

## CONTENTS

# The End Is Just the Beginning

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Data collection doesn't end when a clinical trial ends, as rare or long-term side effects of a new drug or treatment may take years to emerge.

These adverse drug reactions, or ADRs, might be missed among the small population of patients included in the clinical trial and might only be noticed after the drug enters widespread use following Food and Drug Administration approval and marketing.

If long-term side effects are severe, the drug may be removed from the market, as happened with the anti-inflammatory drug Vioxx® (rofecoxib) because of drug-associated heart complications. Unanticipated benefits of a drug can also be realized after years of use.

Some negative side effects of Amgen's red blood cell-boosting drug Aranesp® (darbepoetin alfa), for example, are just starting to emerge. Aranesp and the related drug Procrit® (epoetin alfa) were approved in 2002 for the treatment of chemotherapy-induced anemia. New studies now show taking too much of these drugs can trigger potentially life-threatening side effects in certain patient populations, including faster growth of advanced head and neck cancers in patients receiving radiation and shortened survival time in metastatic breast cancer patients receiving chemotherapy. The drugs are still helpful, however, in reducing blood transfusions and improving fatigue without harmful side effects when used to keep the blood count at a lower level.

Aranesp and its relatives are still on the market, but in March, the FDA ordered additional warning labels on the products. Two months later, an FDA advisory committee said further studies were needed to assess risks, and suggested further restrictions, including banning use of these drugs in patients with certain cancers.

To track the occurrence of serious ADRs, which are usually reported on a case-by-case basis, the FDA launched a program called MEDWATCH. Under the MEDWATCH program, physicians, pharmacists, and patients are encouraged to report serious side effects associated with FDA-approved medications.

MEDWATCH has not been particularly useful for identifying ADRs that occur long after drug use or that are not predictable based on the major effects of the drug. Once a drug is approved, a new FDA rule requires pharmaceutical companies to actively monitor adverse reactions and submit these reports on a regular basis to the FDA for evaluation.