

Use of an Interactive Data Dashboard to Monitor Studies for Large Multi-Center Trials

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More than 10,000,000 data points have been collected for the Inner-City Asthma Consortium (ICAC) – a large, NIH-funded, multi-center clinical research consortium. The ICAC statistical coordinating center is tasked with monitoring this massive volume of data to ensure that studies are conducted successfully. Data of this magnitude can provide a wealth of useful knowledge, but the challenge is to report the data in ways that can be easily accessed and understood. This is especially difficult in large, multi-center networks where data come from numerous sources across dozens of studies.

To aid our research teams with study monitoring, the statistical coordinating center provides a webportal to share key study information and reports. The webportal utilizes a traditional hierarchical structure, which is useful for organizing large numbers of study-specific resources. However, this design also scatters resources across multiple pages and subsections, which makes high-level monitoring challenging and inefficient.

To pull together and summarize our broad data, we created an interactive, web-based data dashboard. A dashboard consolidates key information into one central, easy-to-access location, and organizes it on a single page. In a dashboard, graphics are more prominent than text, which simplifies the user experience and makes data easier to understand. Adding interactive elements to a dashboard increases the volume of data that can be presented and enables users to focus on data of particular interest to them. For instance, data can be filtered in real-time to display charts for individual protocols and study sites. Interactive dashboards take advantage of common website design features to give researchers access to dynamic, data-rich monitoring tools. In this presentation, we describe the advantages of displaying data in an interactive dashboard and demonstrate live web-based examples of these tools.

Our experience indicates that using web-based technology can dramatically improve study monitoring in large, multi-center clinical trials.