

UNSW Biospecimen Services, incorporating the Health Precincts Biobank: Providing high quality biospecimens and data for translational research

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BACKGROUND

UNSW Biospecimen Services is a full service facility devoted to processing and storing human biospecimen for use in research. We provide a complete service from experimental planning to the collection, processing, data management, storage and distribution of biospecimens with consent from healthy subjects and patient populations with targeted diseases.

Under the Biospecimen Services umbrella is Cold Storage Services, and the Health Precincts Biobank (formerly the Health Science Alliance, (HSA) Biobank) which predominately houses cancer samples and associated data for use in HREC-approved studies. Scan the QR codes to the right to access previous HSA Biobank posters.

The overall aims are to provide researchers with high quality biospecimens and/or related clinical data, to help facilitate discoveries that will lead to improvements in disease diagnosis and treatment. UNSW Biospecimen Services and the Health Precincts Biobank are certified through the NSW Health Pathology Biobank Certification Program (BRC-00025).

TEN YEARS OF THE HSA BIOBANK



HSA BIOBANK: FUTURE DIRECTIONS



BIOSPECIMEN SERVICES

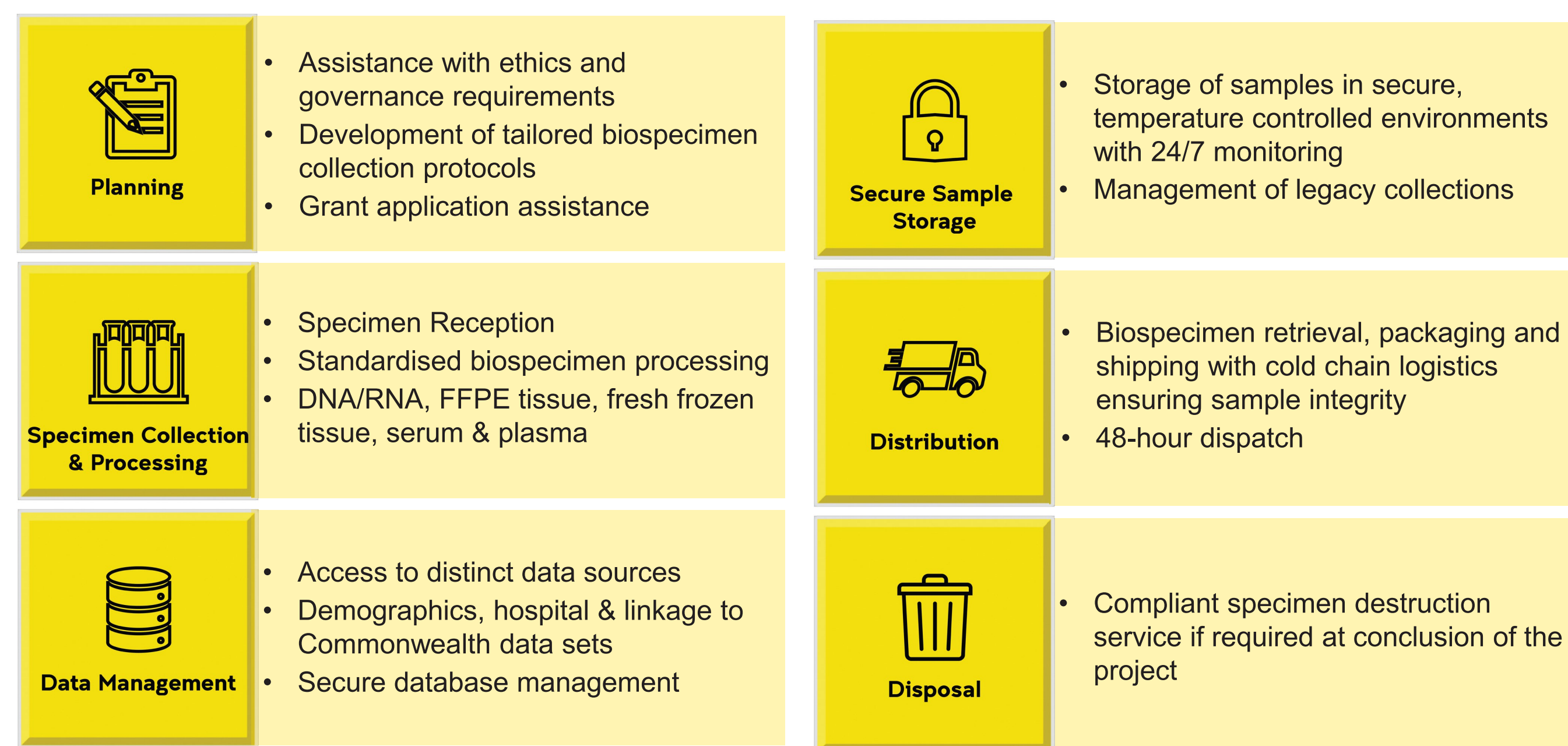


Fig. 1. Services available.

Biospecimen Services offers support for researchers requiring biospecimens and/or clinical data (Fig. 1.):

- Researcher-led collections - for help setting up and/or managing their own collections
- Health Precincts Biobank - for "ready-to-go" annotated biospecimen cohorts

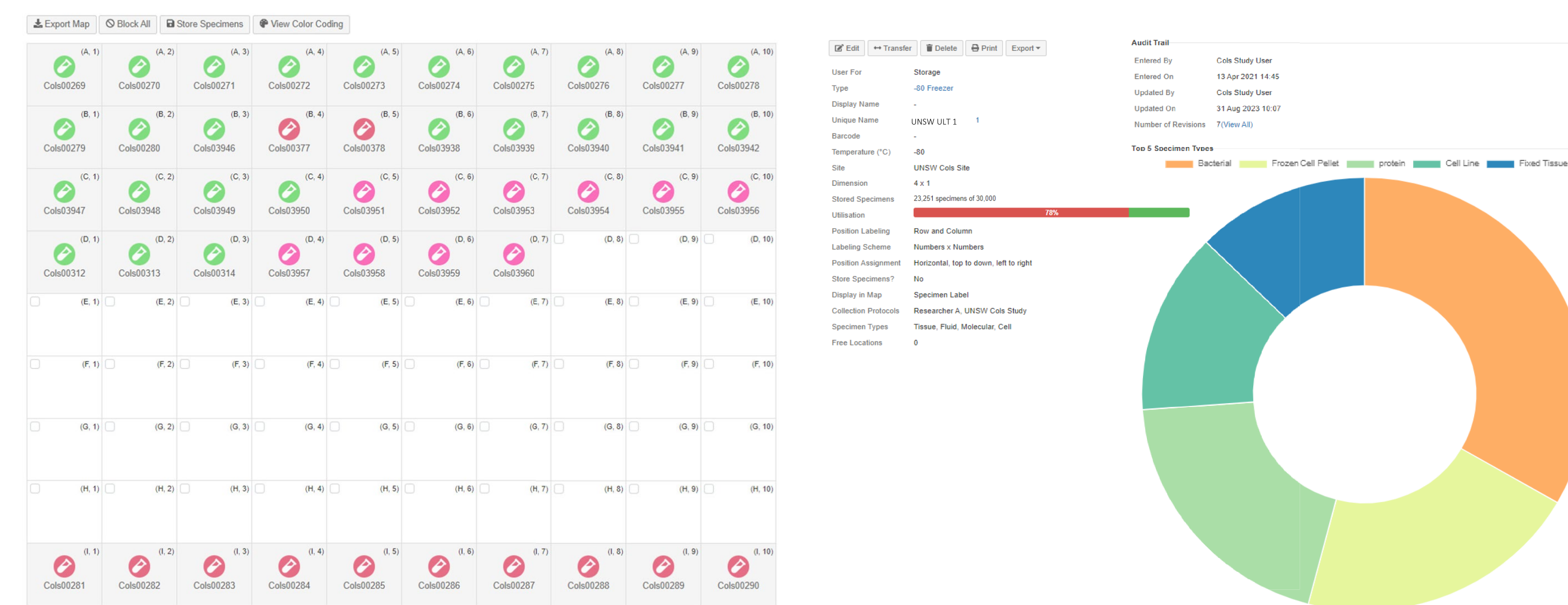
Data only project requests can be accommodated in both categories.

