

Leadership: Nuclear Medicine and PET

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Agenda

- **Nuclear Medicine, the Modality**
- **Market size and growth, trends and drivers**
- **Our position versus competition**
- **Winning on Clinical Excellence without compromise**
- **Summary**

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What Nuclear Medicine is:

- CT, X-ray, Ultrasound and MR provide anatomical information
- Nuclear medicine provides physiological information:
 - How the body/organs function
 - Disease detection before anatomical changes are apparent
 - Diagnostically complementary to anatomical information
- Nuclear medicine clinically important in
 - Heart Disease, Cancer and Brain Disorders
- Two types of imaging device
 - Nuclear gamma cameras
 - Positron emission tomography (PET) scanners

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How diagnostic images are produced:

- Patient receives injection (chemically tagged radioactive tracer)
- Circulates in bloodstream
- Chemical type targets biology/organ of interest & deposits radioactivity
- Scanner detects radioactivity & creates image of biology/organ



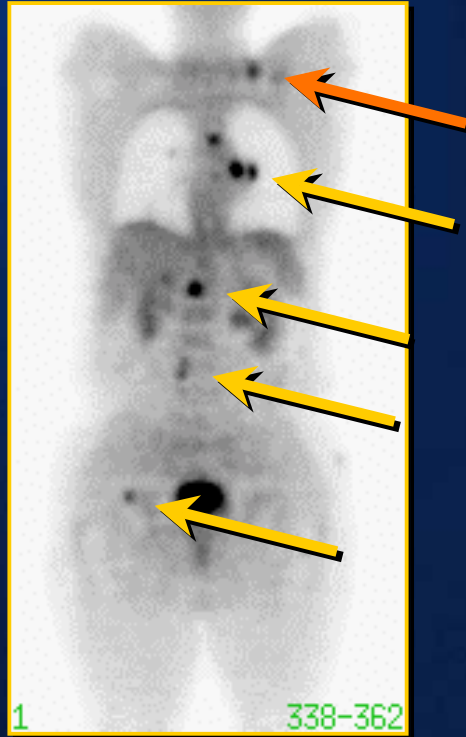
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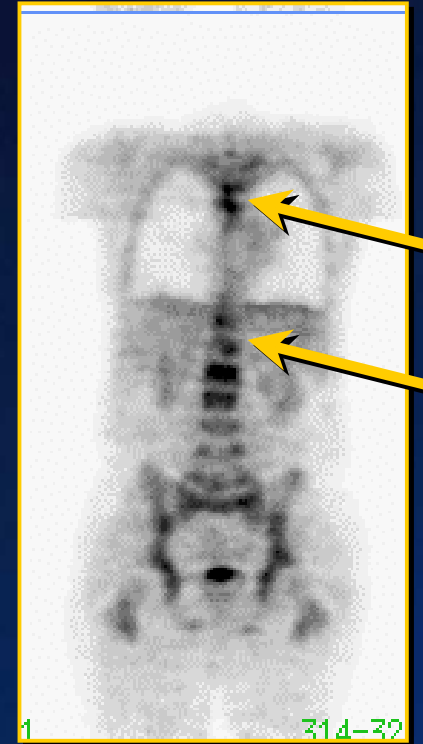
PET Case Study: Melanoma Staging & Follow-up

