

2nd PANHELLENIC CONGRESS OF MEDICAL PHYSICS
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INVENTORY OF DIAGNOSTIC IMAGING EQUIPMENT WITH IONIZING RADIATION OF HEALTH CARE CENTERS IN 2ND REGIONAL HEALTH AUTHORITY OF PIRAEUS & AEGEAN, & PRESENTATION OF 3 NEW RADIOLOGY LABORATORIES

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1. Background-Aim

The 2nd Regional Health Authority of Piraeus & Aegean constitutes a critical authority since it covers the healthcare needs of remarkable geographical region of Greece.

Especially, the 2nd Regional Health Authority controls the radiology laboratories of healthcare centers both of Piraeus area and most of Aegean islands.

Therefore, it was deemed necessary to record the diagnostic imaging equipment using ionizing radiation in order to evaluate the distribution of the existing x-ray machines in the healthcare units based on their needs, taking into consideration that in many Aegean islands only primary health care centers exist, and hospitals are rare.

2. Materials & Methods

- Data was collected on registered medical imaging equipment using ionizing radiation.
- For the recording, the database of the 2nd Regional Health Authority (2nd RHA) was used.
- Initially, the recording of radiology equipment was conducted in the healthcare centers located in the mainland part of the 2nd RHA (Piraeus area).
- Subsequently, the recording of x-ray machines continued in the healthcare centers of Aegean islands.
- The analysis included the equipment in combination with the annual number of examinations per radiology department.

3. Results

Healthcare centers of Piraeus area

- 24 healthcare centers, of which 17 have a radiology laboratory

69%: Radiography X-ray machines
(3 DR & 14 CR systems)

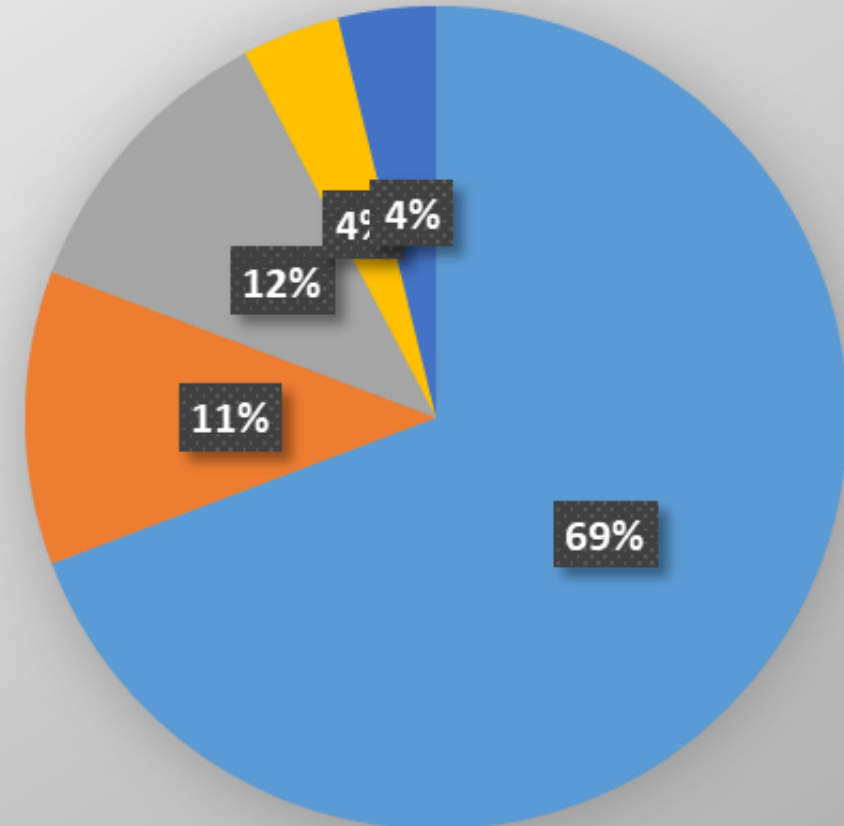
12%: Panoramic X-ray machines
(1 CR & 2 DR systems)

11%: DEXA

4%: Remote-controlled Fluoroscopy systems

4%: Mammography systems (1 DR)

