

Kunstig Intelligens i Norsk helsetjeneste - KIN

Nettverksmøte nr 3 2021

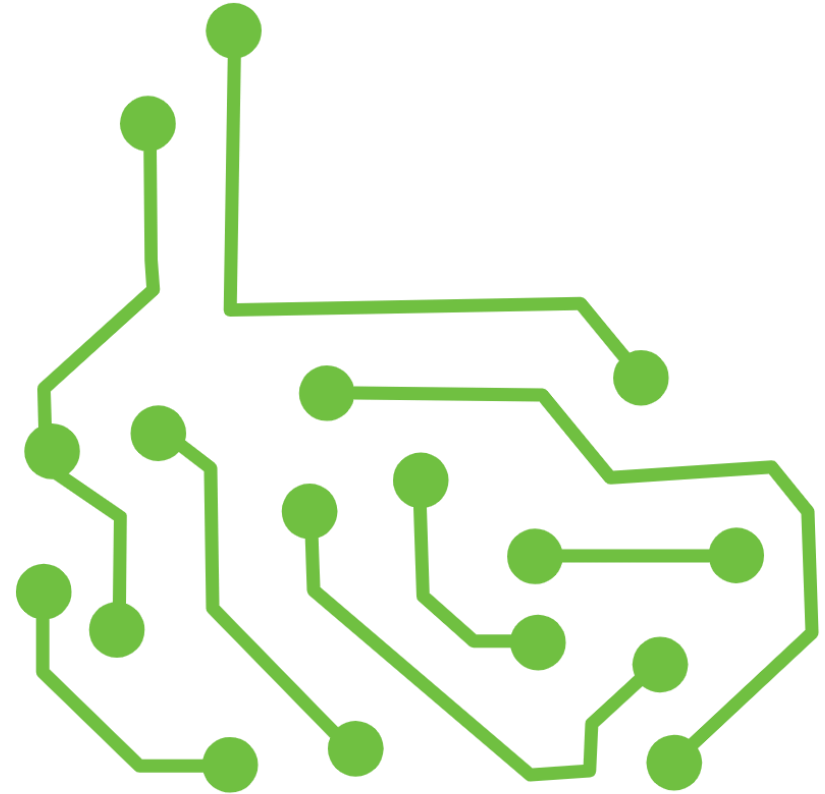
Digitalt møte/Teams
20. September 2021

OBS – disse tekstboksene inneholder notater fra møtet.

Agenda kl 10.00-13.30

- 10.00 Velkommen og nytt om KIN
- 10.15 Kunnskapsstafett: Kommende seminarer
- 10.30 Introduksjon til dagens tema: Kvalitetssikring av kunstig intelligens-drevne verktøy for klinisk bruk - (Alexander Selvikvåg Lundervold, MMIV og Vibeke Binz Vallevik, DNV /BigMed)
- 11.00 Experiences from the UK
 - 11.00 NHSx – Presentation on [Digital Technology Assessment Criteria \(DTAC\)](#) (10-10.30 UK time), Lauren Harkins, NHSx
 - 11.30 Experiences from the [AI in health award](#) (10:30 – 11:00 UK time), Emma Hughes, NHS
 - Discussion
- Ca. 12.00-12.30 PAUSE
- 12.30 Norske erfaringer
 - 12.30 Mammografiscreeningen – empirisk evaluering av systemene, Solveig Hofvind, Krefregisteret
 - 12.55 BoneXpert – et klinisk perspektiv på bruk av et AI-verkøy, Trine Storhaug, Helse Sør-Øst og Merete Retzius, Sykehuspartner
 - 13.10 Åpen scene for å dele erfaringer (Kommentarer og diskusjon)
- 13.20 Neste møte og videre arbeid

Fokustema for møtet: Kvalitetssikring av kunstig intelligens-drevne verktøy for klinisk bruk



Velkommen og nytt om KIN

Velkommen

Nettverket bidrar til åpen utveksling av idéer og meninger for å styrke fagfellesskapet, gjennom møter, seminarer og deling av erfaringer.

Vår arbeidsform:



