A Breaktrough in Broken Bones

Presentation for
Digital Finland

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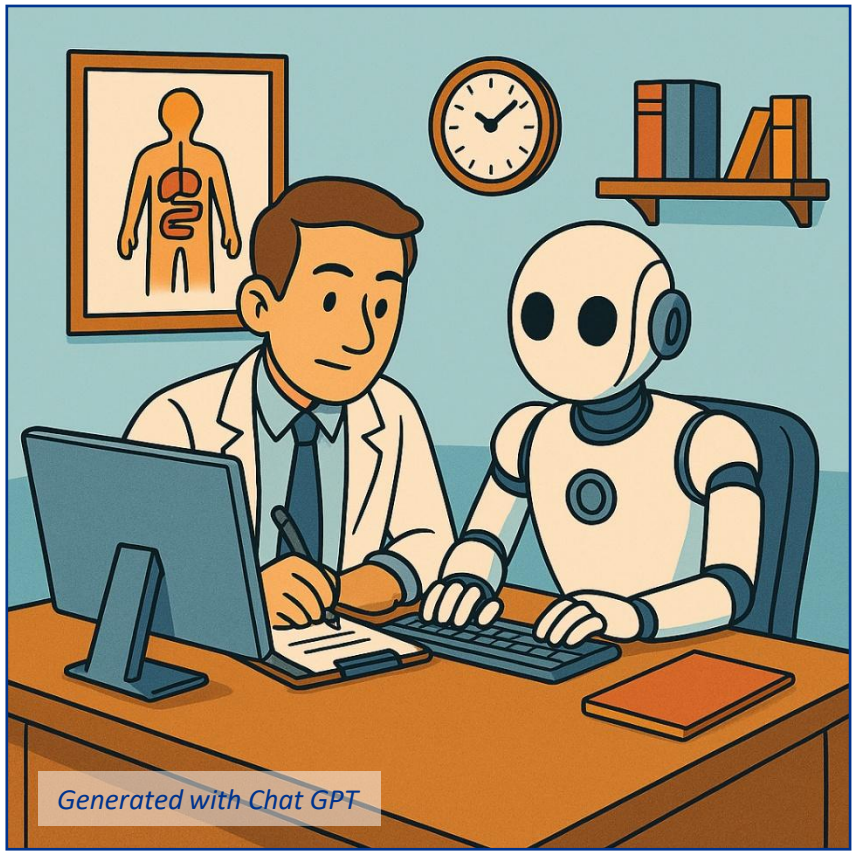
Strategy for deploying AI

- Implement CE-marked applications
  - More than 200 CE marked applications in radiology
  - Static solutions
- Implement fast and agile
- Implement in clinical routine
- Get benefits!

