IHI Call Days | Call 9

BioTwin4Cancer

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- Proposal sharing tool IHI Call Days - Call 9
- Participant profile IHI Call Days - Call 9

Vilnius University

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Challenges and objectives

- Diferential diagnostics (DDX) in oncology remains supporting tool for treatment options.
  - Unreliable and expensive DDX for differential treatreatment options
  - Generalised approach relying on spreaded molecular data
  - Guidelines for treatment rely on incomplete data for cellular interactions

Test	Technology	Parameters	Location
Oncotype DX	RT-PCR	21 genes /RNA	Central (USA)
MammaPrint	array	70 genes /RNA	Central (NL)
BluePrint	array	80 genes /RNA	Central (USA)
PAM50/Prosigna	RT-PCR	55 genes /RNA	Central (USA)
BCI	RT-PCR	7 genes /RNA	Central (USA)
Randox BCA	array	23 genes /RNA	Regional?
Mammostrat	IHC	7 proteins	Regional?
IHC4	IHC	4 proteins	Local? (QA)
IHC4 AQUA	IHC	4 proteins	Central
MammaTyper	RT-PCR	Genes/RNA	Local
NPI plus	IHC	10 proteins	?

Objectives: Create a medical device to overcome challenges based on cellular rather than molecular approach.

- IHI specific objectives: SO2

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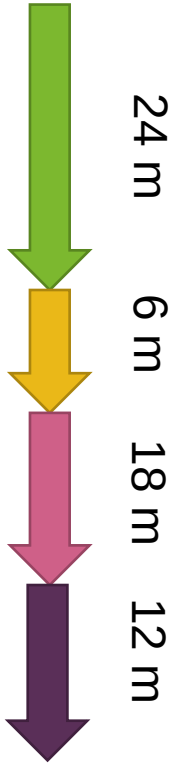
How to solve the problem

- Research:
  - Identify most versatile ACF system for CSCs
  - Perform proof-of-concept study
  - Recognise best evaluation techniques
- Testing:
  - Standartise protocol
- Application:
  - Manufacture prototype system
- Monitoring:
  - Field applications



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Partnership needs - IHI

- Essential collaboration between stakeholders for paradigm shift from molecular tools to functional personalised diagnostics.
- Public – Private collaboration is essential:
  - Access to patient derived material and R&D partners with experience in the field
  - Medtech and pharma partners for providing integrated standartised solution
  - Regulatory partners in supporting tech integration to practice
- Industry partners execution for validation for large scale clinical and industrial deployment

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Outcomes and Impact

- DDx treatment selection instrument for personalised oncology. Suggests and confirms best treatment options.
- Multicentered integration as support tool for DDx and treatment selection. Subsequent implementation to guidelines.
- „Over 35 million new cancer cases are predicted in 2050, a 77% increase from the estimated 20 million cases in 2022“ - WHO.

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Expertise and resources

- We have:
  - Major national translational research hub with state-of-the-art technologies
  - One of the largest specialized tertiary health care providers in Lithuania
  - Partnerships in translational research
- We are looking for:
  - We aim to partner in a consortium focused on developing instrument for oncology DDx and treatment options using 3D biology techniques.

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Medical science center

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