

50

PRIX GALIEN



GLEAMER

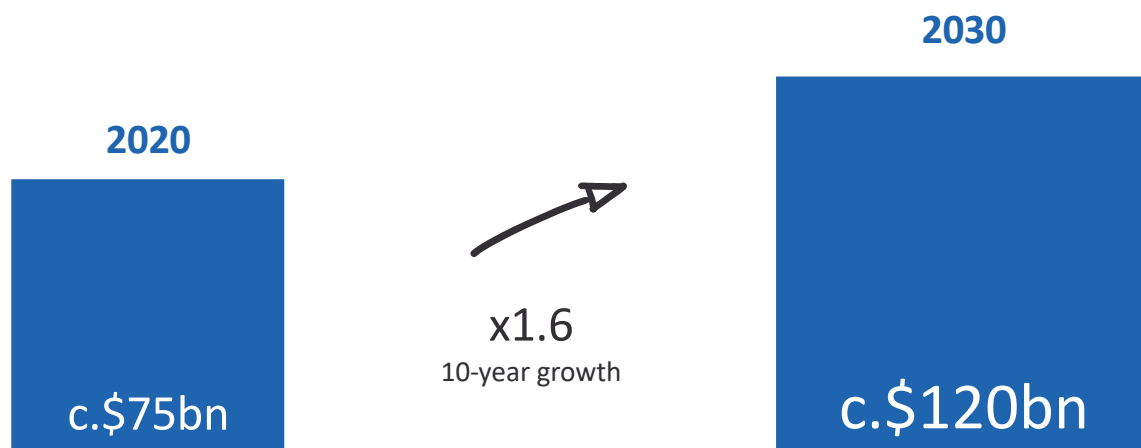
Revolutionizing Radiology with AI

 GLEAMER

01

Context •

Radiology is becoming more and more essential to care pathway



Market growth drivers



Larger access to health-care in emerging markets



Mass screening program



Ageing population in US & EU

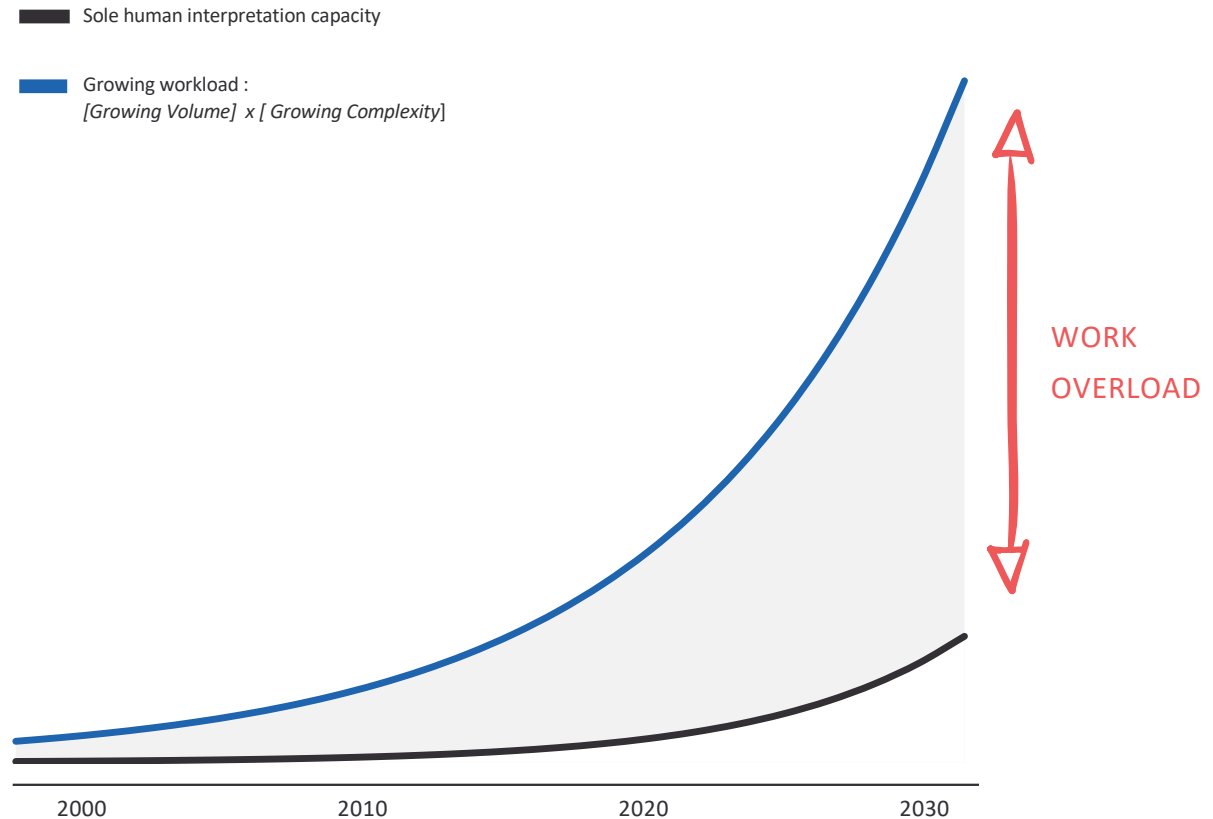
The gap between medical images demand and radiological interpretation capacity is widening

c.2-3 minutes

Average time spent by radiologists per exam (MRI, CT, X-ray, Ultrasound, etc.)

Up to 50,000

Images received per day, requiring increasingly sophisticated medical knowledge to read them



Staff shortage in radiology jeopardizes both patients and the healthcare system

Missed diagnosis

Missed fractures represent up to **80%** of diagnostic errors in the ED

Work overload

+50% of US radiologists have developed burnout symptoms

Legal costs

71% of radiologists surveyed reported being named in a malpractice suit

Our challenge

To meet the growing demand for medical imaging and enhance patient care



Growing Image Volume



**High expectations in
Patient Care**



**Need to optimize healthcare
institution**

02

Empowering Radiologists:
Understand our technology

Transforming X-ray Analysis with AI

Gleamer harnesses the power of Convolutional Neural Networks (CNNs), an advanced deep learning technique used for visual data analysis, to revolutionize the detection of pathologies on X-rays.

Our solution can accurately identify and analyze patterns, structures, and abnormalities within images. This cutting-edge technology allows our system to output precise bounding boxes directly into the radiologist's DICOM (image), facilitating convenient and efficient validation of the detected findings.



