Integrated Implementation of Cancer Research
Research Infomation Technology Systems

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https://www.rig.onc.jhmi.edu

RITS Support for Pancreatic Cancer
* Screening (CAPS - Cancer of the Pancreas Screening)
  - Multi-Institutional research study database for screening of individuals with a family history of pancreatic cancer
* Human Clinical Trials (Pancreatic Cancer Database)
  - Track all patients with pancreatic and periampullary disease who are enrolled in experimental protocols, including clinical, pathologic and tissue bank data
* Animal Drug Studies (PancXenoBank)
  - Acts as the control center in two part translational research study. Links the results via the gene and probe set ontologies with all experimental data.
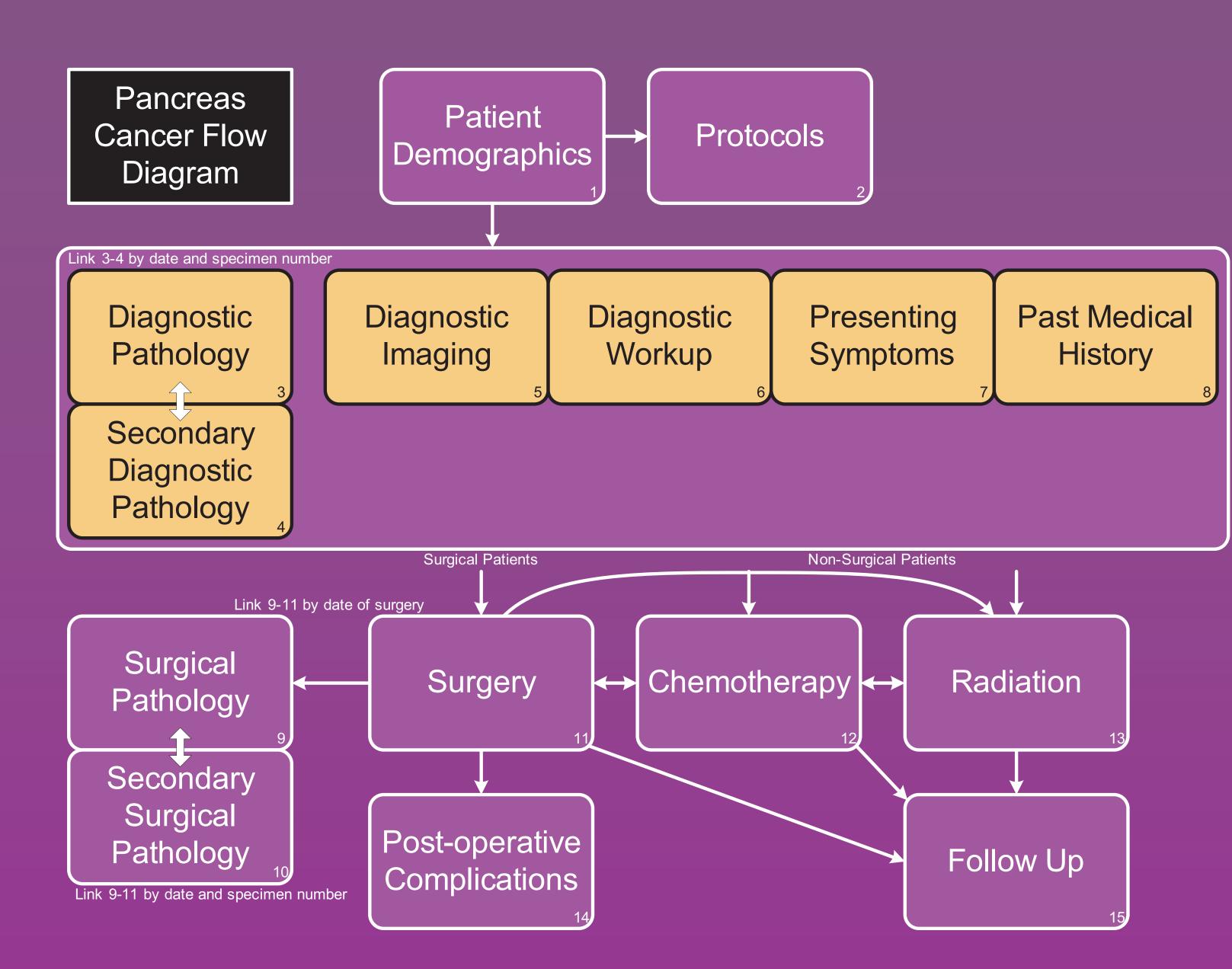
Screening (CAPS - Cancer of the Pancreas Screening)
* Online application for multi-center screening trial
* 5 sites : Johns Hopkins, Mayo Clinic, MD Anderson, UCLA, Dana-Farber
* Handles registration, informed consent, questionnaires, all radiologic and pathologic reports, patient samples.
* Online survey form with backend database
* Application-controlled specimen bank.

