

## Mortality Graphs and Survival Graphs Have Different Strengths and Weaknesses

### Objectives:

To assess whether mortality graphs convey to patients the relative effectiveness of different treatments more accurately than survival graphs.

### Background:

Previous research has shown that people perceive treatments as less effective when they look at survival graphs showing fewer years of data versus more years of data. The authors believed that this error in judgment bias might be due in part to survival graphs' violating one of the basic standards of graphic design: The height of a data point must be compared to the top of the graph rather than to the bottom (the X-axis). The authors hypothesized that mortality graphs, which display the same information as survival graphs but use the X-axis as the standard of comparison, would reduce or eliminate errors in judging treatments' relative effectiveness. They randomly assigned a demographically diverse sample of 1,461 Internet users to view either survival or

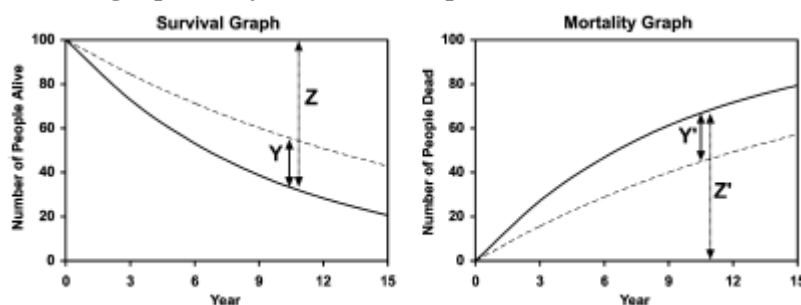


Fig. 1. Interpreting treatment effectiveness with survival and mortality graphs.

mortality graphs that showed either 5 or 15 years of treatment outcomes data for a hypothetical disease and asked them to identify the most effective treatment, rate the relative effectiveness of two treatments, and answer comprehension questions.

In Fig. 1, from Zikmund-Fisher et al., Y and Y' are the distances between the curves that readers must visually measure to judge relative treatment effectiveness. Z and Z' represent the distance to 100% survival.

### Findings:

- Survival graphs were better at helping people correctly identify the optimal treatment: 94% of participants who viewed survival graphs versus 85% of participants who viewed mortality graphs were able to do so.
- Mortality graphs significantly reduced the degree to which people misjudged treatments' relative effectiveness, compared with survival graphs, although they did not eliminate the problem entirely.
- Participants who viewed mortality graphs showed better overall comprehension of the graphic data.
- Participants who viewed 15-year graphs were better able to comprehend relative treatment effectiveness than those who viewed 5-year graphs.

## **Ix Implications:**

- The number of years of data presented in a survival graph can, by itself, affect beliefs about treatment effectiveness.
- Mortality graphs help people judge the relative effectiveness of different treatments better than survival graphs do. However, Ix providers need to ensure that readers understand that the optimal treatment is shown by the lowest curve on the graph; the idea that “less is better” tends to be counterintuitive.

## **Citation:**

Zikmund-Fisher, B. J., et al. (2007). Mortality versus survival graphs: Improving temporal consistency in perceptions of treatment effectiveness. *Patient Education and Counseling*, 66, 100-107.

# Automated Test Results Management System Increases Patient Satisfaction

## Objectives:

To assess how physicians' use of a test results management tool embedded in an electronic health record (EHR) affects patient satisfaction levels with test result communication.

## Background:

Discussion of test results between patients and physicians is a crucial part of medical care, but there are few reliable, efficient systems that support this communication in outpatient settings. Test result viewer applications are available in most EHRs, but they generally require physicians to keep track of pending tests and check each patient's medical record separately for results. This study, conducted at Partners Healthcare System in Massachusetts, was a prospective, cluster-randomized, controlled trial of 570 patient encounters in 26 outpatient primary care practices. Physicians in the intervention practices were trained and given access to Results Manager (RM), a test result management tool with built-in patient notification functions. A total of 44,025 result letters were generated by RM in participating intervention practices during the study period. The researchers conducted telephonic patient satisfaction surveys before and after the intervention.

## Findings:

- The intervention significantly improved patient satisfaction with test result communication (OR 2.35, 95% CI 1.05-5.25,  $p = .03$ ).
- Patients in the intervention group were also more satisfied with the information they received from their physicians about their conditions and treatment plans (OR 3.45, 95% CI 1.30-9.17,  $p = .02$ ).
- RM's ability to embed patient-friendly interpretations of test results, along with the test results themselves, into patient letters likely contributed to these improvements in satisfaction levels.

## Ix Implications:

- An automated test management system linked to patient EHRs can prevent breakdown of physician-patient communication around test results, improving patient satisfaction and preventing avoidable delays in treatment.

## Citation:

Matheny, M. E., et al. (2007). Impact of an automated test results management system on patients' satisfaction about test result communication. *Archives of Internal Medicine*, 167(20), 2233-2239.

# Interventions Designed to Help Patients Address Information Needs During Visits to Providers Have Shown Limited Benefits

## Objectives:

To assess the effects on patients, clinicians, and the health care system of pre-consultation interventions designed to help patients address their information needs during consultations with a doctor or nurse.

## Background:

Patients frequently report that they want more information from their health care providers, or that the information they receive does not address their needs. For this Cochrane review, the authors identified 33 randomized controlled trials of pre-consultation interventions designed to help patients ask questions during consultations. The studies involved 8,244 patients from diverse populations seen in a range of outpatient settings. The outcomes they examined were question asking, patient participation, patient anxiety, knowledge, satisfaction, and consultation length. The interventions comprised written materials (e.g., question prompt sheets) and/or coaching sessions, and were generally delivered in the waiting room immediately before the consultation.

## Findings:

- The interventions reviewed produced limited benefits to patients. Meta analyses showed:
  - Small, statistically significant increases for question asking and patient satisfaction (SMD 0.27, 95% CI 0.19-0.36);
  - A notable but not statistically significant decrease in patient anxiety before consultations; and
  - Small and not statistically significant decreases in patient knowledge and patient anxiety after consultation, and a small, not statistically significant increase in consultation length.
- From the limited evidence available, the authors found no clear benefits from clinician training in conjunction with the patient interventions.
- In a small number of the studies reviewed, the intervention took place some time before the consultation. These interventions did not increase patient satisfaction or consultation time. The authors hypothesize that while giving patients more time to identify and rehearse questions might be beneficial, it might also give patients higher expectations for the consultation that may not be fulfilled.

## Ix Implications:

- Interventions may help patients identify questions to ask in consultations, but patients may still be unable to ask these questions. Clinicians may view question asking as threatening, especially when time is limited. Further research is needed to assess:
  - The quality and content of patients' questions;
  - The effects of clinicians' responses to patient question asking; and
  - Whether combining patient-focused interventions with intensive clinician training improves patient outcomes.
- The authors also suggest that researchers use outcomes other than patient satisfaction, since patients may be satisfied with less than optimal care.

**Citation:**

Kinnersley, P., et al. (2007). Interventions before consultations for helping patients address their information needs. *Cochrane Database of Systematic Reviews*, Issue 3. Article No: CD004565. DOI: 10.1002/14651858.CD004565.pub2.

<http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD004565/frame.html>