

Determining An Accurate **Value** For **Research Biobanking**



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What is a Research Biobank?

“A standardised collection of human biospecimens with associated data records”



- biospecimens account for 15 – 25% cancer research
- demand has increased significantly over the past 20 years



Sustainability

- Biobanking has arisen as a cottage industry
- Biobanks differ from other research infrastructure
- Researcher access can be problematic

Value

- Limited literature on 'value' and 'outcomes'
- 'What we've always done'??
- Stakeholder perspectives differ

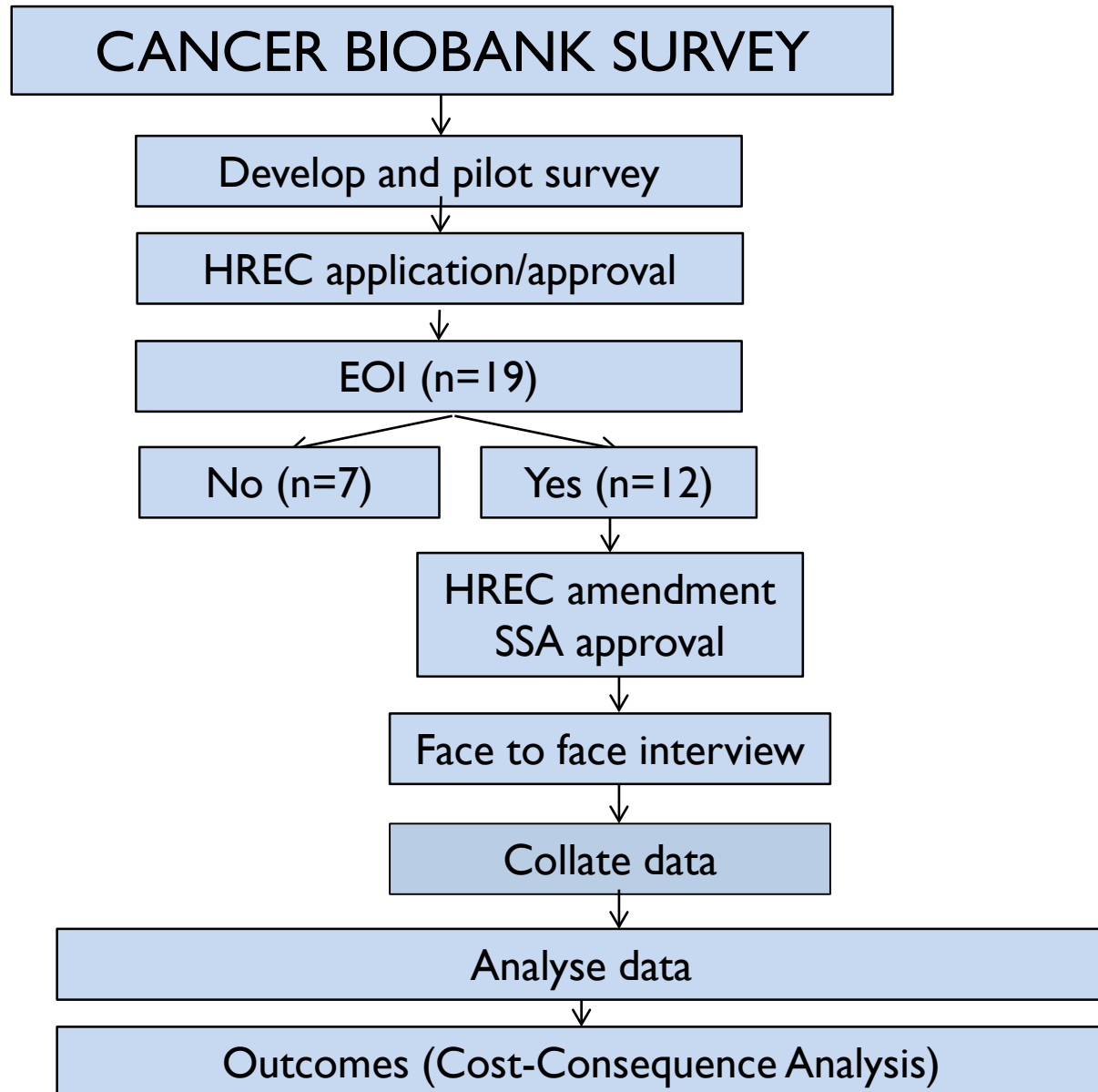
Aim: To investigate biobank value from a health economics perspective (cost:consequence analyses)