Our primary goal of implementing AI



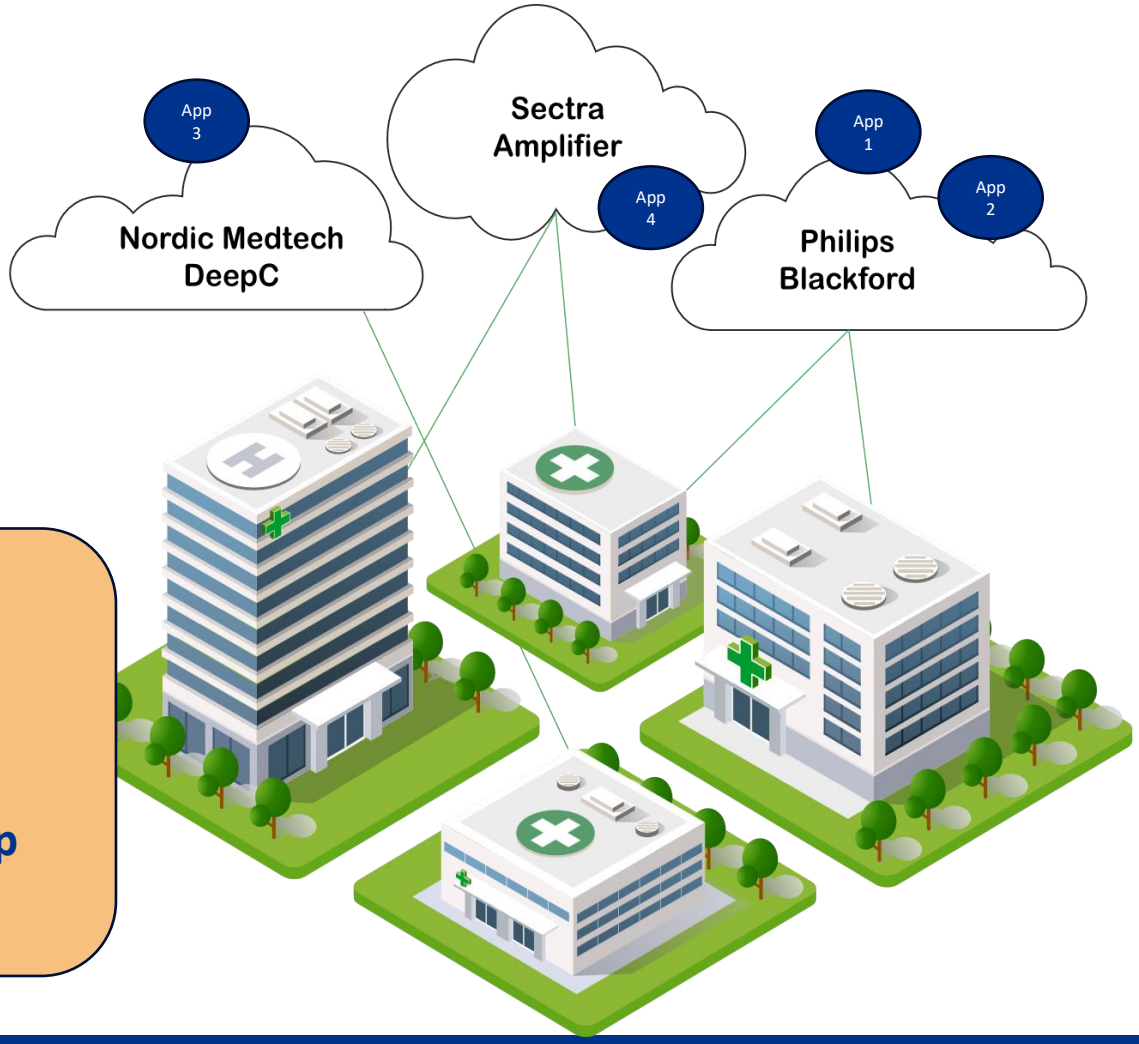
Maintain today's high-quality healthcare for the future

- Reduce workload
- Increase capacity
- Reduce waiting time

AI Implementation team

Interregional procurement – access to three platforms

All hospitals in Norway can now have access to the same AI applications through the same technical infrastructure



Key Benefits

- Lower resource use and costs
- Quicker a
- Increase
- Shared n
- Collabora
- Monitori

Possible Limitations

- **Higher costs due to intermediaries**
- **Communication barriers**
- **Indirect integration vs. local setup and deep integration**