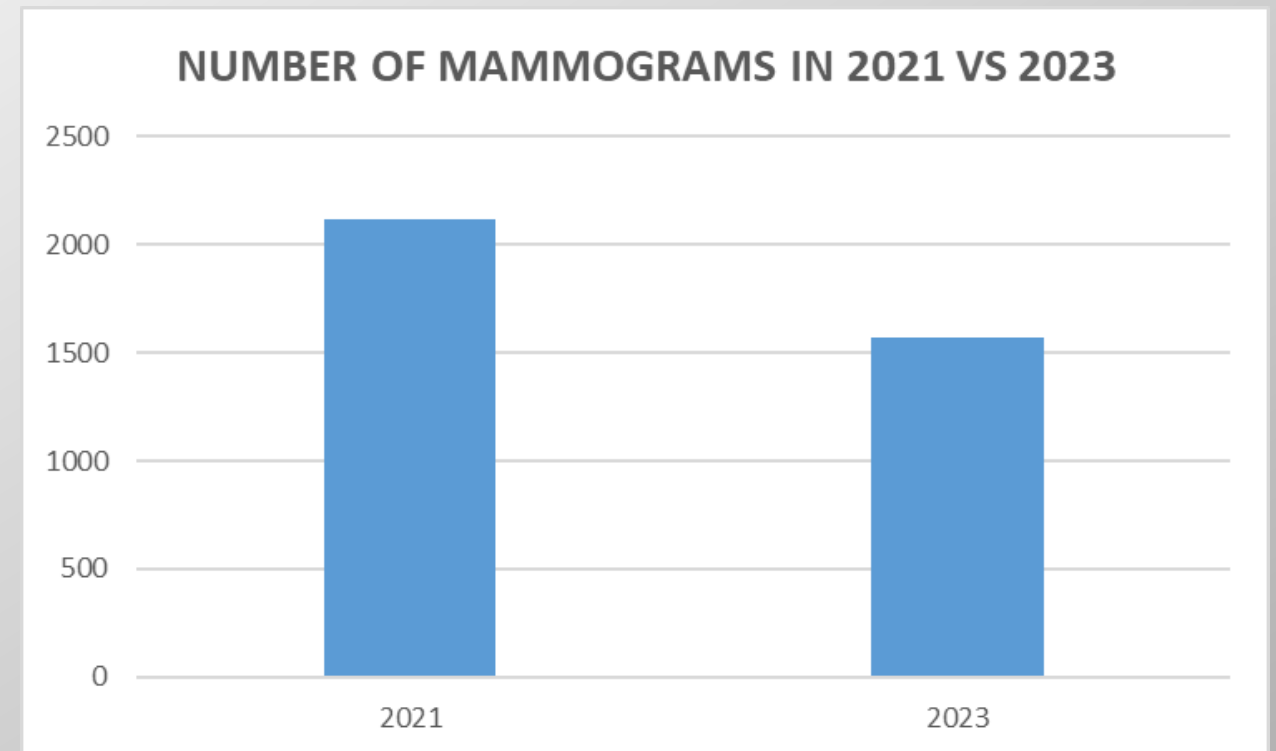
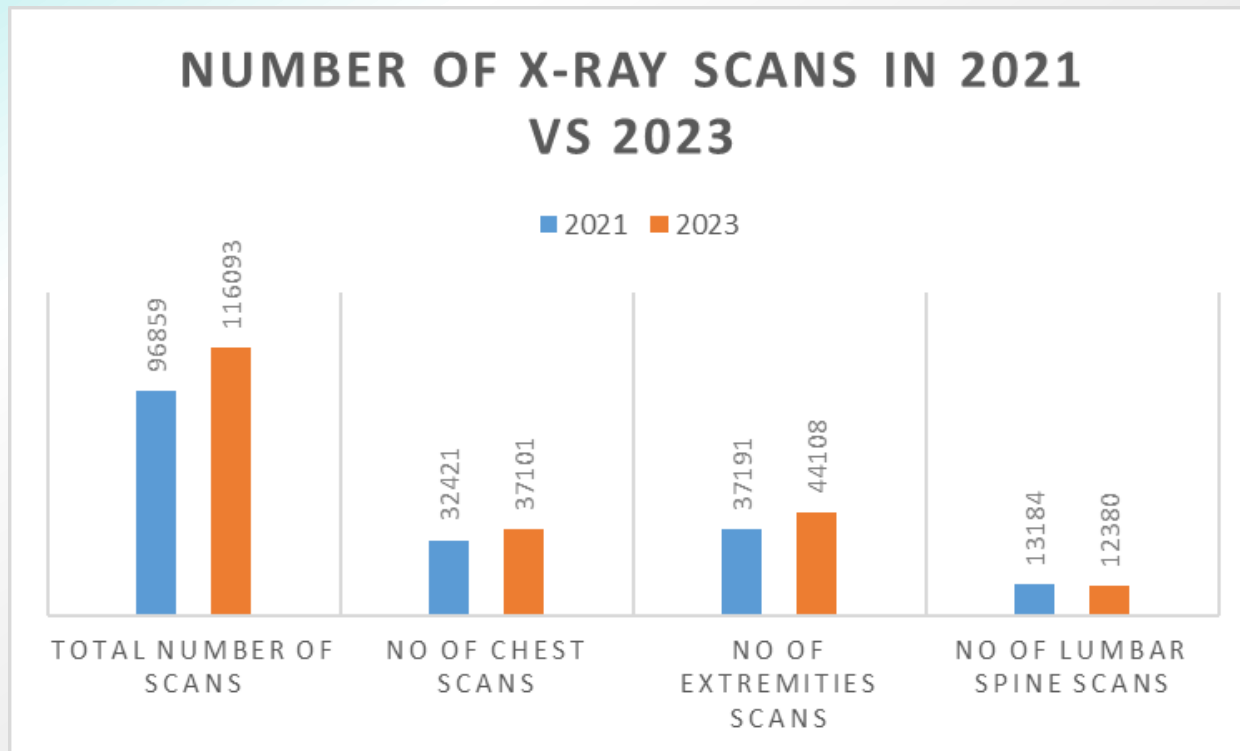
X-RAY MACHINES OF HEALTHCARE CENTERS IN PIRAEUS AREA