Bottom-up



Tverrfaglig



Åpen



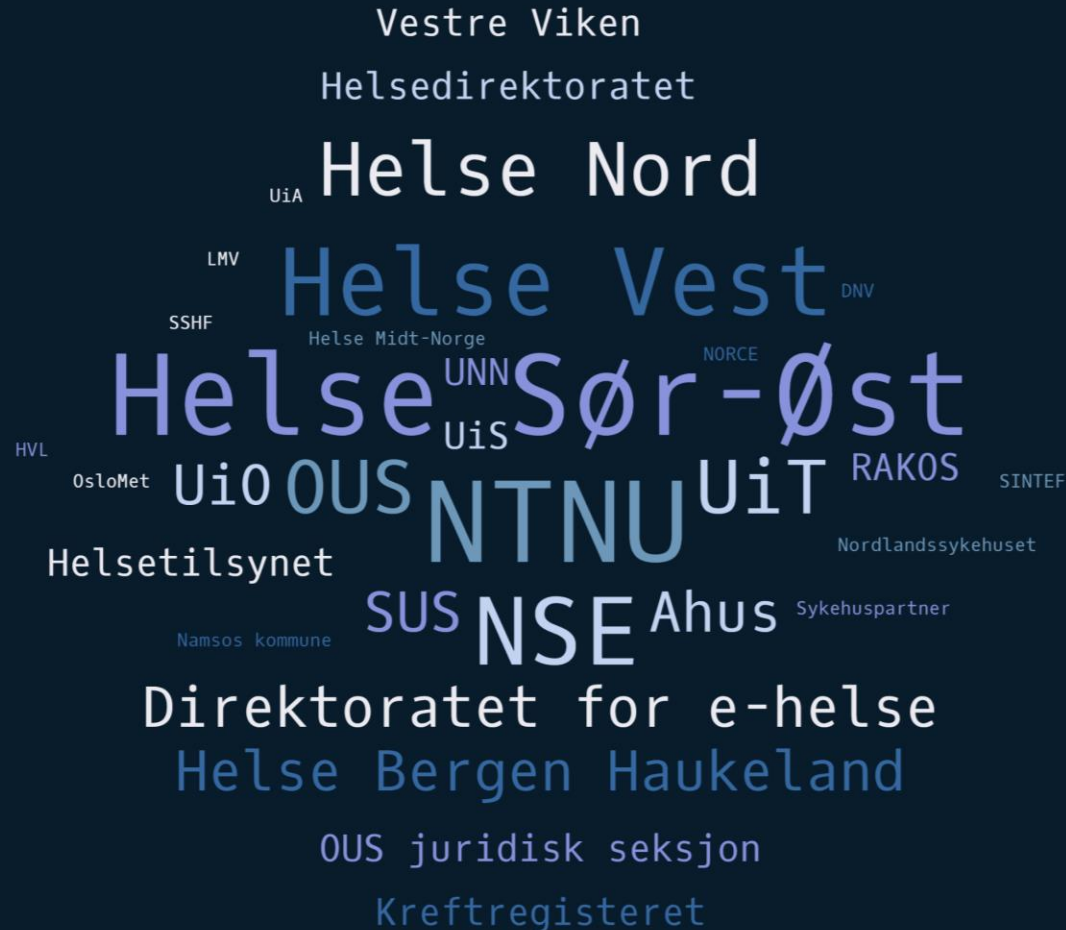
UiO : Universitetet i Oslo



OSLO METROPOLITAN UNIVERSITY
STORBYUNIVERSITETET



65 medlemmer

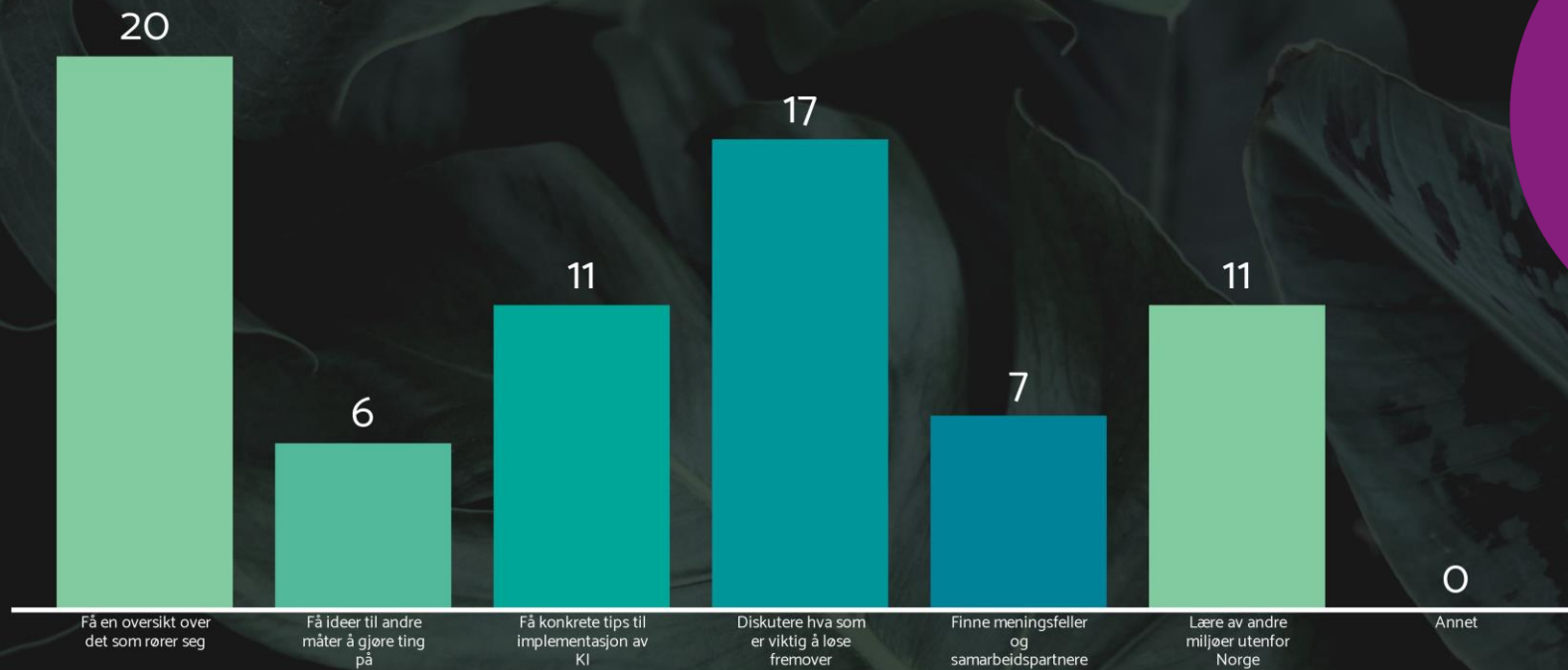


Godkjenning av møtereferat og innkalling



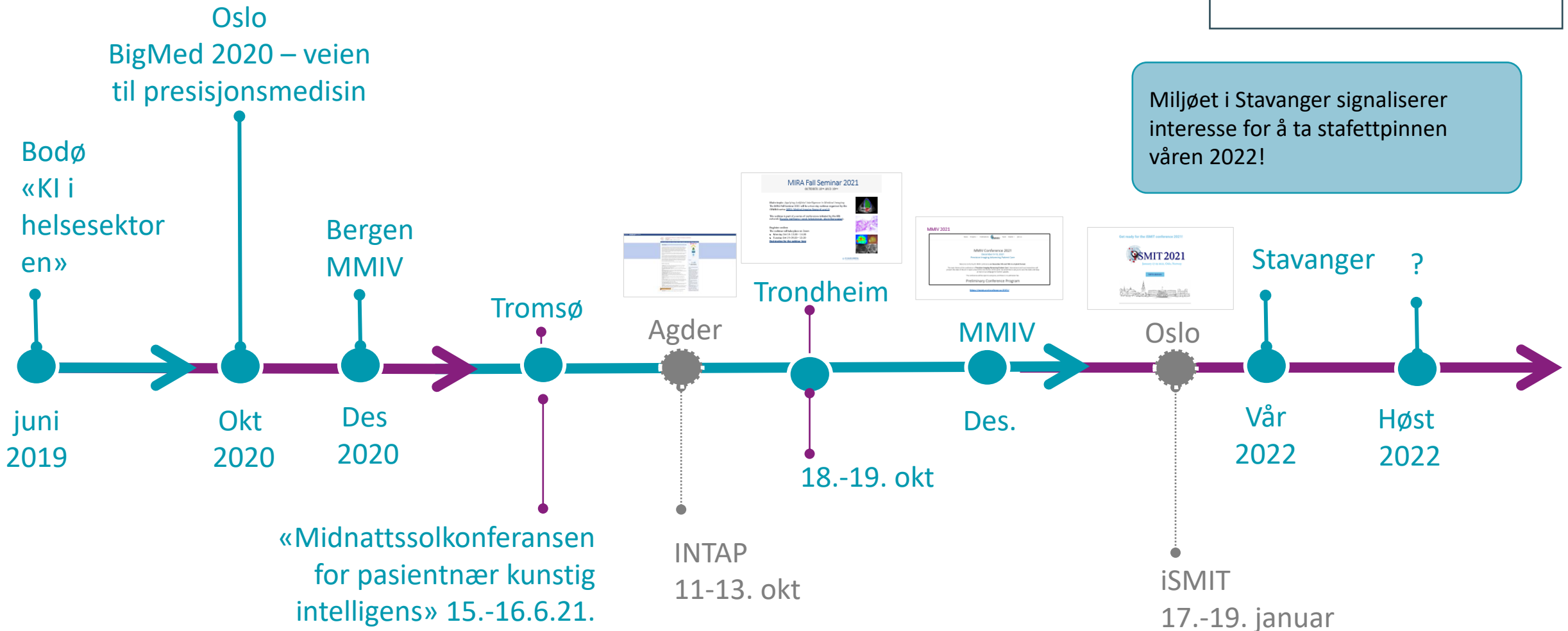
Ingen kommentarer mottatt på agenda og referat som var vedlagt i kalenderinnkalling.

Hva er du mest opptatt av å få ut av dette møtet? (kan krysse av flere)



Kunnskapsstafett: Kommende seminarer

Oversikt seminarer/konferanser





Call for Papers

The information surrounding us is not only overwhelming but also subject to limitations of systems and applications, including specialised devices. The diversity of systems and the spectrum of situations make it almost impossible for an end-user to handle the complexity of the challenges. Embedding intelligence in systems and applications seems to be a reasonable way to move some complex tasks from user duty. However, this approach requires fundamental changes in designing the systems and applications, in designing their interfaces and requires using specific cognitive and collaborative mechanisms. Intelligence becomes a key paradigm and its specific use takes various forms according to the technology or the domain a system or an application belongs to.

INTAP 2021, The 4th International Conference on Intelligent Technologies and Applications, is the inaugural event on advances towards fundamental, as well as practical and experimental aspects of intelligent applications.

We solicit both academic, research, and industrial contributions. We welcome technical papers presenting research and practical results, position papers addressing the pros and cons of specific proposals, such as those being discussed in the standard fora or in industry consortia, survey papers addressing the key problems and solutions on any of the above topics short papers on work in progress, and panel proposals.

The topics suggested by the conference can be discussed in terms of concepts, state of the art, research, standards, implementations, running experiments, applications, and industrial case studies. Authors are invited to submit complete unpublished papers, which are not under review in any other conference or journal in the following, but not limited to, topic areas.

All topics and submission formats are open to both research and industry contributions.

INTAP 2021 conference tracks:

- ▶ **Intelligence:** Agents, deep learning, machine learning, knowledge representation, web intelligence, multiple intelligence, and natural language understanding, etc.
- ▶ **IoT:** AI Powered Sensors for IoT, Sensor based Systems, Sensor fusion, Smart buildings, Smart Cities, Wearable systems, Implantable Systems, etc.
- ▶ **Smart Electrical Energy Systems:** Opportunities and Challenges for Integration of Renewable Energy Systems
- ▶ **Data Analysis:** Big data analytics, text analytics, web analytics, business intelligence, etc.
- ▶ **Decision support systems:** humanitarian operations, Health emergencies and pandemics, Business and commercial settings, Industrial operations, etc.
- ▶ **Intelligent Environments:** Ambient, virtual, and mixed reality, semantic web, etc.
- ▶ **Social Media Analytics:** Text mining, opinion mining, sentiment analysis, etc.
- ▶ **Smart Environments:** Pervasive intelligence, ubiquitous computing, RFID and BLE, etc.
- ▶ **Robotics:** Machine Design, Industrial IT, Intelligent Monitoring, Robotics & Vision, Collaborative Robots, Urban Ocean Technology.
- ▶ **Visual Communication:** Affective interactions, intelliVision, multimedia learning, intelligent video surveillance
- ▶ **Intelligent Telecom Systems:** 5/G IOT, Digital Forensics, Fraud mitigation, Market Analysis and Forecast
- ▶ **AI and ML in Security:** AI and ML for border security, AI and ML for threat and attack modelling, AI and ML for criminal ontologies, AI and ML for secure information communication, privacy preserving AI and ML, trustworthy AI, AI and ML applications in security of energy, health, crime, smart city, smartgrid etc. domains, AI and ML in biometrics, bigdata and AI in security
- ▶ **AI for Software Engineering:** principles, practices and applications
- ▶ **ML in energy sectors and materials:** electrical and heat load forecasting, wind power and PV generation forecasting, control of microgrids, equipment condition monitoring and maintenance, power supply restoration, etc.
- ▶ **Applications of intelligent technologies in Emergency Management:** smart technologies for situational awareness, disaster event detection and prediction, evacuation support, robotics and UAV for decision support, cyber-physical systems, data fusion and visualisation, security and safety for smart cities, smart technologies and automation for information sharing
- ▶ **ML and AI for Intelligent Health**
- ▶ **ML and AI for sensing technologies:** RF sensing, radar sensing, Wi-Fi sensing, wearable sensing, LIDAR sensing, etc.
- ▶ **Miscellaneous:** Ambient Intelligence, persuasive intelligence, bio-inspired intelligence, etc.



ACM Bahawalpur Chapter

Partners



Artificial Intelligence
Research Group, IUB

Call for Late Breaking Results Posters

We are happy to announce a Call for Late Breaking Results Posters at INTAP21. LBR should cover new research in any area relevant to the normal paper submission for INTAP21. Sufficient work must have been completed to indicate viability of the work, but by their nature LBR papers typically outline new and exciting results. Accepted LBR submissions will be presented at a poster session where the LBR poster presenters will showcase their work and get timely feedback from professionals including academia, industries, designers, and makers.

NOTE: at least one author must be present (physically or virtually) at the poster session.

The Poster Session will be held at the Mechatronics Lab, Tuesday, October 12th, 2021. Please see the preliminary program.

POSTER TEMPLATE can be found [here](#).
DEADLINE: October 1st, 2021.
POSTERS MUST BE SUBMITTED via email to: filippo.santilippo@uia.no

Best Student Paper Award

Description: This award recognizes the best paper authored primarily by a student and presented by the student at the 4th

MIRA Fall Seminar 2021

OCTOBER 18TH AND 19TH

Main topic: *Applying Artificial Intelligence in Medical Imaging*

The MIRA Fall Seminar 2021 will be a two-day webinar organized by the GEMINI centre [MIRA: Medical Imaging Research and AI](#).

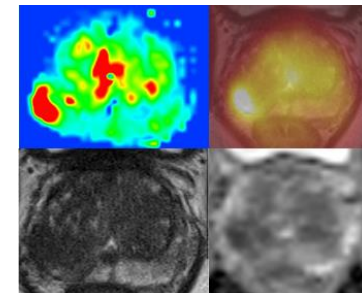
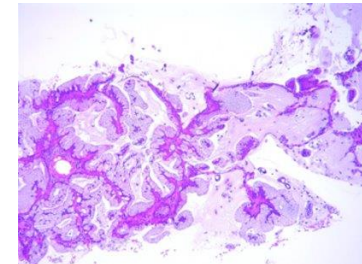
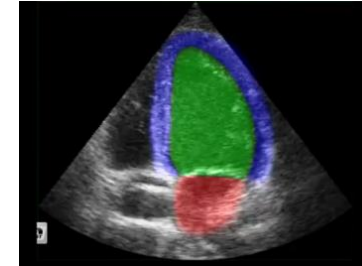
This webinar is part of a series of conferences initiated by the KIN network ([Kunstig intelligens i norsk helsetjeneste, site in Norwegian](#)).

Register online

The webinar will take place on Zoom

- Monday Oct 18: 13.00 – 16.00
- Tuesday Oct 19: 09.00 – 12.00

[Registration for the webinar here](#)



MIRA Fall Seminar 2021

PROGRAMME MONDAY OCTOBER 18TH

	Topic	Speaker
13.00 – 13.10	Welcome and introduction	Tone F. Bathen, NTNU and Lasse Løgstakken, NTNU
13.10 – 13.40	Clinical applications of AI in Medical Imaging	Henkjan Huisman, Radboud University Medical Center, NL
13.40 – 14.00	PET/MRI in Prostate Cancer – AI for improved diagnostics. Research at NTNU/St. Olavs hospital	Mattijs Elschot, NTNU
14.00 – 14.20	AICAN (AI and digital pathology in CANcer)	Marit Valla, NTNU
14.20 – 15.00	<i>Break + virtual mingling</i>	
15.00 – 15.20	AI and a multi-omic approach in lung cancer	Hanne Sorger, NTNU
15.20 – 15.40	AI in lung cancer diagnostics	Thomas Langø, SINTEF and St. Olavs hospital
15.40 – 16.00	AI in neurosurgery	Ingerid Reinertsen, SINTEF and NTNU

MIRA Fall Seminar 2021

PROGRAMME TUESDAY OCTOBER 19TH

	Topic	Speaker
09.00 – 09.05	Welcome and introduction	Tone F. Bathen, NTNU and Lasse Løvstakken, NTNU
09.05 – 09.35	Helseplattformen and AI	Arild Faxvaag, NTNU and Helseplattformen
09.35 – 09.55	AI in echocardiography	Lasse Løvstakken, NTNU
09.55 – 10.15	HUNT Cloud's perspectives on AI infrastructure	Oddgeir Lingaas Holmen, NTNU and Tom-Erik Røberg, NTNU
10.15 – 10.30	<i>Break</i>	
10.30 – 11.00	Decentralised AI and healthcare	Magnus Kjellberg, Kompetenscentrum AI, Sahlgrenska Universitetssjukhuset
11.00 – 11.20	EXAIGON: Explainable AI systems for gradual industry adoption	<i>TBA</i>
11.20 – 11.40	Digital Twins for Data-driven Hypertension Prediction?	Frank Lindseth, NTNU
11.40 – 12.00	Summary and closing remarks	

MMIV 2021

MMIV Conference 2021

December 9-10, 2021

Precision Imaging Advancing Patient Care

Welcome to the fourth MMIV conference **on December 9th and 10th in a hybrid format.**

The main theme of the conference is **'Precision Imaging Advancing Patient Care'**. International and local researchers will present the state of the art in topics around this core theme. At this point, we would like to ask you to save the dates and keep an eye on our webpage for further updates.

