

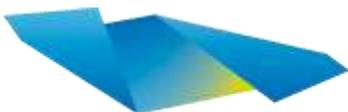


CONCERT
Centre for Oncology Education & Research Translation

THE CONCERT BIOBANK

YEARLY REPORT

MAY 2015



Ingham Institute
Applied Medical Research



Health
South Western Sydney
Local Health District

SUMMARY

DEFINITIONS

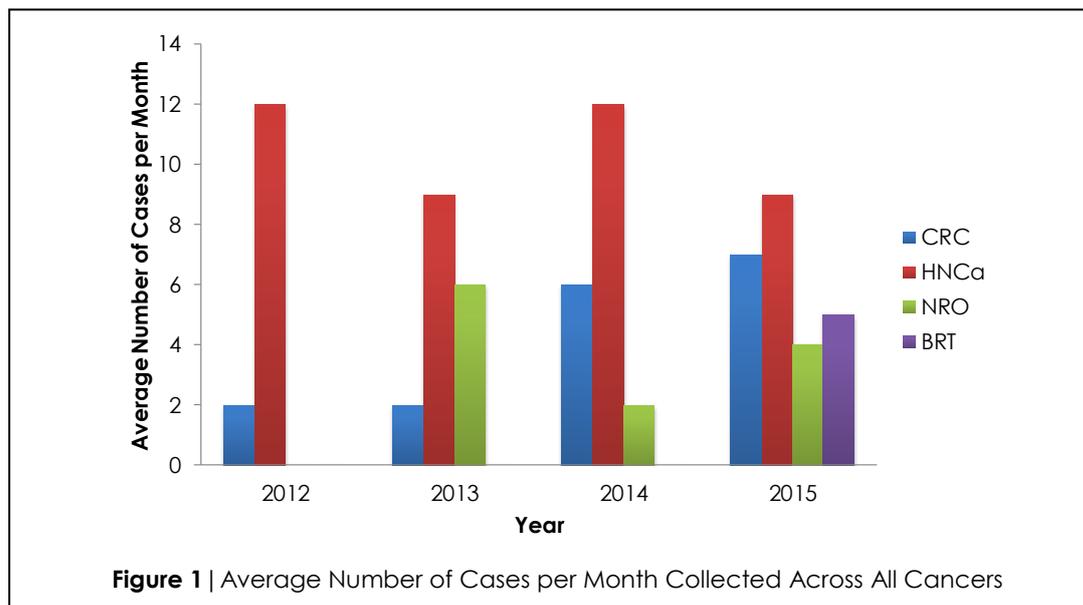
Case – A case is an individual who has donated cancer biospecimens.

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

Total since Operation (November 2012 to May 2015):

- Four hundred and fifty five (455) cases donated tissue and blood to the CONCERT Biobank, which is a 55% increase in collections this time last year.
- Of these, 259 cases were Head and Neck Cancers (HNCa) and 119 were Colorectal Cancer (CRC), 54 were Neurological (NRO) and 23 were Breast (BRT) cancers.
- One participant (HNCa) chose to withdraw their consent and their specimens were subsequently destroyed.
- Average number of cases per month collected across all cancers is illustrated in Figure 1.



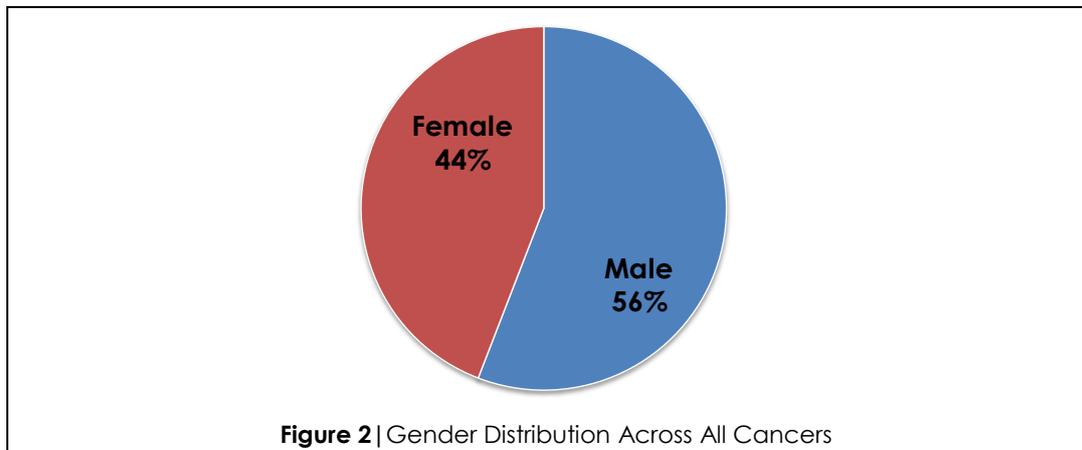
Year to Date (2015):