Making physicians faster and more accurate with expert-level AI companions



First-line

We target the most frequently performed exams, to ease radiologists' routine



Expert-level

Our products outperform generalist radiologists and achieve expert-level performances ⁽¹⁾



Seamless

Our solutions are incredibly easy to use, and fit to the existing workflow

⁽¹⁾ +10pp sensitivity gains, +5pp specificity gains compared to generalist radiologists

Radiologists used to be
on their own



They now have Gleamer,
their AI-companion



Transparent and seamless experience available in radiologist workstation (PACS)



Modality

Imaging exam



X-ray



CT¹



MRI²



Ultrasound

DICOM³

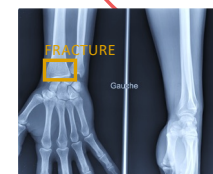
PACS⁴ / Viewer

Storage

Visualization



Standard
X-ray



Gleamer X-ray output

Fully automated process

Gleamer servers

Analysis

Detection

Diagnosis



GLEAMER

AI detection & diagnosis
(CADe / CADx⁵)



BoneView



DICOM³
gateway

¹ CT: Computed Tomography

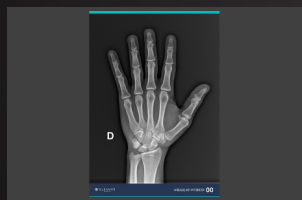
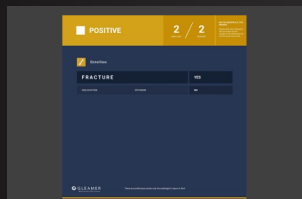
² MRI : Magnetic Resonance Imaging

³ DICOM: Digital Imaging & Communications in Medicine

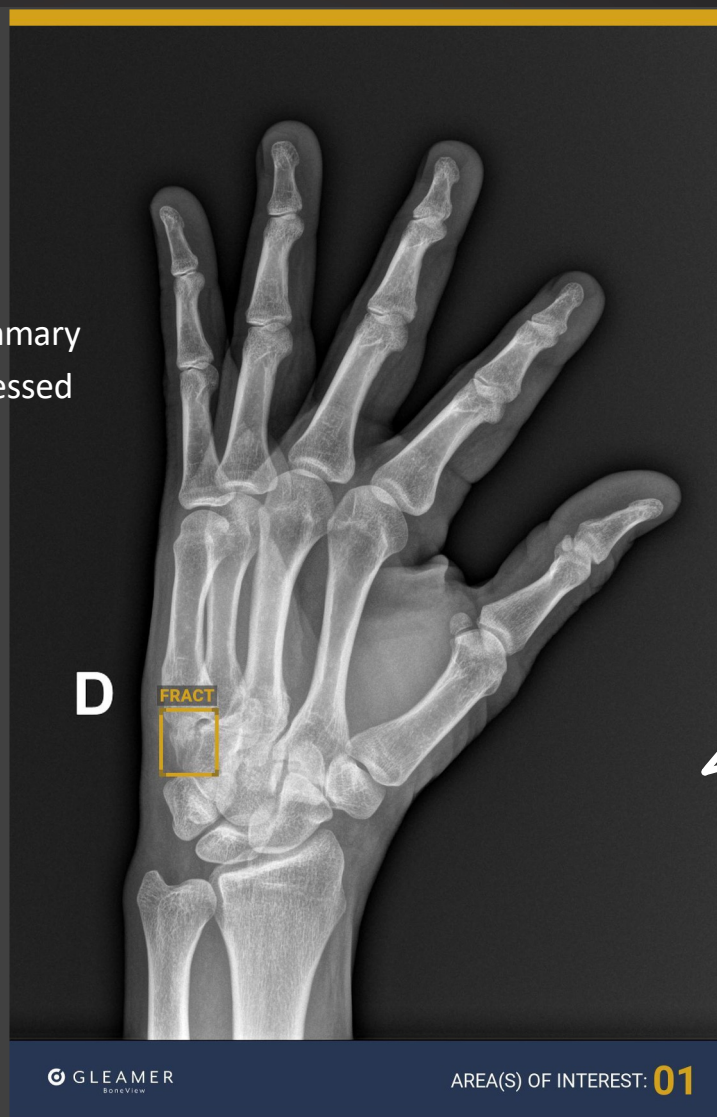
⁴ PACS: Picture Archiving And Communication System

⁵ CADe/CADx: Computer Aided Decision & Diagnosis

Immersive Radiology Experience: Step into the Virtual World of PACS Workstation



We add to the patient file a summary table with results and the processed images



The Radiologist can directly see the finding, zoom, and change the contrast to validate the AI results





03

Meet BoneView •

Unveiling the Journey: Exploring the Evolutionary Steps of BoneView



Did you know?

Boneview achieved a remarkable milestone by becoming the first FDA-approved AI tool for fracture detection within the USA. In March 2023, it further distinguished itself as the only AI tool validated for fracture detection in adults and children, solidifying its position as a groundbreaking solution.