The conference will be open to everyone, and there is no admission fee.

Preliminary Conference Program

<https://mmiv.no/conference-2021/>

Get ready for the iSMIT conference 2021!



Call for abstracts



Introduksjon til dagens tema: Kvalitetssikring av kunstig intelligens- drevne verktøy for klinisk bruk

Vibeke Binz Vallevik, DNV/BigMed

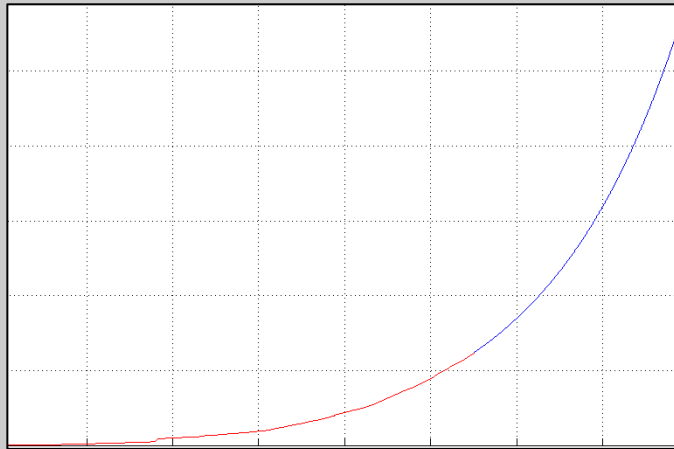
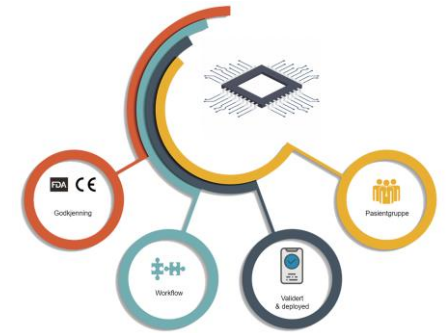
Alexander Selvikvåg Lundervold, HVL/MMIV

Fra møtet i mai 2021

Prioriter temaer for diskusjon



MOTIVASJON



AI for Radiology
an implementation guide

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Subscribe to our monthly newsletter

Products

Find the artificial intelligence based software for radiology that you are looking for. All products listed are available for the European market (CE marked).

Subspecialty: Modality: CE class: FDA class:

All - All - All - All - All -

124/124 results

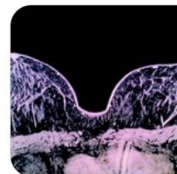
	Siemens Healthineers AI-Rad Companion Brain MR brain volume quantification, segmentation, normative comparison, report generation AI-Rad Companion Brain MR performs an automatic segmentation of the different brain areas, including an individual volumetric analysis. It compares the different volumes to a normative database and ... Subspecialty: Neuro Modality: MR <input type="button" value="Read more"/>	CE: Class IIa - MDR FDA: Class II Information source: Vendor Certification verified: Yes
	Siemens Healthineers AI-Rad Companion Chest CT Segmentation and volume quantification of lungs, lung lobes, lung lesions, heart, thoracic aorta, ... The AI-Rad Companion Chest CT solution offers a multiorgan approach with pulmonary, cardiovascular and musculoskeletal functionalities. Major functionalities: lung lobe segmentation, lung lesion ... Subspecialty: Chest Modality: CT <input type="button" value="Read more"/>	CE: Class IIa - MDR FDA: Class II Information source: Vendor Certification verified: Yes
	Siemens Healthineers AI-Rad Companion Chest X-ray Identifying and highlighting findings, atelectasis, pleural effusion, pulmonary lesions, ... The AI-Rad Companion Chest X-ray automatically characterizes radiographic findings for a valid chest scan in the lung and pleura. It works like a second or third reader to support radiologists in ... Subspecialty: Chest Modality: X-ray <input type="button" value="Read more"/>	CE: Class IIa - MDR FDA: Class II Information source: Vendor Certification verified: Yes

A Home for AI Solutions Inside the Hospital
The Research Information System of the Western Norway Regional Health Authorities

<https://mmiv.no/wiml>

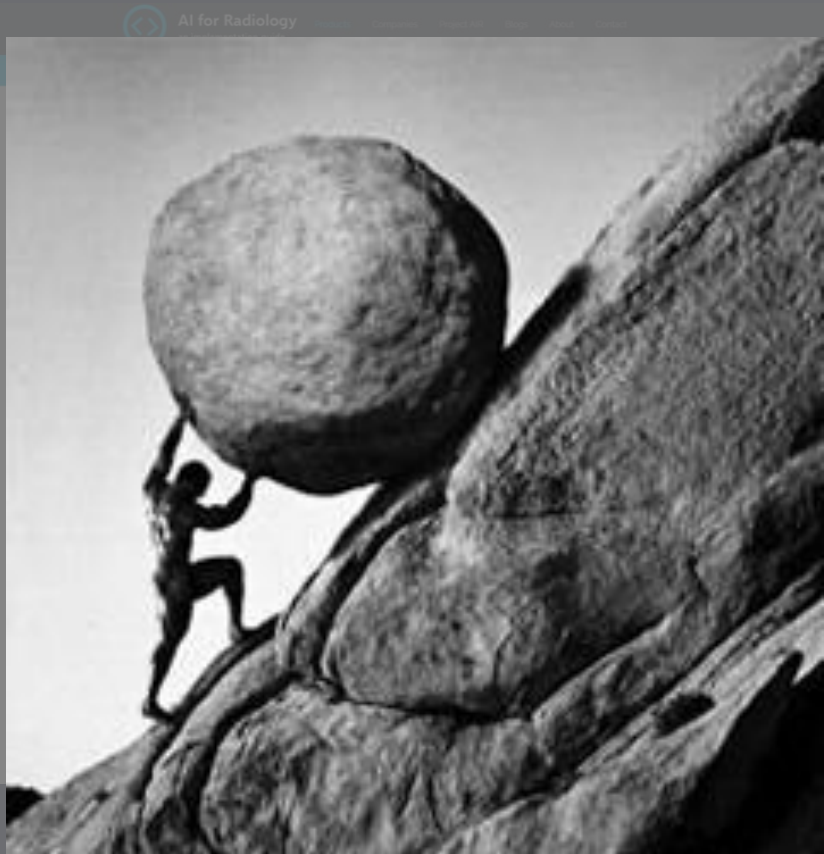
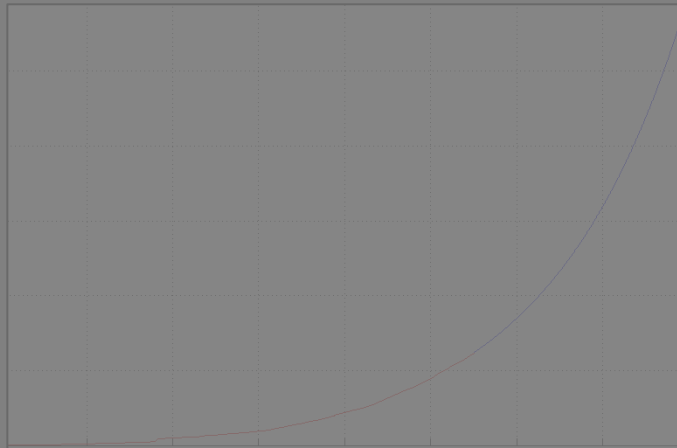


"Thirty four (94%) of 36 AI systems evaluated in these studies were less accurate than a single radiologist, and all were less accurate than consensus of two or more radiologists."



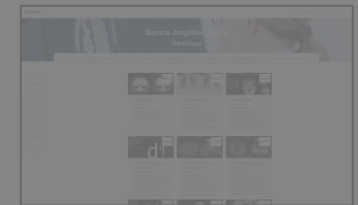
Use of artificial intelligence for image analysis in br...
Objective To examine the accuracy of artificial intelligence (AI) for the detection of breast cancer i...
[bmj.com](https://www.bmj.com)





A Home for AI Solutions Inside the Hospital
 The Research Information System of the Western Norway Regional Health Authorities

<https://mmiv.no/wiml>



accurate than a single radiologist, and all were less accurate than consensus of two or more radiologists."



Use of artificial intelligence for image analysis in br...
 Objective To examine the accuracy of artificial intelligence (AI) for the detection of breast cancer i...
 & bmj.com

What is *assurance*?

“ Grounds for justified confidence that systems, products, and processes work safely, effectively, and efficiently. ”