Contracted Applications on the Platforms

Philips AI Manager - Blackford

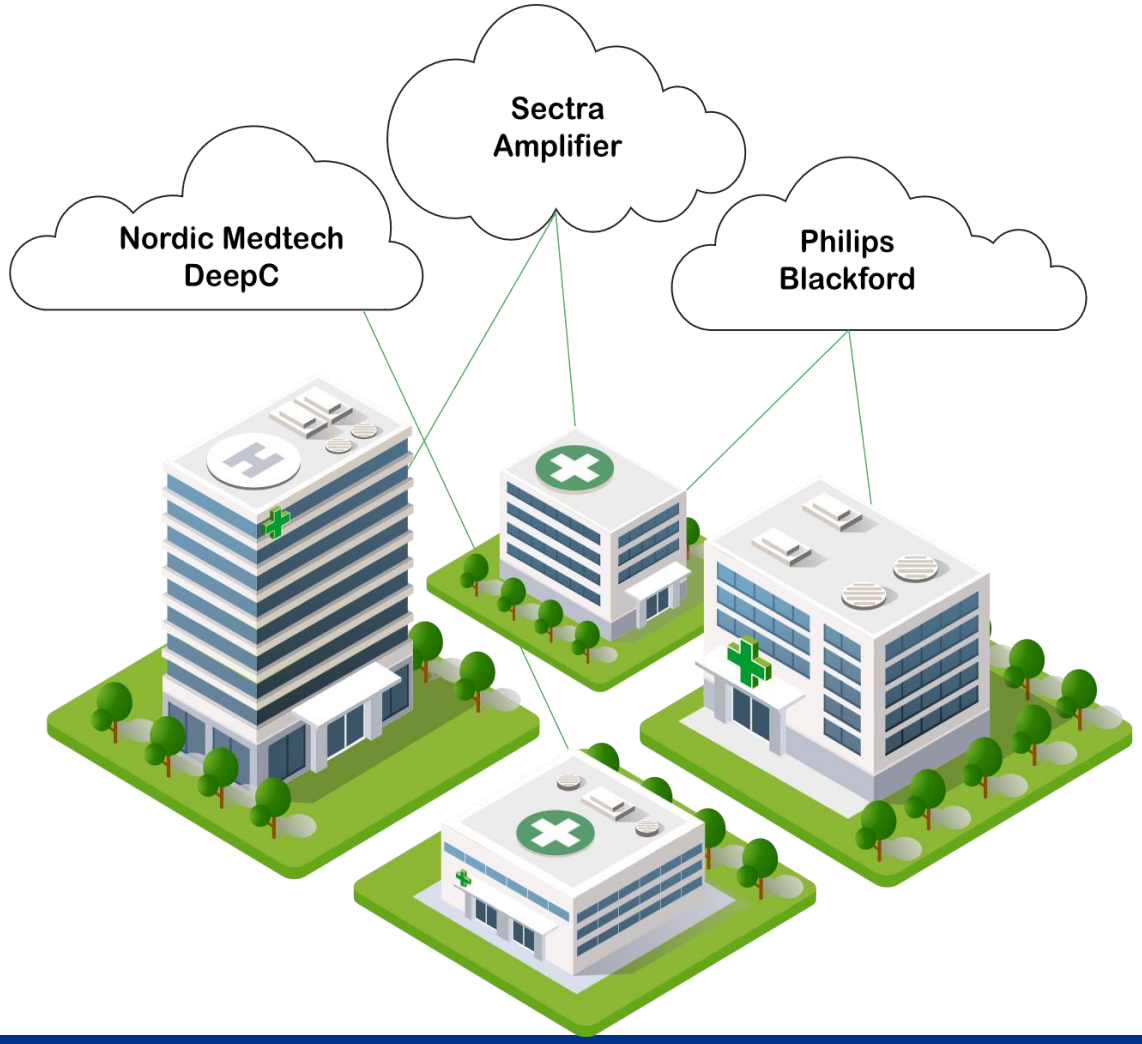
- Fractures: Gleamer – BoneView
- MS: Icometrics – IcoBrain ms
- Chest X-ray: Oxipit – Chestlink and ChestEye
- Chest X-ray: Lunit – CXR4
- Chest CT: Contextflow – Advanced chest CT
- Chest CT: Coreline – aView LCS

