



USE CASES

quantusOS

Medical Imaging with Artificial Intelligence

quantusOS — Detection of Osteoporosis and Osteopenia

Product Description

quantusOS is a non-invasive, fast, and easy-to-use test for the automatic detection of osteoporosis and osteopenia. Developed in collaboration with the Ramón y Cajal University Hospital in Madrid. Using a hip X-ray, it analyzes the quantitative texture of the femur to classify the risk level of osteoporosis into different categories. It provides results in just a few minutes without the need for additional procedures.

Epidemiological Context

Osteoporosis affects nearly 3 million people in Spain (79.2% of whom are women) and results in approximately 300,000 fractures per year, accounting for 3.8% of national healthcare spending. The cost of bone fragility in Spain exceeded 4.3 billion euros in 2019. Early detection is key to preventing fractures and reducing the burden on the healthcare system.

Use Cases

CU-OS-01: Population-Wide Screening in Primary Care

Stakeholders	Primary care physician, patient over 65 years of age (especially women with a history of at least one childbirth)
Main Workflow	The physician orders a routine hip X-ray. The image is uploaded to quantusOS, which returns a risk classification in less than 3 minutes. The physician makes decisions regarding referral or treatment.
Key Benefit	Up to a 30% reduction in specialist waitlists. Avoids unnecessary hospital transfers, resulting in significant cost savings.
Success Metrics	Early detection rate, reduction in referrals to rheumatology, cost per diagnosis.

CU-OS-02: Treatment Monitoring and Follow-Up

Stakeholders	Rheumatologist, orthopedic surgeon, patient undergoing treatment with bisphosphonates
Main Workflow	Patient already diagnosed. Periodic X-rays are performed. quantusOS evaluates changes in the degree of ossification and generates a progression report, helping to adjust the dose or type of treatment.
Key Benefit	Prevents side effects from inappropriate bisphosphonate treatment. Tailors therapy to each clinical case.

Success indicators	Treatment adherence, reduction in fractures, patient quality of life
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CU-OS-03: Integration with Insurance Companies and Health Plans

Stakeholders	Insurance company (e.g., ASISA, Unimed Brasil), population health manager
Main Workflow	The insurance company incorporates quantusOS as a screening tool in its annual checkups for individuals over 50. The results are integrated into the insured person's medical record.
Key Benefit	Reduced costs associated with fractures and hospitalizations. Improved claims ratio. Increased policyholder loyalty through value-added services.
Success Metrics	Average cost per fracture prevented, policyholder NPS, screening cost-benefit ratio

CU-OS-04: Telemedicine and Rural or Hard-to-Reach Areas

Stakeholders	Rural physician, remote radiologist, patient with limited mobility
Main Workflow	X-ray taken at a local clinic with basic equipment. Image sent to the Transmural cloud platform. quantusOS returns a diagnosis to the local physician within minutes.
Key Benefit	Equitable access to specialized diagnosis without the need to travel. Available 24/7 anywhere in the world.
Success Metrics	Number of diagnoses made outside of hospitals, average response time