Data Safety and Monitoring

All research involving human subjects requires a plan calibrated to the anticipated risks associated with the research. The regulations specify at 45CFR46.111 that when appropriate, the research plan makes adequate provision for monitoring the data collected to ensure the safety of subjects, and, when appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of data.

Ensuring the integrity of the data collected and monitoring the study for emerging safety concerns ensures that the benefits derived from the research are maximized and the risk of harm to subjects and society are minimized. In order to ensure the safety of research participants and the integrity of research, the IRB will ensure that each study includes a plan for data and safety monitoring appropriate to the risks presented by the research. The IRB should ensure that adequate monitoring is taking place and will review reports from the monitoring entity, if applicable.

Definitions:

DSMP: Data and Safety Monitoring Plan. The DSMP includes all aspects for ensuring the integrity of the data and for protecting the safety of current and future participants.

DSMB or DMC or DMB: Data Safety Monitoring Board, Data Monitoring Committee or Data Monitoring Board.

Independent DMC: A committee composed of individuals with no connection or conflicts of interest related to the current study and organized to provide oversight of the emerging data and safety during the progress of a clinical trial. One of the primary purposes of the Independent DMC is to preserve the integrity of a randomized blinded trial.

Internal DMC: A committee composed of representatives of the study investigators and sponsors who are empowered to monitor the progress, safety, and integrity of a study.

Medical Monitor: An individual assigned to monitor the progress, safety, and integrity of a study

When does a study require a data safety monitoring plan?

For minimal risk studies, data monitoring plans are generally not required; however, there should be a description in the protocol of adequate provisions to protect the privacy of subjects and to maintain the confidentiality of data.

Phase II and Phase III randomized, blinded trials involving life-threatening diseases will always require an external Data Monitoring Committee (DMC), also referred to as a Data Safety Monitoring Board (DSMB). The information regarding the procedures followed by the DSMB should be provided by the sponsoring agency. An internal data monitoring committee usually will usually be sufficient for open-label Phase II or Phase III trials

Type of DSMP required

The degree of monitoring is related to the level of study risk. Monitoring may be conducted by the investigator (for low risk studies), a Data Safety Monitoring Board (DSMB) managed by the investigator or the sponsor, or by an independent DSMB. The IRB will make a determination for when to require a formal DMC to provide data and safety monitoring oversight.

Description and Objectives of the DSMP

Investigators are required to develop a DSMP appropriate in scope to the anticipated risks of the research. The DSMP may address the following issues:

- A description of the plan to insure the integrity of the data including:
  (a) A description of the systems for storing and backing up the data;
  (b) A listing of who will monitor and review the data (note: it may be appropriate for the PI to serve as the monitor); this may be a data safety monitoring board, data safety committee, the investigator, or independent board / physician
  (c) The frequency of monitoring (e.g. specific points in time, or after a specific number of participants have enrolled);
  (d) A description of the data to be monitored;
  (e) Procedures for analysis and interpretation of the data;
  (f) Actions to be taken upon specific events or endpoints.
  (g) a procedure for ensuring that any temporary or permanent suspension of the research will be reported to the IRB

- Procedures for communication from the data monitor to the IRB and other sites;

- Protection of the rights and welfare of subjects during the recruitment, consenting process, and study participation;

- Protection of subject privacy and confidentiality;

- A description of the mechanisms for detecting, reviewing, and reporting unanticipated problems involving risks to subjects or others by the investigative team at a frequency sufficient to ensure the safety of participants;

- If there are external reporting responsibilities, the plan should describe the processes and oversight the investigator has in place to report unanticipated problems and serious adverse events to the following as applicable: OHRP, FDA, and the study sponsor;

- Assurance that research responsibilities delegated by the principal investigator to investigative team members are carried out in accordance with the protocol, federal regulations, federal, state and local laws, and institutional policies and procedures.

The DSMB may wish to terminate a study because the data may reveal new risks previously unanticipated, the data may show that the study should end earlier than planned, or the data may show a need for study revision or termination for patient safety. The IRB will review the data safety monitoring reports at the initial submission, at continuing review, and as required to ensure subject safety.