- One hundred and nineteen (119) cases donated tissue and blood to the CTB.
- Of these, 47 cases were HNCa, 31 were CRC, 18 were NRO and 23 were BRT.

DEMOGRAPHICS

- There is a fairly even distribution of males to females across all cancers with a ratio of 1:0.80 (Figure 2).

- The majority of cancer cases (16%) fall within the age bracket of 70-74 yrs (Figure 3).



BIOSPECIMENS

- The CONCERT Biobank inventory exceeds 6,500 biospecimens across all cancers (Table 1 and 2).
- Of these 1,246 are fresh frozen tumour and normal adjacent tissue (Table 1), 5,435 are blood and blood products, 11 are Cavitation Ultrasonic Surgical Aspirator (CUSA), 10 are cerebrospinal fluid (CSF), 300 are paraffin embedded tissue (FFPE), with 585 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).

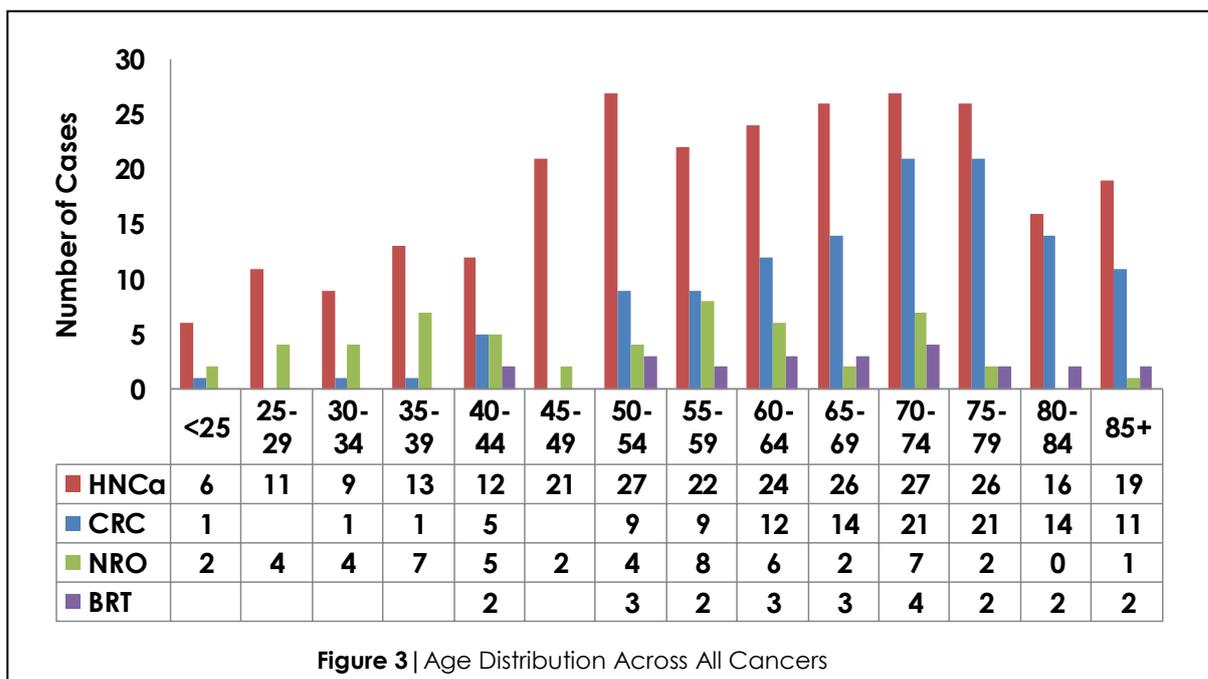


Table 1 | Total Number of Specimens Across All Cancers

SPECIMEN TYPE	TOTALS (n)
Tumour Tissue	929
Normal Tissue	317
Blood	5435
CUSA	11
CSF	10
FFPE	300
H&E	585