Cost estimates can be provided to assist with project planning.

39
BESPOKE COLLECTIONS
Currently being stored

DATA MANAGEMENT SYSTEM

Fig. 2. Screen shots showing sample tracking in OpenSpecimen (left) and an overview of an individual freezer including capacity (right).



Biospecimen Services implemented the first Australian instance of OpenSpecimen in 2010, this software is currently used by more than 90 institutions globally!

OpenSpecimen is used to manage the Health Precincts Biobank as well as all Researcher-led collections. The database tracks the life cycle of a specimen from collection to distribution; including management of specimen inventory, tracking of participant consent, and storage locations, as well as associated clinical data.

Hierarchical access ensures compliance with ethical and legislative requirements and is hosted on UNSW infrastructure.

OPENSPECIMEN
a krishagni product

<https://www.openspecimen.org/>



SPECIMEN CATALOGUE

OpenSpecimen's catalogue feature, will allow visibility of Researcher-led collections, in a deidentified manner, for external users to search. Scan here to see the Biospecimen Services version.

HEALTH PRECINCTS BIOBANK

BIOSPECIMENS	DATA
<ul style="list-style-type: none"> FFPE tissue block sections Fresh/frozen tissue Plasma from peripheral blood Frozen cell pellet from peripheral blood Cryopreserved white blood cells from BMA 	<ul style="list-style-type: none"> Demographic information - hospital records Clinical diagnosis Tumour morphology from pathology reports MBS and PBS data Survival data

Table 1. Biospecimens and data available from the Health Precincts Biobank.