3. Results

Healthcare centers of Piraeus area

- Also, it was found that
 1. the examinations with the highest number of x-ray scans were those of the chest, extremities and lumbar spine.
 2. the number of x-ray examinations increased between 2021 and 2023.
 3. the number of mammograms decreased between 2021 and 2023.



3. Results

Healthcare centers/Multifunctional Regional Clinics of Aegean islands

- 24 Healthcare centers, of which 20 have a radiology laboratory
- 39 Multifunctional Regional Clinics (MR Clinics), of which 2 have a radiology laboratory

77%: Radiography X-ray machines
(20 CR & 3 DR systems)

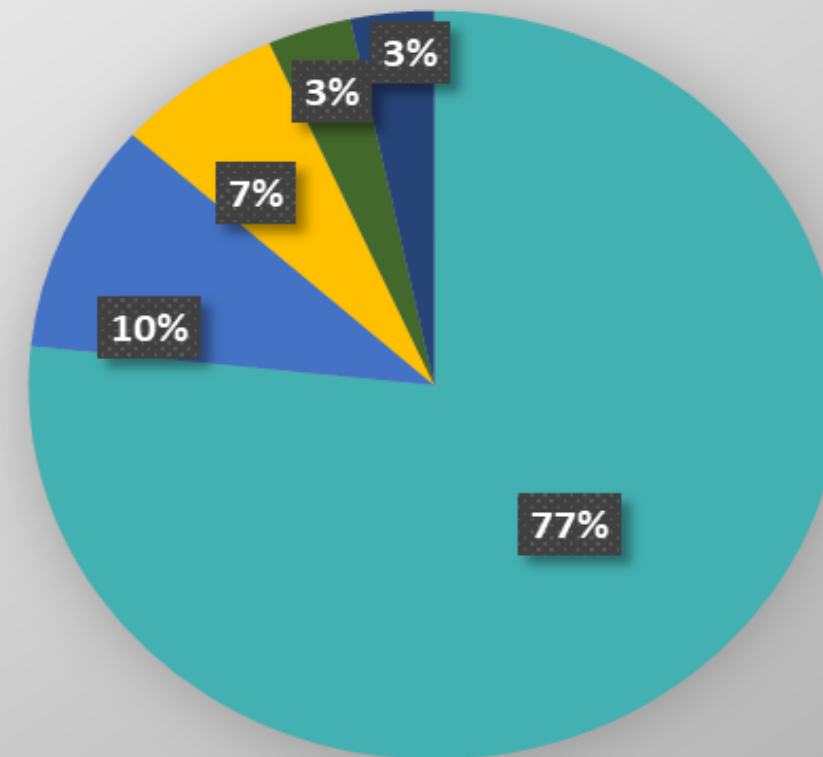
10%: Mammography systems
(2 CR & 1 DR system)

