



Online Ethics Center
FOR ENGINEERING AND SCIENCE

The New Hip

Author(s)

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Year

2000

Description

A scenario about a researcher who is trying to decide if an animal model is appropriate for her research.

Body

A design engineer, Louise Chandler has developed a new design for a hip prosthesis. The new designer represents a major departure from previous designs; the shape and the materials are innovative and have not been used before. Dr. Chandler wants to test the implant in an animal before it is used in humans. After reviewing the literature, she finds that dogs have been used previously to test joint replacements. For most designs, results in dogs were subsequently shown to be very similar to results in humans.

However, there is one case that is troubling; several years ago, another innovative design was tested in dogs and it performed very well. The failure rates were very low, there was no loosening of the implanted material, and there was very little wear on the artificial joint surface. The orthopedic community was excited and proceeded to implant this design in humans. Unfortunately, the prostheses had a

very high failure rate in patients.

Dr. Chandler also finds many reports in the literature of machines that simulate joints to test new prosthesis designs. She does not have these sophisticated pieces of equipment available to her.

- Should Dr. Chandler test her new design in dogs, despite the one troubling study from the literature?
- What considerations do you think Dr. Chandler should use to aid her in this decision?
- What alternatives might Dr. Chandler have?

Notes

Caroline Whitbeck introduced methods and modules for discussing numerous issues in responsible conduct of research at a Sigma Xi Forum in 2000. Partial funding for the development of this material came from an NIH grant.

You can find the entire sequence on the OEC at [Scenarios for Ethics Modules in the Responsible Conduct of Research](#). Some information in these historical modules may be out-of-date; for instance, there may be a new edition of the professional society's code that is referred to in an item. If you have suggestions for updates, please contact the OEC.

Contributor(s)

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Resource Type

Open-ended scenario

Parent Collection

Scenarios for Ethics Modules in the Responsible Conduct of Research

Topics

Animal Use
Research and Practice

Discipline(s)

Biomedical Engineering and Bioengineering
Engineering
Research Ethics

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