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Streamlining Cross-Institutional Processes: the Next Great Frontier for Supplying High-Quality Biospecimens to Translational Researchers

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Streamlining Cross-Institutional Processes: The Next Great Frontier for Supplying High-Quality Biospecimens to Translational Researchers

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Introduction

Translational cancer research heavily relies on finding high-quality and clinically annotated biospecimens to fulfill research projects goals. Researchers need to meet specific criteria that includes credibility, to demonstrate a true picture of the research process and validity of findings, transferability, to ensure enough details and sufficient context is analyzed, and confirmability, which provides factual proof of the findings of the research and does not have underlying assumptions.

Miami Cancer Institute, at Baptist Health South Florida, counts with a unique source of resources and biospecimens available for research due to its solid hospital-based infrastructure and the unique population of patients; a predominantly Hispanic population. The Biorepository Program was established to provide this asset to the research community at large. The Program ensures the consent, collection, processing, preservation and biospecimen clinical annotation are holding the highest standards to enable qualitative translational research projects. The Biorepository utilizes a programmatic approach to receive, manage and fulfill researchers' requests, which includes specific sub processes and activities that are contained and delineated in each request. Because of the uniqueness and level of complexity inherent to each project request, a fully standardized and rigid approach would not be adopted to fulfill a tailored researcher request. Therefore, an innovative, semi-standardized approach was designed as a way to be efficient, flexible and to adjust based on dynamic changes in the oncology research landscape.