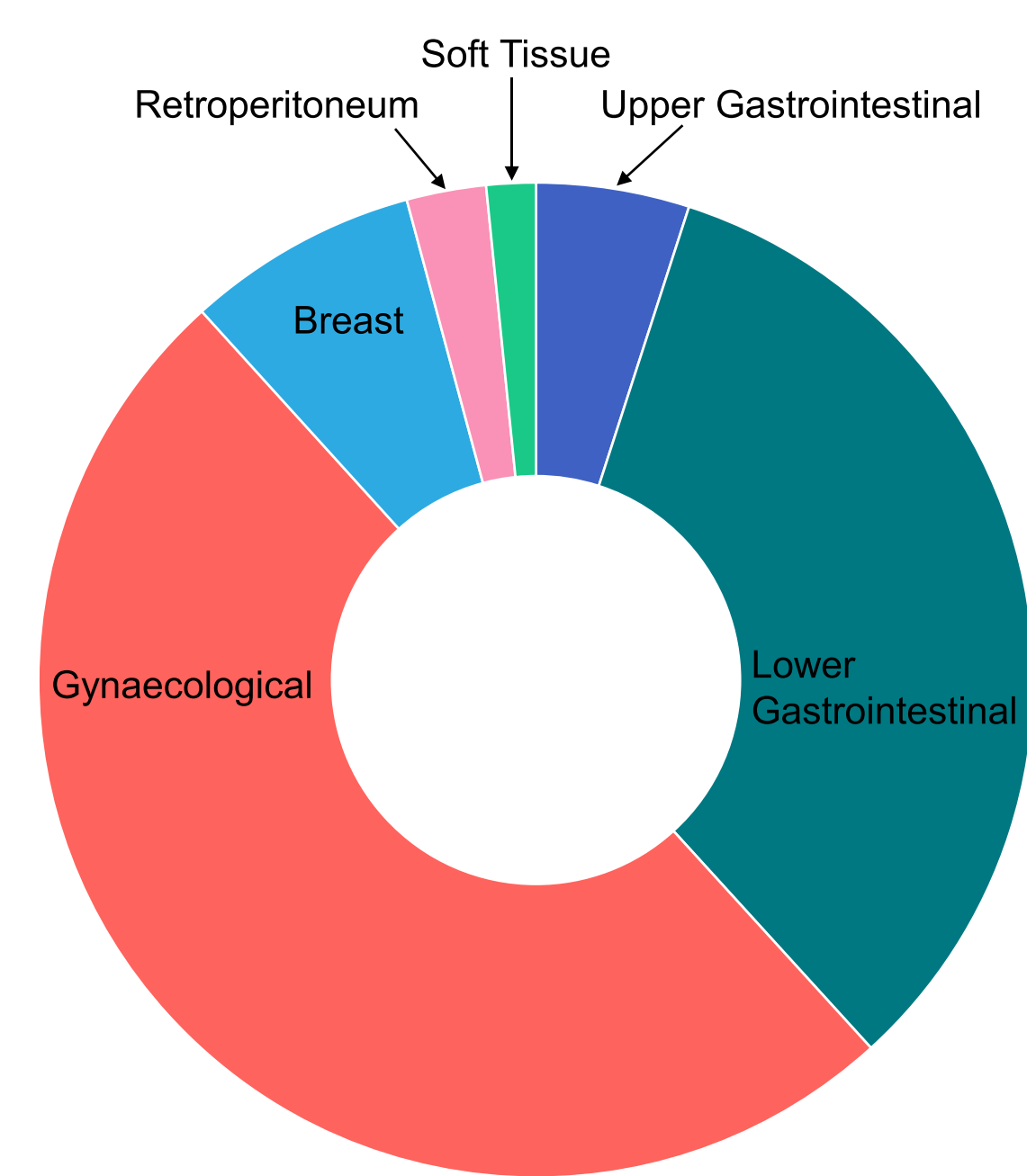


Fig. 3. The proportion of broad tumour categories that make up the current Health Precincts Biobank collection. Only the largest cohorts are represented, disease cohorts with <100 specimens are not represented.