7%: DEXA

3%: Remote-controlled Fluoroscopy systems

3%: CT (1 system only)

**X-RAY MACHINES OF HEALTHCARE
CENTERS/MR CLINICS IN AEGEAN
ISLANDS**

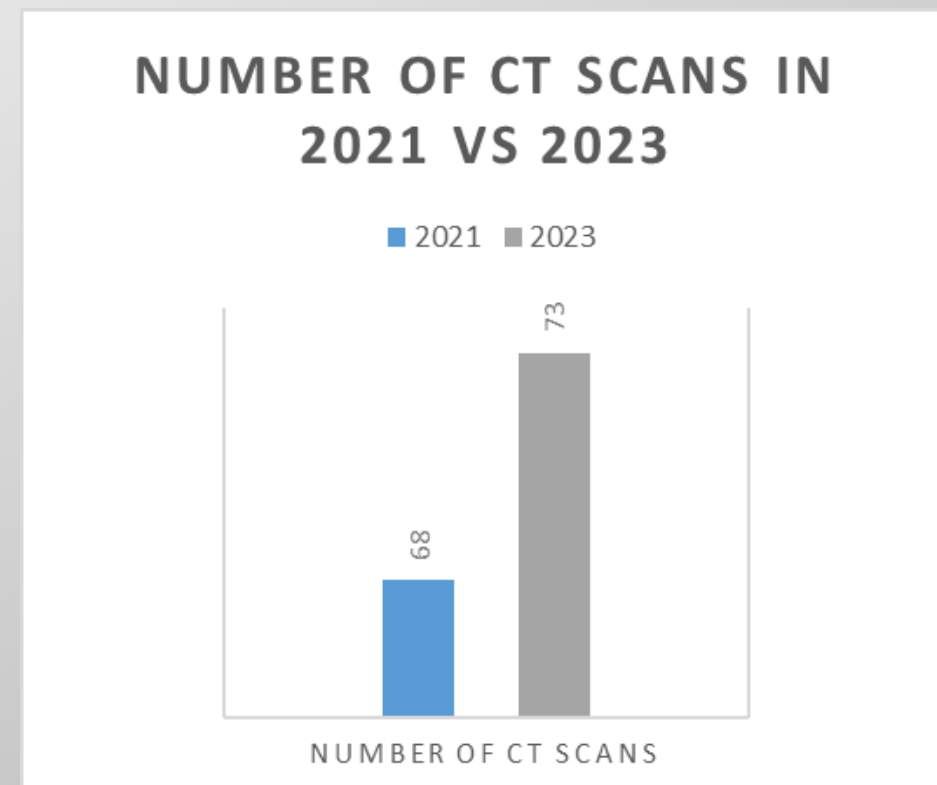
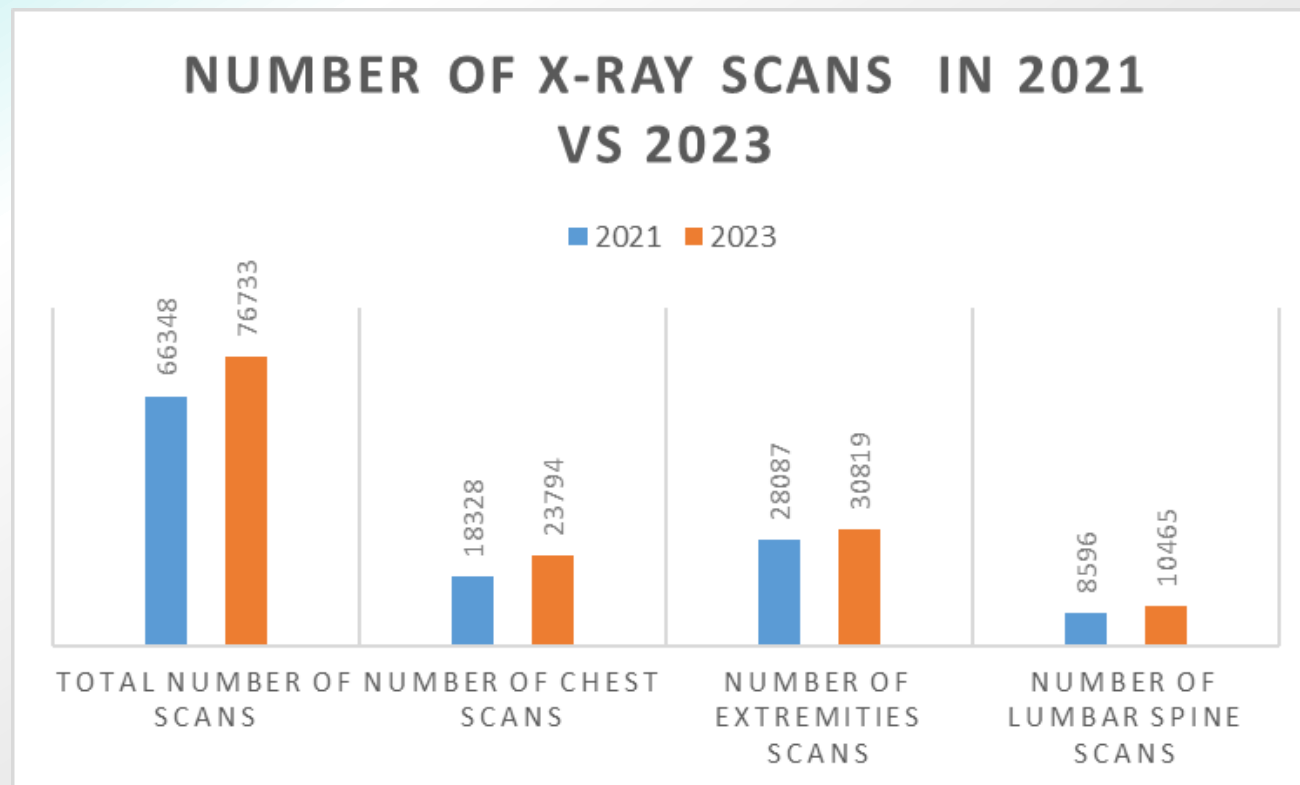