Nordic Medtech - Deep C

Perfusion CT/MR: CerCare – CT Stroke

Sectra - Amplifier

MS: Mediaire - MD Brain



Vestre Viken and Norway's 1st AI application – August 2023

Gleamer, Boneview

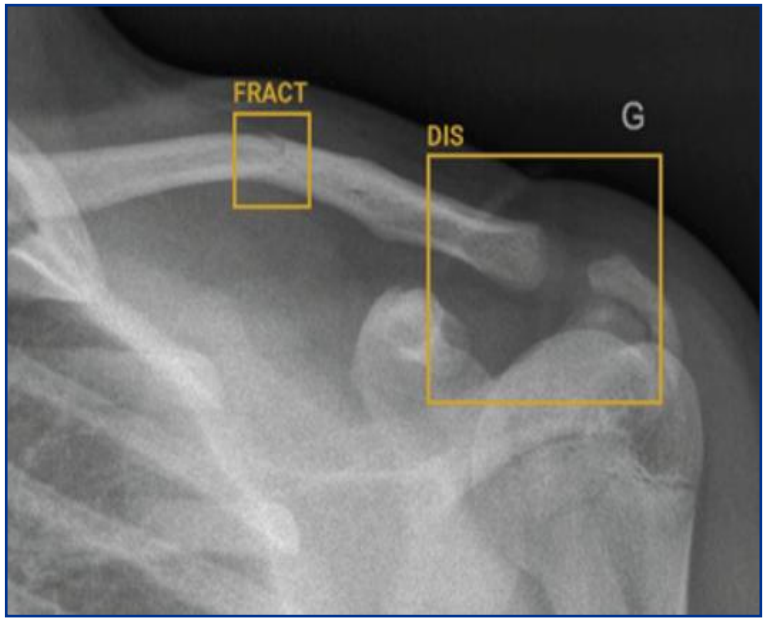
Artificial Intelligence solution for

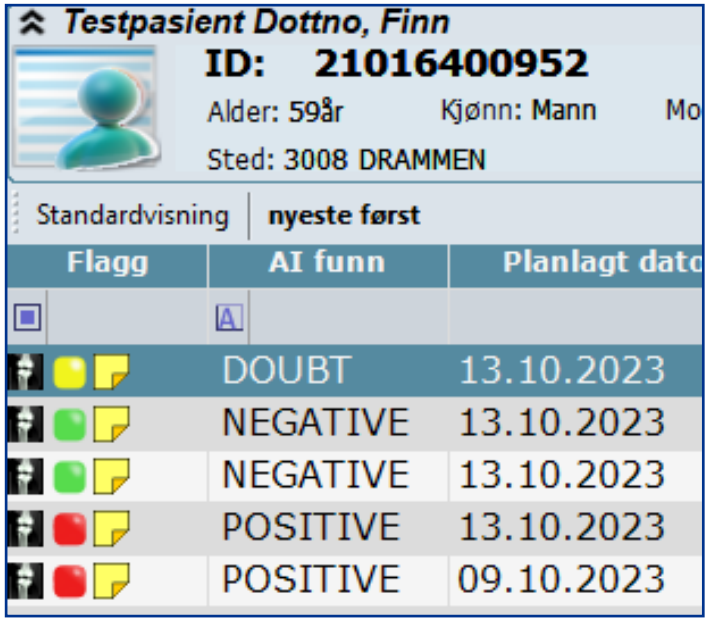
FRACTURE DETECTION

effusion, bone-lesions, joint dislocations

on X-rays

Except neck and skull
Used for patients >2years
Triaging tool





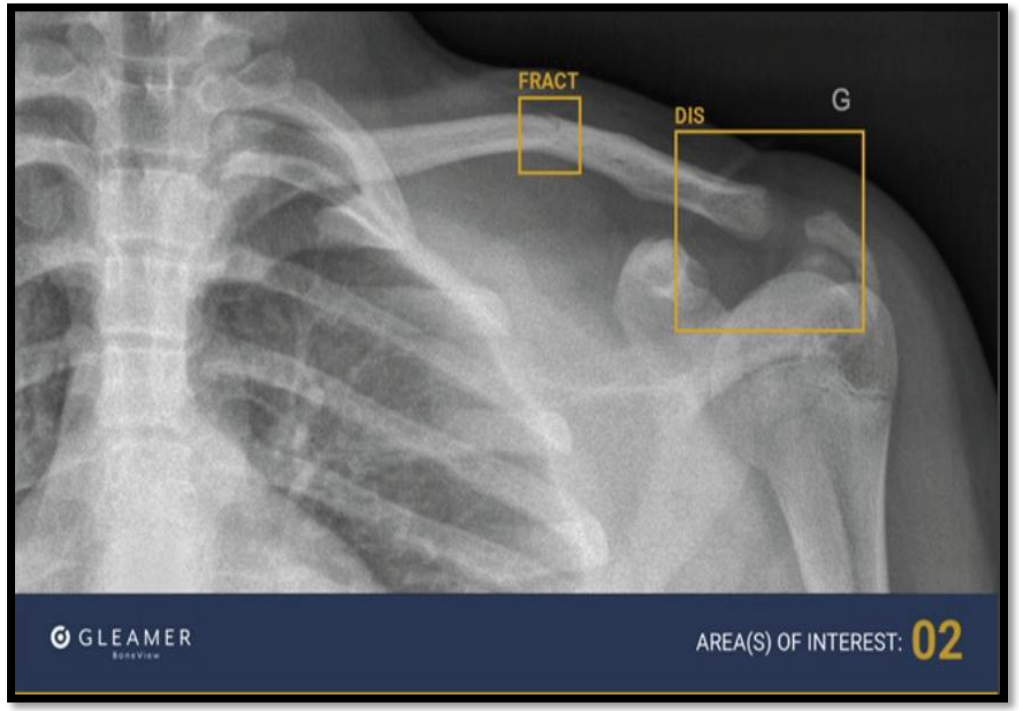
AI reports: 3 different results

Negative

Only a report is generated

Doubt

Positive



Yellow solid box around the area

Yellow dashed outline around the area

AI performance

Identify patients with fractures (PPV)

98,6% | 93,1%

+ 97,6%

Identify patients without fractures (NPV)

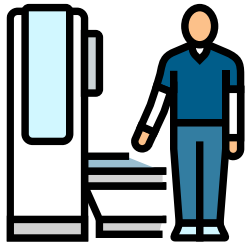
96,1% | 96,0%

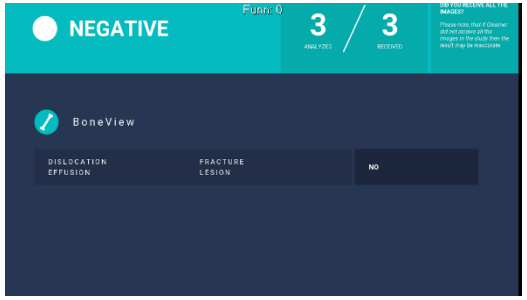
+ 98,8%

Workflow with Boneview 24/7

