



DEVELOPMENT OF A SITE-SPECIFIC BIOBANK TO ENHANCE GENITOURINARY ONCOLOGY BIOMARKER RESEARCH



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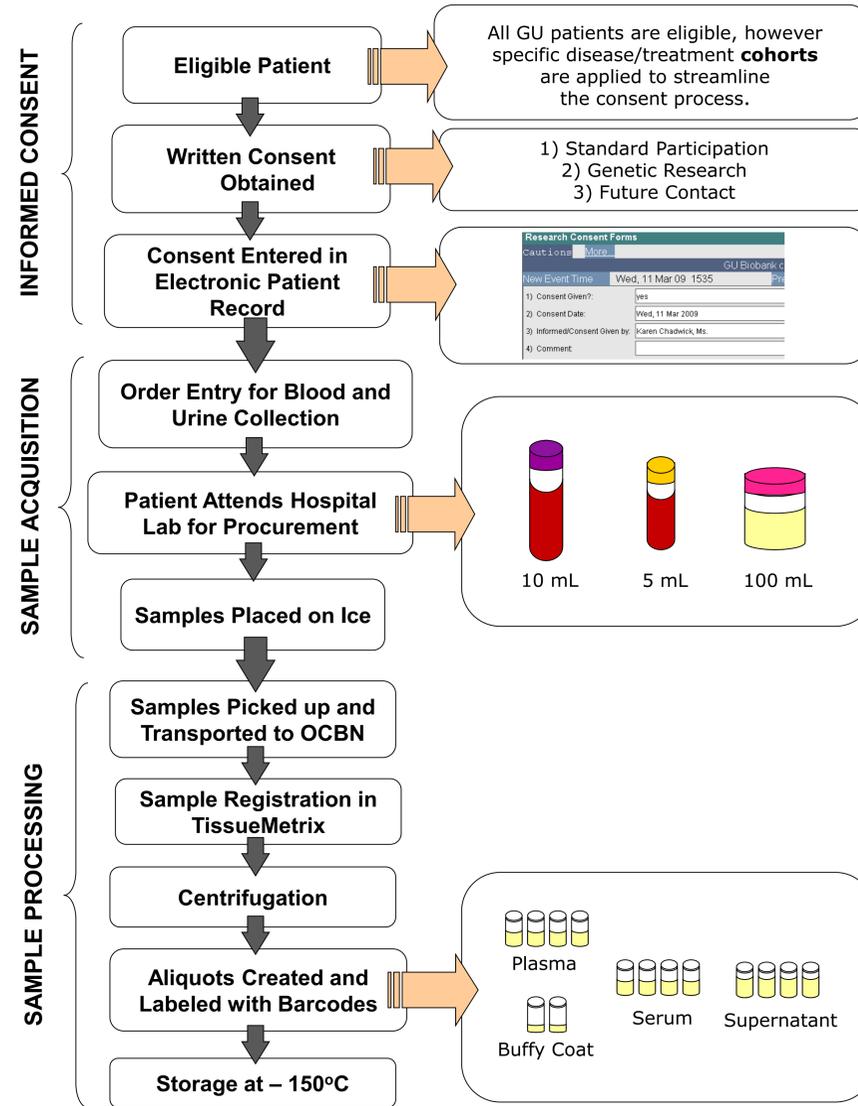
ABSTRACT

The genitourinary (GU) oncology division at Princess Margaret Hospital (PMH) has developed a site-specific BioBank to serve as a central repository for biospecimens obtained from patients attending out-patient clinics within the division. All consenting patients at high-risk for, or with bladder, kidney, prostate, and testis cancers (the Cohorts) agree to provide specimens prior to, during and following their treatment(s). Each sample collection point (Clinical State) is dictated by detailed flow diagrams that have been developed for each disease cohort. We have developed the following number of clinical states for each disease cohort: Prostate (14), Kidney (10), Bladder (7), and Testis (11). Study-directed banking allows for particular samples to be collected and stored in conjunction with an existing study, and ensures those samples will not be used for purposes other than those agreed to by the study participant. All blood (plasma, serum and buffy coat) and urine specimens are processed and stored by collaborators at the Ontario Cancer Biomarker Network (OCBN). All specimens are catalogued in TissueMetrix, centrifuged, aliquoted, bar-coded, and then stored in liquid nitrogen. Relevant clinical databases within the division will be used for clinical outcomes determination. The GU Site group committee will approve and distribute the samples to requesting investigators. The hierarchy for sample use will give precedence to investigators performing in-house academic projects, followed by collaborative academic projects, and then lastly for commercial projects. Since the date of its inauguration in May 2008, over 1,000 patients from the above cohorts have been recruited to the GU Site BioBank, and well over 10,000 biospecimen aliquots have been stored. The GU Site BioBank continues to expand at a rate of 35 - 50 new participants per week. Ongoing refinement of cost-recovery models and informatics systems will be of utmost importance in enhancing the productivity and longevity of the BioBank.