Project Requests

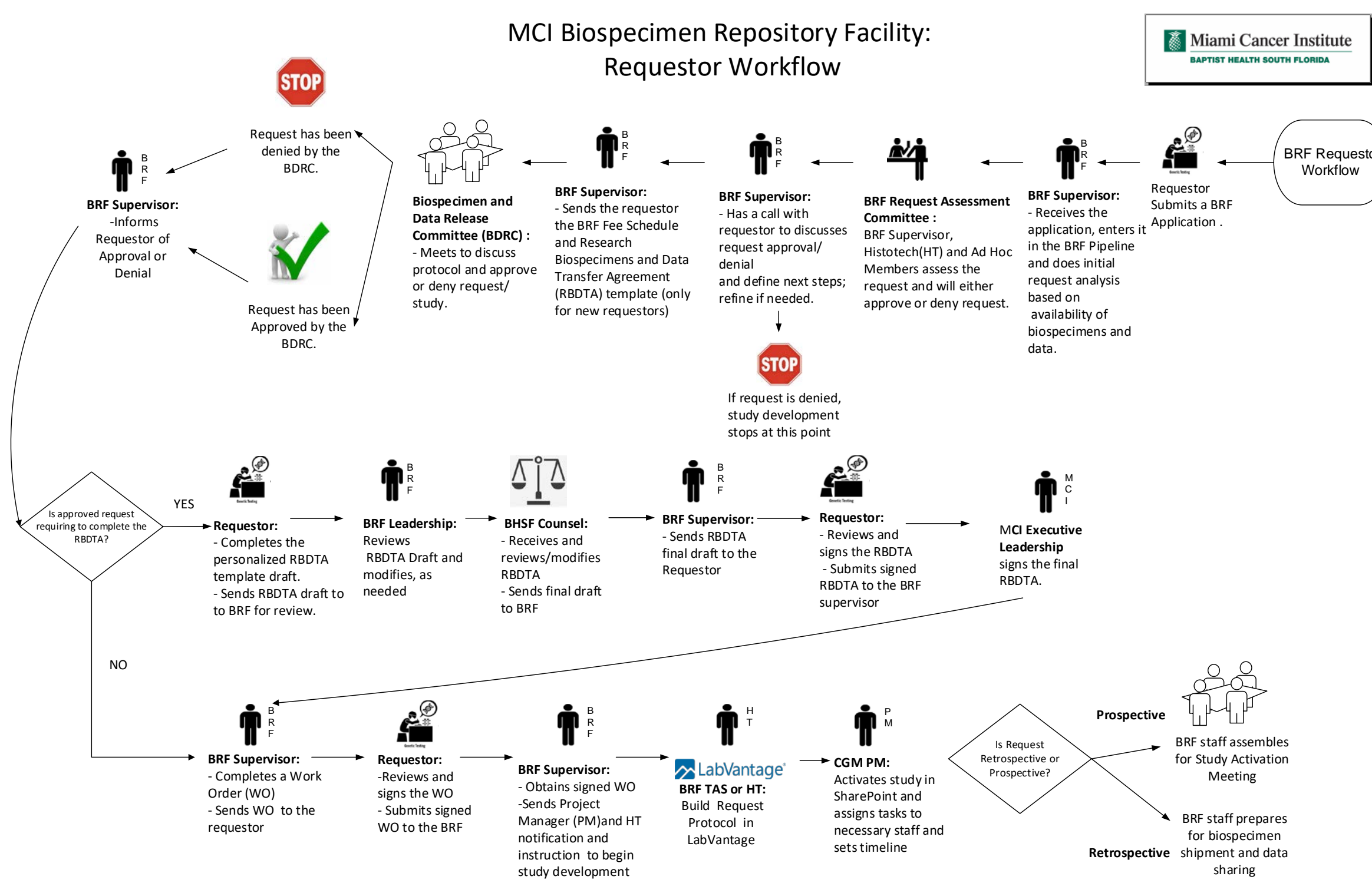


Figure 1. Biospecimen Repository Facility workflow used to manage biospecimen requests.

For an initial request, an investigator submits an inquiry to the Biospecimen Repository Facility Supervisor, which then needs to be formalized by submitting an official application. When the application is reviewed by the Biospecimen Repository Facility Request Assessment Committee, and if approved, a fee schedule is provided to the researcher. The application is then reviewed by the Miami Cancer Institute Biospecimen Data and Release Committee. Upon approval, the requestor signs a Material Transfer Agreement and a Work Order is created to start the project. The Work Order sets the requirements for project implementation which includes prospective biospecimen collection, banked biospecimen retrieval or a combination of the two.