Before Therapy PET on 11/20/00



CT showed mass in left shoulder
But missed abdominal lesions

After Therapy PET on 2/18/01



Normal post-therapy
bone marrow uptake

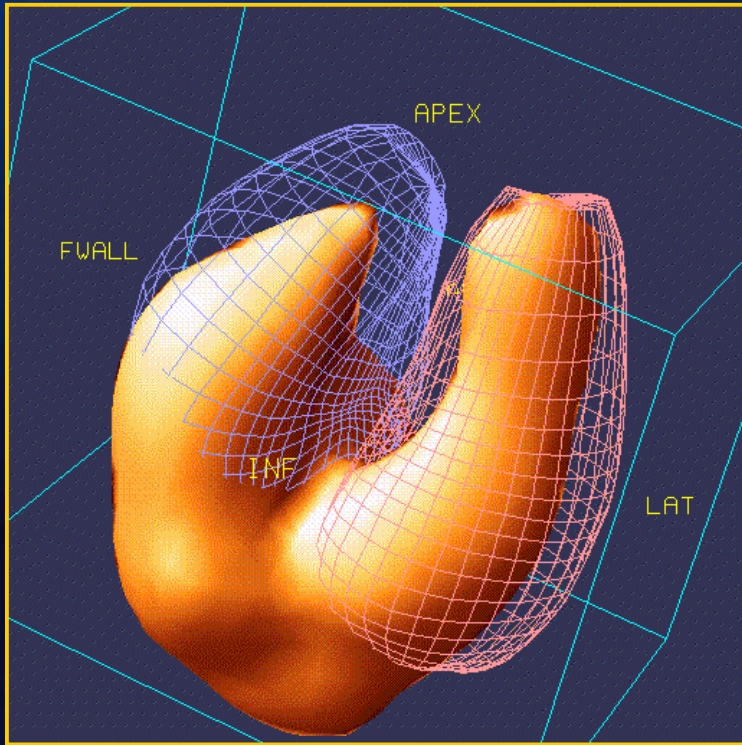
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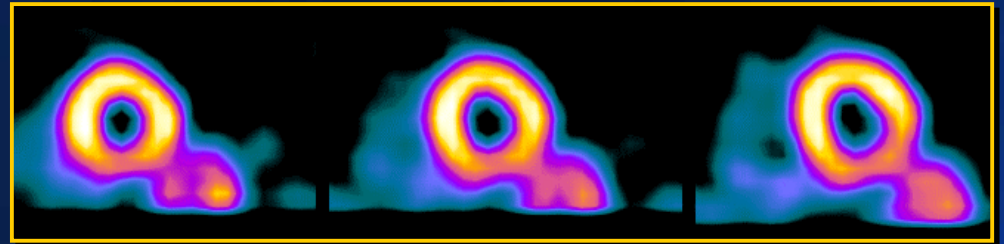
Nuclear Cardiology Images

Normal Heart



RVEF = 34% / LVEF = 53%

Myocardial Perfusion Slices



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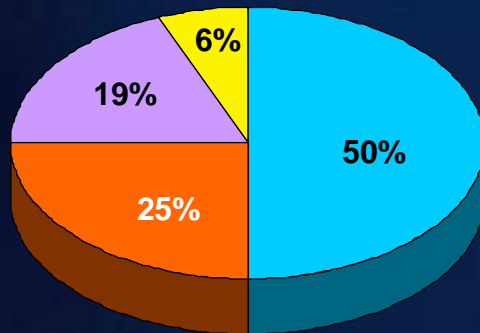


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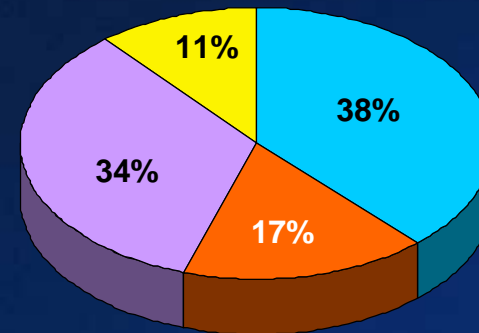
Nuclear Medicine market trends and drivers

- Fast deployment of a new technology
 - PET for Cancer Management
- Older population growth leading to increased Nuclear Cardiology procedures in the U.S.

'00 NM MARKET (~\$ 800 Mln)



'04 NM MARKET (~\$ 1.3 Bln)