OBJECTIVES

- To form a collection of biological specimens obtained from consenting Urology patients at UHN and store them for future research purposes
- To enhance UHN's future Urology research capabilities in areas such as genomics, proteomics and epidemiology
- To enable research that will ultimately aid in disease discovery, prognostication and management

BIOBANK WORKFLOW



GU SITE BIOBANK COHORTS

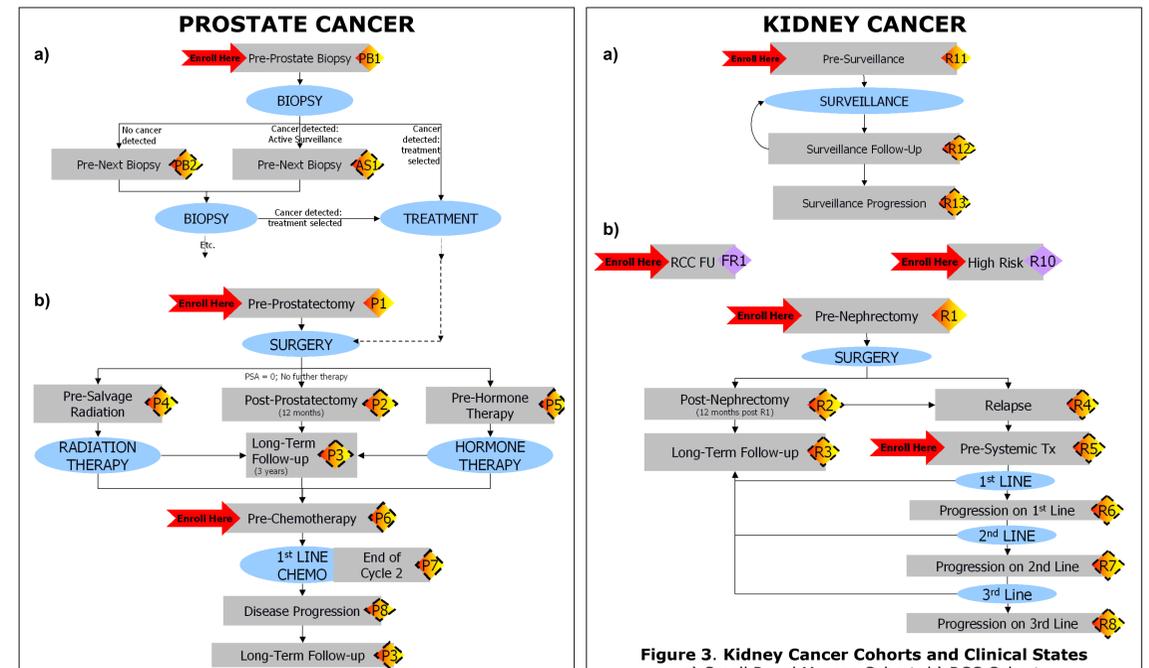


Figure 1. Prostate Cancer Cohorts and Clinical States a) Prostate Biopsy Cohort, b) Prostatectomy Cohort

Figure 3. Kidney Cancer Cohorts and Clinical States a) Small Renal Masses Cohort, b) RCC Cohort.

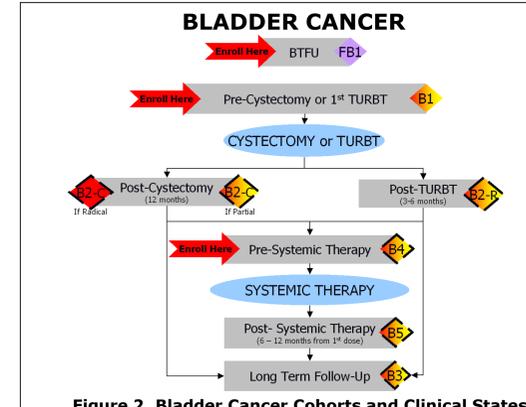


Figure 2. Bladder Cancer Cohorts and Clinical States

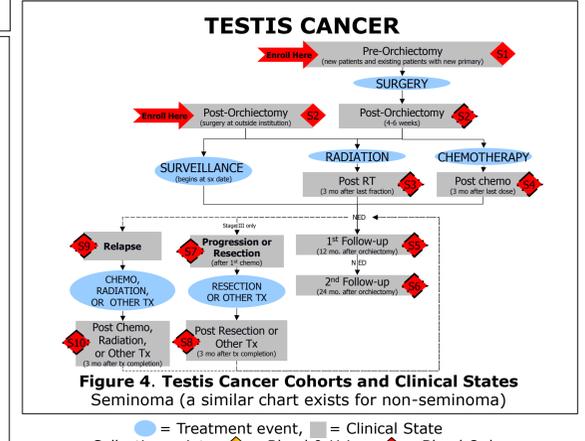


Figure 4. Testis Cancer Cohorts and Clinical States Seminoma (a similar chart exists for non-seminoma)

● = Treatment event, ■ = Clinical State
 Collection points: ◆ = Blood & Urine, ◆ = Blood Only, ◆ = Buffy Coat (BC) Only, <> = No BC

GU SITE BIOBANK: CURRENT INVENTORY

As of March 10, 2009

- Patients Consented: 1202
- Patients Declining Consent: 10%
- Total Number of Sample Sets: 1113
- Total Number of Aliquots: 11,846

Clinical State	Prostate Cancer						Kidney Cancer				Bladder Cancer					Testis Cancer		
	PB1	P1	P4	P5	P6	P7	FR1	R1	R5	R11	FB1	B1-C	B1-R	B2-R	B4	S1	S2	NS2
Number of Sample Sets	498	167	3	2	7	3	13	49	1	4	296	20	33	6	4	1	4	2
Number of Aliquots	6972	2338	42	28	98	42	26	686	14	56	592	280	462	84	56	10	40	20
Banking Start Date	22 Sep 08	26 May 08	07 Jan 09	20 Oct 08	09 Oct 08	28 Jan 09	16 Jan 09	26 May 08	26 Aug 08	22 Oct 08	17 Jun 08	10 Jul 08	04 Jun 08	06 Jan 09	08 Oct 08	20 Feb 09	13 Feb 09	13 Feb 09

Table 1. Number of samples collected and stored with the GU Site BioBank since its inception in May, 2008. Cohorts and Clinical States were rolled out sequentially. Additional cohorts may be introduced in the future as need arises. Additional states exist for study directed banking (not included here).

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