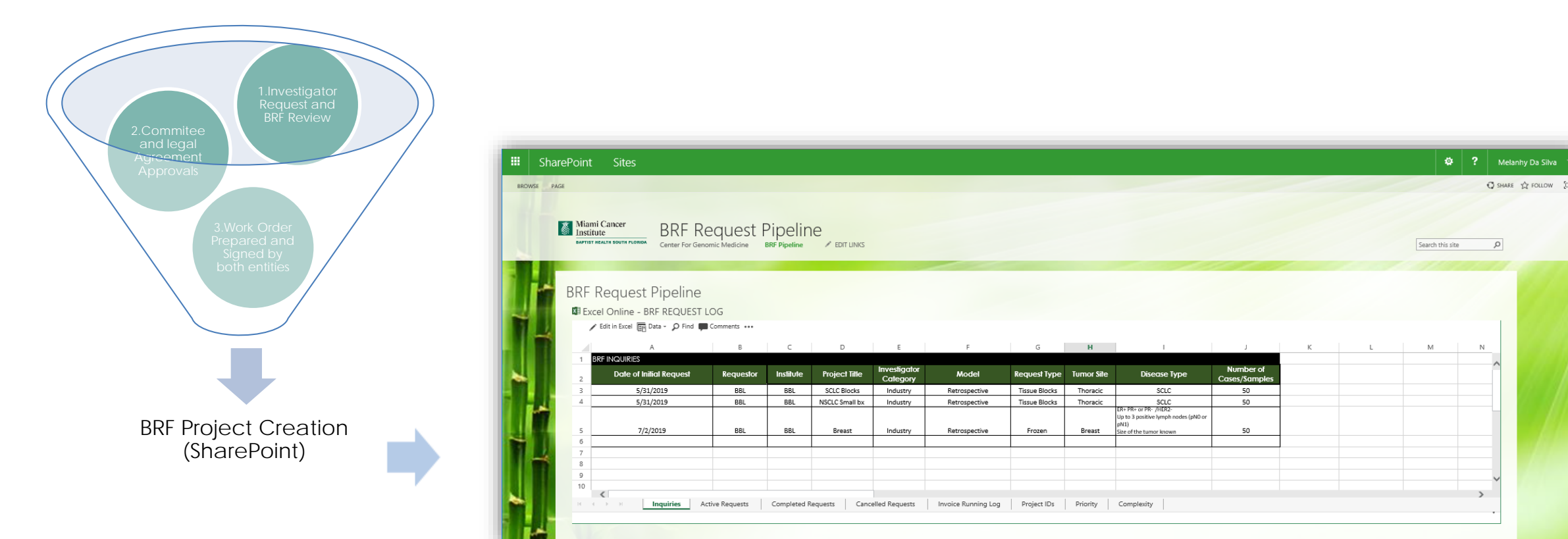


Figure 2. Elements composing a BRF Project and are tracked using SharePoint.

Project Tracking and Task Allocation

All requests and steps throughout the project are tracked and properly recorded in SharePoint, a dynamic system that allows collaboration from different team members in real time. The request moves from an "inquiry" to an "active request" to start project development. This system articulates a semi-standardized process that normalizes task allocation, milestone tracking and project fulfillment for the different operational units.