Skeletal trauma patient

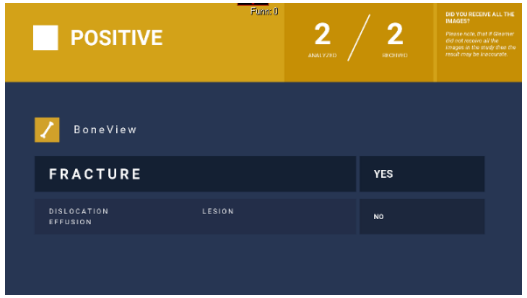
Doctor's request regarding a suspected fracture





→ Patient is sent home

Unless the referral physician request for an extra consultation at ED



→ Emergency Department

Images are read by a radiologist at the next available moment or the following day(s)

> 16,900 patients

have avoided waiting time
at emergency and radiology departments

Feedback from radiographers, radiologists, orthopedics, communal ED, ED

Improved patien experience - safe

Reduced recall rate

Can use recources in other places

No reduction in readingtime

Increased competence for recidents

Reduced crowding

Reduced 5,400 doctor consultations

1min delay noticeable – but worth it

Triaging, and no rush to report

Quicker diagnosis and treatment

Positive with new tasks - Pride

Reduces stress, especially when operating

Can use more time on other patients

Satisfaction of search!

