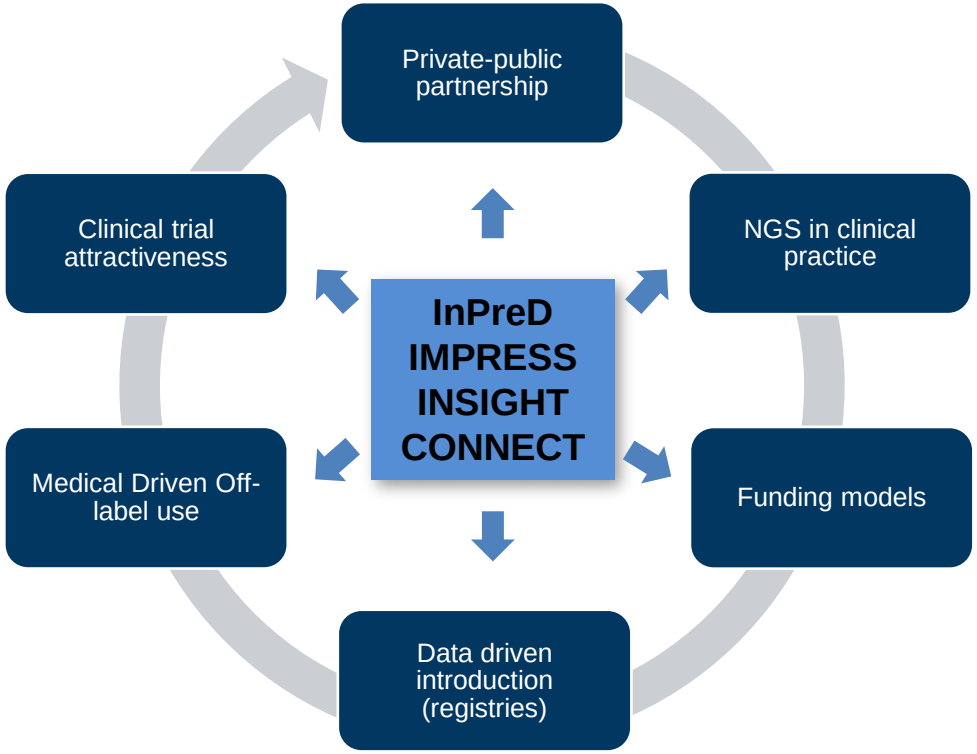
CONNECT - et økosystem for offentlig-privat samarbeid i presisjonsmedisin for kreft

Joint objectives and shared opportunities for public and private stakeholders

In the Commission documents for 2019 and 2020, the **Norwegian Minister of Health** has explicitly asked for initiatives that can **accelerate the implementation of precision medicine** both, in research and standard patient care.

A Public-Private Consortium can address the different and interconnected tasks that require a **coalition of resources, expertise and partnering** and which are beyond the capacity and resources of a single organization.



Implementing precision cancer medicine in Norway: four interconnected initiatives:

InPreD Norway:

National infrastructure for precision diagnostics

IMPRESS-Norway:

