IRB Tip Sheet: Data and Safety Monitoring Plan

What is a Data and Safety Monitoring Plan?

A Data and Safety Monitoring Plan (DSMP) prospectively identifies and documents monitoring activities that are required to protect the safety and welfare of the subjects, the validity of the data, and the integrity of the research study. The DSMP should be commensurate with the level of risk, nature and complexity of the research, and the population under study.

- All non-exempt human subjects research protocols in the NIH Intramural Research Program must include a DSMP.
- The DSMP must be described in the written protocol and should be carefully considered and tailored to the individual protocol.

What may be included in the written Data and Safety Monitoring Plan?

- Procedures for communication between applicable groups such as the PI and research team members, the study sponsor, the data and safety monitoring entity, the IRB, the coordinating center, the FDA, and other study sites.
- Individual stopping rules and/or study stopping rules
- Plans for interim and/or futility analyses
- The frequency of any assessments or reviews of data and events
- The identity and description of the Data and Safety Monitoring Entity

What is a Data and Safety Monitoring Entity?

The Data and Safety Monitoring Entity is an identified individual or group assigned to conduct interim monitoring of data from research activities. The NIH Institute or Center (IC), the FDA, a Sponsor, or an IRB can require that a DSMP identify a data and safety monitoring entity that is independent from the PI and is chosen based on the risk of the research that is performed.

Examples Include:

Principal Investigator	Data and Safety Monitoring Committee (DSMC)
Institute or Center (IC) Monitor	Data Monitoring Committee (DMC)
Medical Monitor	Safety Monitoring Committee (SMC)
Independent Safety Monitor (ISM)	Data and Safety Monitoring Board (DSMB)

What are the IRB's responsibilities regarding a Data and Safety Monitoring Plan?

- The IRB is responsible for reviewing the DSMP to determine whether there are adequate provisions to ensure, to the extent possible, the safety of research subjects and the integrity of the data. If necessary, the IRB may require changes to the plan before approving the study.
- The IRB is responsible for reviewing data and safety monitoring reports at the time of continuing review, or sooner, to determine if the study remains approvable or requires an amendment.
- IRB review of submitted data and safety monitoring reports should include:
    - Reviewing the findings of any Data and Safety Monitoring Entity and any actions proposed by the PI in response.
        - *Examples of PI actions: amending the protocol or the consent, placing the study on administrative hold, closing the study.*
    - Determining whether any additional changes are needed based on the report.
        - *Examples of IRB actions: increasing frequency of continuing review, requiring changes to the protocol or consent, changing the Data and Safety Monitoring Entity, suspending the protocol, terminating the protocol.*

Examples of Common Data and Safety Monitoring Entities Seen in NIH Intramural Research Program Protocols:

Monitoring options for all studies regardless of risk	
Principal Investigator*	**At minimum**, the PI must perform monitoring as part of their oversight duties as the study investigator per NIH HRPP Policy 300, *Investigator Responsibilities* and Policy 503, *Data and Safety Monitoring*.
Institute or Center (IC) Monitor or Clinical Research Associates (CRA)	Monitors the conduct of the research to evaluate for compliance with the protocol and reporting requirements; and monitors the validity and integrity of the study data.
Medical Monitor (MM)	A MM is a physician and spokesperson of a drug study sponsor responsible for examining the safety aspects of a protocol. A MM provides medical expertise for trial oversight and safety concerns.
Possible additional monitoring for Greater than Minimal Risk Studies *Monitoring responsibilities of these entities enhance, but do not replace, the monitoring responsibilities of the Principal Investigator (PI) and reporting to the IRB.*	
Independent Safety Monitor (ISM) Also known as: • Independent Medical Monitor (IMM)	An ISM is an independent physician or other appropriate expert with relevant expertise whose primary responsibility is to provide independent monitoring of the research in a timely fashion. The ISM is distinctly separate from a study medical monitor's role. The ISM evaluates individual and cumulative participant data when making recommendations regarding the safe continuation of the study. The ISM must be independent from any professional or financial conflict of interest (COI) with the research project and/or study investigators. An ISM is typically used for small early phase trials that are considered low risk, but also can be used in higher risk studies together with a DSMB. ISMs are also used in studies where the PI is blinded to the treatment arm.
Safety Monitoring Committee (SMC)	At NIH, a SMC provides a similar function as a DSMB but is closely associated with its Institute. This means that the members of the SMC must be independent of the study; however, they can still be from the same Institute as the PI. Depending on the Institute, they may focus on the review of events related to safety concerns and not perform any interim analyses or evaluations of clinical endpoint data. Different Institutes at NIH have different requirements related to the structure of the SMC and what level of review they provide. For example: NCI has an established SMC that reviews their high-risk and gene therapy protocols. NINDS requires an Institute approved SMC typically for single-center intervention trials or moderate risk studies but requires a DSMB for their high-risk studies.
Data and Safety Monitoring Board (DSMB) Also known as: • Independent Data Monitoring Committee (IDMC) • Independent Data and Safety Monitoring Board (IDSMB) • Data Monitoring Committee (DMC) • Data and Safety Monitoring Committee (DSMC)	A DSMB may be established by the sponsor to conduct interval assessments of clinical trial progress, safety data, and critical efficacy variables and recommend to the sponsor whether to continue, modify or terminate a trial. The DSMB is a separate entity from an IRB and should include clinical trial scientists/medical clinicians knowledgeable in the appropriate disciplines, including a biostatistician. This allows them to perform the clinical monitoring necessary to interpret the data from the clinical trial and to fully evaluate participant safety. DSMB members must be independent from any professional or financial conflict of interest (COI) with the research project and/or study investigators. A DSMB is typically required for multi-center intervention trials and for high-risk interventional studies. They are also used in blinded studies or high-risk studies that involve certain vulnerable populations.

* A Medically Advisory Investigator (MAI) must be identified when the PI is not a member of the medical staff, and the protocol requires direct medical care to protocol participants and consultation about clinical matters.