BoneView in a glance

Without BoneView

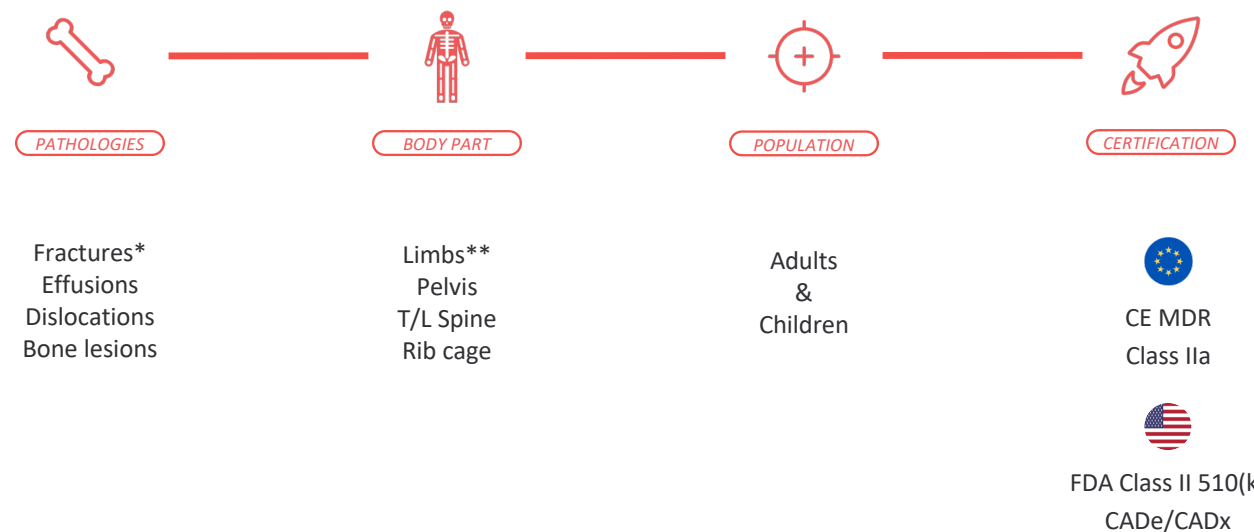


With BoneView



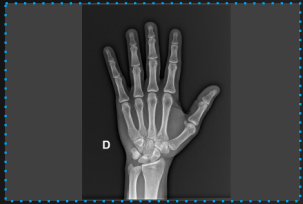
Detection Diagnosis

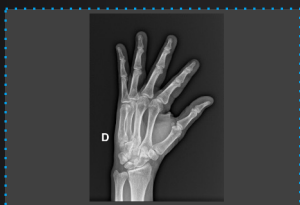
BoneView provides imaging readers with an instant and automatic **2nd reading of trauma bone X-Rays** fully integrated into the reading workflow.



*FDA covers fractures for adults & children

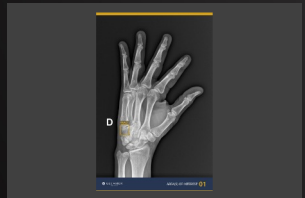
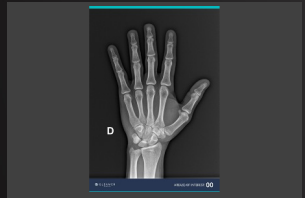
**Pediatric FDA clearance covers limbs only





D





 **POSITIVE**

2

ANALYZED

2

RECEIVED

DID YOU RECEIVE ALL THE IMAGES?

Please note, that if Gleamer did not receive all the images in the study, then the result may be inaccurate.