Improving public cancer care by implementing precision medicine in Norway

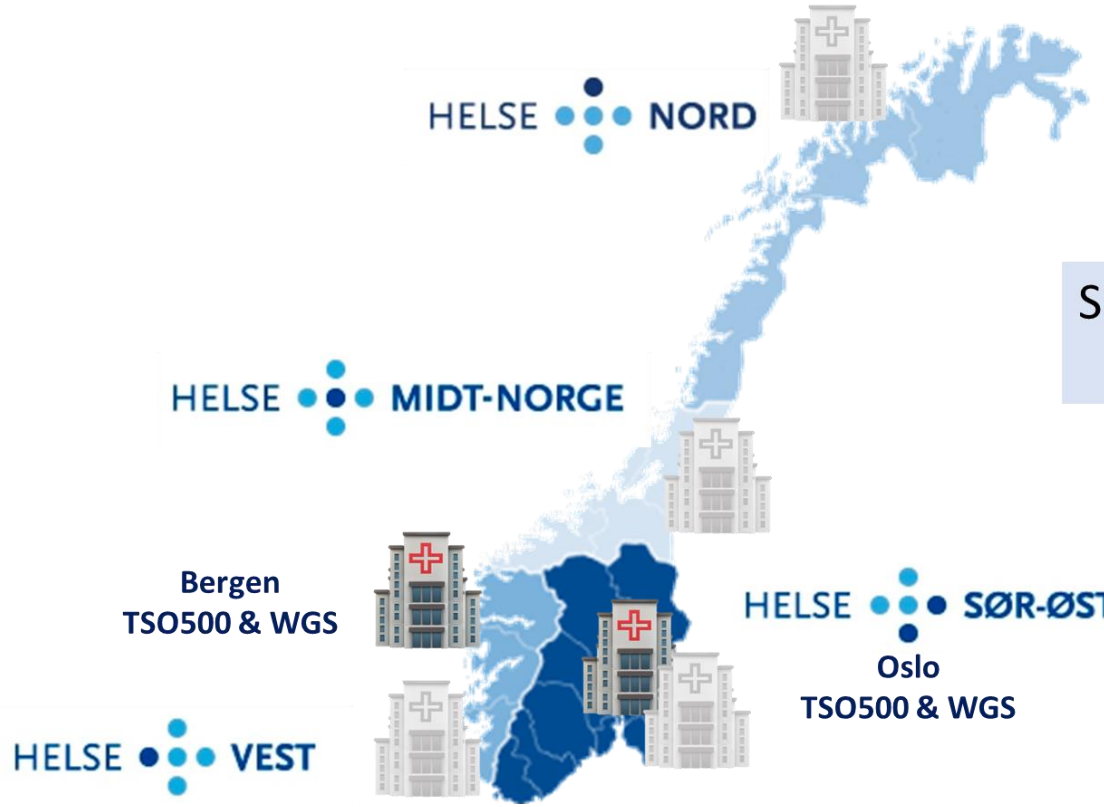
INSIGHT:

Regulatory framework for implementing precision medicine into the Norwegian health care system

CONNECT:

Norwegian Precision Cancer Medicine Implementation Consortium

National infrastructure for precision diagnostics, InPreD Norway



Six University hospitals across Norway

Competence centres
Facilitate technology transfer
Test sites for new technologies

The six pathology departments at the university hospitals as core of InPreD-Norway

- Network for NGS accessible for all pathology departments being established
- Patient recruitment to clinical trials is available for all hospitals.

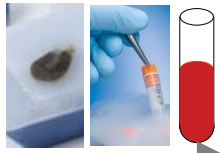
Aim: Equal access to expanded molecular testing – and experimental treatment for cancer patients

InPreD: Diagnosis and assessment for cancer patients where experimental treatment and clinical trial inclusion is an option

Informed consent
Molecular profiling

Tissue: TSO500

ctDNA: coll. with Roche/Foundation Medicine



Sampling tissue/blood, existing biopsies

Molecular analyses

Data-analysis

Molecular Report

Interpretation, Integration with clinical information

MTB meeting: Assessment for biomarker-trial match

No biomarker or not eligible for trial
Back to ordinary treatment program with survival follow-up

1) Selected to **biomarker defined trial -** **Informed consent**

2) Biomarker present but no trial available

Inclusion in IMPRESs-Norway

Sequential biopsies:
WGS
RNAseq
+additional sampling for **translational research**
- **Informed consent**

National Molecular Tumor Board (MTB):

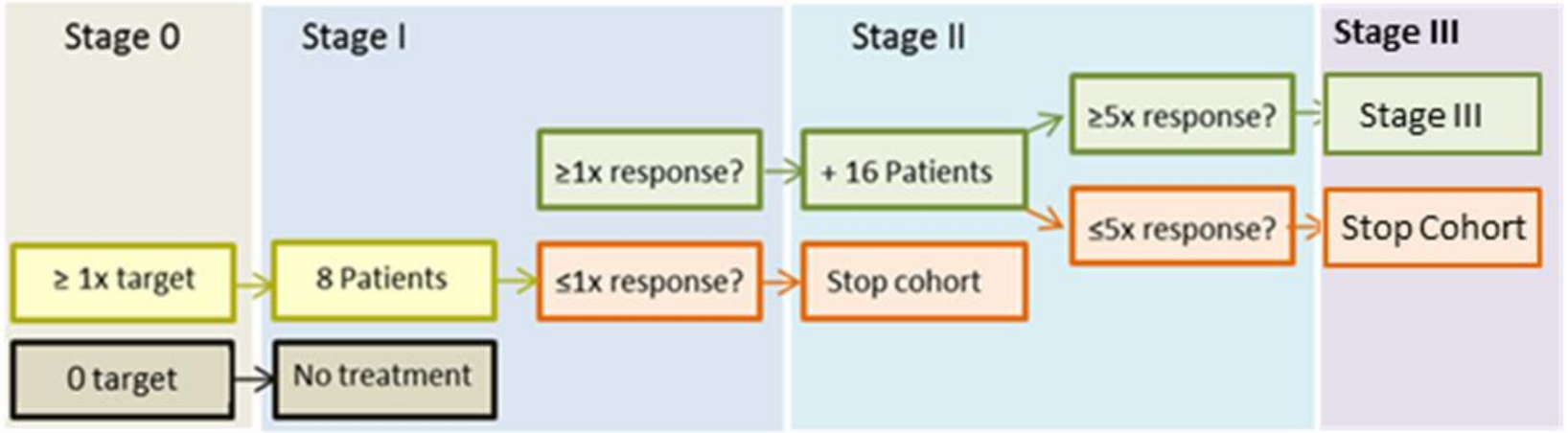
- Weekly Virtual meetings
- A core group with broad competence: pathology, oncology, hematology, molecular biology, bioinformatics, ++
- Referring clinician
- Others (e.g. trial coordinators, local clinicians/pathologists)

