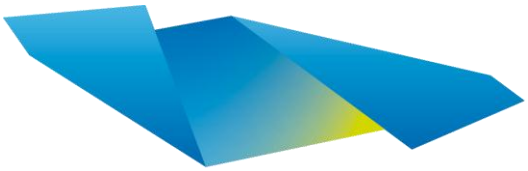

Ingham Institute
Applied Medical Research

THE SOUTH WEST SYDNEY COMPREHENSIVE CANCER TISSUE BANK

HALF YEARLY REPORT

JULY 2013

NSW GOVERNMENT Health
South Western Sydney Local Health District

SUMMARY

DEFINITIONS

Case – A case is an individual who has donated cancer biospecimens.

Biospecimen – A specimen of biological material from a case, which includes tumour/normal adjacent tissue, blood and blood products. For example, 1 case may have 20 associated biospecimens.

COLLECTIONS

Between November 2012 and June 2013:

- Fifty-nine (59) cases donated tissue and blood to the Cancer Tissue Bank (CTB).
- Of these, 53 cases were Head and Neck Cancers (HNCa) and 6 were Colorectal Cancer (CRC) cases.
- One participant (HNCa) chose to withdraw their consent and their specimens were subsequently destroyed.

DEMOGRAPHICS

- There is a fairly even distribution of Males to Females across all cancers with a ratio of 1:1.2 (Figure 1).
- The majority of cancer cases (17%) fall within the age bracket of 60-64 yrs (Figure 2).

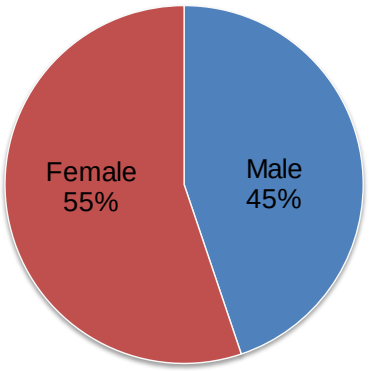

Figure 1 | Gender Distribution Across All Cancers

BIOSPECIMENS

- The CTB inventory exceeds 900 biospecimens across all cancers (Table 1 and 2).
- Of these 94 are fresh frozen tumour and normal adjacent tissue (Table 1), 692 are blood and blood products, and 32 are paraffin embedded tissue (FFPE), with 91 haematoxylin and eosin (H&E) slides (Table 1).
- Blood specimen types can further be divided into whole blood, plasma, serum and buffy coat (Table 2).

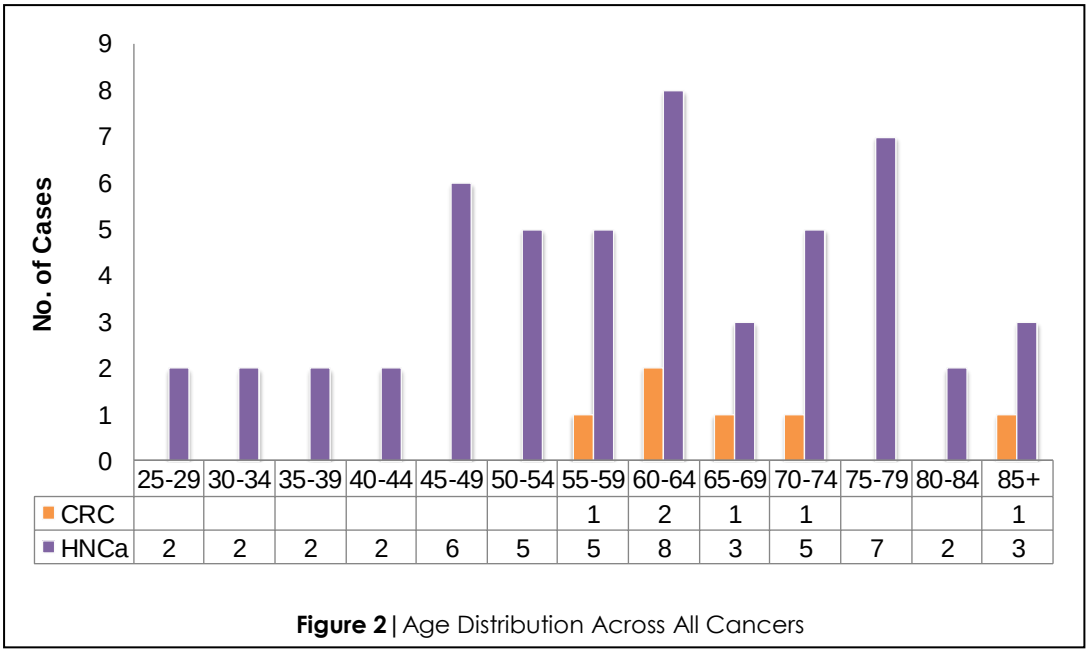

Figure 2 | Age Distribution Across All Cancers

Table 1 | Total Number of Specimens Across All Cancers

SPECIMEN TYPE	TOTALS (n)
Tumour Tissue	67
Normal Tissue	27
Blood	692
FFPE	32
H&E	91