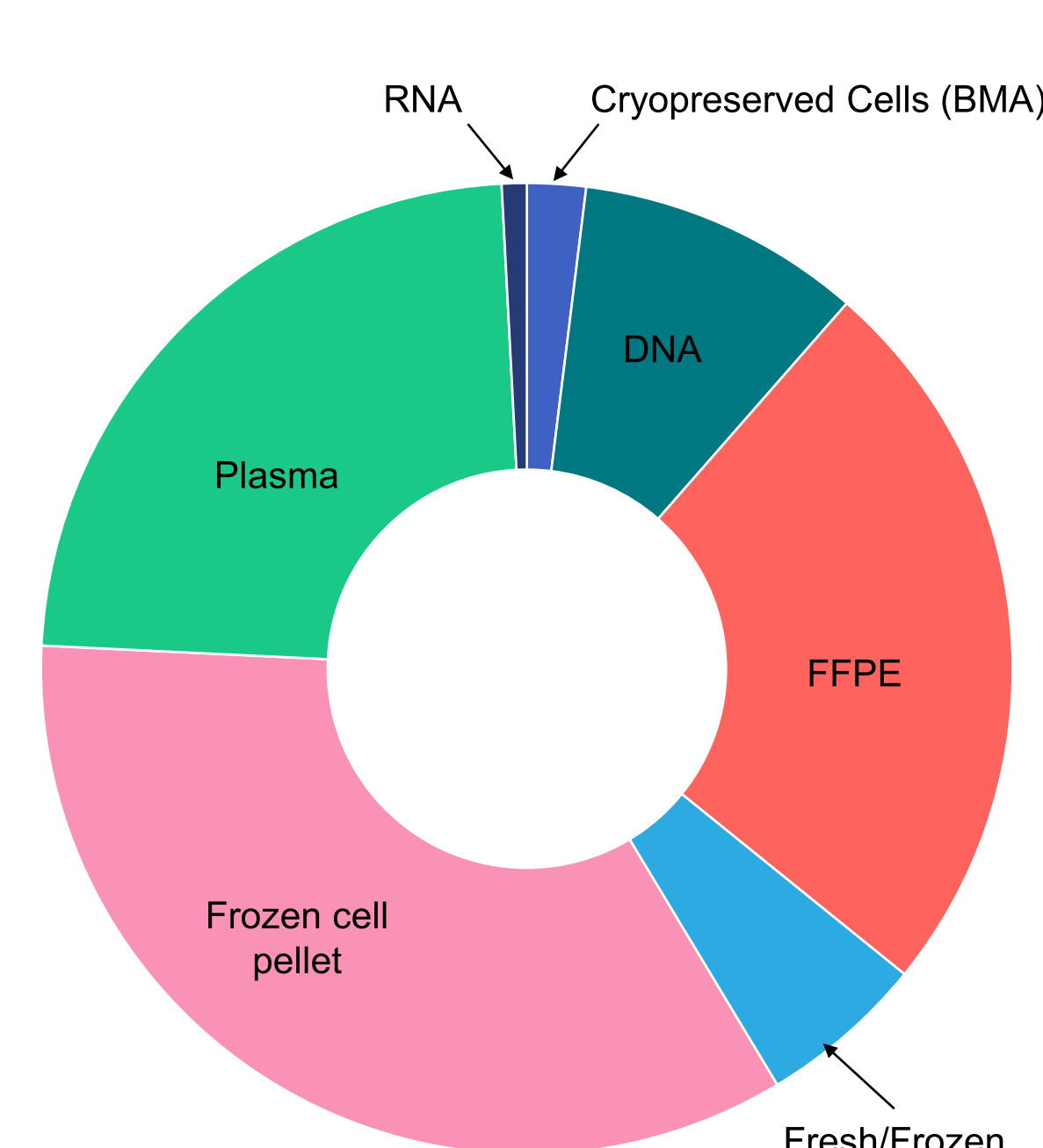


Fig. 4. The type and proportion of biospecimens stored in the Health Precincts Biobank.