Table 2 | Total Number of Blood Products Across All Cancers

BLOOD PRODUCT	TOTALS (n)
Whole Blood	906
Plasma	1822
Serum	1796
Buffy Coat	911

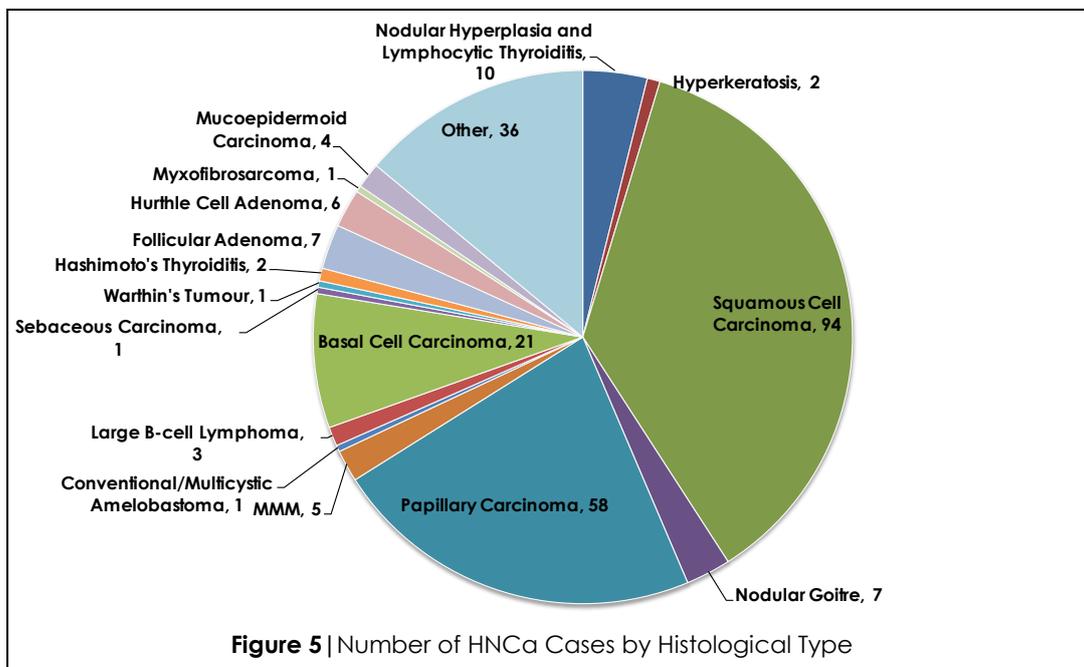
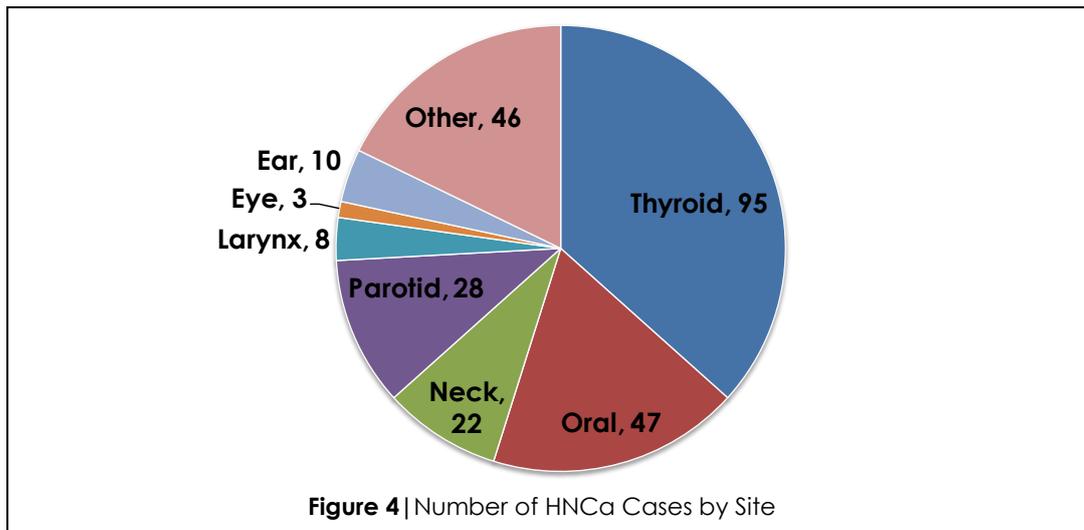
Cancer Specific Biospecimens

