly discovered chemical is actually expected to treat a chronic illness.
- A new medication or biologic with a novel mechanism can be approved through a fast-track process if there is an established therapeutic. However, only when adequate postmarketing surveillance demonstrates the new compound's safety and efficacy should the other members of the same group be given consideration for fast-track clearance.
- Assessing approval based solely on surrogate markers is necessary.
- The statistical significance of an improvement in survival from a fast-track procedure must be matched with clinical benefits in malignancies with really poor prognosis.

- Regulatory bodies need to be more cautious of pharmaceutical companies' inadequately or inaccurately based evidence.

Fast-track approval can allow new drugs to reach patients earlier. But it also exposes them to risk earlier. Patients should be made aware of the potential hazards of fast tracks since some of the risks associated with medication development are passed on to them. Even if a drug is not an important breakthrough, it might still receive expedited approval in the United States. Europe has mainly avoided this risk, which appears to be unnecessary.

Fast track raises concerns about safety and effectiveness data, perhaps highlighting a risk to patients. There is a lot of face validity to the opinion that doing something more quickly defines carrying out it ineffectively. The question

of whether the advantages of medications that receive fast track approval overweigh the hazards to a greater or lower degree than those of medications that are approved with regular evaluations is a practical one.

We can conclude fast track approval is on right path if:

- Whether the benefits of fast-track medications outweigh their risks compared to those approved through regular evaluations is a crucial question.
- Regulatory bodies have to tighten the rules and oversight on confirmatory trials to address the safety concerns, emphasizing the need for thorough post-marketing studies to confirm clinical benefits.
- Patients should be informed about the potential risks of fast tracks, as some risks of medication development are transferred to them.
- Documents like the Statement of Product Characteristics should specify when approval was based on preliminary data.
- Fast track-approved medications require continuous evaluation.

The pharmaceutical industry and regulatory bodies face a constant and dynamic problem in integrating the need for ensuring the safety and effectiveness of potentially life-saving medications after they are approved with the necessity to provide rapid access to them.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

Reference

1. Shelke S. Navigating drug regulatory affairs: an analytical review of compliance in the pharmaceutical industry. J Drug Deliv Biother. 2024;1(2):1–12.
2. P GM, Maanvizhi S. Fast track USA regulatory approval for drugs to treat emerging infectious diseases. Asian J Pharm Clin Res. 2021;14(7):1–4.
3. U.S. Food and Drug Administration. The Drug Development Process [Internet]. Silver Spring (MD): USFDA; 2018 Jan 04 [cited 2024 Oct 17]. Available from: https://www.fda.gov/patients/learn-about-drug-and-device-approvals/drug-development-process
4. Arjun S, Venkatesh M, Balamuralidhara V, Kumar TP. Expedited programs for drug development and approval in the USA. Res J Pharm Technol. 2020;13:1409-14.
5. Reichert J, Rochon S, Zhang B. A decade of the fast track programme. Nat Rev Drug Discov. 2008;7:885-6.
6. Pawar A, Patil H, Desale MS. Drug regulatory affairs: an insight on regulatory authorities of various countries. Int J Pharm Sci Res. 2023;12(13):121-61.
7. CDRH, FDA. Regulatory pathways for medical devices and drugs [Internet]. Silver Spring (MD): Center for Devices and Radiological Health, U.S. FDA; 2020[cited 2024 Oct 17] Available from: https://www.fda.gov
8. U.S. Food and Drug Administration. Guidance, compliance, and regulatory information [Internet]. USFDA;2023 Aug 21 [cited 2024 Oct 17]. Available from:https://www.fda.gov/drugs/guidance-compliance-regulatory-information
9. U.S. Food and Drug Administration. Accelerated approval [Internet]. USFDA; 2023 Feb 24[cited 2024 Oct 20]. Available from: https://www.fda.gov/patients/fast-track-breakthrough-therapy-accelerated-approval-priority-review/accelerated-approval
10. Warreth S, Harris E. The regulatory landscape for ATMPs in the EU and US: a comparison. Level 3. 2020;15(2):5.
11. Shoemaker D, Barber K, Kingon GA. Accelerating regulatory product development and approval for drugs and biologics in the U.S. [Internet]. Durham (NC): Rho; 2020 [cited 2024 Oct 20]. Available from: https://www.rhoworld.com/wp-content/uploads/Rho_AcceleratingRegulatoryApprovals_WEB.pdf.
12. Michaeli DT, Michaeli T, Albers S, Boch T, Michaeli JC. Special FDA designations for drug development: orphan, fast track, accelerated approval, priority review, and breakthrough therapy. Eur J Health Econ. 2024 Aug;25(6):979–97
13. European Medicines Agency. Exceptional circumstances [Internet]. Amsterdam (NL): EMA [cited 2024 Oct 25]. Available from: https://www.ema.europa.eu/en/glossary-terms/exceptional-circumstances
14. European Medicines Agency. Accelerated assessment [Internet]. Amsterdam (NL): EMA; [cited 2024 Oct 25]. Available from: https://www.ema.europa.eu/en/human-regulatory-overview/marketing-authorisation/accelerated-assessmen
15. European Medicines Agency. Conditional marketing authorisation [Internet]. Amsterdam (NL): EMA [cited 2024 Oct 25]. Available from: https://www.ema.europa.eu/en/human-regulatory-overview/marketing-authorisation/conditional-marketing-authorisation
16. European Medicines Agency. Priority Medicines (PRIME) [Internet]. Amsterdam (NL): EMA [cited 2024 Oct 25]. Available from: https://www.ema.europa.eu/en/human-