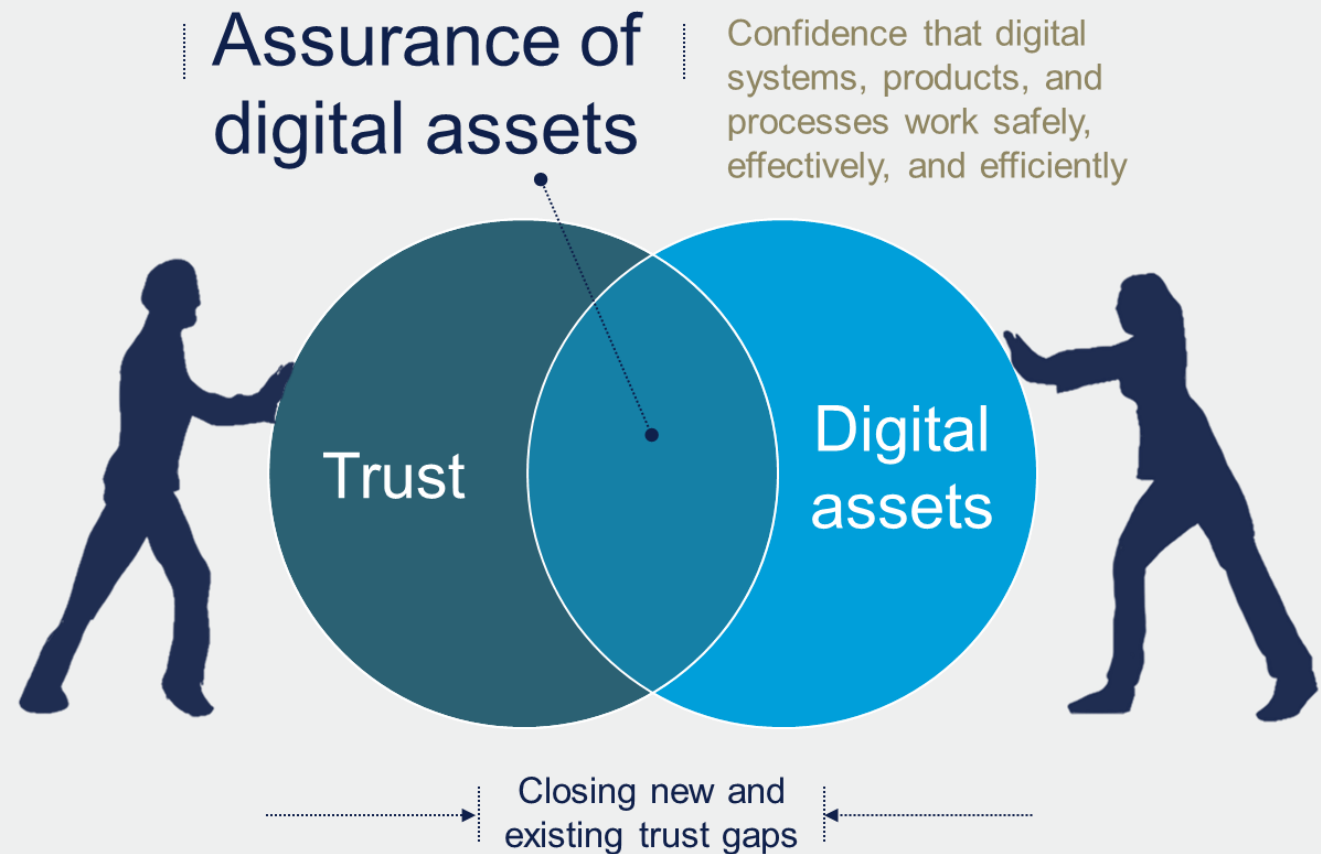
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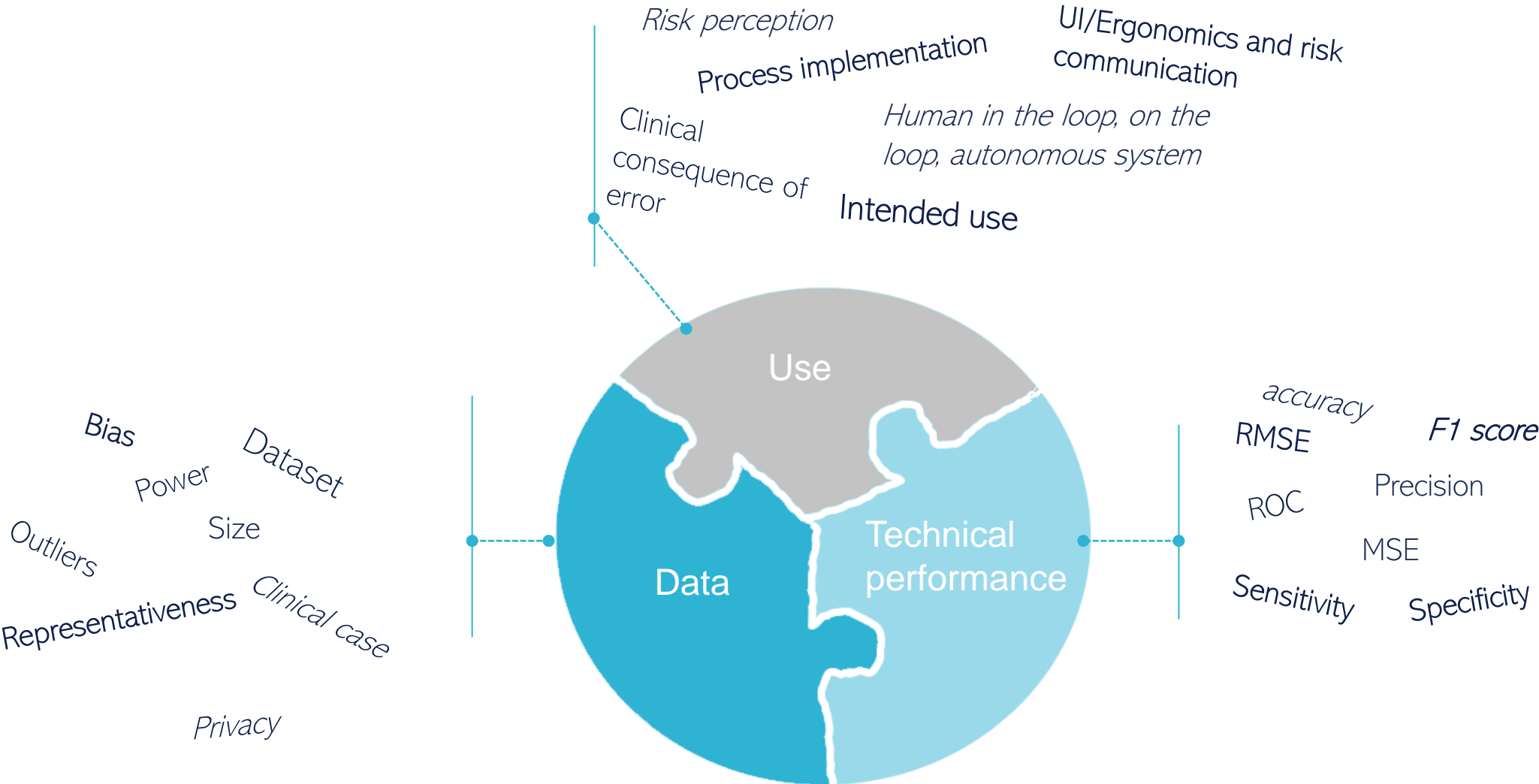
Key requirements for trustworthy AI

- human agency and oversight
- technical robustness and safety
- privacy and data governance
- transparency
- diversity, non-discrimination and fairness
- environmental and societal well-being and
- Accountability

Source: 2020, Assessment List for Trustworthy Artificial Intelligence (ALTAI) by the High-Level Expert Group on Artificial Intelligence (AI HLEG)

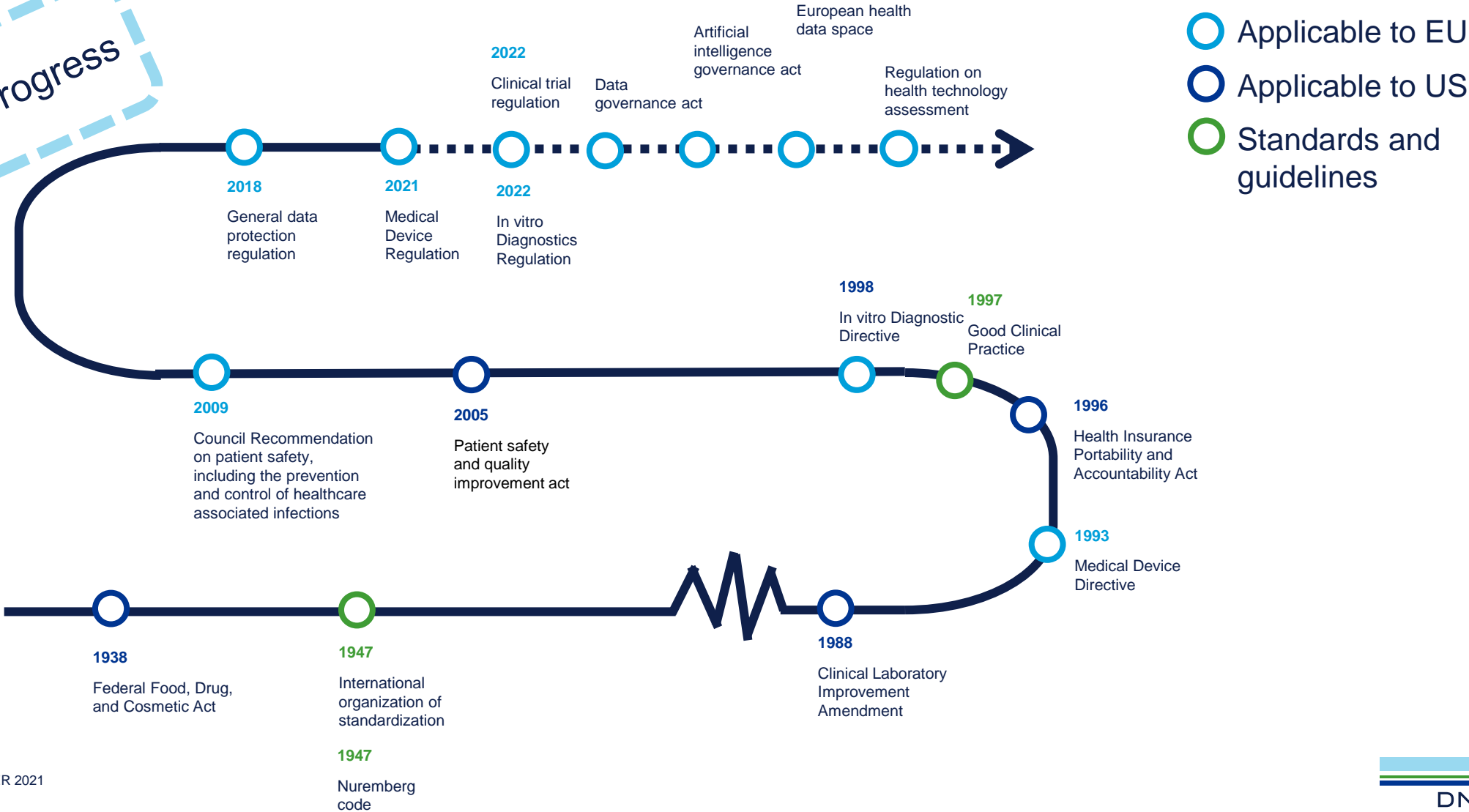


Perspectives of risk in AI tool implementation



Key regulations and standards facilitating and shaping assurance in healthcare

OBS work in progress



Some keywords on Medical Device Regulation (MDR)



(OBS list is simplified and not exhaustive)

- MDR replaces MDD from may 2021.
- Simplified from MDR art 2: AI powered tools with an intended medical use will be covered by MDR
 - *MDR art. 2: 'medical device' means any (...) software, (...) intended by the manufacturer to be used (...), for human beings for one or more of the following specific medical purposes: diagnosis, prevention, monitoring, prediction, prognosis, treatment or alleviation of disease, (...)*
- Demonstration of **safety and performance** of the medical device
- Validated against the intended purpose and stakeholder requirements and verified against the specifications
- Conformity assessment by external Notified Body (higher risk classes)

“Health technology assessment (HTA) is a tool to review technologies and provide evidence of the value these technologies can deliver to patients and their families, health system stakeholders, and to society more broadly.”