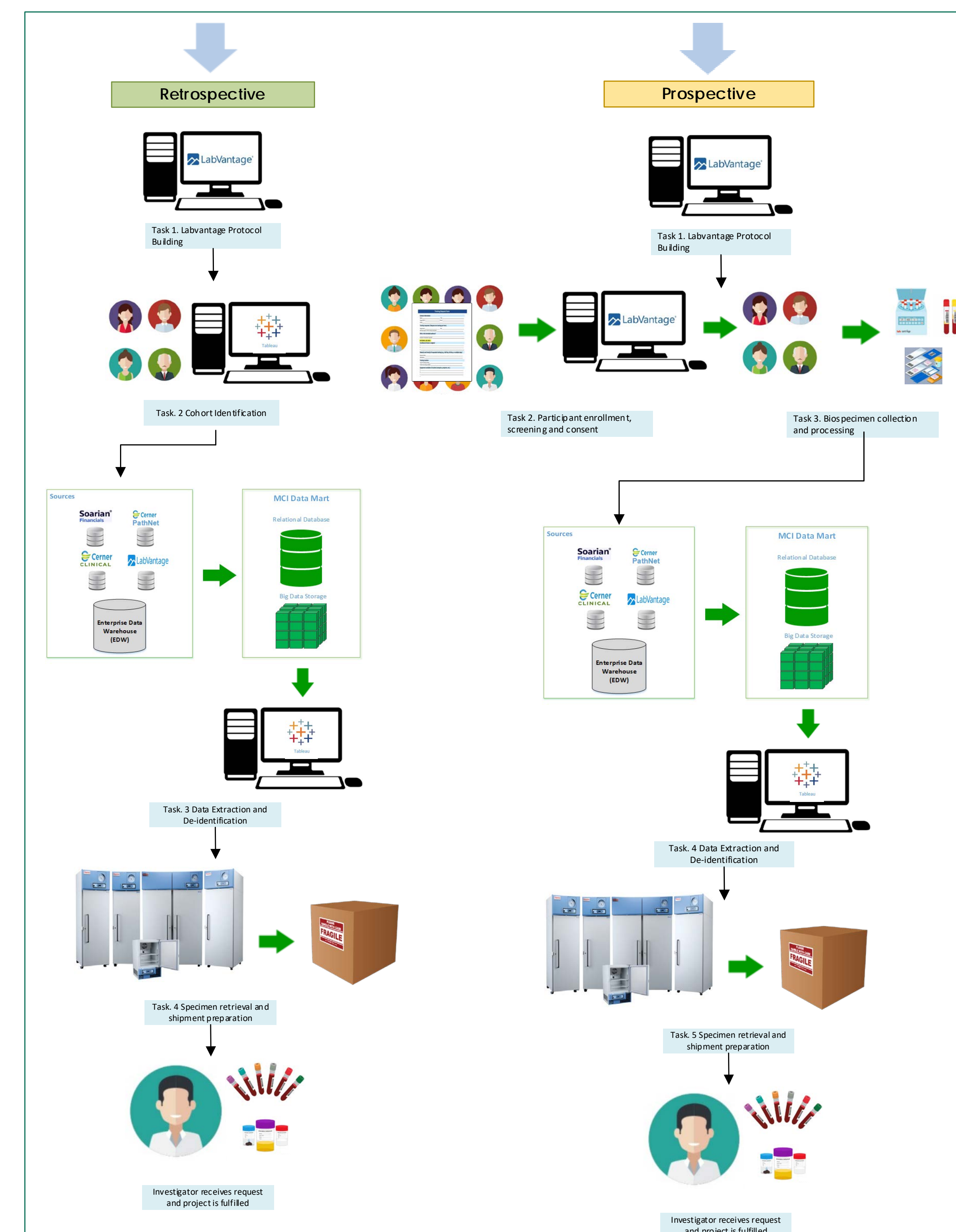
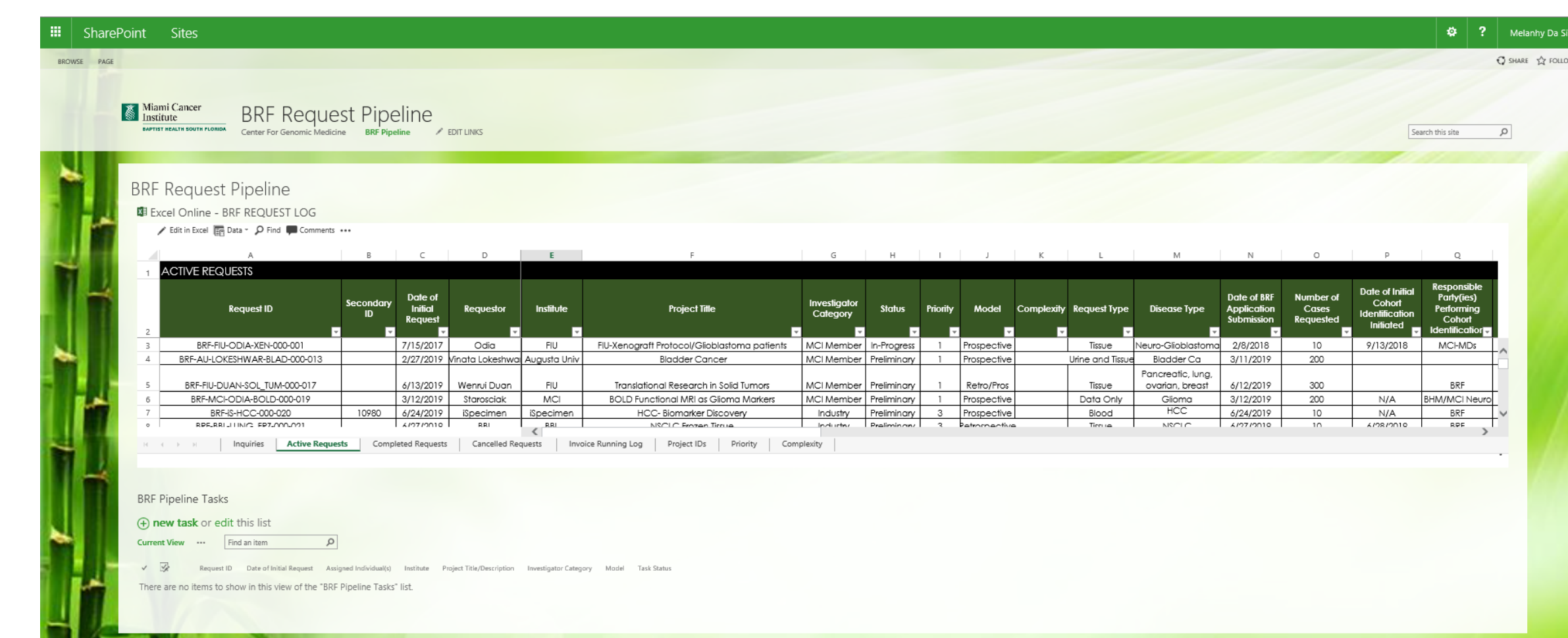