BoneView

FRACTURE

YES

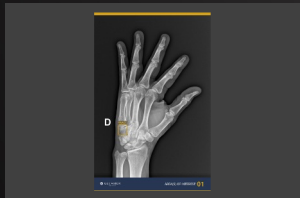
DISLOCATION

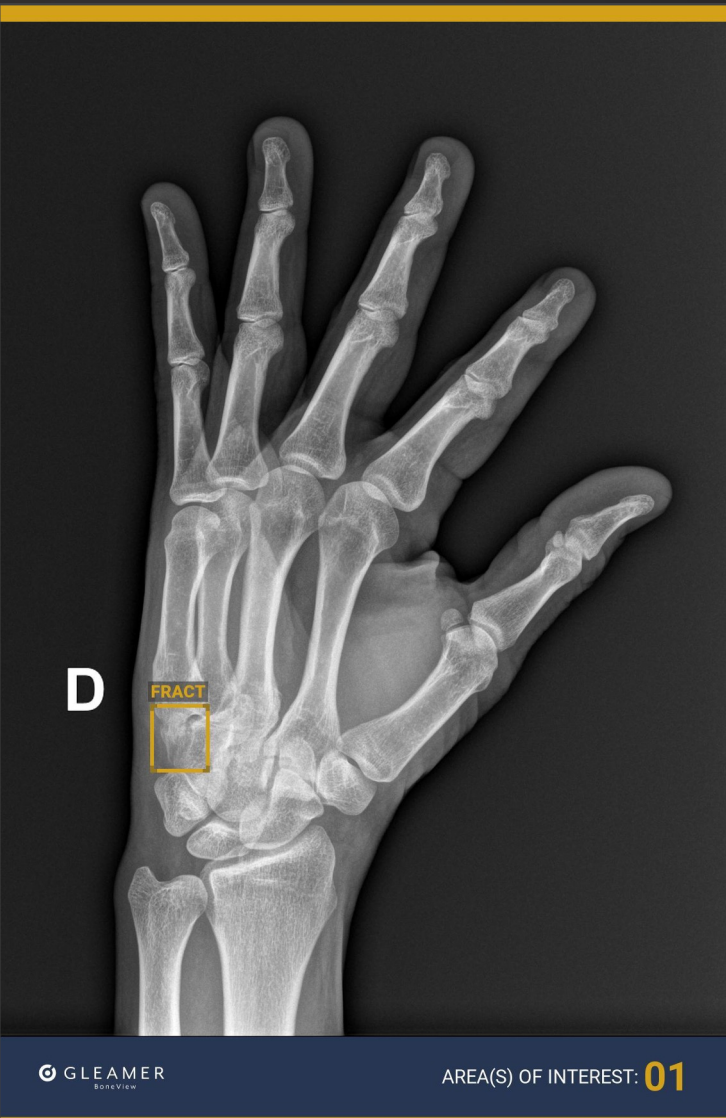
EFFUSION

NO

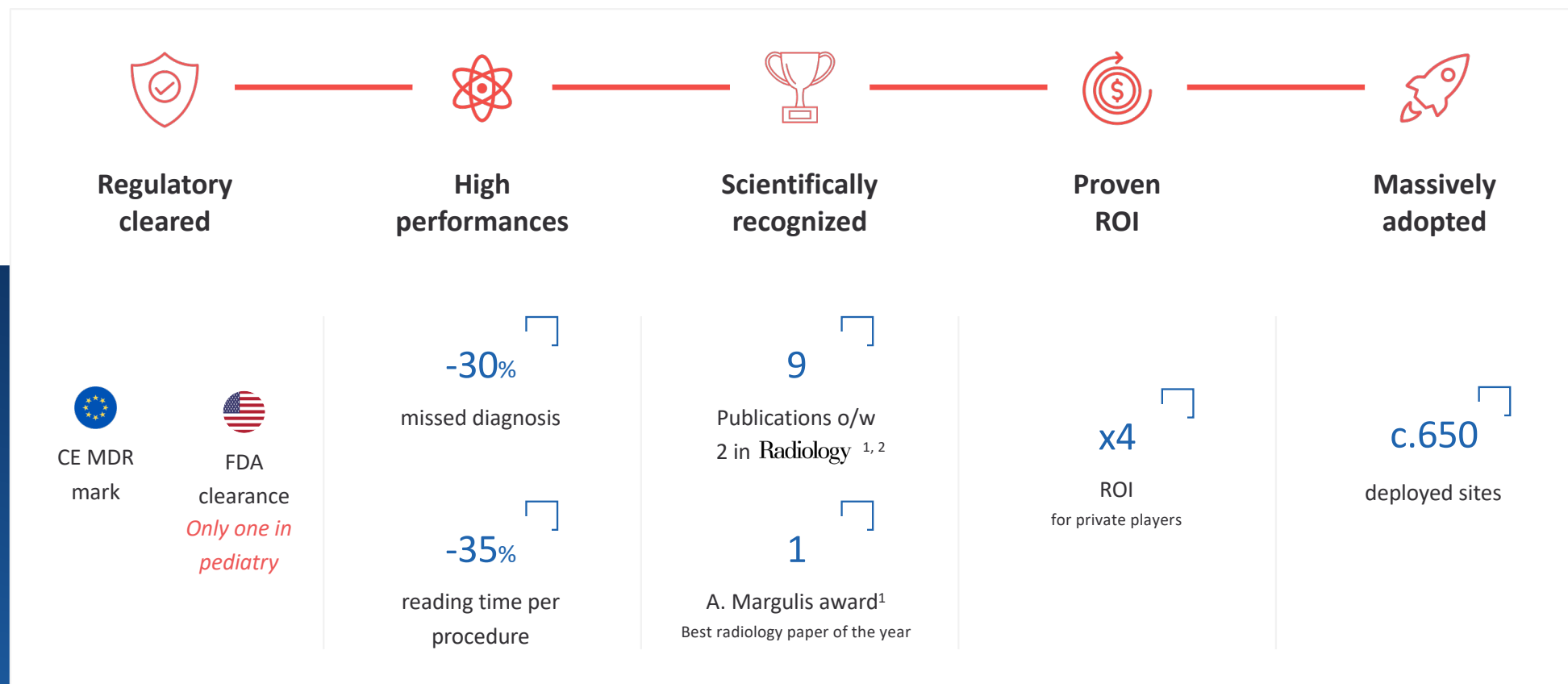
 **GLEAMER**
BoneView/ChestView

These are preliminary results only the radiologist's report is final





BoneView: a top-notch medical device with proven stats



(1) - Assessment of an AI Aid in Detection of Adult Appendicular Skeletal Fractures by Emergency Physicians and Radiologists: A Multicenter Cross-sectional Diagnostic Study - [Radiology](#)

(2) - Improving radiographic fracture recognition performance and efficiency using artificial intelligence - [Radiology](#)

2021 | Extend to all imagery readers

Multi Readers-Multi Cases Study within
USA

480

exams

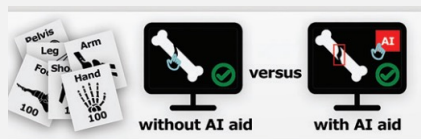
3

MSK experts for
the gold standard

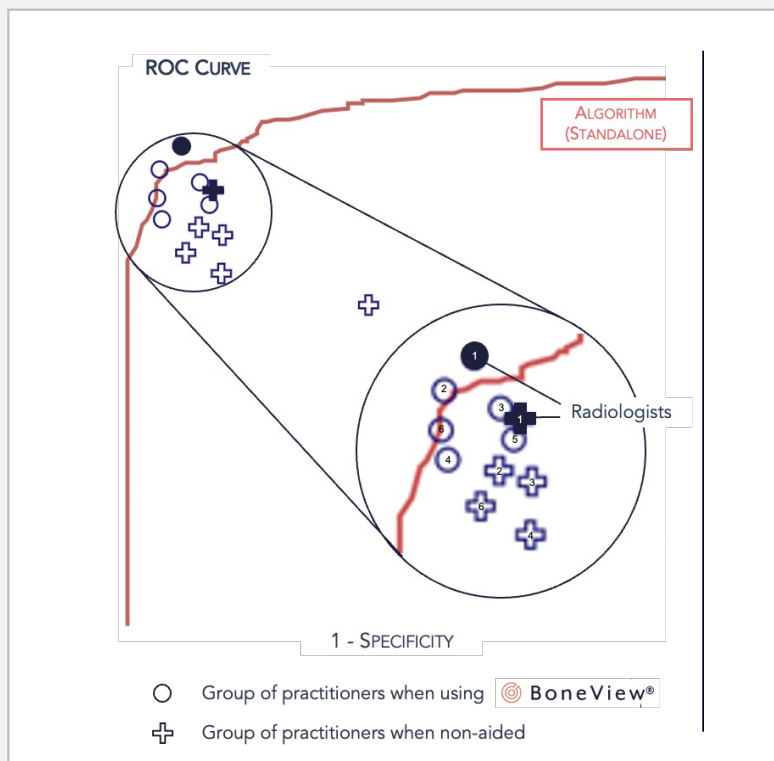
24

Readers

radiologists, trauma surgeon, emergency physician,
physician assistants, rheumatologists, family physicians



Data set twice—once with the assistance of AI software and once without the assistance, with a minimum washout period of 1 month.



Radiology

Improving Radiographic Fracture Recognition Performance and Efficiency Using Artificial Intelligence.

Guermaz A, Tannoury C, Kompel AJ, Murakami AM, Ducarouge A, Gillibert A, Li X, Tournier A, Lahoud Y, Jarraya M, Lacave E, Rahimi H, Pourchot A, Parisien RL, Merritt AC, Comeau D, Regnard NE, Hayashi D.

Radiology. 2022 Mar;302(3):627-636. doi: 10.1148/radiol.210937. Epub 2021 Dec 21. PMID: 34931859.

RSNA 2022
Alexander Margulis Award
Scientific excellence

Key benefits

+16%

Sensitivity

-29%

Missed fractures

-15%

Reading time



Pr. Ali Guermazi MD, Ph.D.

