# **Drug Development Process Discussion**

Discovery 2-5 years

Preclinical 1-2 years

Clinical Trials 6-7 years FDA Review 1-2 years

Target ID Lead Finding Optimization

Lab Tests Animal Studies Safety Data Clinical Trial 1 Clinical Trial 2 Clinical Trial 3 Data Review Safety Check Approval

Total Development Time: 10-15 Years

Only 1 in 10,000 compounds reaches market approval

# **Useful Vocabulary**

clinical trials • preclinical testing • FDA approval • drug discovery • target identification safety data • phase studies • lead optimization • animal testing • patient recruitment drug efficacy • regulatory review • development timeline • side effects • clinical phases

#### **Process Overview**

- What is the total development time?
- · Which phase takes the longest?

### Clinical Trials Analysis

- Why are there three trial phases?
- How are patients selected?

#### Safety and Regulation

- · How is safety monitored?
- What can stop development?

#### **Development Costs**

- Why is drug development expensive?
- · What if a drug fails?

# **Discussion Topics**

- How does this process affect drug prices?
- How might AI and machine learning change drug development??