Figure 3. Task assignments initiated and tracked using SharePoint

Operational Units

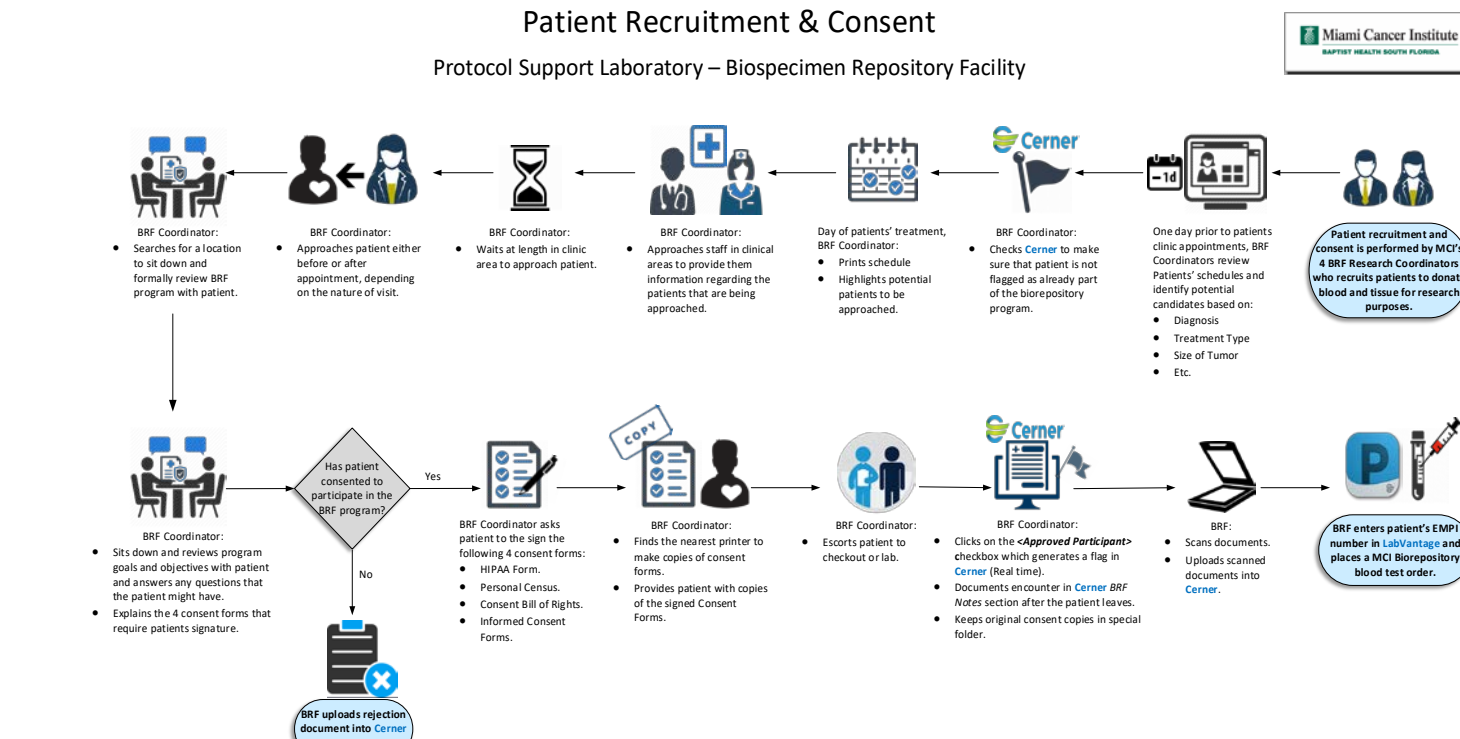
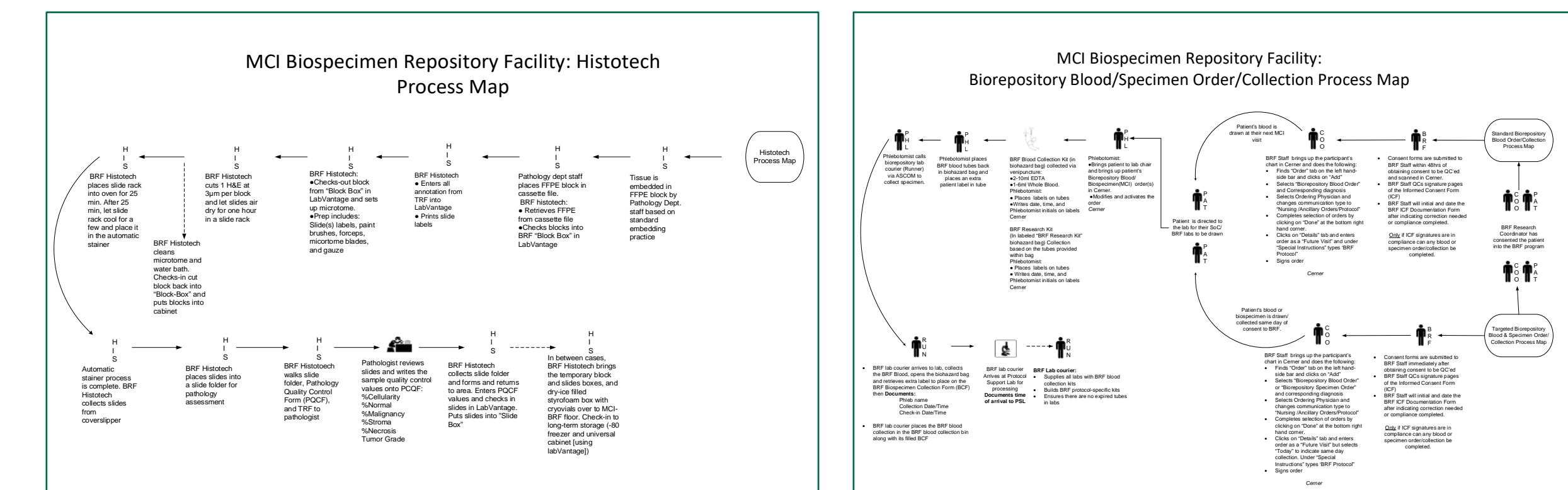
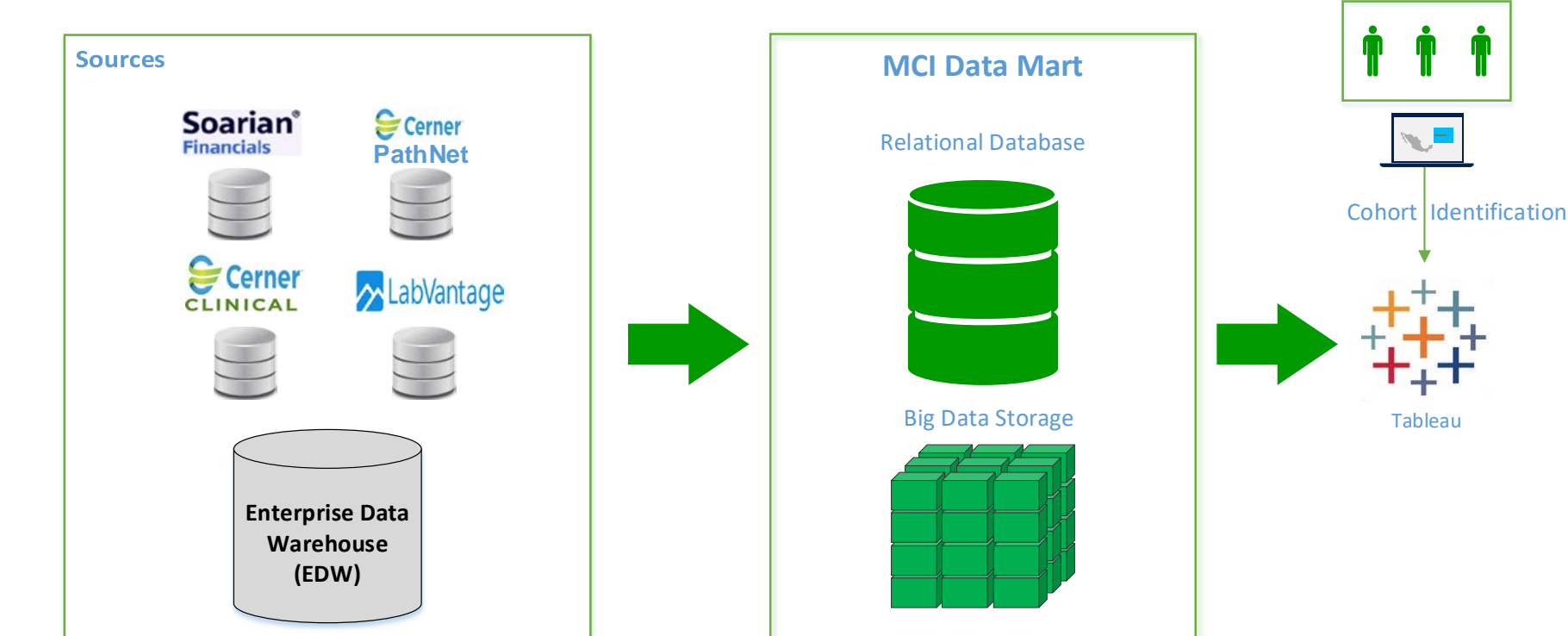