Boston University, School of Medicine USA

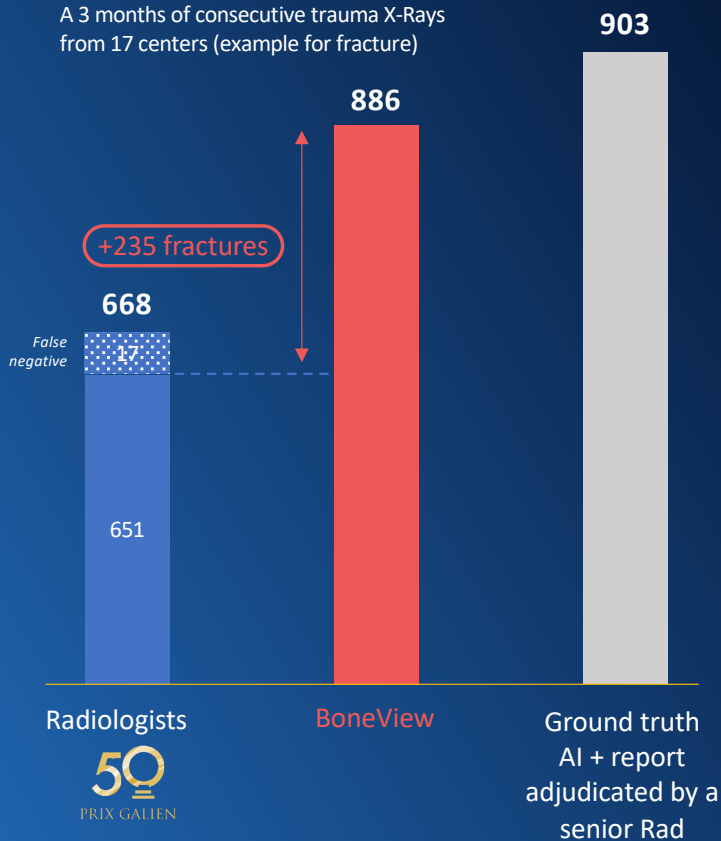
MSK Radiologist, +30y-experience

Computer-Aided Detection systems can be easily sensitive but usually bring significant loss in specificity. Here, the algorithm also helped reduce false positive rates," he said. "The time saving was a good surprise given that the algorithm brings additional information to look at on top of the native images. In reality, it was not obvious that the algorithm would speed up interpretation time.

2022 I New Multi-pathologies scope

Study design :

A 3 months of consecutive trauma X-Rays from 17 centers (example for fracture)



Key benefits

	Sensitivity	Specificity	NPV
Fractures	97.8	88	99.5
Dislocations	90.9	99.1	99.8
Effusions	91.4	99.8	99.9
Bone lesions	98.3	95.6	99.9

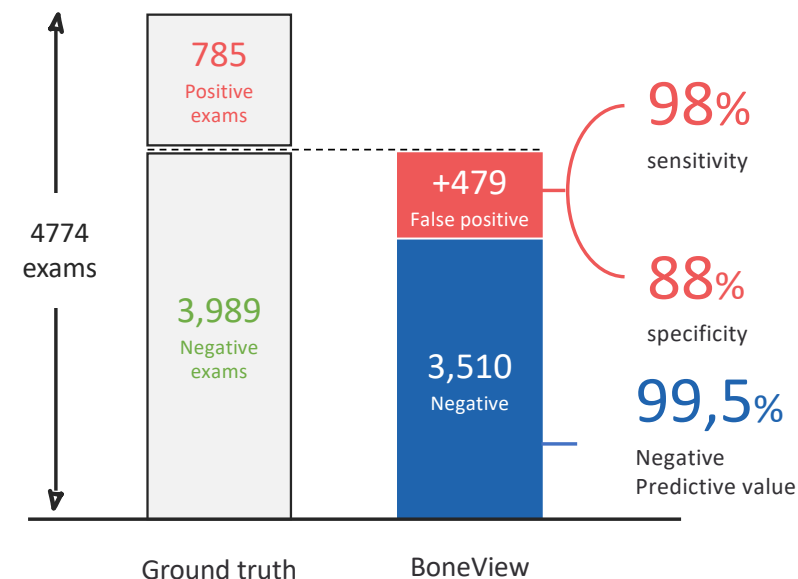


Assessment of performances of a deep learning algorithm for the detection of limbs and pelvic fractures, dislocations, focal bone lesions, and elbow effusions on trauma X-rays.

Regnard, N. E., Lanseur, B., Ventre, J., Ducarouge, A., Clovis, L., Lassalle, L., ... & Feydy, A.