(Source: INAHTA)

Health Technology Assessments

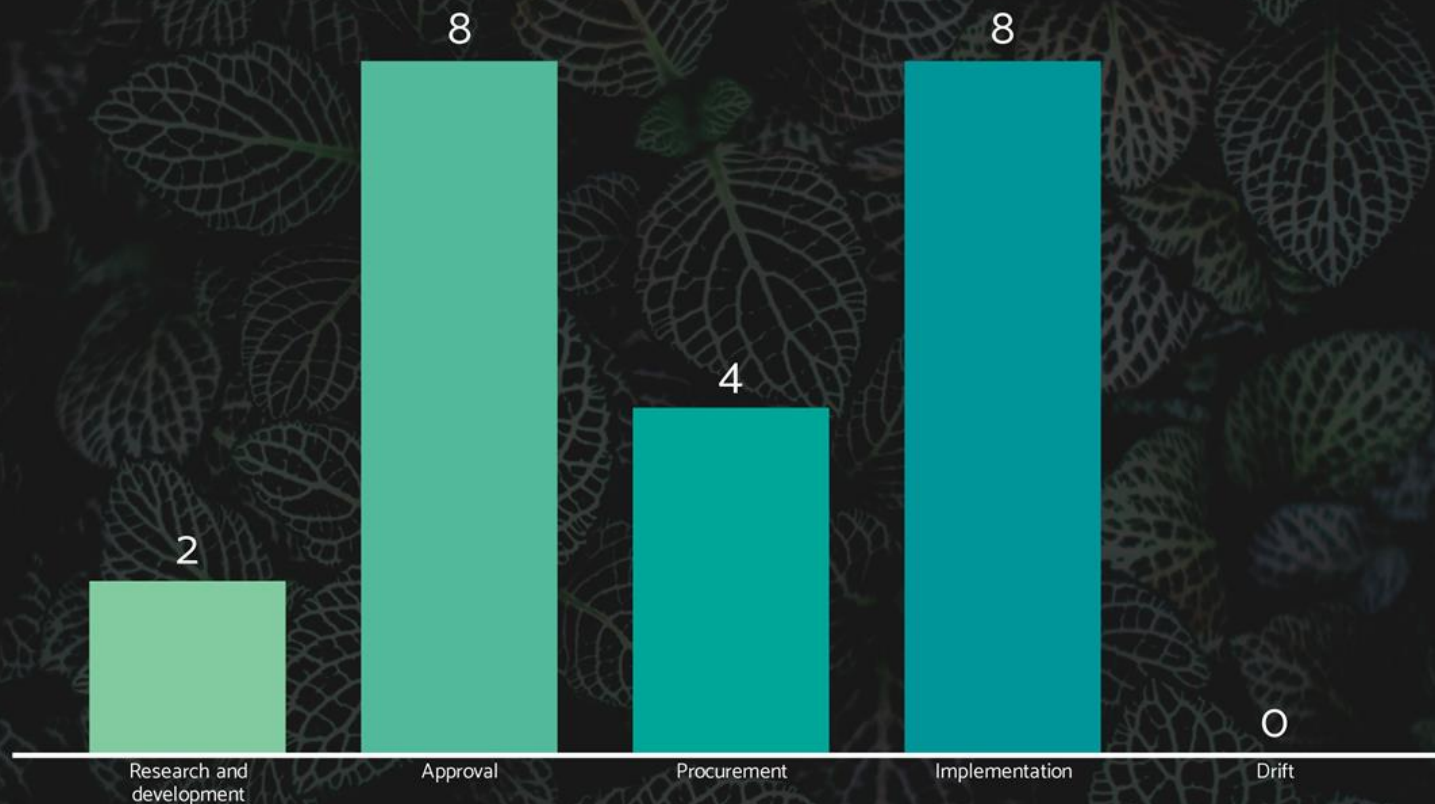
Topics in HTA:

- Health problem and current use of technology
- Description of technical characteristics
- Safety
- Clinical effectiveness
- Costs and economic evaluation
- Ethical analysis
- Organisational aspects
- Social aspects
- Legal aspects

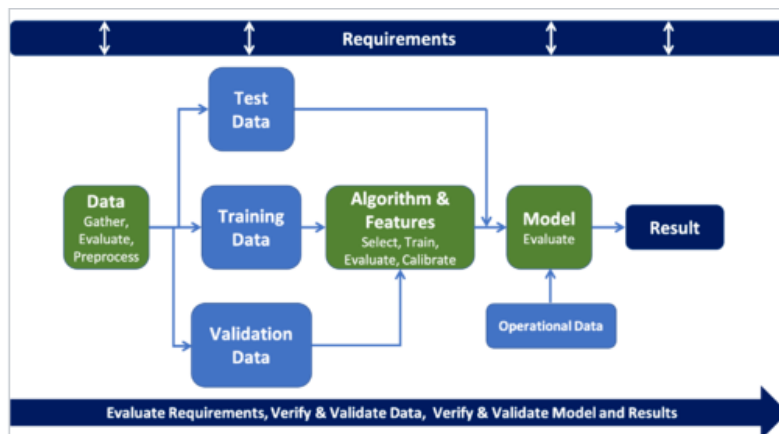
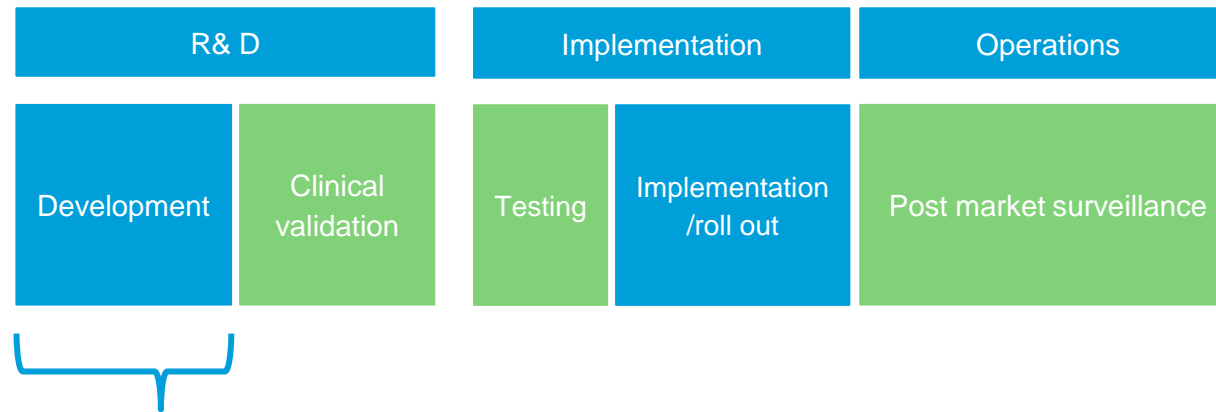
LEVEL OF SAFETY



Hvilken fase av anskaffelse og implementeringsprosessen opplever du som mest utfordrende?



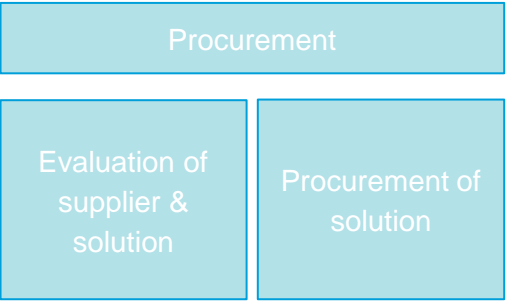
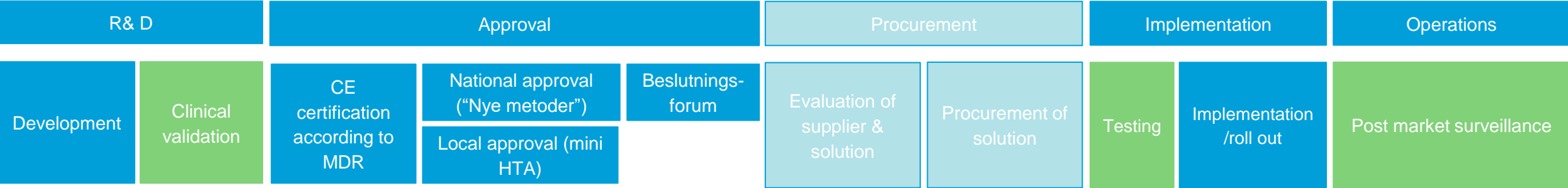
Ved innføring av et nytt system: Kvalitetssikring i mange ledd i dagens prosess



Source: SeBOK

Ordet “validering” brukes ofte om ulike ting i ulike deler av prosessen.
(klinisk validering vs. i data science)

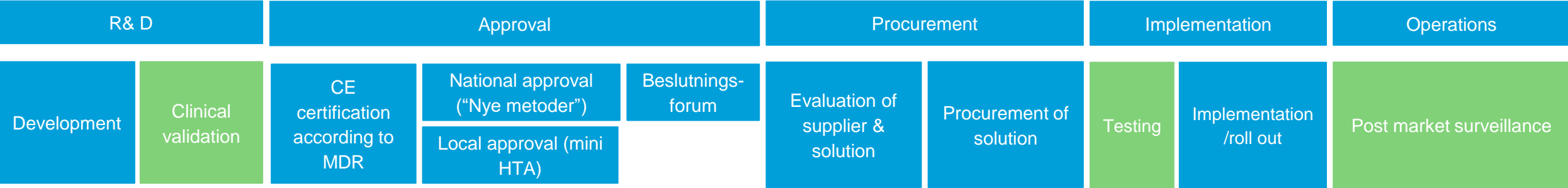
Kvalitetssikring i mange ledd



Innovative anskaffelser
Dialogbaserte anskaffelser

Proessen kan se ulike ut ut fra om det er egenutvikling, samarbeid eller ren anskaffelse.