3. Results

Healthcare centers/Multifunctional Regional Clinics of Aegean islands

In additional:

1. the examinations with the highest number of x-ray scans were those of the chest, extremities and lumbar spine.
2. the largest percentage of CT scans were of the chest.
3. the number of examinations (x-rays & CT) increased between 2021 and 2023.
4. the number of mammograms remained at the same level between 2021 and 2023.



3. Results

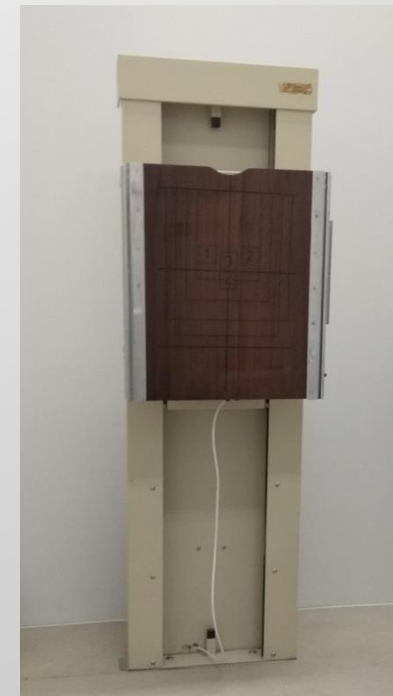
- At the same time, lack of radiology department was found in healthcare units in Aegean islands. Especially, in Astypalaia, Amorgos and Serifos.
- Therefore, taking into account both economic and technical factors (e.g., geographical factors, population size, needs, etc), the authority constructed 3 new radiology departments fully equipped and safe according to the requirements of the Greek Atomic Energy Commission.
- All 3 laboratories have received operating licenses from Greek Atomic Energy Commission.



Radiology laboratory of healthcare unit of Astypalaia



Radiology laboratory of healthcare center of Amorgos



Radiology laboratory of healthcare unit of Serifos



4. Conclusions

The needs of each medical facility can change dynamically due to the different demands that arise, so regularly data analysis must be performed.

Based on the results, the inventory of the x-ray machines leads to a better distribution according to the needs of each healthcare center.

Consequently, citizens can have access to quality healthcare services in all medical centers controlled by the 2nd Regional Health Authority of Piraeus & Aegean.