2022. European Journal of Radiology 154, 110447.

Focus on fracture cases



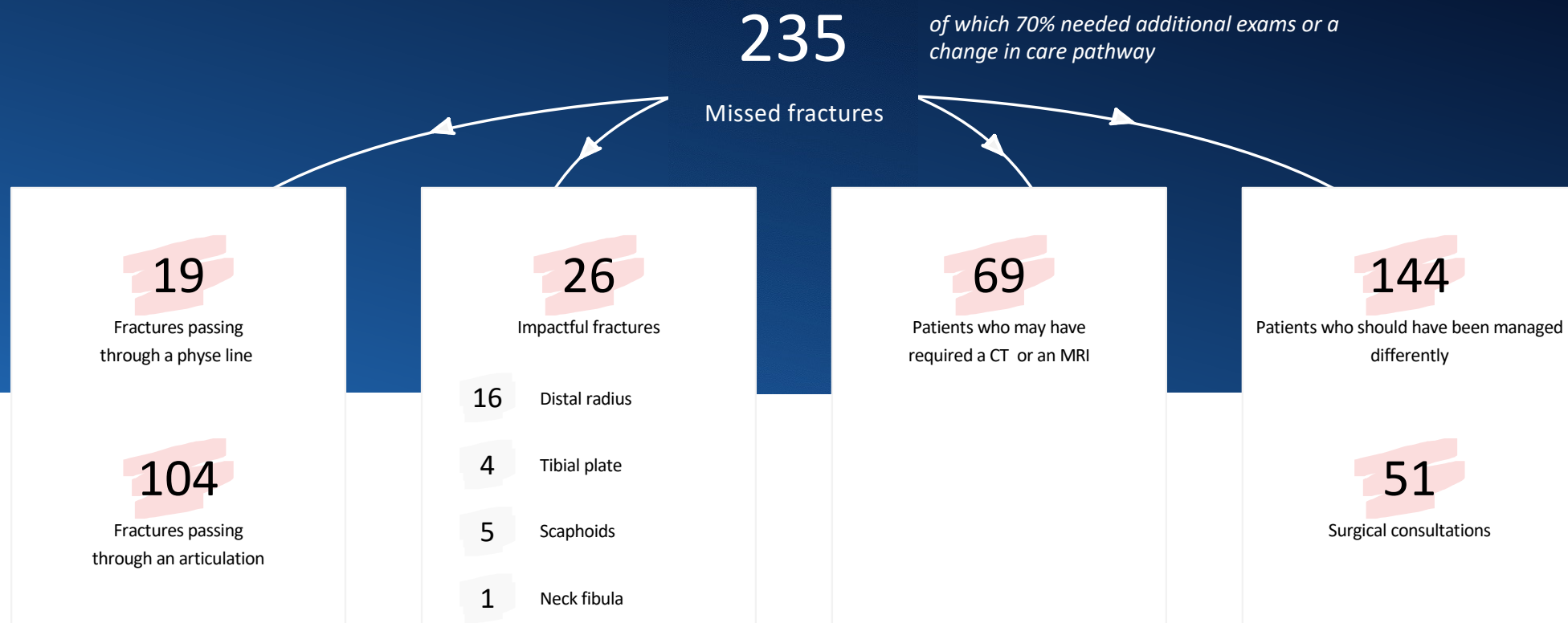
Nor-Eddine Regnard MD

RISF, FRANCE

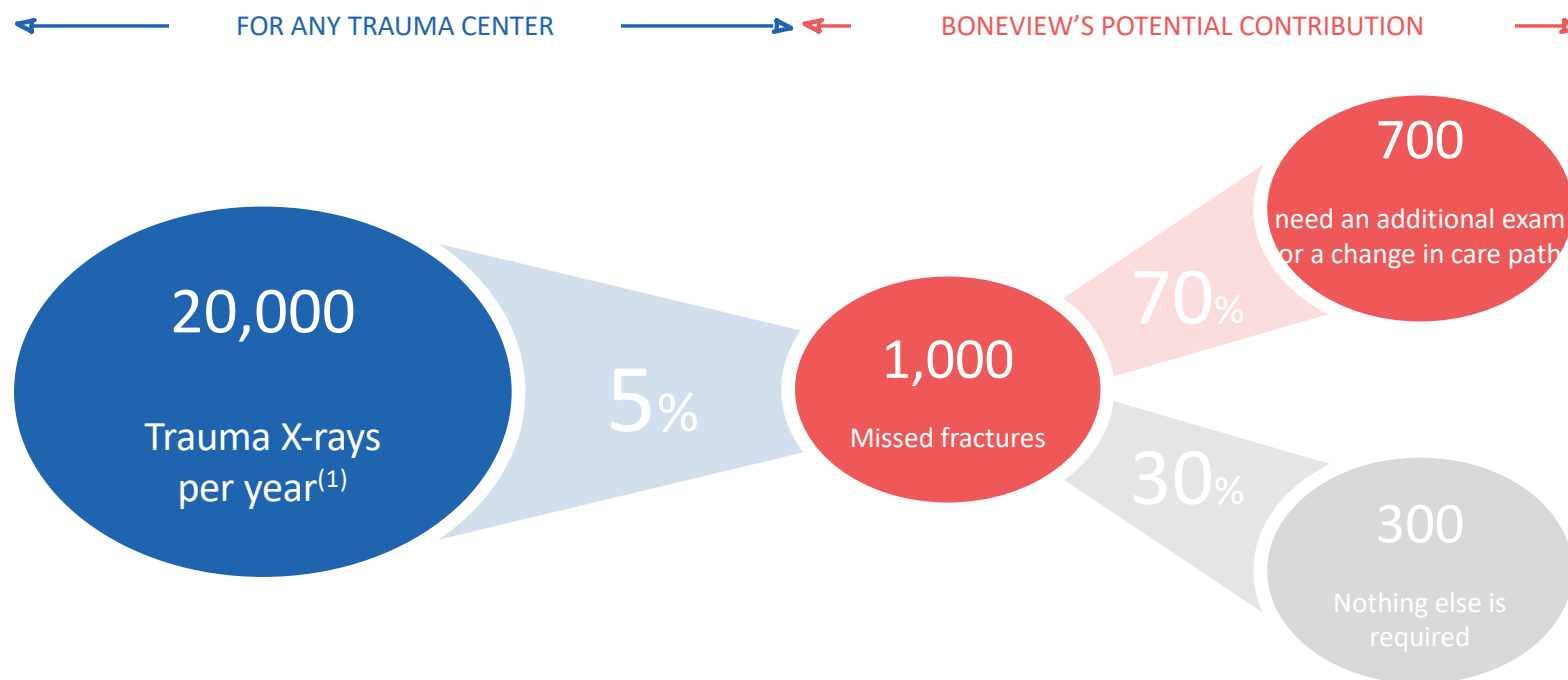
MSK Radiologist, +17y experience | Gleamer CMO

"This is the first study to evaluate the performance of Boneview on all relevant pathologies in traumatic radiography (fracture, dislocation, joint effusion, focal bone lesion) in natural prevalence over 3 months compared to radiologists' reports. The number of traumatic anomalies Boneview could have caught is impressive (over 200 fractures!). The very high negative predictive value means doctors can be confident in interpreting even negative results."

Unpublished findings from the study, shed light on valuable insights



Generalizing BoneView's clinical impact



Enhancing Healthcare: BoneView Benefits for Patients, Doctors, and Society

Radiologists



Decrease
Reading Time by 35%



Improve
Exams prioritization

Clinicians



Reduce Emergency waiting time
(NPV = 99,5%)



Provide Standardized, Reliable
and Complete Results

Institution



Improve the overall
Quality of Care



Avoid Legal Claims
and Litigations

04

Gleamer

“ We have built one of the largest installed base among all the radiology AI manufacturers ”

Gleamer, Best new vendor 2023 at the EuroMinnies*

10

Nationalities

+55

employees

2017

Year of creation

+650

Institutions using our solutions
worldwide

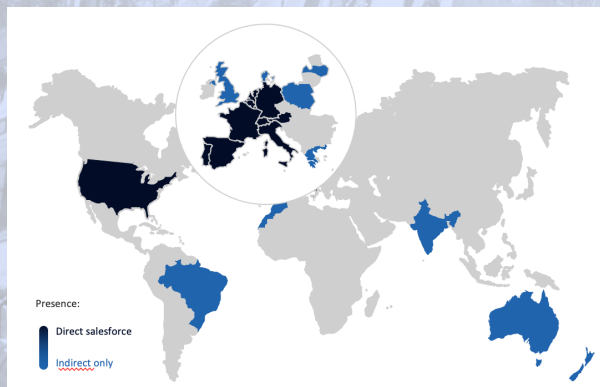
24

Countries reached



*The EuroMinnies is the 1st website dedicated to Radiology in Europe

Global expectation



Main distributors



Meet Our Complementary and Experienced founder Team



Christian Allouche

Chief Executive Officer

With 9 years of invaluable experience, Christian has established himself as an entrepreneur in the field of Digital Health and Biotech. As the co-founder of BrainVectis and MeltingDoc, Christian has demonstrated a relentless passion for revolutionizing healthcare through innovation, driving transformative solutions that have a lasting impact on patient care.