regulatory-overview/research-development/prime-priority-medicines
17. Pharmaceuticals and Medical Devices Agency. Regulatory measures to promote fast patient access in Japan. [Internet]. Tokyo (JP): PMDA;2023 Feb 1[cited 2024 Nov 2]. Available from: https://www.pmda.go.jp/files/000250259.pdf
18. Pharmaceuticals and Medical Devices Agency. Reviews [Internet]. Tokyo (JP): PMDA; [date unknown] [cited 2024 Nov 2]. Available from: https://www.pmda.go.jp/english/review-services/reviews/advanced-efforts/0001.html
19. Schneider ME. Convergence: understanding expedited approval pathways in Japan [Internet]. RAPS; 2022 Sep [cited 2024 Nov 2]. Available from: https://www.raps.org/news-and-articles/news-articles/2022/9/convergence-understanding-expedited-approval-pathw
20. Therapeutic Goods Administration. Fast track approval pathways. Canberra (AU): Australian Government Department of Health and Aged Care [Internet]. 2022 Sep[cited 2024 Nov 2. Available from: https://www.tga.gov.au/fast-track-approval-pathways
21. Therapeutic Goods Administration. Provisional approval pathway: prescription medicines [Internet]. Canberra (AU): TGA; 2023 Mar 16[cited 2024 Nov 2]. Available from:https://www.tga.gov.au/provisional-approval-pathway-prescription-medicines
22. Bootes A, Maundu J, Golding S, McDonald M, Lombard J. Fast-track pathways for drug approvals: the Australian experience so far. Aust Prescr. 2019 Aug;42(4):118.
23. Michaeli DT, Michaeli T, Albers S, Boch T, Michaeli JC. Special FDA designations for drug development: orphan, fast track, accelerated approval, priority review, and breakthrough therapy. Eur J Health Econ. 2024 Aug;25(6):979–97.
24. U.S. Food and Drug Administration. Fast track [Internet]. Silver Spring (MD): FDA; 2024 Aug 13[cited 2024 Nov 20]. Available from: https://www.fda.gov/patients/fast-track-breakthrough-therapy-accelerated-approval-priority-review/fast-track
25. U.S. Department of Health and Human Services. Fast track drug development programs-designation, development, and application review [Internet]. Silver Spring (MD): U.S. FDA; 2006 [cited 2024 Nov 20]. Available from: https://www.fda.gov/media/72208/download
26. Friends of Cancer Research. FDA expedited review programs [Internet]. Washington (DC): Friends of Cancer Research; 2020 [cited 2024 Nov 20]. Available from: https://www.friendsofcancerresearch.org/fda-expedited-review-programs
27. Barham L. How fast are the FDA fast lanes? Pharm Exec. [Internet]. 2018 Oct 10[cited 2024 Dec 5]. Available from: https://www.pharmexec.com/view/how-fast-are-fda-fast-lanes
28. U.S. Food and Drug Administration. Expedited programs for serious conditions-drugs and biologics [Internet]. Silver Spring (MD): U.S. FDA; 2014 [cited 2024 Dec 5]. Available from: https://www.fda.gov/files/drugs/published/expedited-programs-for-serious-conditions-drugs-and-biologics.pdf
29. U.S. Food and Drug Administration. SOPP 8414: Fast track drug development programs: designation and review programs [Internet]. Silver Spring (MD): U.S. FDA; 2001 [cited 2024 Dec 5]. Available from: https://www.fda.gov/media/108986/download
30. Abbott Laboratories. Ritonavir (Norvir) approval for HIV treatment [Internet].Silver Spring (MD): U.S. FDA; 1999 Jun 29[cited 2024 Dec 5]. Available from: https://www.fda.gov
