Standard Operating Procedure

Requesting Statistical Analyses for Clinical Trials

Biostatistics and Data Management Core
Indiana University Melvin and Bren Simon Comprehensive Cancer Center

Purpose: The primary purpose of the Biostatistics and Data Management Core (BDMC) is to promote research for IUSCCC through delivering high-quality collaborations, with priority on: (1) submitting and obtaining externally-funded peer-reviewed grant awards (e.g., NIH, DOD, NSF, American Cancer Society), (2) publishing peer-reviewed journal articles, and (3) conducting industry-sponsored investigator-initiated clinical trials (which are not usually funded through national granting agencies).

The Biostatisticians and Statistical Data Managers in the BDMC contribute to research data collection and are responsible for data extraction from OnCore (as well as other databases) and statistical analyses for investigator-initiated studies at the IUSCCC.

The data extractions and statistical analyses are primarily used for the purposes of quality control and abstract and manuscript preparation. This document describes the process of requesting biostatistics and data management support from the BDMC in regards to clinical trials. Non-clinical trial requests should follow a similar format and timeline, but it is understood that a Clinical Research Specialist (CRS) will not be involved and the data may be provided in the form of an Excel spreadsheet or a REDCap database.

1. The principal investigator (PI) should notify the CRS or project manager of any upcoming analysis **deadlines** (i.e. interim analysis, abstracts, etc.) within a minimum of 8 weeks of the deadline date. The CRS should then immediately notify the Statistical Data Manager and Biostatistician on the protocol. If the CRS does not know who the Biostatistician and/or Statistical Data Manager is for a particular request, they should first check the PC Console in OnCore under the Staff tab. If that is not helpful they should send their request directly to the BDMC Director, Dr. Monahan (pmonahan@iu.edu).

   Please include both the 'hard' deadline (e.g. abstract submission date) and the soft deadlines (e.g., 1 week prior to abstract submission date for sponsor approval). The PI needs to provide the CRS a list of what they want analyzed, which the CRS can then forward to the Biostatistician and Statistical Data Manger. It is helpful if the CRS can also direct the Statistical Data Manager/Biostatistician to where the data are located in OnCore (or REDCap for selected protocols) or to the lab that has the correlative data. **An example** for an abstract submission request is shown below. If necessary, the CRS should also provide information on who to contact if CRS is out of office during holiday breaks or vacations (or leaves) concerning queries generated by the Statistical Data manager or Biostatistician while completing the request. The CRS will normally receive a response from either the Statistical Data Manager and/or the Biostatistician within 1-2 business days from when the request was received.

   An example of an analysis request for an abstract submission is provided below. Lists with specific information like this example are preferred to general statements. If only general statements are provided, the Biostatistician will set up a meeting with the PI:

ASCO Abstract deadline: Feb 2, 2012; Must submit to sponsor 2 weeks prior.

1) Demographic information
(sample size per cohort, age, gender, ECOG PS)
2) Disease Site/Location of Tumor
3) Date of Diagnosis
4) Prior therapies (chemo, biologic, rad, surgery, average # of prior therapies)
5) Number of cycles each patient had with summary
6) Best response while on study
7) Follow up and Survival information/Date of death to calculate TTP or PFS, duration of response, duration of Stable Disease (SD)
8) Adverse events: 5 most common treatment-related, and all Grade 3 and 4 treatment-related.