Introduction:
Working with in-house developed re-usable modules we build multi-protocol, multi-institutional web based database applications for cancer researchers, which include screening, clinical trials enrollment, education, treatment info, follow up, xenograft, drug efficacy, microarray analysis and genomic annotation.
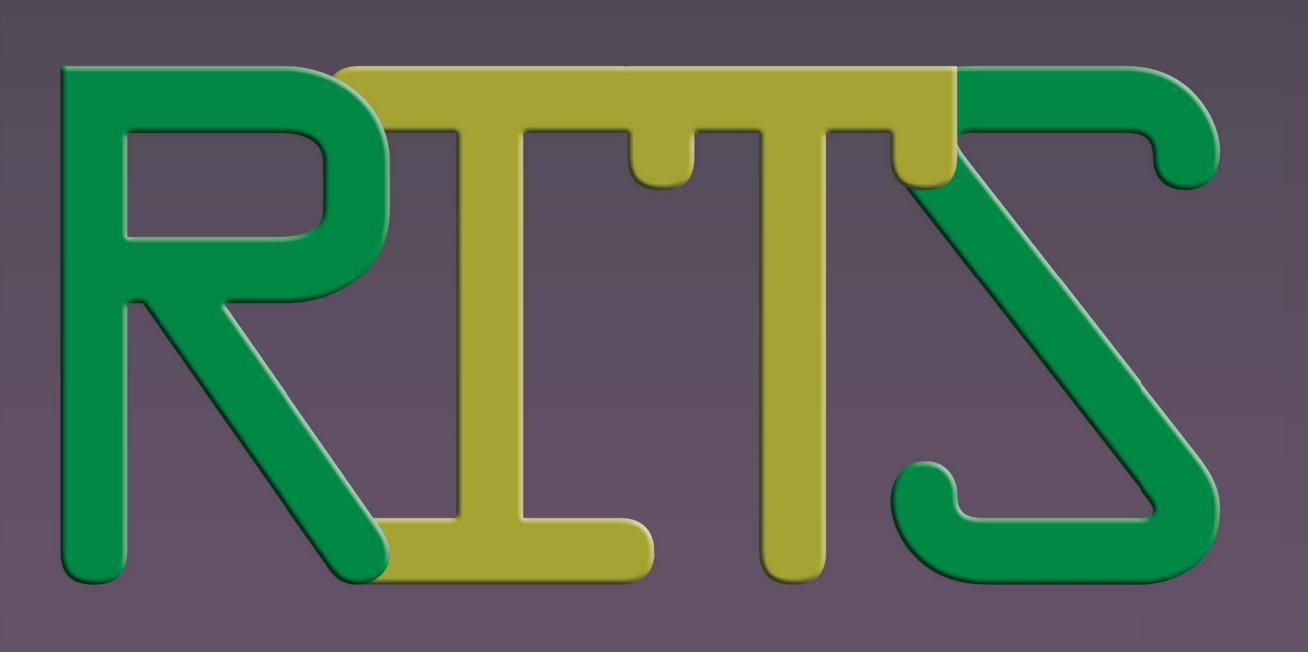