13%
CAGR forecast



Source: NEMA, 2001 Strategic Plan and PMS Internal analysis

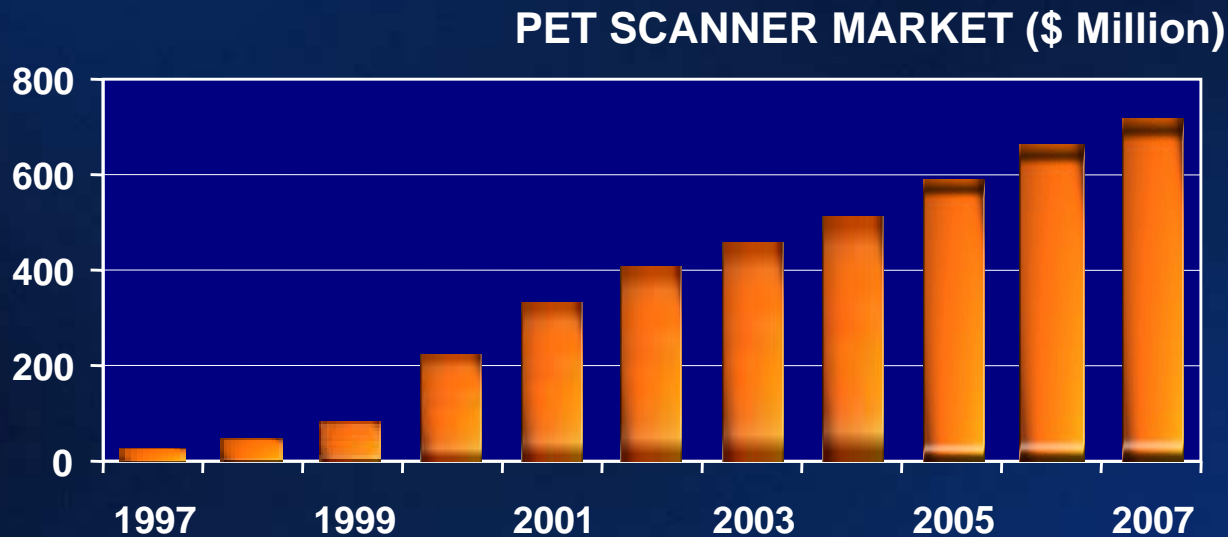
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PET Scanner Market Projected to reach \$700M in '07

- Acceptance of PET benefits in cancer management
- Expanded reimbursement for PET in the US
- Fast paced PET technology innovation



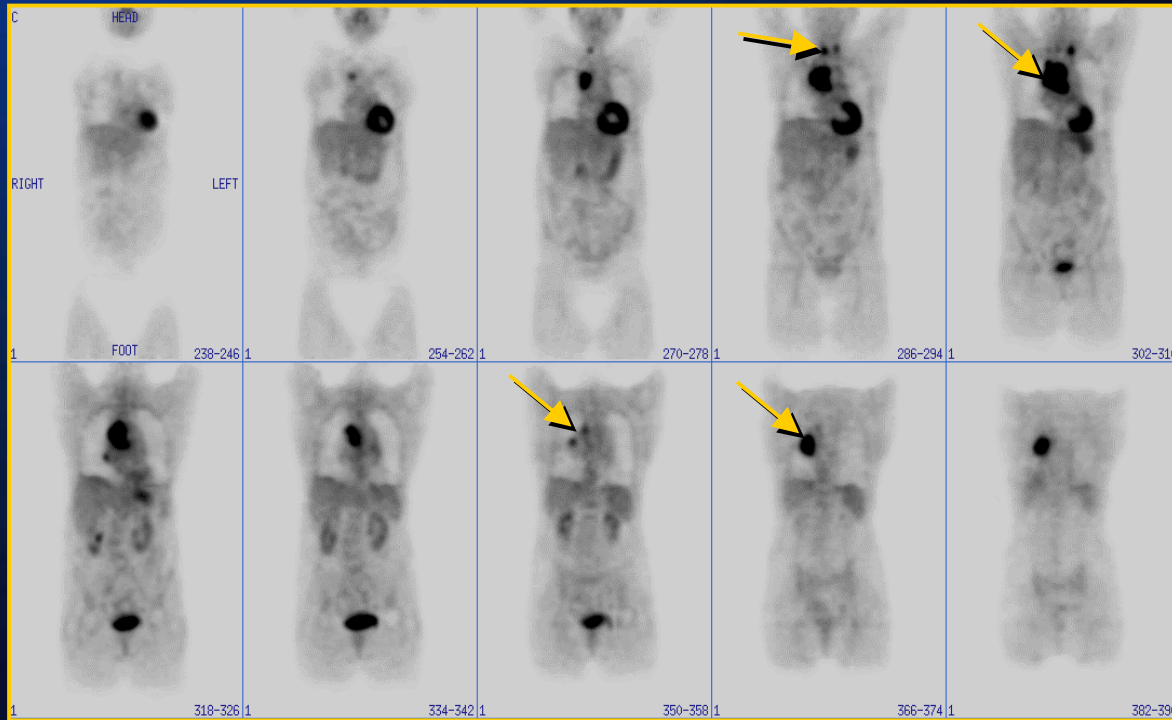
Source: Frost & Sullivan '00 & PMS Internal analysis

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PET Case Study: Lung Cancer Staging



**Outcome:
Patient
Inoperable**



Chemotherapy

- 78 Year Old Female, Heavy Smoker
- Positive Chest CT for Large Abnormality in Lung
- PET Identified Metastatic Disease

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Expanded reimbursement increasing utilization