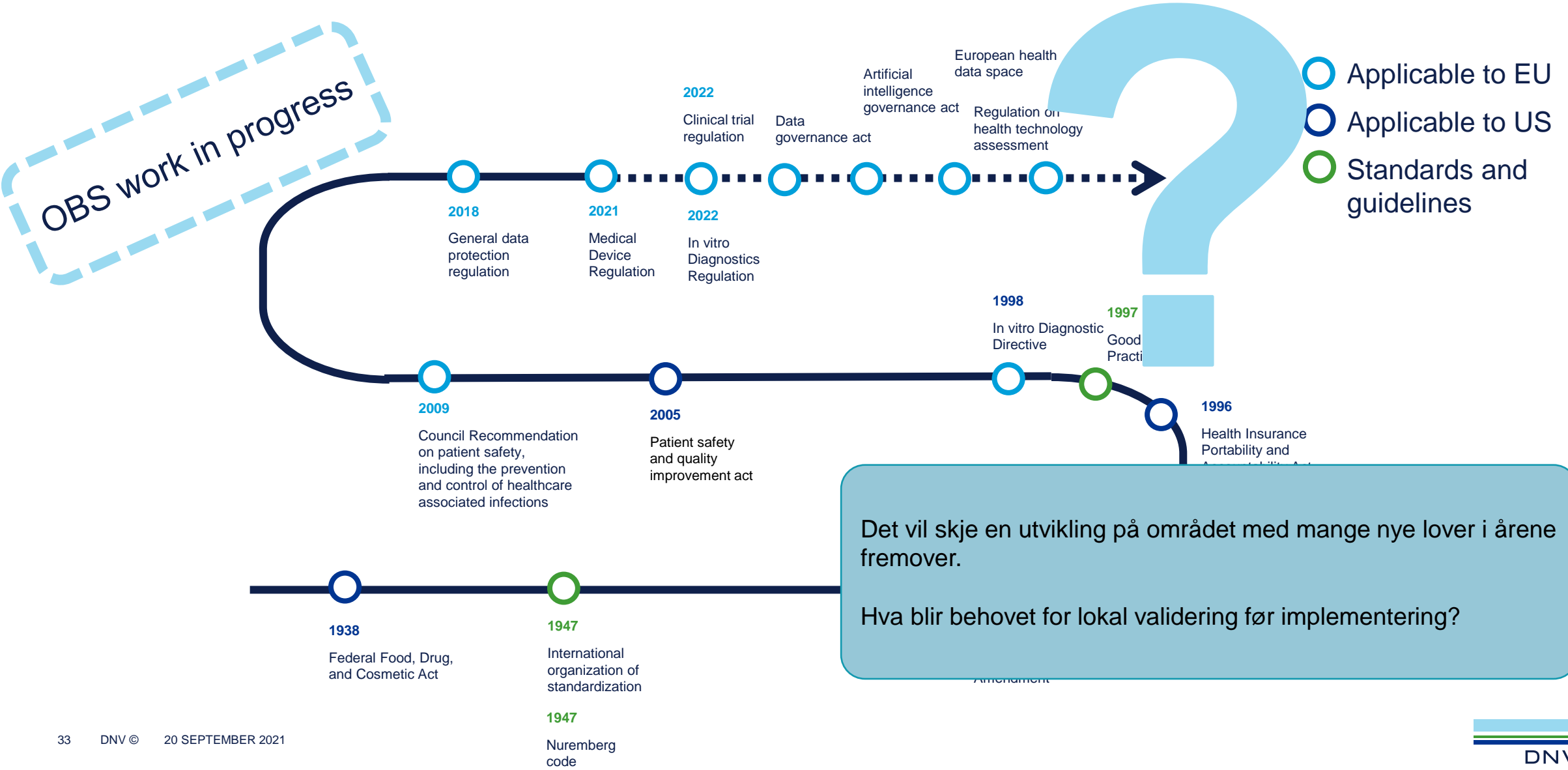
Kvalitetssikring i mange ledd



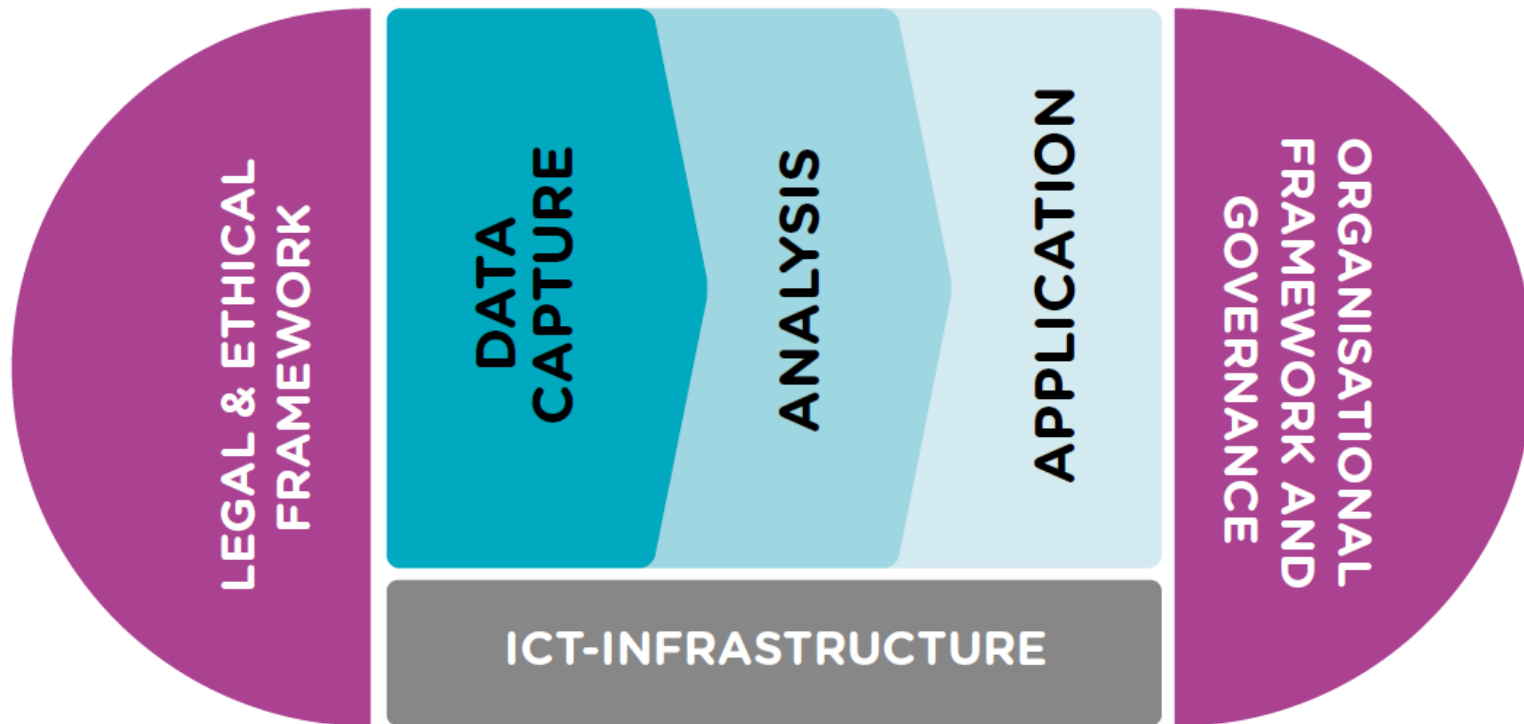
I godkjenningssprosessene ligger ulike kvalitetssikringsaspekter. Hvordan vet vi hva som er godt nok?

Hva når man bruker "For research use only"-produkter?

Key regulations and standards facilitating and shaping assurance in healthcare



Komponenter for stordataanalyse



Oppsummeringen fra BigMed-prosjektet understreker behovet for å legge til rette for innføring av kunstig intelligens gjennom at flere elementer må på plass:

- **Organisering** og prosesser (en "løype")
- **Infrastruktur** for å utvikle, teste og validere, men også for klinisk bruk
- **Juridisk rammeverk** må være tilpasset og med klare fortolkninger
- Og til slutt må vi ha prosesser og rammeverk for å **samle inn data, analysere og gjenbruke** disse

Dette gjelder også for kvalitetssikringen! Vi trenger infrastruktur, klare prosesser, et tydelig fortolket lovverk og en organisasjon som er rigget for dette.

WHEN TRUST MATTERS

Vibeke.binz@gmail.com

+47 930 36 931

www.dnv.com



Experiences from the UK

11.00 NHSx – Presentation on Digital Technology Assessment Criteria (DTAC) (10.00 UK time), Lauren Harkins, NHSx

11.30 Experiences from the AI in health award (10:30 UK time), Emma Hughes, NHS

Discussion



Presentation on Digital Technology Assessment Criteria (DTAC)

<https://www.nhsx.nhs.uk/key-tools-and-info/digital-technology-assessment-criteria-dtac/>

Lauren Harkins, Assistant Director of Programmes at NHSX



Experiences from the AI in health award

<https://www.england.nhs.uk/aac/what-we-do/how-can-the-aac-help-me/ai-award/>

Emma Hughes, Senior Manager, Innovation Research and Life Sciences at NHS England and NHS Improvement

[Link til egen pdf med presentasjon her.](#)

AI in Health and Care Award

ACCELERATED
ACCESS
COLLABORATIVE

NIHR | National Institute
for Health Research

NHS^x

Dr. Emma Hughes – AI Award Evaluation Lead

September 2021

www.england.nhs.uk/aac

@AACInnovation

What is the Award?

- £140m fund run by Accelerated Access Collaborative
- Announced in 2020 by the SoS for Health & Social Care
- Funding available over four years through a competitive process for AI technologies that support the aims of the NHS Long Term Plan
- Key programme within £250m NHS AI Lab, part of NHSX
- Aims to establish the UK as a leading destination for developing and scaling health and care AI



Aims of the Award



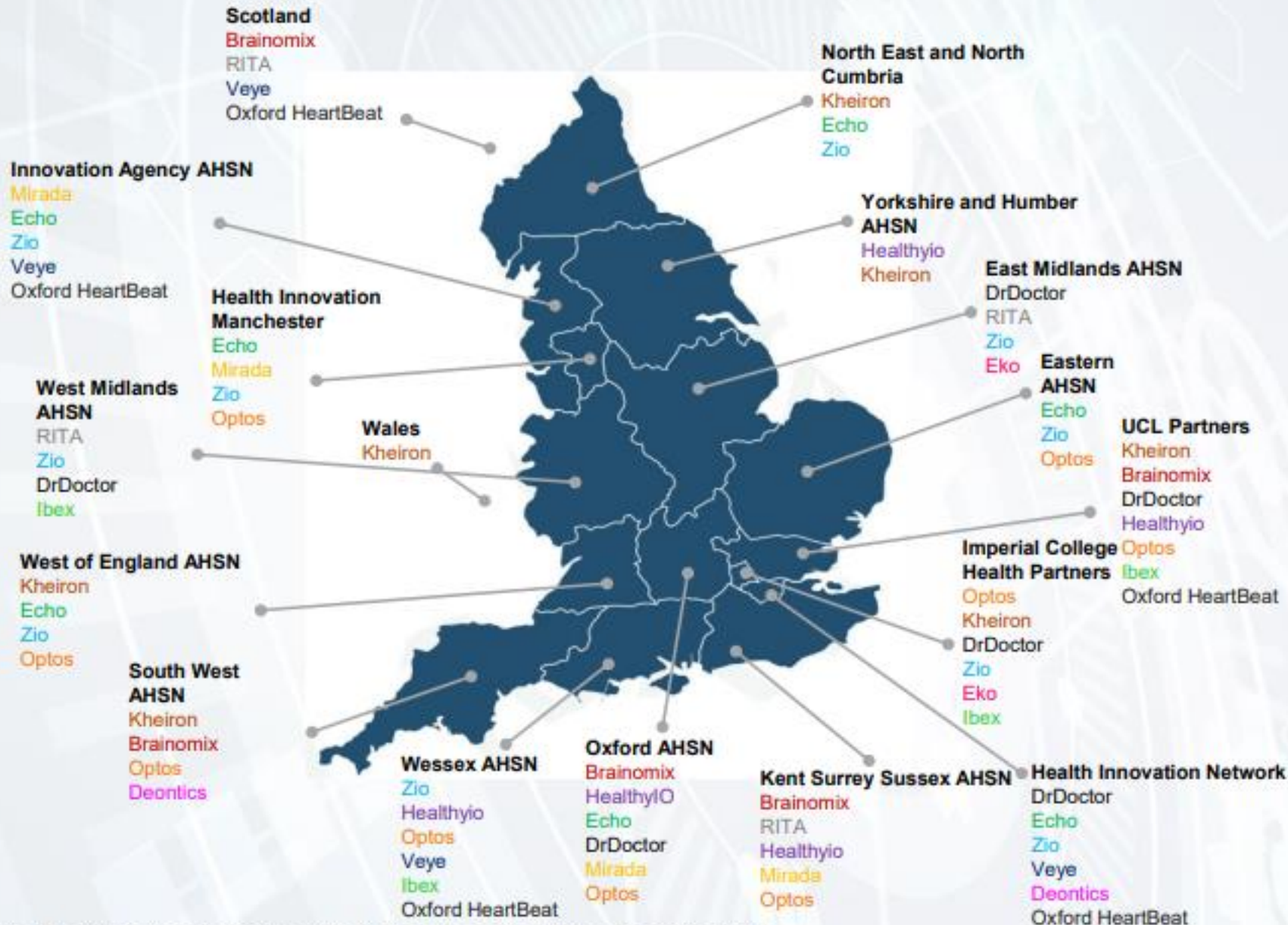
Establish the UK as the preeminent destination for developing and scaling health and care AI