Alexis Ducarouge

Chief Product & Tech Officer

With 5 years of experience, Alexis is a highly skilled professional in the fields of Computer Vision and Deep Learning. A solid background in neurosciences complements their expertise in these cutting-edge technologies. Alexis's unique blend of knowledge brings a multidisciplinary approach to solving complex problems at the intersection of artificial intelligence and neuroscience. Their exceptional understanding of both technical and biological aspects empowers them to develop innovative solutions that push the boundaries of research and application in these fields.



Nor-Eddine Regnard, Dr

Chief Medical Officer

Leveraging more than 17 years of expertise in radiology, Nor-eddine plays a pivotal role by bringing unparalleled knowledge and skill to the table. As an Associate Radiologist at RISF and former head of Radiology at AP-HP, his contribution is instrumental in creating the finest companion that embodies excellence in radiology.

We work with all types of healthcare institutions with a global coverage

Public

Private

Large



Medium



Small



Our values

User-centred

Our collaboration with a solid advisory board of radiologists is pivotal in leading our company to success. Their radiology and medical imaging expertise provides invaluable insights, guiding us to make informed decisions and develop cutting-edge solutions. With their guidance, we are well-equipped to revolutionize the field of radiology and deliver exceptional outcomes.

Target excellence

We have assembled expert teams to construct our solutions, aiming to reach the level of an expert in the field. Our dedicated medical officer experts contribute their specialized knowledge to ensure the highest level of expertise in our medical applications. Through their collaboration, we strive to deliver exceptional and reliable solutions for the medical domain.

Never seetle

We relentlessly advance our AI towards excellence with each new version, harnessing cutting-edge technologies and research. Our commitment to innovation drives us to exceed expectations and push the boundaries of what AI can achieve. Each iteration brings enhanced capabilities, performance, and an unparalleled user experience.

Embracing Global Leadership *Harnessing the Power of International Experts for Unparalleled Success*



Pr Jean-Denis Laredo

MSK Radiologist
Hôpital Lariboisière
Paris, France

« Through my dedicated journey in radiology, I've witnessed the rise of numerous startups in the area. What sets Gleamer apart from the competition? Their outstanding input data, skilled scientists, visionary leadership, and dedication to addressing critical challenges in radiology. By fostering collaborative teamwork, they drive rapid innovation in medical imaging AI.

Joining forces with Gleamer allows me to contribute my expertise and be part of a startup, making a meaningful impact on patient care. »



Pr Nicolas Theumann

MSK Radiologist
Hirslanden Klinik
Lausanne, Switzerland

« I am proud to be a part of GLEAMER, a company with impressive product quality. Working with them has been a pleasure, and I am confident they will succeed. GLEAMER has proven its ability to launch successful, high-quality solutions for radiologists, and I am excited to be a part of their journey. »



Pr Gabriel Krestin

Prof of Radiology
ERASMUS MC
Former ESR President
Rotterdam, Netherlands

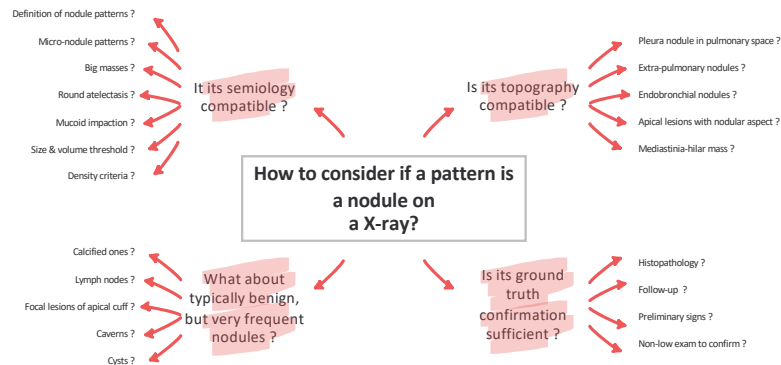
« I have been involved with startup companies in the field of AI in medical imaging for almost a decade and successfully exited one of them nearly two years ago. However, I believe Gleamer.ai is the most innovative and fast-moving startup in this field. Their strategy, clear focus, and product quality are impressive and better than anything I have seen before. Working with them is a pleasure, and I am convinced they will achieve a lot in the coming years. »

A collaborative process to create the most relevant medical device

Medical scoping

Long and iterative process between expert medical advisors and the product team

+50 fundamental questions were raised:



Process feedback loop

Product and market fit validation

Internal and external validation with all Gleamer's departments and partners to develop the most relevant medical devices



Marketing

Market

User research



Clinical affairs & QARA

FDA predicate

CE compatible

Clinical protocol



Data & AI team

Data availability

R&D feasibility

Bibliography

Tool compatibility

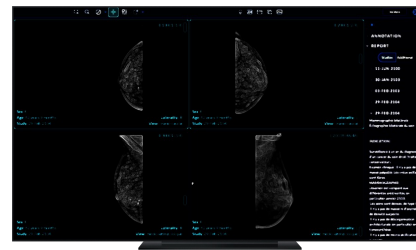
Crafting Excellence: Building Proprietary and Ultra-Quality Data Sets

1 Data collection

We collect and acquire data directly from our radiologist partners to get high-quality data sets and meet our own requirements. Since inception, we have collected 5m+ images

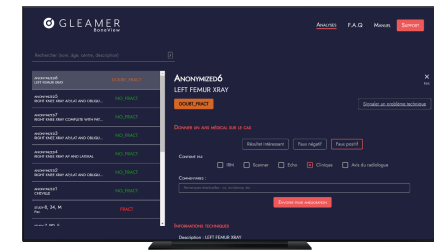
2 Data annotation

We find and train the best radiologists to annotate data with highest standard. For a seamless process, we have developed an in-house annotation software



3 Real-time feedbacks

To leverage our installed client base, we offer a unique platform to collect direct feedbacks and stay on top of AI



Feedback loop

05

What's next?

