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Improved rodent trials can speed cancer drug development

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Better design of rodent trials could reduce the cost and time required for cancer drug development, according to a commentary in the October 28 online issue of the *Journal of the National Cancer Institute*.

Cancer drug development is a multistep process that involves in vitro tests, animal studies—often with rodent models of disease—and human clinical trials. Inadequately designed rodent studies have led to missteps and delays in previous drug development programs.

In a commentary, Melinda Hollingshead, D.V.M., Ph.D., of the developmental therapeutics program at the National Cancer Institute in Frederick, Md., reviews the critical facets of a well-designed rodent trial. The key steps include the identification and use of an appropriate animal model and study endpoints, correct statistical evaluation of the data, proper randomization, and inclusion of a sufficient number of animals for statistically meaningful data. Hollingshead also argues for the inclusion of enough methodological detail in the published article to allow readers to fully interpret and understand the implications of those data.

Using examples from the peer-reviewed literature, she illustrates the consequences of improper experimental design. Although properly designed experiments may cost more money or require the use of more animals initially, they ultimately save resources and are necessary to streamline the whole process, she argues.

"The conclusions drawn from a series of studies are only as good as the data on which they are based. The impact of high-quality experimental design, methodology, and data interpretation cannot be overstated," she writes. "Along with a savings in animals, there will likely be a concomitant savings in costs and time, contributing to an overall reduction in drug development costs."

Source: Journal of the National Cancer Institute