HNCa

- Classification of HNCa by site reveals the largest proportion were thyroid followed by cancers of the mouth, parotid and neck (Figure 4).
- Classification of HNCa by histological type reveals the largest proportion were squamous cell carcinoma followed by papillary carcinoma (Figure 5).
- From 259 HNCa cases, 138 have associated tumour tissue and 60 of those also have associated normal adjacent tissue (Table 3).
- Of the 138 cases which have tumour tissue, 304 aliquots have been produced. Similarly, of the 60 cases which have normal adjacent tissue, 113 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	138	304
Normal Tissue	60	113
Blood	258	3109
FFPE	62	115
H&E	224	308



CRC

- Classification of CRC by site reveals the largest proportion were located in the sigmoid colon followed by the ascending colon and rectum (Figure 6).
- Classification of CRC by histological type reveals the largest proportion were adenocarcinoma (Figure 7).
- From 119 CRC cases, 84 have associated tumour tissue and 87 of those also have associated normal adjacent tissue (Table 4).

- Of the 84 cases which have tumour tissue, 323 aliquots have been produced. Similarly, of the 87 cases which have normal adjacent tissue, 188 aliquots have been produced and so forth for the remaining specimens (Table 4).

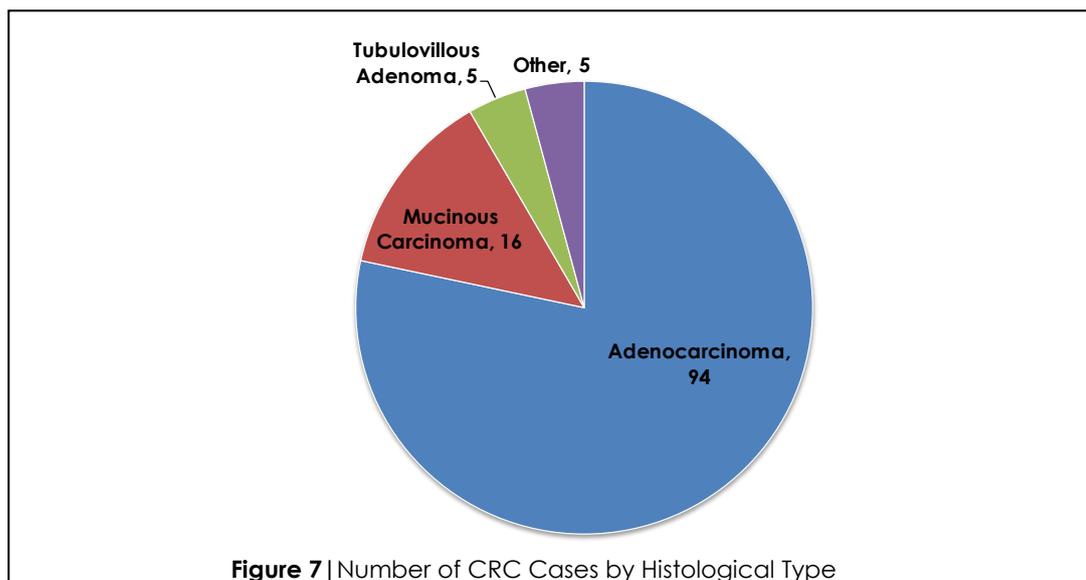
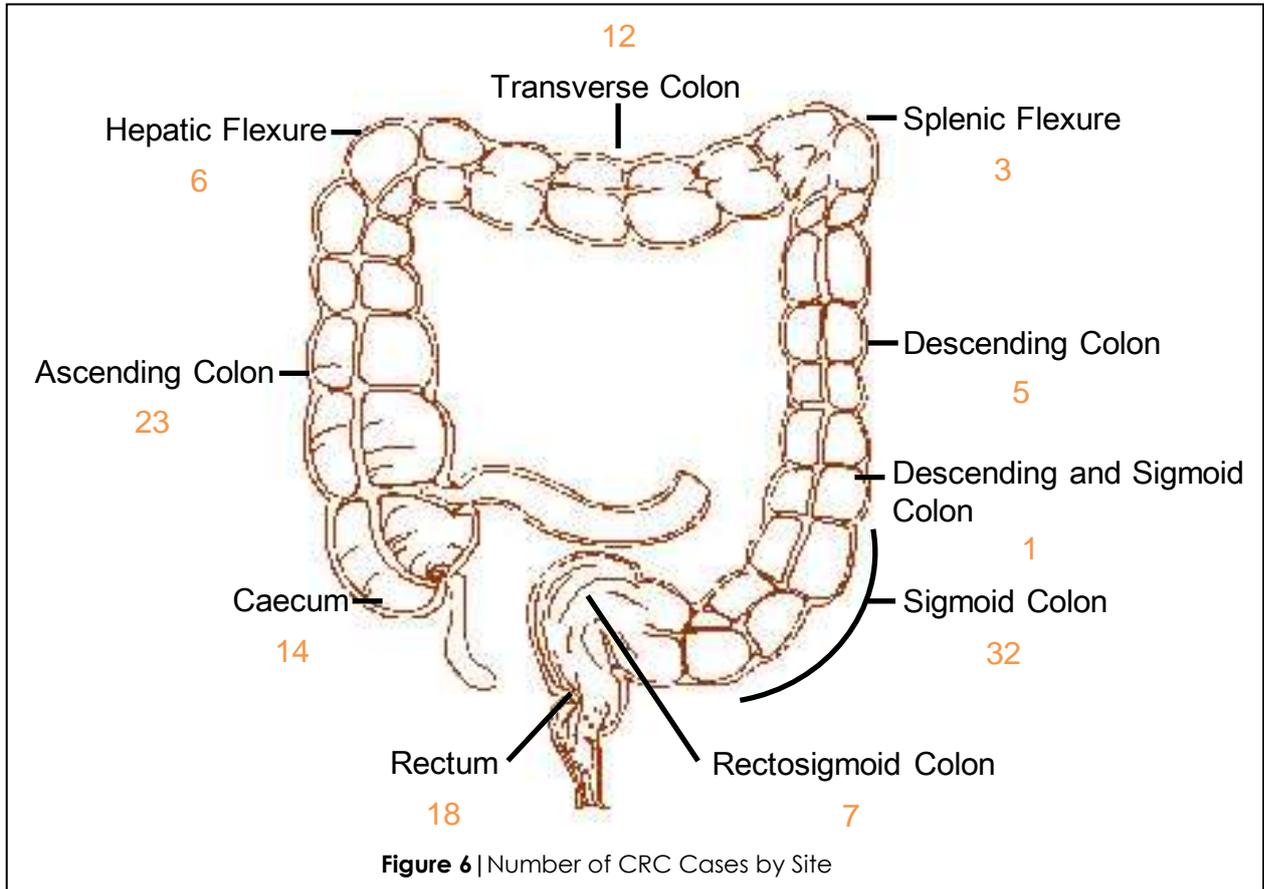


Table 4 | Number of CRC Specimens by Case Number and Biospecimen Number

SPECIMEN TYPE	NO. OF CASES	NO. OF BIOSPECIMENS
Tumour Tissue	84	323
Normal Tissue	87	188
Blood	119	1451
FFPE	68	165
H&E	103	231

NRO

- Classification of NRO by histological type reveals the largest proportion were gliomas (Table 5).
- From 54 NRO cases, 52 have associated tumour tissue (Table 6).
- Of the 52 cases which have tumour tissue, 174 aliquots have been produced (Table 6).