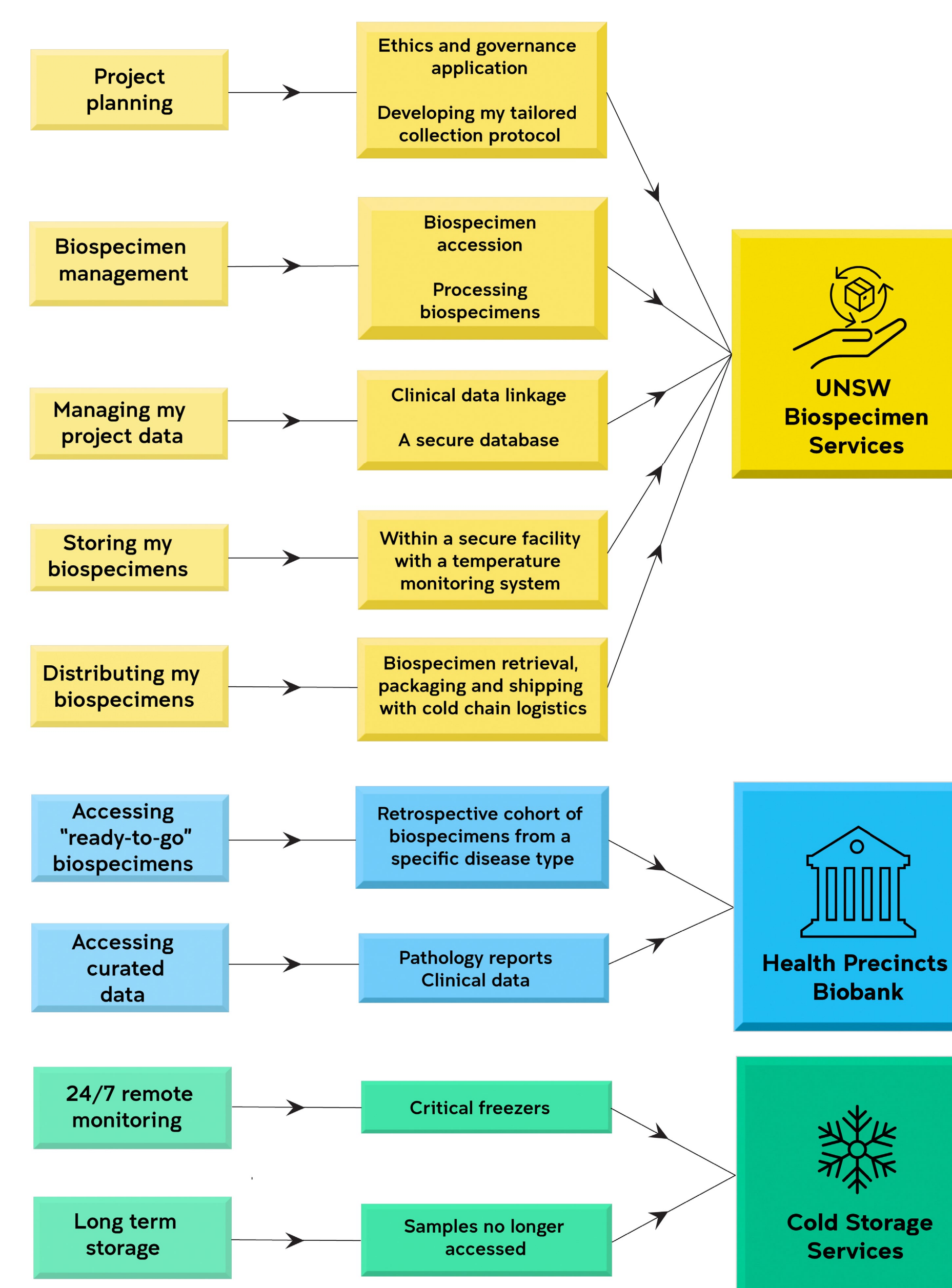
View the Top 10 ICD-10 Donor Diagnoses on our Website



50
PROJECTS
Supported
4,900
CONSENTED DONORS
43,000
STORED BIOSPECIMENS

Available for use in ethically approved research

WHAT DO YOU WANT HELP WITH?



PLEASE CONTACT

CHOOSING A SERVICE

The "Pick A Service" diagram (Fig. 5.) assists researchers to determine which service meets their research need.

Biospecimen Services has a range of services that assist researchers to establish and manage their own researcher-led collections.

Cost estimates can be provided as part of project planning and grant applications.

Data management is provided via a secure database with hierarchical access that allows for annotation of samples.

Health Precincts Biobank provides access to "ready-to-go" annotated biospecimens from a retrospective cohort of mostly cancer samples and associated clinical data.

Cold Storage Services offer long-term storage for archival samples, access to emergency freezer space, and wireless temperature monitoring.

Fig. 5. Pick A Service diagram.

GOVERNANCE

UNSW Biospecimen Services including the Health Precincts Biobank has a robust governance structure (Fig. 6.), is centrally supported and operates a cost recovery model.

The Health Precincts Biobank holds ethics approval from South Eastern Sydney Local Area Health District. All applications:

- are reviewed by the Research Access Committee
- must hold ethics approval for use of samples and/or data
- must complete an MTA or UNSW Internal User Agreement

Access to Researcher-led collections is through the Principal Investigator of the collection.