Biobank metrics

Biobank Inputs (‘Costs’)	Internal Measures (‘Activities’)	Biobank Outputs/ Outcomes
Staff	Number of participants	Cost-recovery
Overheads	Number of samples/aliquots	Researcher publications
Assets	Staff training	Personalised medicine
Consumables	Data variables	Clinical trials
Contractors	Studies supported	Clinical tests
Software	Researcher feedback	Quality control
In-kind services	Biobank publications	Data reporting
In-kind infrastructure		

Methods





Case study:

Open-access cancer biobank

Annual cost ('17 – '18)	Percentage of costs
Staff	76%
Assets	12%
Consumables	7%
Floor/laboratory space	2%
Software	<1%
Access committee	<1%
Collecting tissue	<1%
Processing tissue	<0.5%
Tissue characterisation	<0.5%



Case study:

Open access cancer biobank

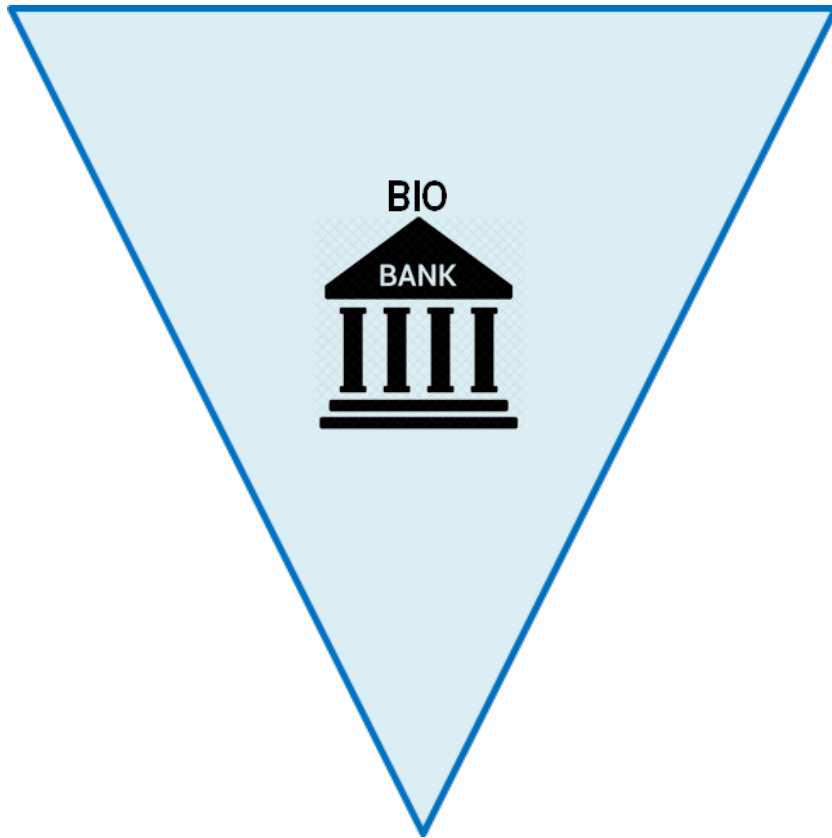
Output ('14 – '15 FY)	Direct measure	Proposed value measure
Research projects	18 approved	Case studies
Publications	9 peer-reviewed	Citation counts, 'alt-metrics', h-index, career trajectories via ORCID
Research support	814 hours of image scanning and slide auto-stainer use	Hourly rate
Contribution to personalised medicine	47 patient samples	Individual health outcomes
Contribution to oncology clinical trials	85 patient samples	Trial outcomes
Contribution to clinical testing	273 patient samples	Pathology fees as a proxy



