INTRODUCTION

The use of animals to try to understand human disease has long been the dominant paradigm in biomedical research. Approximately 47% of research funding from the U.S. National Institutes of Health (NIH) goes toward animal experimentation and the U.S. Food and Drug Administration requires that novel drugs be tested in animals.

“Preclinical research, especially work that uses animal models, seems to be the area that is currently most susceptible to reproducibility issues.”

U.S. National Institutes of Health (NIH) Director, Dr. Francis Collins

OBJECTIVES

1. Describe a strategy for replacing the use of animals in biomedical research with human-relevant, non-animal methods.
2. Conduct a critical review of the literature to determine the areas of research and regulatory testing where the use of animals can be ended immediately, either because it is unproductive, untranslatable, or because the harms to animals do not outweigh the benefits to humans.

METHODOLOGY

Conduct a literature review to identify the ways in which the use of animals has hindered biomedical research, drug discovery, and economic advancement in the U.S., enumerate the areas of research where the use of animals has been most problematic, and define a strategy for shifting resources towards the implementation of non-animal, human-relevant methods.

CONCLUSIONS

Astonishing advances in human-relevant research technologies hold tremendous promise to revolutionize biomedical research and usher in the age of personalized medicine. Regulatory and funding agencies must redirect the public’s funds to more relevant research that has real potential to help humans. With greater investment in exciting and innovative non-animal methods and bold policy initiatives, far more promising cures and treatments for humans can be developed. This will also alleviate the unimaginable suffering of millions of animals.