Increased competence

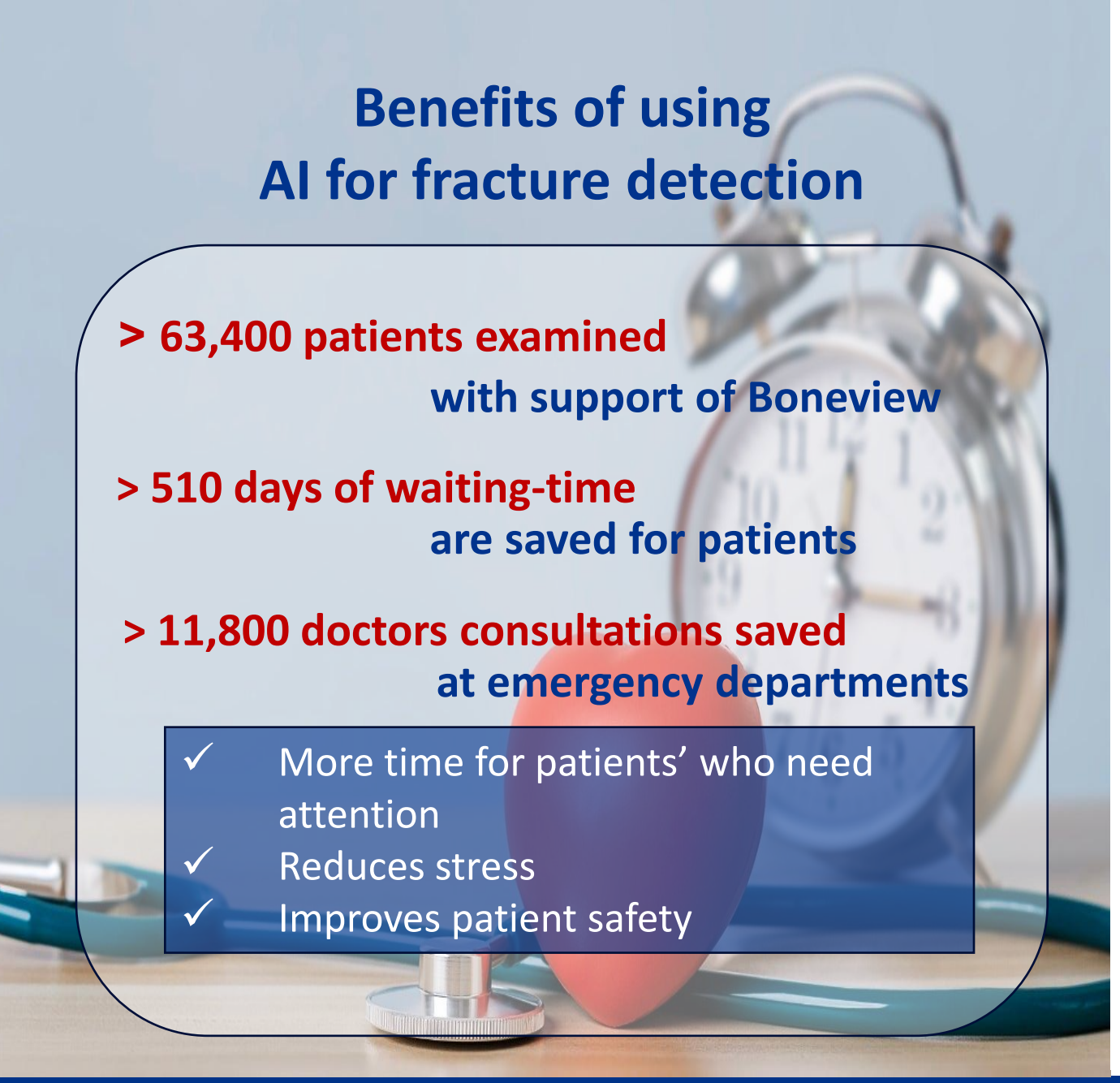
Can use more time on other patients

AI not biased by clinic and referall

They see BV's limitations as low-risk

Good for support

Benefits of using AI for fracture detection



> 63,400 patients examined
with support of Boneview

> 510 days of waiting-time
are saved for patients

> 11,800 doctors consultations saved
at emergency departments

- ✓ More time for patients' who need attention
- ✓ Reduces stress
- ✓ Improves patient safety