Human Clinical Trials (Pancreatic Cancer Database)
* Supports both surgical and nonsurgical, and protocol and non-protocol patients undergoing pancreatic cancer treatment.
* Modules:
  - patient, patient protocols, surgery, pathology, past history, pre-op, complications, follow-up, adjuvant, reports
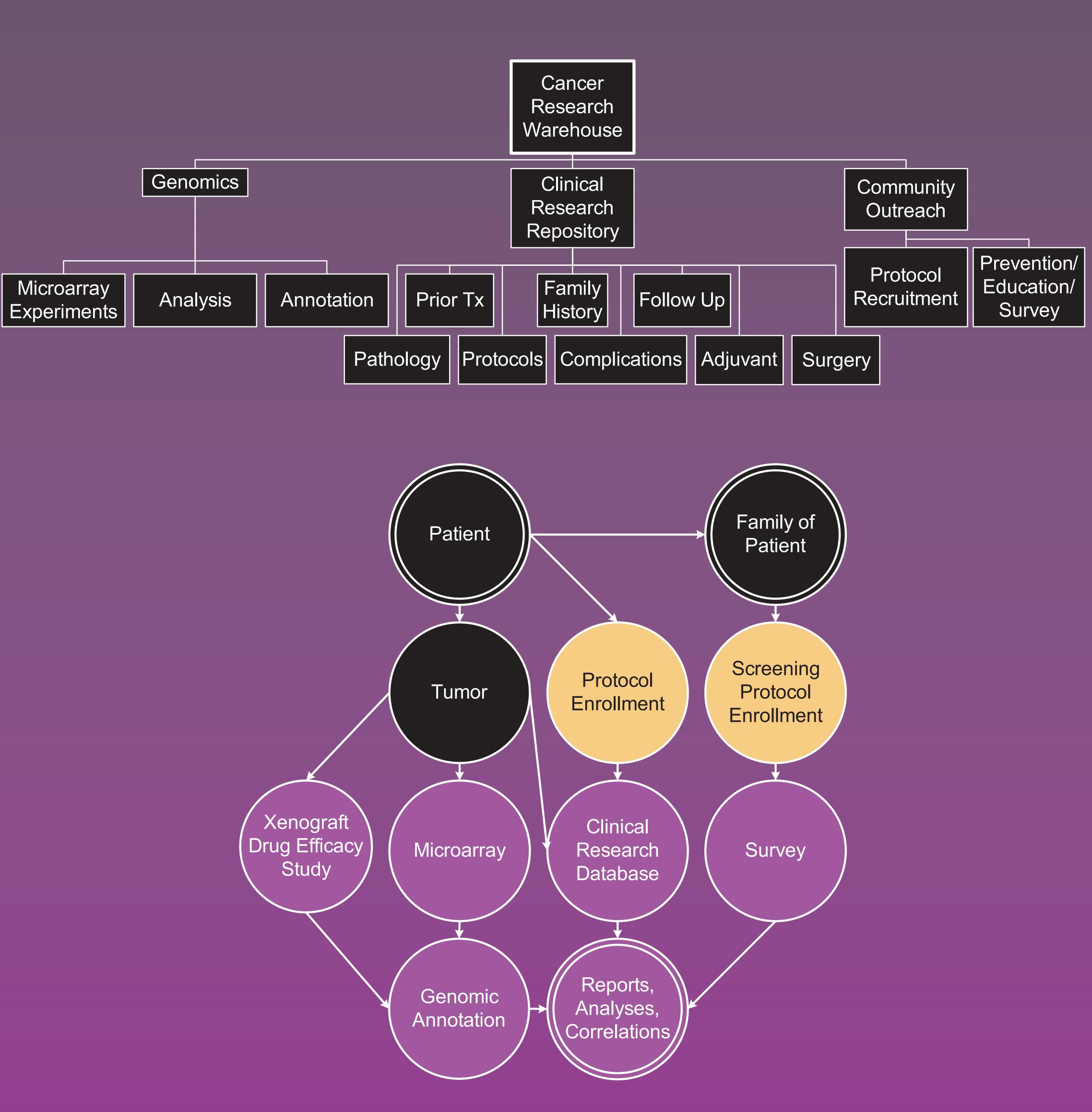* Extended to capture all areas of pancreatic cancer research

As a research warehouse prototype we implemented this concept for Pancreas Diseases with 3 main foci: Screening, Human Clinical Trials and Animal Drug Studies.

Animal Drug Studies (PancXenoBank)
* Application acts as the control center in this two part translational research study
* Part 1: human tumors are implanted into mice and treated with variety of drugs
* Part 2: the same human tumor undergoes microarray testing and analysis
* Application links the results of both experiments via the gene and probe set ontologies, with all experimental data maintained in this secure web-based database driven application

Application Highlights
* algorithm to optimize the distribution of the mice to various cages
* each day the volume, growth and relative growth are automatically calculated, using a SAS program which directly reads the database and places the reports on the web
* calculates the efficacy of each drug for that case
* Affymetrix microarray experiment data for each probe set is electronically brought into the application, along with the ontological data linking each probe set with gene name and the data from the animal experiment.
* XML files for data transfers
* database driven application

Summary of Conclusions:
Although each disease group has its own specific data needs, there is a great deal of commonality, which allow us to build a warehouse with available, up to date information on outcomes, adverse events, quality assurance to facilitate translational research and transformative patient care.