31. Ghosh A, De Jesus E. Ritonavir and the history of HIV treatment. J Clin Pharmacol. 2005;45(2):185–92.
32. CDER fast track designation requests received [Internet]. Silver Spring (MD): U.S. FDA; 2020 [cited 2025 Jan 10]. Available from: https://www.fda.gov/media/97830/download
33. CY 2024 CDER fast track calendar year approvals [Internet]. Silver Spring (MD): USFDA; 2024 Dec 31[cited 2025 Jan 10]. Available from: https://www.fda.gov/media/159901/download?attachment
34. Chary KV. Expedited drug review process: Fast, but flawed. J Pharmacol Pharmacother. 2016 Apr-Jun;7(2):57-61. doi: 10.4103/0976-500X.184768.
35. Chary KV, Pandian K. Accelerated approval of drugs: ethics versus efficacy. Indian J Med Ethics. 2017 Oct-Dec;2(4):244-247. doi: 10.20529/IJME.2017.062.
36. U.S. Food and Drug Administration. Recalls, market withdrawals, and safety alerts [Internet]. Silver Spring (MD): U.S. FDA; [cited 2025 Jan 10]. Available from: https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts
37. U.S. Food and Drug Administration. Potential signals of serious risks/new safety information identified by the FDA Adverse Event Reporting System (FAERS) between July – September 2015 [Internet]. Silver Spring (MD): USFDA; 2015 [cited 2025 Jan 10]. Available from: http://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/Surveillance/AdverseDrugEffects/ucm484294.htm
38. U.S. Food and Drug Administration. The novel new drugs of 2014 [Internet]. Silver Spring (MD): USFDA; 2014 Dec 17[cited 2025 Jan 10]. Available from: http://www.fda.gov/downloads/Drugs/DevelopmentApprovalProcess/DrugInnovation/UCM430299.pdf
39. Grimes DA, Schulz KF. Surrogate end points in clinical research: hazardous to your health. Obstet Gynecol. 2005 May;105(5 Pt 1):1114-8.
40. U.S. Food and Drug Administration. FDA drug safety communication: new risk factor for progressive multifocal leukoencephalopathy (PML) associated with Tysabri (natalizumab) [Internet] Silver Spring (MD): USFDA; 2012 Jan 20 [cited 2025 Jan 11]. Available from: http://www.fda.gov/Drugs/DrugSafety/ucm288186.htm
41. Tang Y, Zhang YC, Chen Y, Xiang Y. Efficacy and safety of cangrelor for patients with coronary artery disease: a meta-analysis of four randomized trials. Int J Clin Exp Med. 2015;8(1):800–8.
42. Serebruany VL, Aradi D, Kim MH, Sibbing D. Cangrelor infusion is associated with an increased risk for bleeding: Meta-analysis of randomized trials. Int J Cardiol. 2013;169:225-8.
43. Hahn S. Understanding non-inferiority trials. Korean J Pediatr. 2012 Nov;55(11):403
44. Schumi J, Wittes JT. Through the looking glass: understanding non-inferiority. Trials [Internet]. 2011 Dec [cited on 2011 May 3];12:106. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC3113981/10.1186/1745-6215-12-106.
45. Davis C. Drugs, cancer and end-of-life care: a case study of pharmaceuticalization? Soc Sci Med [Internet]. 2015 Apr [cited 2014 Dec 2];131:207–14. Available from: https://pubmed.ncbi.nlm.nih.gov/25533871/ doi: 10.1016/j.socscimed.2014.12.007.
46. Gainor JF, Chabner BA. Ponatinib: Accelerated disapproval. Oncologist [Internet]. 2015 Aug [cited on 2015 Jul 14];20(8):847–8. Available from: https://pubmed.ncbi.nlm.nih.gov/26173838/