

Use of an interactive web-based heat map calendar to monitor study event data

Nathan Bryant, Jeremy Wildfire, Emily Wilson, Ryan Bailey, Michelle Walter

Rho, Chapel Hill, North Carolina

The 3837 participants enrolled in studies conducted by the Inner-City Asthma Consortium – a large, NIH-funded, clinical research group – have completed over 100,000 study events. With data of this scope, innovative approaches are needed to coordinate logistics and guarantee data quality.

The statistical coordinating center provides the framework for scheduling and monitoring all events (clinic visits, phone calls, discontinuations, etc.) using a web-based data management system (DMS). Clinical sites use this system to schedule events and administrators at the site and program level use this information to monitor and predict workload.

All event data is stored in a database that can be queried for standardized reports by each of these parties. However, traditional reports are text-heavy and have a limited number of query parameters, which can make for cumbersome lists that cannot be quickly parsed for the array of potential uses.

We created a web-based calendar tool to display this information in a more user-friendly format. The tool is generated in a web browser based on a dataset produced by the DMS. It displays a calendar-format heat map partitioned by year, month and day. This default, high-level view can quickly illustrate patterns of event frequency over the course of the study. An exact event count and hour-by-hour daily summary can be easily shown for each day. The event information displayed can be subset by the user through custom filters based on any field in the events dataset (e.g. event status, event type, participant ID). In this presentation, we describe the benefits of this visual display and web-based approach.

Our experience provides evidence that using available web-based technology can dramatically improve the way event data is monitored and managed in clinical trials.