Figure 4. Example of Workflow used for enrolling patients into the Biospecimen Repository Facility Program. Requestor demands are fulfilled by fine-tuning steps depending on operational logistics.



Figures 5. Examples of Workflows used for collecting tissue (left side) and blood (right side) biospecimens from consented patients.



Figures 6. Examples of workflows used for clinical annotation of biospecimens and extraction of specific clinical datasets requested.

Conclusions

- Miami Cancer Institute, at Baptist Health South Florida, counts with a unique source of resources and biospecimens available for research due to its solid hospital-based infrastructure and its unique population of patients; a predominantly Hispanic population.
- Researchers can request biospecimens that have been already banked, request to initiate a prospective collection or a combination of both.
- The Biospecimen Research Facility (BRF) operates using an innovative, semi-standardized approach, which starts with an inquiry by a researcher, gets assessed from a feasibility perspective, seeks the approval of different committees and has the potential of becoming a BRF research project.
- Due to the uniqueness and level of complexity inherent to each project, the method for project tracking is constantly tested and remains semi-standardized in order to be efficient and flexible.
- BRF utilizes SharePoint, a dynamic system that allows collaboration from different team members in real time. SharePoint serves to manage operational logistics such as intra-departmental communication, task allocation and project tracking and completion. This allows the BRF to have a timely and efficient request fulfillment even though multiple Departments contribute to the development and completion of each project.
- At the heart of the BRF, quality is at the forefront of its operations and each biospecimen is collected, processed, clinically annotated and banked following the highest standards to continuously help researchers generate new diagnostic tools, predictive models and better therapeutic modalities.