PDUFA Activities in Drug Development

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(CBER)
Drug Development Timeline

- Basic Research
- Discovery
- Preclinical
- Phase I
- Phase II
- Phase III
- NDA Filing
- BLA
- Safety Surveillance
- Initial IND Submission
- End of Phase Ila meeting
- Pre-NDA Meeting
- Safety Updates
- Pre-IND Meeting
- Ongoing IND Submission
- End of P2 Mtg.
- NDA/BLA Submission
- Phase IV Studies
Preclinical Development

• Preclinical work occurs before a new drug or biologic is tested in humans

• Primary goals are to determine whether the product is –
  – Reasonably safe for initial use in humans
  – Sufficiently effective against a disease target in chemical assay tests or animal models

• Pre-IND Meeting
Clinical Development – Phase 1

- **IND submission**
  - Pharmacology/Toxicology Studies
  - Manufacturing Information
  - Clinical Protocols and Investigator Information

- **Primary goals** –
  - Safety profile for the drug in humans
  - Relationship between dosing and the patient's systemic drug exposure
Clinical Development – Phase 2

• **Primary goals** –
  – Effectiveness in people who have a certain disease
  – Relationship between dose and response to the drug
  – Safety evaluation continues

• **End of Phase 2a Meeting**
• **End of Phase 2 Meeting**
Clinical Development – Phase 3

• Primary goals –
  – Continued assessment of effectiveness, duration of effect, effect in different populations, varying dosages
  – Safety evaluation continues, including potential drug-drug interactions

• Pre-NDA / Pre-BLA Meeting
NDA/BLA Submission

- Includes all animal and human data from the development program
- FDA determines the application's completeness and assigns a review team to evaluate the application
- FDA assesses –
  - Whether effectiveness has been demonstrated for the drug's proposed use
  - Whether the safety assessment is adequate to conclude that the drug is safe – i.e., the benefits of the drug outweigh its risks
  - Whether the manufacturing methods and the controls used to maintain the product quality are adequate
- Advisory Committee input
Post-Market Safety Surveillance

• Knowledge about a product will always be limited at the time of approval
  – Clinical studies are brief in duration and involve a limited patient population
  – New safety information often emerges after a product is used in a wider patient population

• FDA maintains an active program in post-market safety surveillance to monitor adverse events
## Overview of Performance Goals

<table>
<thead>
<tr>
<th>Submission</th>
<th>Goal</th>
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<tbody>
<tr>
<td>Original NDAs/BLAs and Efficacy Supplements</td>
<td>90% of priority applications within 6 months</td>
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<td>90% of standard applications within 10 months</td>
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<td>NDA/BLA Resubmissions</td>
<td>90% of Class 1 resubmissions within 2 months</td>
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<tr>
<td></td>
<td>90% of Class 2 resubmissions within 6 months</td>
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<tr>
<td>Manufacturing Supplements</td>
<td>90% of prior approval supplements within 4 months</td>
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<td>90% of non-prior approval supplements within 6 months</td>
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<tr>
<td>Special Protocol Assessment (SPA) Review</td>
<td>90% of SPAs within 45 days of receipt</td>
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<td>Clinical Hold Response</td>
<td>90% of clinical hold responses within 30 days of receipt</td>
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<tr>
<td>Meeting Scheduling</td>
<td>90% of Type A/B/C meetings within 30/60/75 days of receiving request</td>
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PDUFA performance deadlines and regulatory oversight responsibilities address a large volume of incoming work

<table>
<thead>
<tr>
<th>Unit</th>
<th>Sample period: 7/1/2008- 6/30/2009</th>
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<tbody>
<tr>
<td>Investigational New Drugs (INDs) with activity</td>
<td>5,728</td>
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<tr>
<td>IND/New Drug Application (NDA) Meeting Requests</td>
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<tr>
<td>Original NDA/Biologic License Application (BLAs)</td>
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<tr>
<td>Efficacy Supplements</td>
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<td>Manufacturing Supplements</td>
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<td>NDA/BLA Labeling Supplements</td>
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<td>IND Special Protocol Assessments</td>
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<td>NDA/BLA Annual Reports</td>
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Next – Drug Review in PDUFA IV