IMPRESs-Norway: Study Outline

- Opportunity for all Norwegian cancer patients
- Entry by testing (level 1 lab / 500-gene panel test)
- Evaluation via national molecular tumor board (MTB)
  - Amalgamated algorithm defined by inclusion criteria for each drug
- If suitable molecular profile
  - Referral to other ongoing trial
  - Inclusion in IMPRESs-Norway study-arm
- Sampling biological material (tumor/pleura fluid/ascites/blood)
- RECIST or other standard evaluation (for different diagnoses)
- Monitoring according to GCP
- Study protocol complemented with drug-specific study manual
  - Definition of inclusion criteria, sampling, translational research for each drug

IMPRESS NORWAY

Study-design: combined umbrella-basket, Simon two-stage model



- Eligible patients with identified actionable targets with matching drug from the study drug portfolio will be included in an IMPRESS-Norway cohort.
- A cohort will consist of patients with the same indication and same actionable target.
- IMPRESS-Norway will open several cohorts and expand these to the next stage based on the response determined in the patient group.

For reference also see: van der Velden, D.L., Hoes, L.R., van der Wijngaart, H. *et al.* The Drug Rediscovery protocol facilitates the expanded use of existing anticancer drugs. *Nature* **574,** 127–131 (2019)
Van Waalwijk *et al.* Personalised reimbursement: a risk-sharing model for biomarker-driven treatment of rare subgroups of cancer patients. *Annals of Oncology*, *30*(5), 663–665 (2019)

IMPRESs-NORWAY:
1:1 Meetings with Pharma Companies from March 2020

AbbVie
Astra Zeneca
Bayer
BMS
Merck Serono
MSD
Novartis
Pfizer
Roche
Sanofi
Amgen
Astellas
GSK
Takeda
Karyopharm (initial discussion)
Blueprint medicines
Eli Lilly

April 2020 – June 2020: Internal evaluation

Autumn 2020 – Individual process with each company for development of drug specific manuals and approval of drugs

- Company-specific processes
- Involvement of and decision making on Nordic, European, Global level within Pharma
- Individual follow-up by OUH team in close collaboration with OCC

INSIGHT – Work Packages

WP1: Statistical analysis in non-randomized trials
PI: Inge Christoffer Olsen

- Develop syntethic control groups
- Statistical framework IMPRESS-Norway
- Framework for merging control groups for optimalization of syntetich control groups

WP2: Cost-effectiveness of IMPRESS-Norway
PI: Eline Aas

- Health outcomes IMPRESS-Norway
- Costs for patients in the IMPRESS-pathway
- Cost-effectivness analyses
- Equal access

WP3: Drug reimbursement scheme
PI: Tor Iversen

- State-of-the-art reimbursement scheme
- Propose new schemes to be tested in IMPRESS-Norway
- Comperison of impact from both public and private perspective of different schemes

WP4: Ethical challenges embedded in the PCM
PI: Bjørn Hofmann

- Describe the generic uncertainty
- Research ethics (e.g. real consent from vulnerable patients)
- Describe methodlogical issues (e.g. Assessing causlity using small patientsgroups)

WP5: Insecurity in health care legislation
PI: Anne Kjersti Befring

- Legal framework for access, process and store molecular data without consent
- Merging legal framework covering standard of care at explorative research-based treatment

