

# Path to Approval

## Developing a Rare Disease Therapy in the United States



### People living with rare disease play a critical role by:

- Educating others about the impact of a disease
- Communicating what's important to them in a new therapy
- Contributing to clinical trial design
- Participating in clinical studies as volunteers

## Key Things to Know



- The U.S. Food and Drug Administration (FDA) regulates medicines in the U.S
- The steps of drug development exist to make sure medicines work and are safe
- It can take 10-15 years for a medicine to go from a science lab to an approved treatment
- Regulators recognize the need for rare disease therapies and the Orphan Drug Act of 1983 provides ways to speed up the process
- Patients and families are important participants in drug development

## Steps of Drug Development

### Discoveries



#### Researching possible new methods to treat disease

Developing or discovering new molecules, technology, or new uses for existing medicines

### Pre-Clinical Testing



#### Determines safety and shows effectiveness in the target disease

Animal testing obtains safety data about effects on multiple internal organs and proves potential efficacy of the compound

### Phase 1

#### Tests the safety of the medicine

The safety is carefully tested in healthy volunteers, people with kidney or liver problems and sometimes in people with the rare disease. Even more studies seek information about how and when the medicine reaches specific body tissues

### Phase 2

#### More studies in people living with the rare disease

Tests if the medicine works in people with the condition, determines potential side effects and best dose

### Phase 3

#### Compares participants receiving the new medicine to those in a control group

The control group may receive a placebo (an inactive medicine) or the current standard treatment



### Approval

### Phase 4

#### Post-marketing surveillance and pharmacovigilance

Monitors the product for long-term safety and efficacy



### Clinical Trials:

Many research studies are done in people to evaluate a potential medicine's efficacy and safety



## Manufacturing

Drug developers must follow good manufacturing practices (GMP) during and after Phase 2 studies. Why is GMP important?

- Buildings, equipment and processes are properly designed, monitored and controlled
- FDA inspects manufacturing facilities, including ones that manufacture ingredients and the finished product



*The medicine's quality, identity, purity, and strength are confirmed for each batch*



## Speeding up the Process

Under certain circumstances, companies can apply for FDA programs that facilitate faster review

- Fast Track Designation
- Breakthrough Therapy Designation
- Accelerated Approval
- Priority Review