Risks

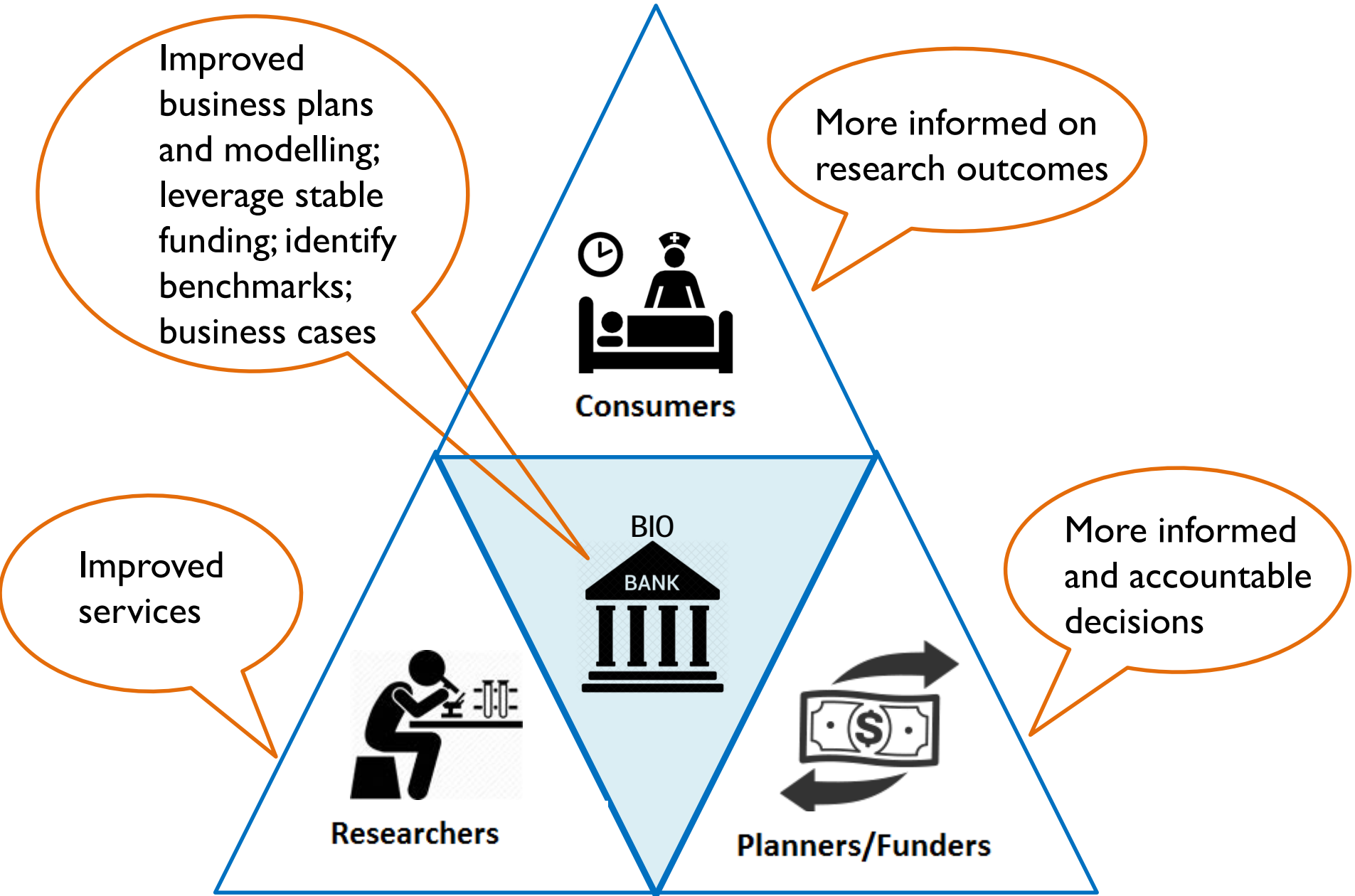
- Variations due to intrinsic biobank properties
 - Open vs. restricted access
 - Rare vs. common disease types
 - Support of ‘high risk’ research vs. research with ‘assured’ outcomes
- Biobanks artificially altering their operations to meet imposed targets
- Some biobanks may not be portrayed positively

Research **impact**



- Better understanding of the cost of biobanks
- Document broad range of biobank impacts
- Better understanding of biobank outputs and value

Impact upon stakeholders



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