WP6: Decision process and patient communication
PI: Per Magnus Mæhle

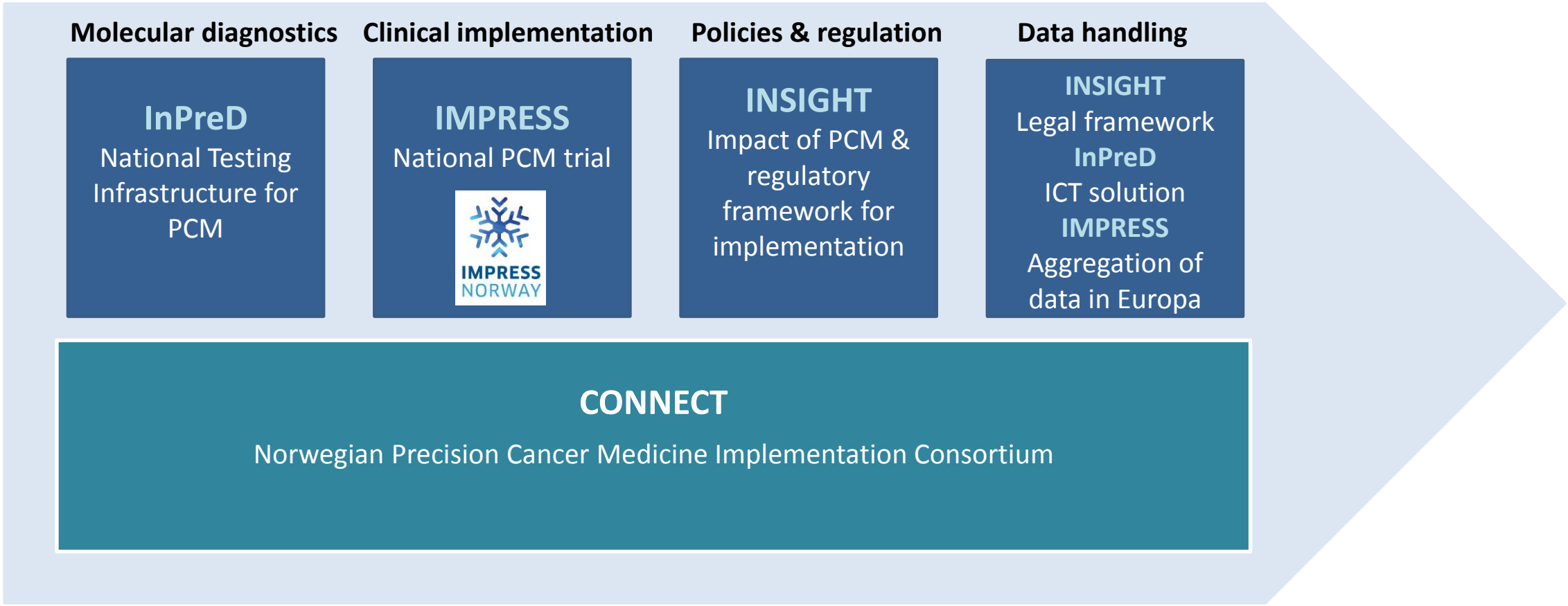
- Decision dynamics in IMPRESS-Norway
- Exploring communication of missions, opportunities, recommendations and uncertainty to the patient.

WP7: Interface to IMPRESS, InPreD & CONNECT
PI: Kjetil Taskén

- Dissemination strategy (inter-project and external)
- Participation in Working Groups in CONNECT
- Interface IMPRESS-Norway and InPreD

CONNECT Public Private Partnership:

Offering an arena for all relevant stakeholders to jointly address key obstacles and piloting novel solutions



CONNECT - Public and private collaboration within the health care sector

Benefits for Public Partners:

- National harmonization of molecular testing
- Access to industry competence and contribution
- Increase number of clinical trials
- Sustainable system ready for next level of precision medicine
- Advisory for large scale projects such as InPreD and IMPRESs

Benefits for Private Partners:

- Infrastructure for national stratification
- Increase competence - key for attracting clinical trials
- Increased research and infrastructure
- Precompetitive forum for implementation

Joint benefits for all stakeholders

- Faster and equal access to novel treatments
- Enrich Cancer Registry - data for STA/HTA assessments of precision medicine
- Proactive communication for competence building
- Informed discussion of novel implementation and reimbursement methods