1. Fund leading AI innovators to develop their technologies in UK

2. Build a world-class real-world AI testing environment in UK

3. Accelerate adoption and spread of proven AI technologies across NHS

Translating Research into Sustainable Commissioning

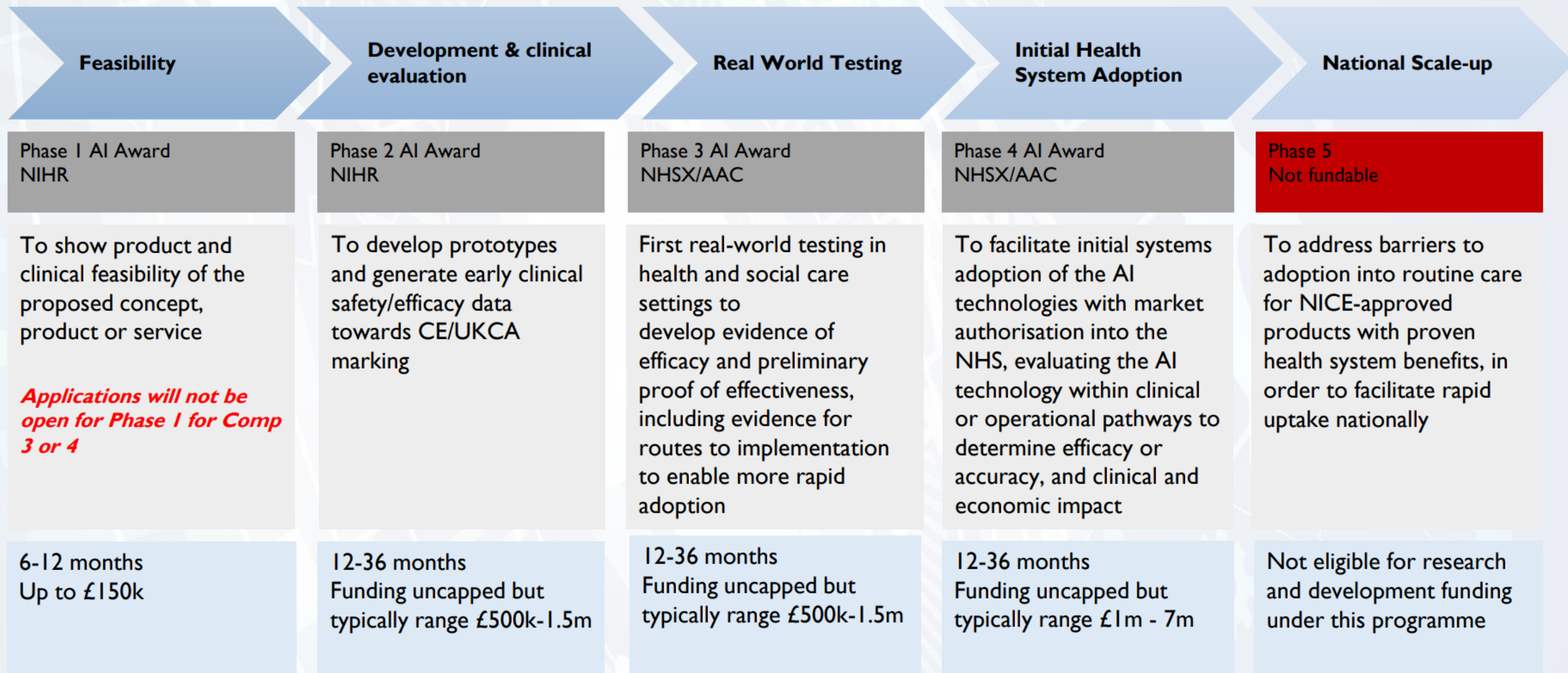


- £90m of funds committed across 2 Rounds, with £50m available across Rounds 3 and 4
- Winners supported by AAC to develop local NHS commissioning contracts, and international sales

England	119 planned sites
DA	7 planned sites

Notes: Technologies are working with 1 site in the region unless otherwise stated.

AI Award Phases



RI Phase 3 Winners

Clinical Area	Name	Description	Company
Cardiology	Eko DUO	The Eko DUO is a "smart," AI driven digital stethoscope that simultaneously captures ECG and heart sounds for the immediate diagnosis of heart failure (HF) in clinical practice. The Eko DUO has been integrated with a HF detection algorithm to accurately detect low ejection fraction and is designed for use as a point-of-care tool for integration into the GP workflow to improve the diagnosis of suspected HF.	EKO
Oncology	Ibex-AI	The Ibex-AI histology diagnostic system is designed to accurately rule-out and detect clinically important prostate cancer from scanned images of prostate biopsy tissue slides.	Ibex
Oncology	Deontics CDST	Deontics is an AI driven clinical decision support tool (CDST) that integrates individual patient data and preferences with evidence-based clinical guidelines. It is designed to augment cancer Multidisciplinary Team Meetings (MDTMs) to dynamically generate personalised treatment recommendations concordant with best-practice.	Deontics
Vascular	Presize® Neurovascular	Presize® Neurovascular is designed to accurately identify the correct stent for minimally invasive cerebrovascular aneurysm surgery, providing a rapid planning tool for neuro-surgeons with 3D visualisation.	Oxford Heartbeat

RI Phase 4 Winners

Theme	Name	Description	Company
Diabetes	Optos AI	Machine learning algorithm to analyse images of the back of the eye for the presence/severity of any diabetic retinopathy, and then advises if referral to an eye care specialist is needed (based on the local clinical pathway).	Optos Public Limited Company
Cardiology	EchoGo Pro	A fully automated and scalable application for quantification and interpretation of stress echocardiograms that autonomously processes "real world" echocardiographic image studies to predict prognostically significant cardiac disease.	Ultromics Limited
Cardiology	Zio	A complete and clinically proven ambulatory ECG monitoring service, utilising powerful AI-led processing and analysis to support clinical workflows and improve the diagnostic yield and timeliness of cardiac monitoring.	iRhythm Technologies Ltd.
Neurology	e-Stroke Suite	A set of tools that uses AI methods to interpret acute stroke brain scans, and helps doctors make the right choices about treatment and the need for specialist transfer of patients with confidence. It also provides a platform for doctors to share information between hospitals in real-time, avoiding the delays that can occur.	Brainomix Limited
Oncology	Mia	Deep learning software that has been developed to solve critical challenges in the NHS Breast Screening Programme (NHSBSP), including reducing missed cancers, tackling the escalating shortage of radiologists and improving delays that put women's lives at risk.	Kheiron Medical Technologies
Oncology	DLCExpert	Automation of the time-consuming and skill-intensive task of contouring healthy organs on medical images for radiotherapy planning so that they are not irradiated during treatment.	Mirada Medical Limited
Oncology	Veye	An AI platform to optimise oncology pathways, which can be integrated into existing software systems. Veye Chest, the first clinical application, is unique in its ability to currently automate early lung cancer detection, and soon also support treatment response assessment	Aidence
Operational Efficiency	DrDr	AI to ensure attendance is as high as possible by using past appointment attendance and demographic data to predict those less likely to attend in the future and customises communication with these demographics accordingly.	ICNH LTD
Operational Efficiency	Referral Intelligence and Triage Automation	RITA is an AI solution to automate the triage of GP referrals – assessing the urgency and next step for the referral and sending through directly to the next step in the process. In addition the solution includes a virtual assistant that supports clinicians in writing letters back to GPs, significantly speeding up this process.	Deloitte
Primary Care	Healthy.io	Using a home test kit and mobile app, Healthy.io's solution empowers patients to self-test at home with clinical grade results. Fully integrated to the Electronic Medical Record (EMR), real-time results are available for clinician review and follow-up. Shifting testing to the home increases uptake, improves quality, reduces workload in primary care, and creates savings.	Healthy.io (UK) Ltd

R2 Phase 3 Winners

Theme	Name	Description	Company
Cardiology	CaRi-Heart	By quantifying coronary inflammation, and combining this with traditional risk factors, CaRi-Heart gives a personalised risk of heart attack and death over the next 8 years	Caristo Diagnostics Ltd
Oncology	Mammoreader	Artificial intelligence (AI)-enabled NHS breast screening to improve accuracy, safety, cost-effectiveness, and patient experience	Google/Imperial College London
Oncology	Open-Source AI	Open-source AI to augment and accelerate radiotherapy workflows across the NHS	Cambridge University Hospitals NHS Foundation Trust
Oncology	DOLCE	AI-driven risk score to help clinicians evaluate lung nodules on chest CT scans for risk of malignancy	Optellum Ltd
Mental Health	WYSA	WYSA is an AI enabled chat bot available on android and IOS which utilises Natural Language processing and digital routine outcome measures to help signpost and support users with their mental health and wellbeing	Touchkin Limited
Neurology	qER	qER includes a triage aid to prioritize and notify critical head CT scans, localise abnormalities using boundary boxes, a TBI progress monitoring tool and a reporting assistance mode that pre-populates radiologist templates	Qure.ai Ltd
Operational Efficiency	Intelligence Workforce Solution	AI-led indoor location-based services, infrastructure-free solution (smart phone based) to improve operational efficiency. Built on proprietary indoor geolocation tech, with robust motion tracking, multi-floor localisation, crowdsourced signal mapping and location-powered task scheduling	Navenio
Operational Efficiency	CogstackNLP	CogStack is an open-source, home-grown NHS product which provides cutting-edge NLP to extract and annotate unstructured, clinical text, therefore making it 'understandable' by a computer and usable for research, planning and care. The CogStack AI system for augmented clinical coding has three key components that have been validated in NHS secondary care settings: Pipeline, MedCAT and MedCAT Trainer.	Cogstack
Pulmonary Health	ArtiQ.Spiro	ArtiQ.Spiro uses an AI solution that assesses the quality of spirometry and interprets results to support early and accurate diagnosis of lung conditions	ArtiQ
Pulmonary Health	Storm ID	A digital healthcare service that re-orientates the management of COPD patients to a proactive and preventative care model. It uses AI to analyse output from patients' daily monitoring and wearable devices to predict deterioration and enable targeted intervention by care teams for those patients at most risk.	Storm ID

R2 Phase 4 Winners

Theme	Name	Description	Company
Trauma and Orthopaedics	HealthVCF	HealthVCF is an algorithm that can detect vertebral compression fractures on CT scans of the chest and abdomen. The algorithm was developed using machine learning and trained on a dataset with CT scans from >40 different hospitals from the United States and Israel.	Zebra Medical Vision
Oncology	PAIGE.AI	A prostate cancer solution that identifies, grades and quantifies areas of interest.	Paige
Oncology	Red Dot	The red dot® AI Algorithm analyses Chest X-rays (CXR) to provide two outputs: 1.Suspected Lung Cancer (SLC) – if the CXR has a finding suspicious for lung cancer, this is flagged to the radiographer/radiologist for urgent reporting, and if confirmed the patients is fast-tracked for a CT Chest examination 2.High Confidence Normal (HCN) – if the CXR is identified as normal with very high degree of accuracy, then the algorithm inserts an authorised report into the hospital system, negating the need for a radiologist report	Behold.ai
Oncology	DERM	DERM, our unique AI technology, supports clinicians in the assessment of skin lesions. These range from malignant and pre-malignant lesions that can be treated if assessed early enough, through to benign lesions where patients can be discharged or referred for further monitoring. The Skin Analytics system also enables local dermatologists to review referred cases remotely, allowing them to direct patients to the best assessment or treatment option.	Skin Analytics
Primary Care	eHub	eHub uses AI to intelligently triage and automate GP e-consultation requests, reducing the staff time needed to manage the system. eHub aims to improve clinician efficiency, and allow easier interface for GPs and admin staff with eConsult software, reducing errors and improving patient safety.	eConsult Health

Role of Evaluation

We commission **independent evaluations** of the late-stage (Phase 4) Award winners whilst they are being deployed in **real-world settings** aligned to key evidence gaps across eight domains:

Accuracy	Safety
Effectiveness	Value
Fit with site	Implementation
Feasibility of scale up	Sustainability of scale up

These evaluations serve to:

- Fill evidence gaps and accelerate local adoption and national adoption (via NICE guidance or UK NSC endorsement)
- Provide a model for late-stage, real-world evaluation of AI and generate learnings on the challenges and associated solutions



R3 Focus Areas



All phases are open to technologies that address unmet health and care priorities

Phases 3 and 4 will have the following focus areas:

- Self-management of long-term conditions
- Diagnostic support
- Improving operational/system efficiency
- Elective Recovery

AI Award feeds into DHT adoption policy

AI Award workstreams

Evaluation learning workstream

- We commission independent evaluations of Phase 4 technologies as they are deployed
- We learn and communicate about the practical challenges and solutions in terms of the design & implementation of these real-world evaluations

Implementation & adoption learning workstream

- We are conducting qualitative research with AI Award winners and literature reviews to identify the drivers and barriers for AI testing, implementation and adoption in health & care

Wider policy development

NICE Evidence Standards Framework for digital health technologies review

PHE policy positions on the testing and use of AI in screening programmes

NHSX 'Who Pays for What' for Digital Health Technologies

NHSX – NICE – AAC development of a contingent access pathway for DHTs

NHSX development of a National AI in Health and Adult Social Care Strategy

Evaluation

Adoption



Discussion questions

- How does the AI Award support mechanism compare with the support mechanisms in Norway for developing and scaling health & care AI?
- What challenges have you experienced in developing and evaluating AI techs in real-world healthcare settings?
- What solutions have you developed to overcome these challenges?