Table 2 | Total Number of Blood Products Across All Cancers

BLOOD PRODUCT	TOTALS (n)
Whole Blood	114
Plasma	238
Serum	227
Buffy Coat	113

Cancer Specific Biospecimens

HNCa

- Classification of HNCa by site reveals the largest proportion were thyroid followed by cancers of the mouth and neck (Figure 3).
- Classification of HNCa by histological type reveals the largest proportion were squamous cell carcinoma followed by papillary carcinoma (Figure 4).
- From 52 HNCa cases, 12 have associated tumour tissue and 7 of those also have associated normal adjacent tissue (Table 3).
- Of the 12 cases which have tumour tissue, 42 aliquots have been produced. Similarly, of the 7 cases which have normal adjacent tissue, 14 aliquots have been produced and so forth for the remaining specimens (Table 3).

Table 3| Number of HNCa Specimens by Case Number and Biospecimen Number

SPECIMEN TYPE	NO. OF CASES	NO. OF BIOSPECIMENS
Tumour Tissue	12	42
Normal Tissue	7	14
Blood	51	616
FFPE	12	15
H&E	45	74

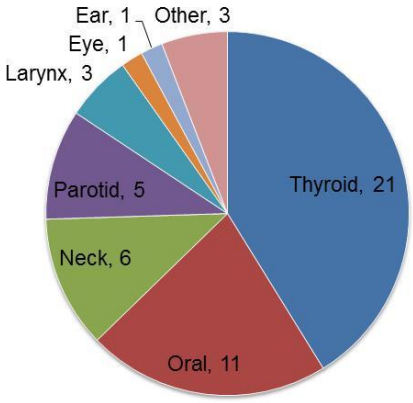

Figure 3| Number of HNCa Cases by Site

CRC

- Classification of CRC by site reveals the largest proportion were located in the ascending colon followed by sigmoid colon and rectum (Figure 5).
- Classification of CRC by histological type reveals the largest proportion were adenocarcinoma (Figure 6).
- From 6 CRC cases, 5 have associated tumour tissue and 5 of those also have associated normal adjacent tissue (Table 4).
- Of the 5 cases which have tumour tissue, 25 aliquots have been produced. Similarly, of the 5 cases which have normal adjacent tissue, 13 aliquots have been produced and so forth for the remaining specimens (Table 4).