Year	Indications	New Cases (‘000’s per year in US)	% Cancer Types Reimbursed
1998	<ul style="list-style-type: none"> • Solitary Pulmonary Nodules • NSC Lung Cancer staging 	85	9.1%
1999	<ul style="list-style-type: none"> • Recurrent Colorectal Cancer • Hodgkin’s & non-Hodgkin’s Lymphoma • Recurrent or Meta-static Melanoma 	125	21.9%
2000-2001	<ul style="list-style-type: none"> • Broad coverage, diagnosis, staging Lung, Esophageal, Colorectal, Lymphoma, Melanoma, Head & neck • Myocardial viability with FDG • Epilepsy (refractory seizures) 	280	44.3%
Future	<ul style="list-style-type: none"> • Breast Cancer • Alzheimer’s 	575	62.1%

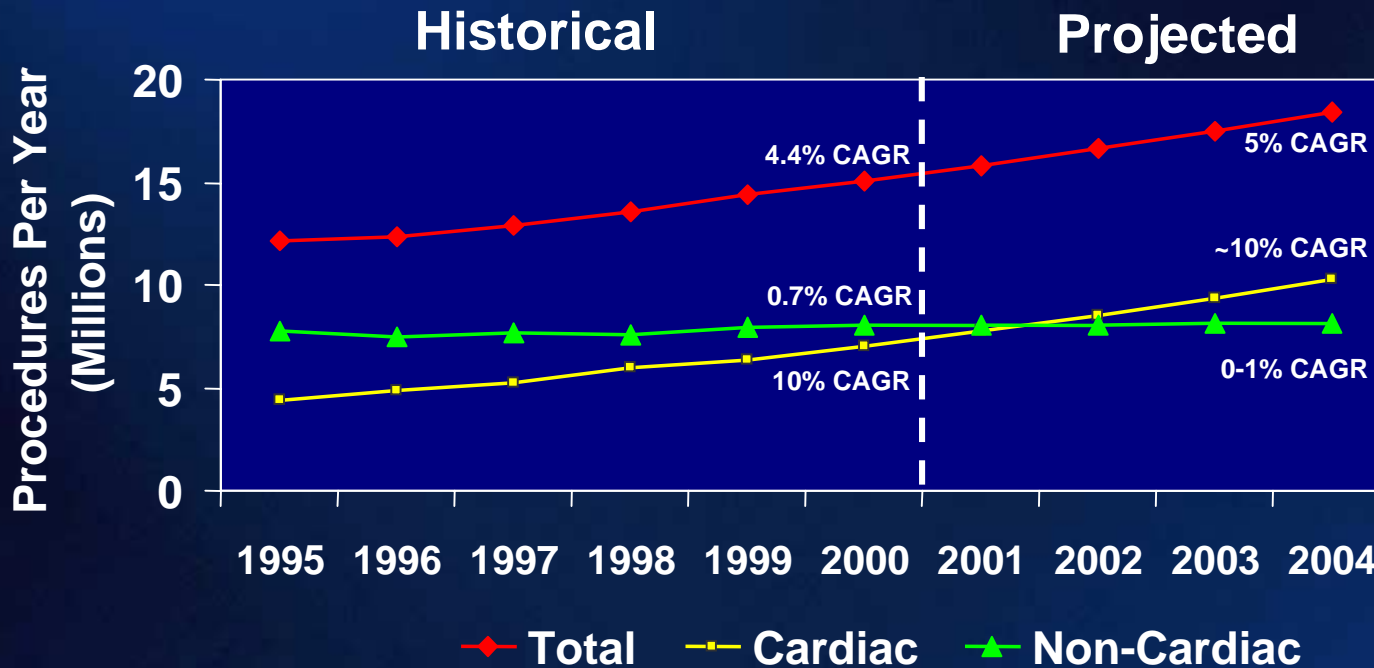
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Cardiology continues to drive US market growth

US NM PROCEDURE TRENDS/PROJECTIONS



U.S. office based Cardiology growing at 16% CAGR

Europe/Asia
 • Less Cardiology
 • Lower growth

Source: TMG Census Reports 1995-99, MDI 2000 and PMS Internal analysis

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Future applications in Nuclear Cardiology provide significant opportunities for growth

Clinic application	Biochemical Process	Imaging agent
Plaque detection	Platelet activation	Tc-99m GPI
Angiogenesis eval.	Apoptosis	Tc-99m Annexin V
CHF diagnosis	Apoptosis	Tc-99m Annexin V
EP applications	Apoptosis	Tc-99m Annexin V
Myocarditis	Apoptosis	Tc-99m Annexin V