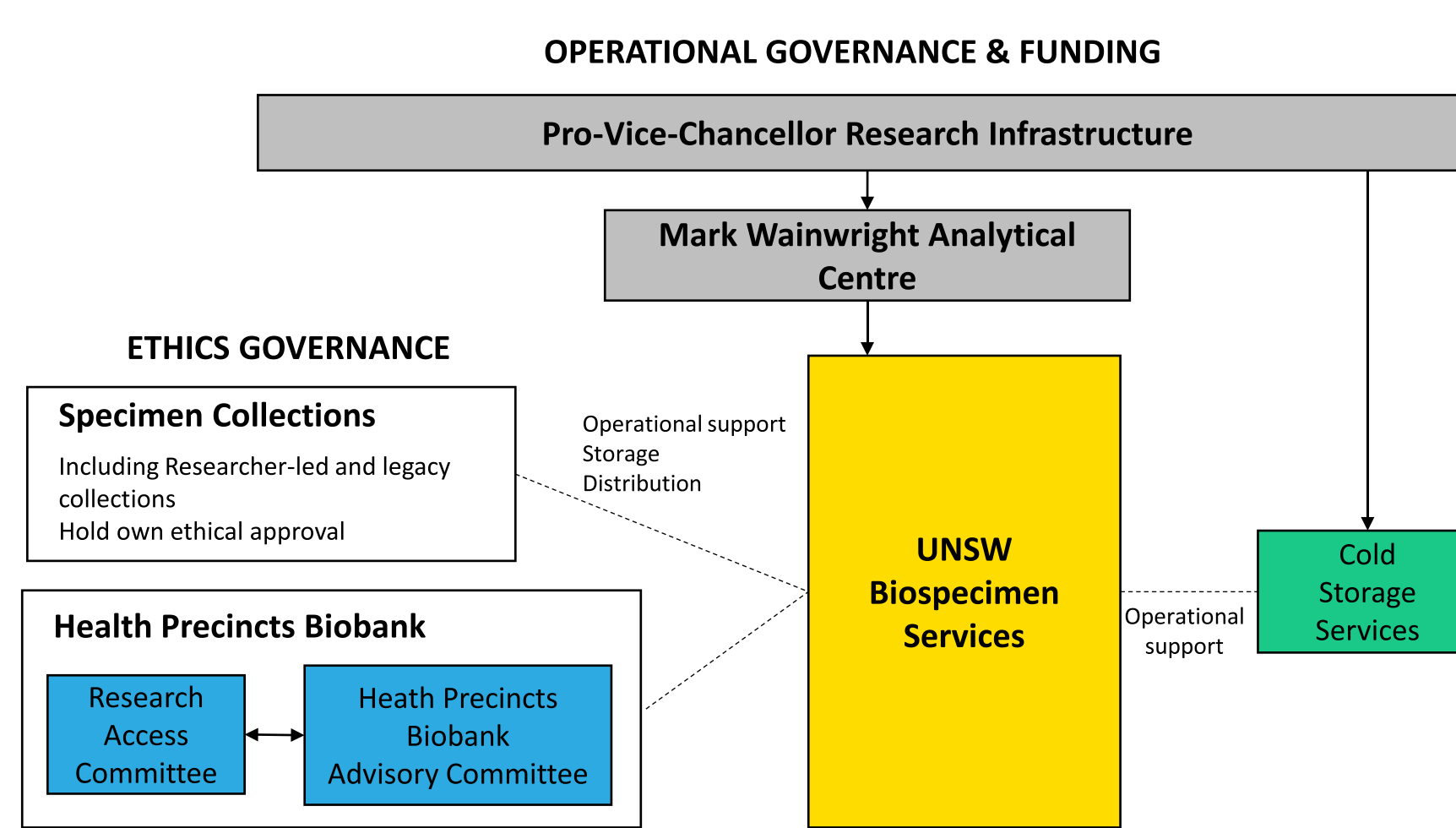


Fig. 6. UNSW Biospecimen Services governance structure.

COLD STORAGE SERVICES

Cold Storage Services provides access to a 24/7 wireless monitoring system for critical equipment including fridges, freezers, incubators and vapour phase tanks. Temperature and power consumption of equipment, as well as room temperature and humidity can be monitored.

This system provides real-time information utilising wireless sensors independent of UNSW's Building Management System. The data is web accessible (Fig. 7.).

Cold Storage Services also provide long-term storage facilities for archival samples at -80°C or in liquid nitrogen vapour with data management within a secure database.