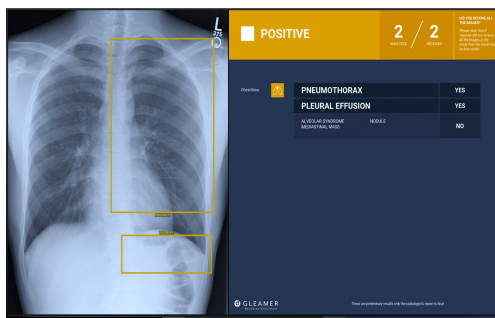


A major milestone : from mono-product to a multi-product company

ChestView

Lesion detection on chest X-rays

LAUNCHED Q4-22



+35%

pneumothorax
detected

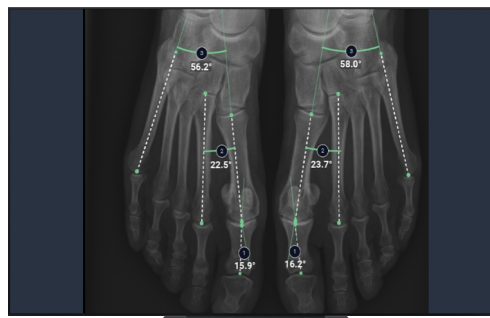
-26%

reading time per
procedure

Measurements

Routine MSK measurements automation

LAUNCHED Q1-23



99%

measurements
addressed

3h+

saved per month
per FTE

BoneAge

Automatic Bone Age assessment

LAUNCHED Q1-23



94%

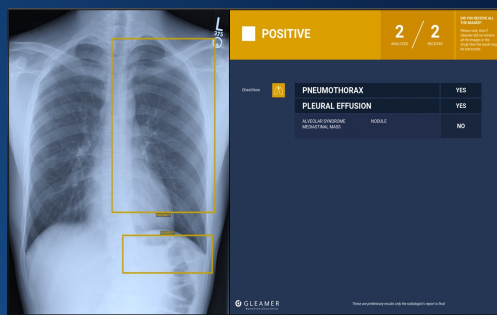
success rate

3min

saved per age
evaluation

4 - WHAT'S NEXT

Discover ChestView



CE MDR Class IIa

PATHOLOGIES

Urgent

Pneumothorax
Consolidation

Semi-Urgent

Pleural Effusion

With tumor potential

Nodule
Mediastinal Mass

Acquisition

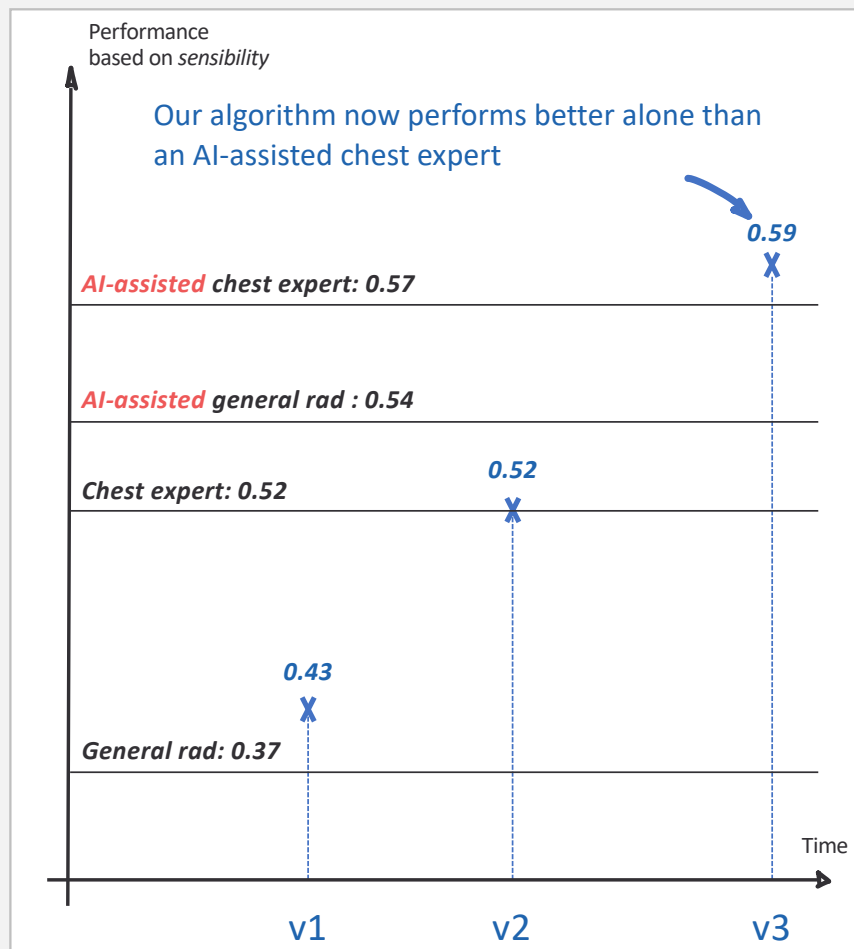
PA & AP
Bedside acquisitions
Frontal & Lateral View

Population

Adults
>15 yo

50
PRIX GALIEN

ChestView performance evolution graph¹



EUROPEAN CONGRESS OF RADIOLOGY
ECR 2023
THE CYCLE OF LIFE
VIENNA 19-21 MARCH 2023

Co-developed with

ASSISTANCE
PUBLIQUE
HÔPITAUX
DE PARIS

Key benefits

+36%

Pneumothorax

Same

Specificity

31%

decrease in reading time



Pr. Marie-Pierre Revel, MD, Ph.D.

Cochin Hospital, FRANCE

Professor and Chest Radiologist

« CXR is the 1st line exam for multiple indications, however, CXR reading is particularly difficult. AI can detect subtle findings that require urgent management or that can highly impact patient prognosis, including signs of cancer, increasing the performance of radiologists. »

06

Conclusion



We have built the most robust AI medical devices and it is only the start of the adventure



Awarded

Alexander R.
Margulis award

In November 2022



CADe/CADx

Among the

11

CADe/CADx FDA-approved
competing companies
worldwide



Renowned

8

publications in leading
peer review medical journals
Radiology



Performing

+30%

Fracture detected



Co-developed

R&D in collaboration
with the very best

Thank you •

We sincerely hope our journey together has conveyed the passion, dedication, and unwavering commitment of our entire team at Gleamer to transform the world of Radiology. We hope this presentation witnesses the incredible spirit of hard work that drives us to reshape healthcare.



Contact information
Cécile Hourquet
Marketing Manager
cecile.hourquet@gleamer.ai