Table 5 | Number of NRO Cases by Histological Type

HISTOLOGICAL TYPE	TOTAL (n)
Astrocytic	40
Oligodendroglial	3
Ependymal	1
Neuronal/Neuronal-Glial	1
Embryonal	1
Other	6
Awaiting Report	2

Table 6 | Number of NRO Specimens by Case Number and Biospecimen Number

BIOSPECIMEN TYPE	NO. OF CASES	NO. OF BIOSPECIMENS
Tumour Tissue	52	174
CUSA	5	10
CSF	2	11
Blood		804
Pre-Op	55	612
Post-OP	18	192

BRT

- Classification of BRT by histological type reveals the largest proportion were X (Figure 8).

- From 23 BRT cases, 10 have associated tumour tissue and 8 of those also have associated normal adjacent tissue (Table 7).
- Of the 10 cases which have tumour tissue, 34 aliquots have been produced. Similarly, of the 8 cases which have normal adjacent tissue, 16 aliquots have been produced and so forth for the remaining specimens (Table 7).

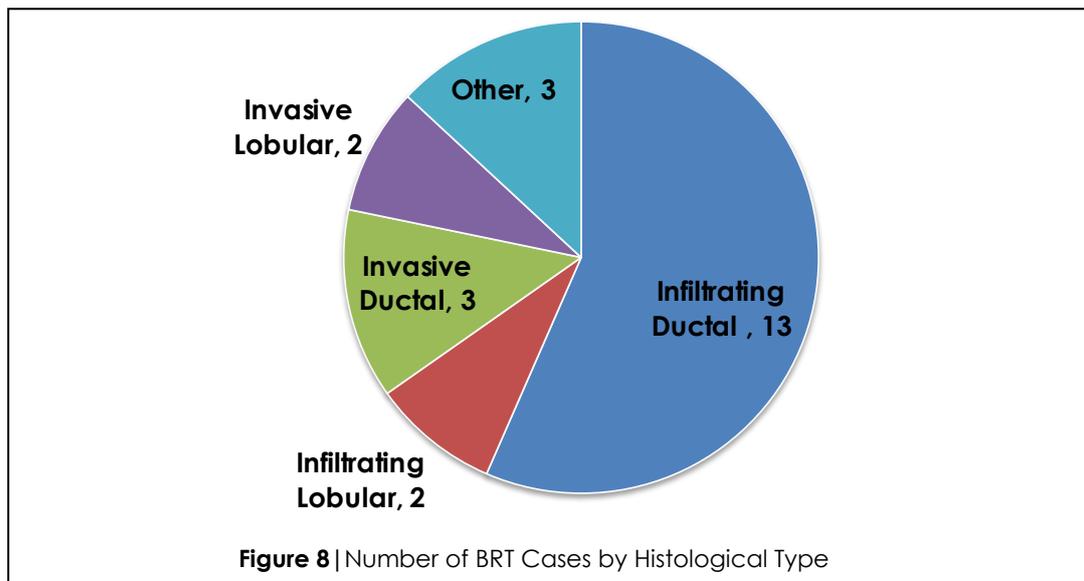


Table 7 | Number of BRT Specimens by Case Number and Biospecimen Number

SPECIMEN TYPE	NO. OF CASES	NO. OF BIOSPECIMENS
Tumour Tissue	10	34
Normal Tissue	8	16
Blood	23	1451
FFPE	6	20
H&E	19	46

CURRENT PROJECTS

- The CONCERT Biobank is currently assisting 15 cancer research studies as well as providing expertise and guidance to researchers on the utility of biospecimens and information and how to apply for ethics approval for studies involving the use of human participants.
- The CONCERT Biobank has completed its pilot study, 'Health professionals' opinions on supporting a cancer biobank – identification of barriers to combat biobanking pitfalls', which has been accepted for publication in the European Journal of Human Genetics.

ACKNOWLEDGEMENTS

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Please visit our website: <https://inghaminstitute.org.au/content/concert-biobank>