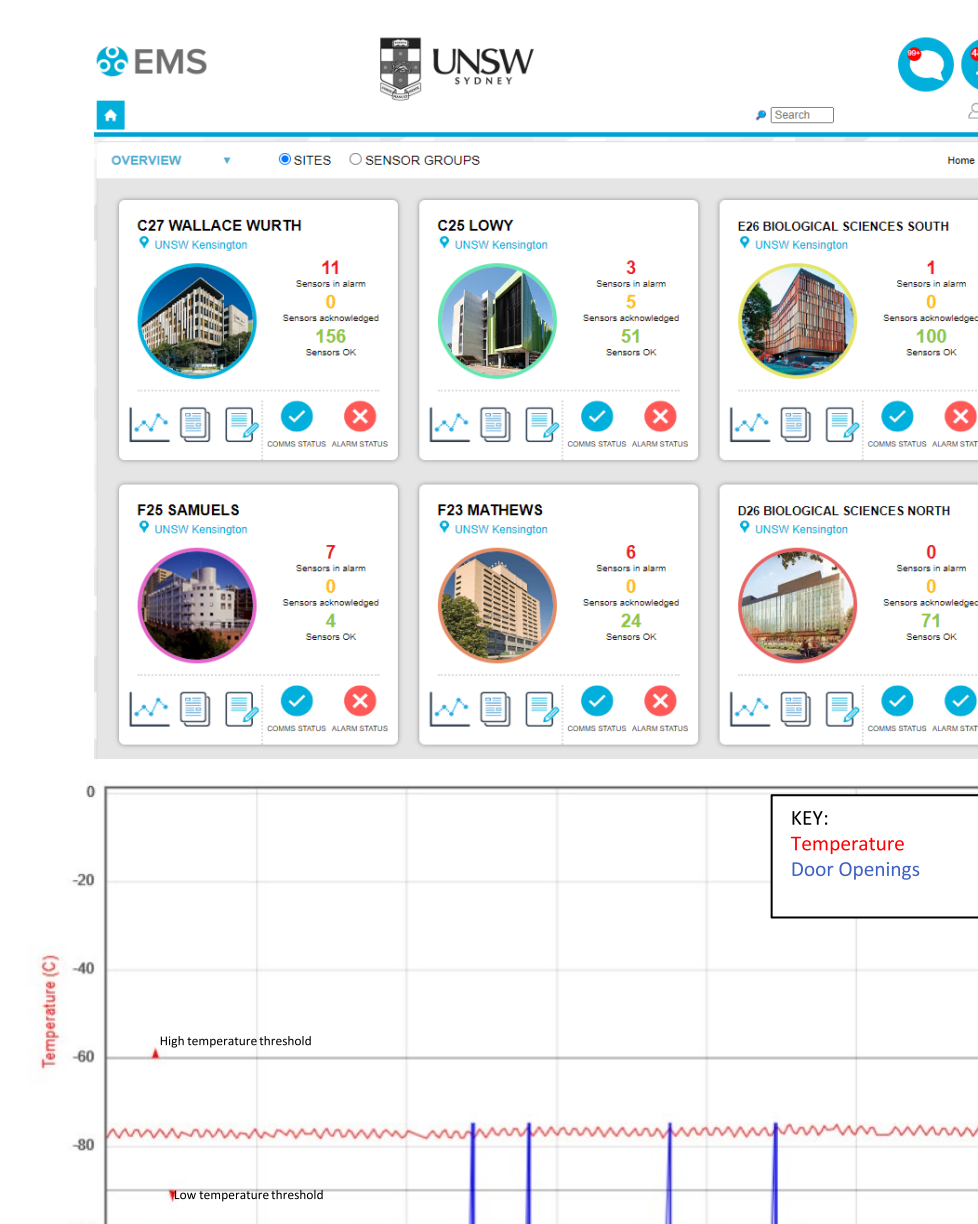


Fig. 7. Web interface showing six UNSW sites (top) and an example of -80°C freezer temperature monitoring (red), door opening events (blue) & high/low temperature thresholds (bottom).