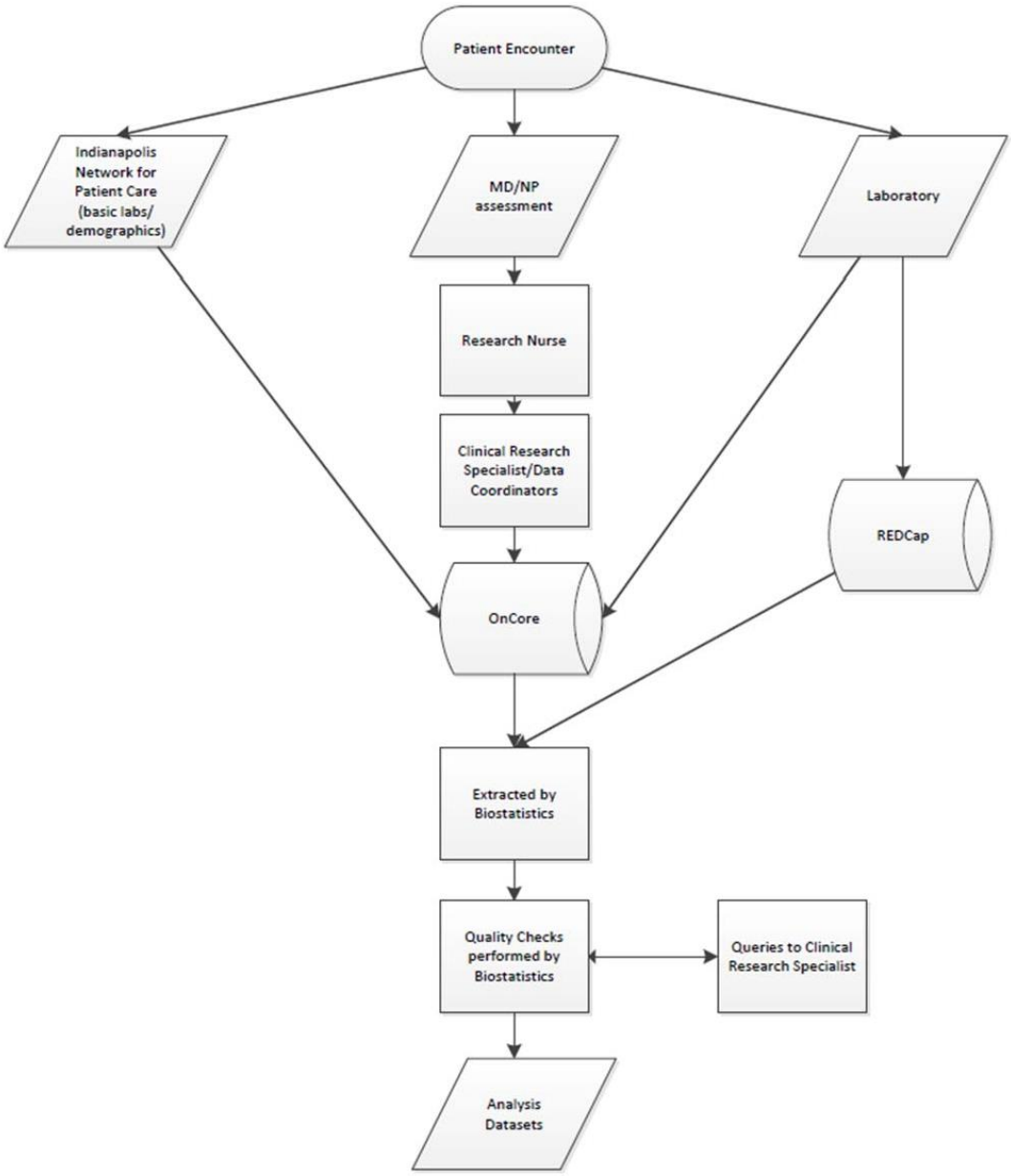
2. The Biostatistician and CRS (with PI input) will determine a **data lock date** (last date for which data will be included in the analysis). Typically, this will be one of the four dates mandated by the CTO for which the CRS must ensure the data are up-to-date.

   February 1st (data up-to-date through February 1st must be entered by February 28th)
   May 1st (data up-to-date through May 1st must be entered by May 31st)
   August 1st (data up-to-date through August 1st must be entered by August 31st)
   November 1st (data up-to-date through November 1st must be entered by November 30th)

3. **Prior to beginning any work, the Biostatistician must verify the funding source**. This is done through communications with the PI and/or finance team. Funding sources are typically: industry sponsored, which is typically billed via a flat contract amount that depends on trial type and complexity; % effort on grant; per patient funding through CTO; or billed hourly through a collaborator agreement form for fee-for-service. If the funding source is not already ongoing, then a collaborator agreement form must be filled out and returned. The Biostatistician will send the form to the PI, which the PI will then complete and return to the Biostatistics Department.

4. **The Biostatistician will send the results/output directly to the PI and copy the CRS**. This will allow the CRS to have a record, be informed that the request was filled, and have a chance to review the results if interested. Reports will vary depending on the request but can include text, tables, listings, and figures. It is not uncommon for the PI to then request additional information or point out issues with the data or results that need to be further addressed by the CRS and/or Statistical Data Manager and Biostatistician. The timeline to fully complete the request will depend on the scope of work and the urgency of the deadline. As recommended by IUSCCC leadership, the BDMC should give first priority to helping promote externally-funded grant submissions, then to assisting with peer-reviewed article publications, and then to helping with abstract submissions. This is consistent with the research priorities of most organizations.

The following **diagram** depicts the **flow of data for a typical clinical trial**, from the initial patient encounter to production of a dataset prepared for analysis (i.e., the “analysis dataset”, results, and then publication.


Patient Encounter
Indianapolis Network for Patient Care (basic labs/ demographics)
MD/NP assessment
Laboratory
Research Nurse
Clinical Research Specialist/Data Coordinators
REDCap
OnCore
Extracted by Biostatistics
Quality Checks performed by Biostatistics
Queries to Clinical Research Specialist
Analysis Datasets