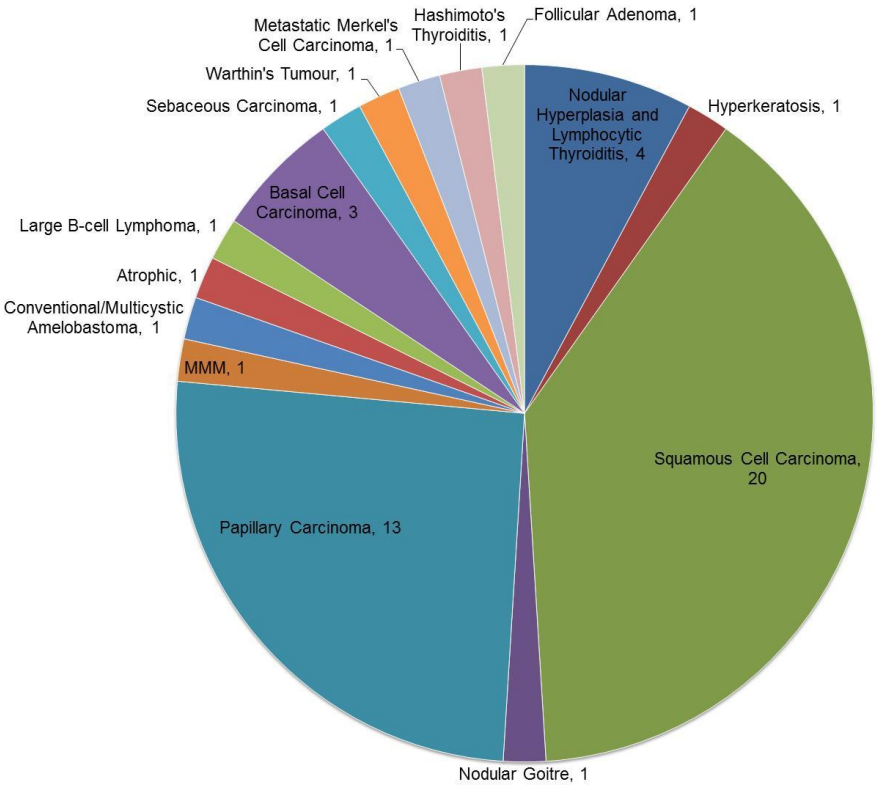

Figure 4 | Number of HNCa Cases by Histological Type

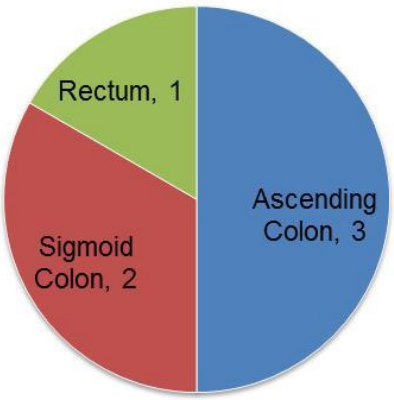

Figure 5 | Number of CRC Cases by Site

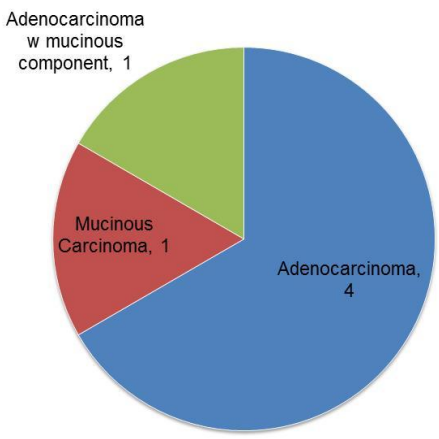

Figure 6 | Number of CRC Cases by Histological Type

Table 4 | Number of CRC Specimens by Case Number and Biospecimen Number

SPECIMEN TYPE	NO. OF CASES	NO. OF BIOSPECIMENS
Tumour Tissue	5	25
Normal Tissue	5	13
Blood	6	76
FFPE	6	17
H&E	6	17

GENERAL COMMENTS

- Instances where tissue specimens have not been collected have been largely due to no palpable tumour (38%), Anatomical Pathology closed (30%), or a suspicious biopsy (13%; Figure 6).

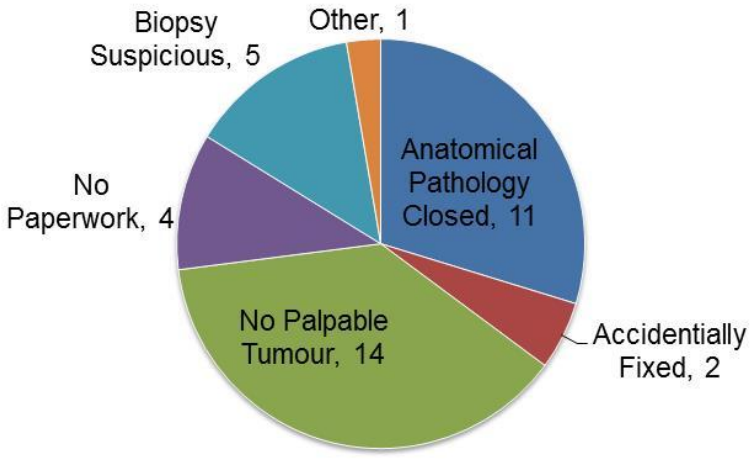

Figure 6 | Reasons for No Collection of Tumour and Normal Adjacent Tissue Biospecimens

RECOMMENDATIONS

- Recommendations to increase collection capacity of **fresh frozen tissue** are to have surgeries, where possible, performed so that potential tissue biospecimens to be biobanked are received during Anatomical Pathology hours of operation.
    - If no fresh frozen tissue can be obtained then the biobank would still like bloods collected and will request a FFPE (the next best alternative to fresh frozen tissue).
- For Anatomical Pathology to amend their protocols to include assessment of tissue biospecimens with suspicious biopsies.

FUTURE PROSPECTS

- As from July 2013, the CTB has expanded its collection to two other sites, Bankstown Hospital and Strathfield Private Hospital.
- The CTB has also begun the collection of prostate and neurological cancers.
- There is an additional part-time Technical Officer to assist with collections as well as a Clinical Nurse to assist with consenting of HNCa cases.

Please visit our website: http://www.inghaminstitute.org.au/content/cancer-tissue-bank