AI solutions in clinical routine

Skeletal trauma patients - x-ray

Gleamer - Boneview
In clinical setting at all hospitals

Effects for patients and healthcare personnel

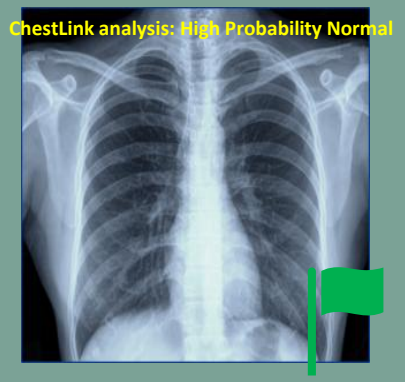
Aug 2023

MS patients - MRI

Icometrics - Icobrain
In clinical setting at Drammen

Minimal effects (for now)

March 2025



Chest radiographs – x-ray

Oxipit - Chestlink
In clinical setting at Bærum

Minimal effects (first step)

June 2025

On premise solution

Prostate Cancer - MRI

AI-Rad Companion
In clinical setting at Drammen

Effects for radiologists and urologist

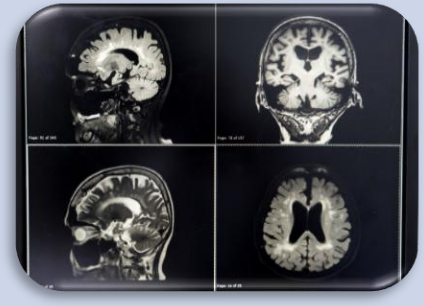
2024

AI solutions in validation/pipeline

Orthopedic measurements - x-ray

Gleamer - Bonemetrics
Test agreement - validation

Potential effects for radiologists and orthopedics



MS patients - MRI

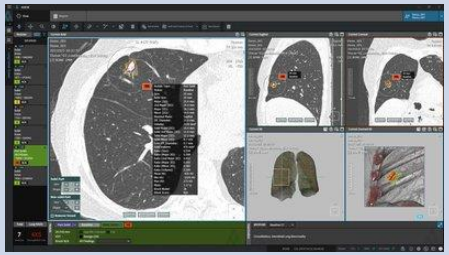
MediAire – MD Brain
Just finished procurement

Potential effects for patients and radiologists

Thorax pathology - x-ray

1. Oxipit – ChestEye
2. Lunit – CXR 4
Starting validation now

Potential effects for patients and healthcare personell



Lung nodules - CT

Access thru platform
Validation other hospital

Potential effects for patients and radiologists

Collaboration in a regional AI-network

- Collaboration on AI procurements
- Share validation, workflows, templates, approvals

Thank you for listening

VESTRE VIKEN

Answers to the audience's questions:

You said your applications are not learning from your data. Do you have plans in the future to make use of the data you already have in your PACS for future application development? As we know that Norway has been using PACS 100% a long time, so there is a lot of material and potential.

- Vestre Viken Hospital Trust do not have plans to develop algorithms, but other hospitals in the region have done so. There are both advantages and disadvantages by doing that.

I suppose this is task-specific AI and not based on generative AI?

- Correct.

Do you keep record of (assumed) reasons why doctor/AI failed to detect pos/neg case correctly ? If so any analysis done yet ?

- We have records, and this is actually being published within a few weeks. Please contact us for more details if you are considering implementing the same application, and we will share some data.

How was the AI application integrated to the radiologist ´s workflow? Was it seamless or was that a problem for nt gaining the benefits of the applications?

- The images/analysis from the application returns to our image archive as secondary captures, and is available in the image stack together with the original x-rays. In addition we have a flag in our patient journal to get an overview of the result for each patient. This is important to be able to do an effective triaging of patients. We are currently looking into the possibility to have auto-generated reports that could improve the workflow further.

At the end you said you have challenges in scaling. Can you talk more about that?

- The most important challenge for us is to effectively scale the implementation to the hospitals, but we also have some differences between the hospitals with regard to accepting other's validations and implementing the applications with similar workflows. I believe this partly is related to cultural issues.