More information on the AI Lab and AI in Health and Care Award



NIHR | National Institute
for Health Research

**ACCELERATED
ACCESS
COLLABORATIVE**

www.nhsx.nhs.uk/ai-lab/

enquiries@ai-award.info
www.nihr.ac.uk/explore-nihr/funding-programmes/ai-award.htm

www.england.nhs.uk/aac/what-wedo/how-can-the-aac-help-me/ai-award/



Hva mener du vi kan ta med oss fra UK?

Bredt perspektiv- der man tar hensyn til både helsenæring, til virksomheten og til forvaltning/regulatorisk arbeide- med pasientsikkerhet som en fellesnevner.

De har en sterk KI-næring,, og kommet langt selv om de ikke har nasjonale implementeringer. Awarden som ble presentert kan være relevant for Norge.

En tydelig og samlende mål-formulering!

Nasjonal støtteordning/award for innovatører. Dagens ordninger er ofte basert på dugnad

Både system for kvalitetssikring og øremerket program for finansiering av utvikling

Praktiske erfaringer om hva som fungerer og ikke

Verdt å merke seg at det ikke finnes mer enn ett eksempler på storskala, nasjonal implementering av AI-løsninger i UK. Det vitner om den veldig lange veien fra forskning til løsning, og ville trolig overrasket alle AI-optimistene i, si, 2016.

Hva hindrer oss fra å opprette "AI Award" i Norge? Da ikke fokusert på norsk-utviklede produkter, men fra hvor som helst. Med et godt, velfinansiert program kunne Norge kanskje blitt et attraktivt sted for leverandører å teste ut sine nye løsninger.

Banebrytende! Veldig takknemlig for at de har satt av £140M til å hjelpe verden (via seg selv) å avdekke hva som fungerer! Og hvorfor (ikke). Dette bør vi følge godt med på!

Norske erfaringer

- 12.30 Norske erfaringer
 - Mammografiscreeningen – empirisk evaluering av systemene, Solveig Hofvind, Kreftregisteret
 - BoneXpert – et klinisk perspektiv på bruk av et AI-verkøy, Trine Storhaug, Helse Sør-Øst og Merete Retzius, Sykehuspartner
 - Åpen scene for å dele erfaringer (Kommentarer og diskusjon)



Mammografiscreeningen – empirisk evaluering av systemene
Solveig Hofvind, leder Mammografiprogrammet, Kreftregisteret

[Link til egen pdf med presentasjon her.](#)



BoneXpert – et klinisk perspektiv på bruk av et AI-verkøy



Trine Storhaug, Helse Sør-Øst
Merete Retzius, Sykehuspartner
Kari Beate Boye Eldor, OUS

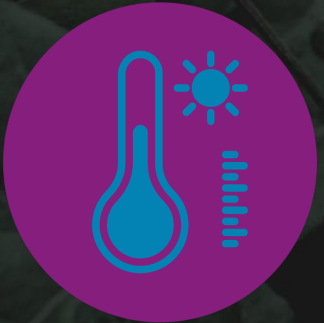
[Link til egen pdf med presentasjon her.](#)

I liten grad

Stoler vi på andres dokumentasjon før storskala implementeringer?

3

I stor grad



Mange mener i dag at beslutningsprosessene våre tar for lag tid. Hva mener du vi som samfunn bør vektlegge ?

Grundig kvalitetssikring

Et robust beslutningssystem eller tid til markedsadgang (og dermed pasientnytte)?

2.8

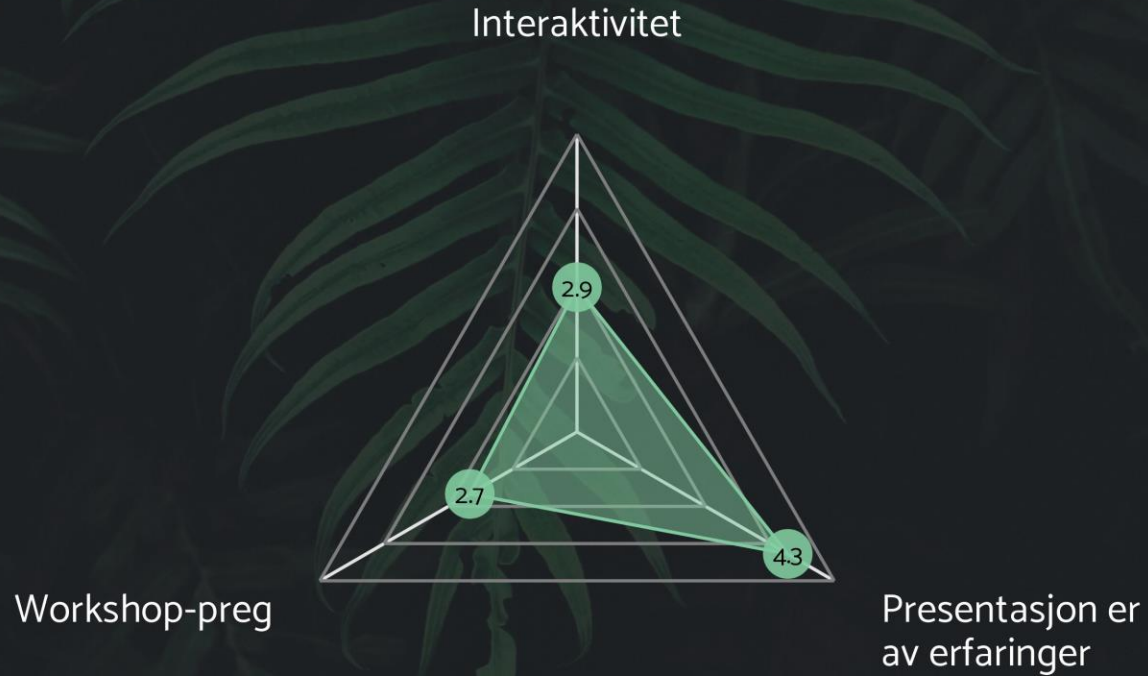
Rask godkjenning





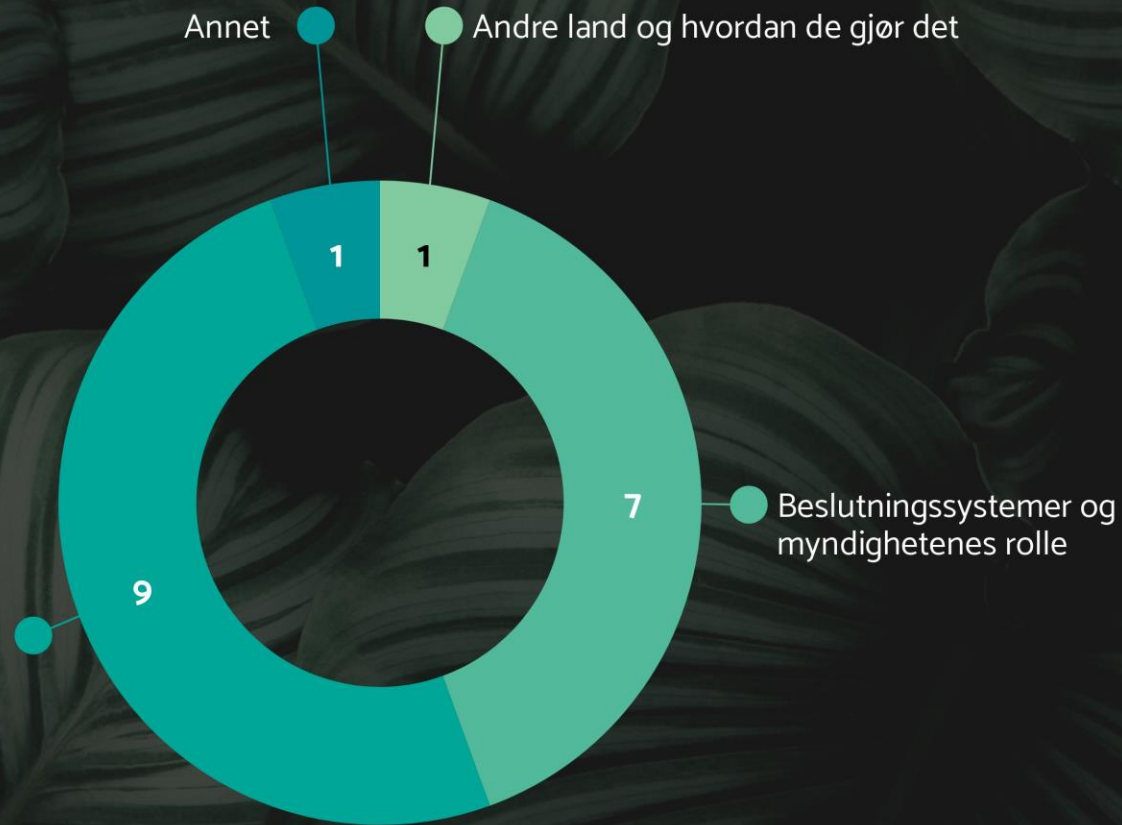
Oppsummering og neste møte

Hva slags arbeidsform ønsker du å ha i nettverksmøtene?



Hva ønsker du å høre mer om neste gang?

Erfaring fra samarbeid innad i norge og mellom utlandet og norge



Praktiske erfaringer fra sykehuset



Hva slags temaer ønsker du skal belyses i kommende møter? (Velg den viktigste først osv.)





INTAP 2021

📅 11.10 - 13.10.2021 📍 Grimstad

The 4th International Conference on Intelligent Technologies and Applications.



MIRA – Medical Imaging Research and AI

📅 18.10 - 19.10.2021 📍 Webinar

Two-day webinar on clinical applications of AI in cancer diagnostic imaging and perspectives on AI infrastructures. The webinar is organized by the Gemini centre MIRA: Medical Imaging Research and AI, a joint initiative by NTNU, SINTEF and St. Olavs Hospital.

Klokkeslett: Mandag kl. 13 – 16 og tirsdag kl. 9 – 12.

Program og mer informasjon



Nettverksmøte

📅 15.11.2021 📍 Videomøte

Informasjon kommer.

Kommende møter oppdateres på nettside:

<https://ehealthresearch.no/kin/>

Takk for idag!



www.bigmed.no



@VibekeBinz
@BigMedProject



Vibeke.Binz.Vallevik@dnv.com

<https://ehealthresearch.no/kin/>