Apoptosis Publications / Year



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Nuclear Medicine Competitors

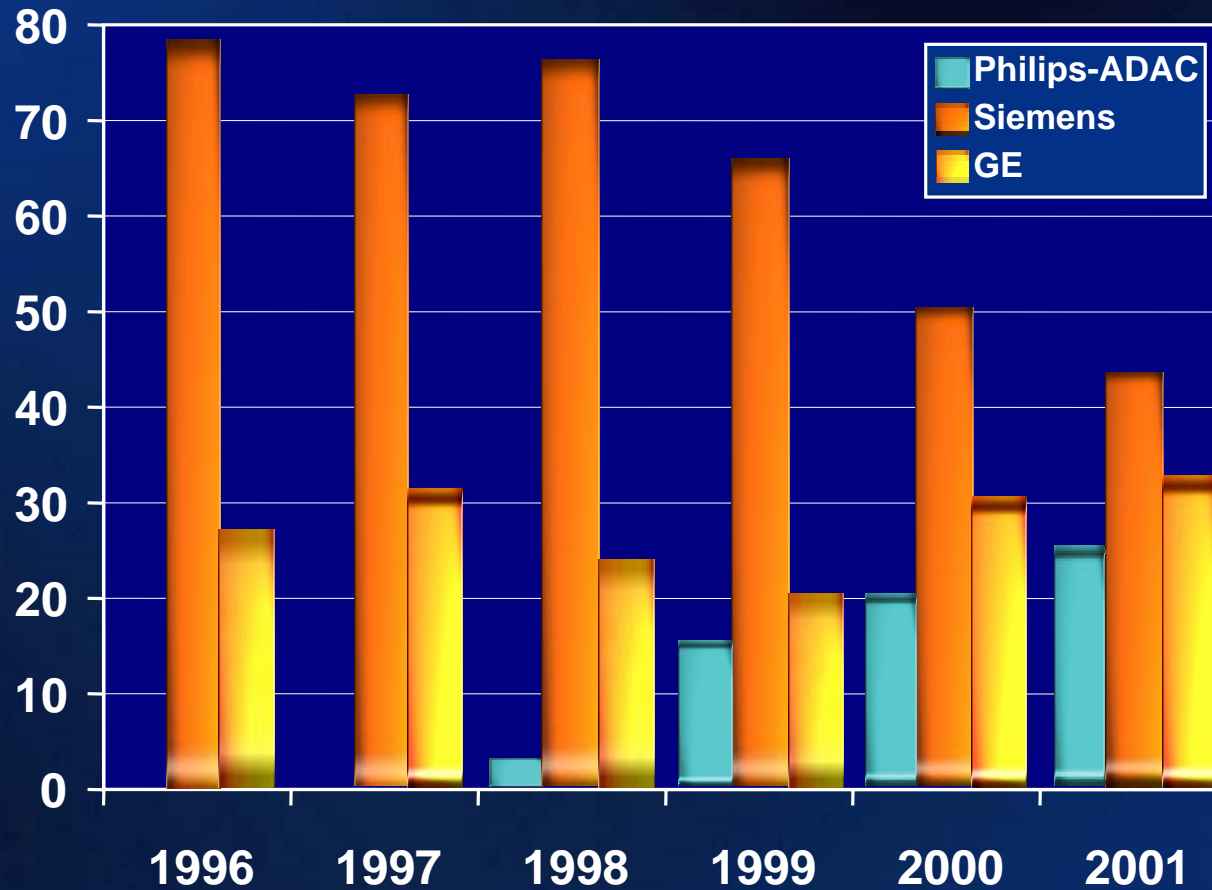
- **Philips (acquired ADAC 2000, Marconi 2001)**
 - Market leader in Nuclear gamma cameras
 - Entered PET in 1998, currently #3 share
 - Distribution strength in North America
- **Siemens**
 - #2 worldwide in Nuclear gamma cameras
 - Market leader in PET scanners
 - Distribution strength in Europe and Japan (Toshiba)
- **GE (acquired Elscint 1997, SMV 2000)**
 - #3 worldwide in Nuclear gamma cameras
 - #2 worldwide in PET, leveraging CT strength
 - Distribution strength in North America and Asia

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U.S. PET Market Share



Source: Philips-ADAC, Biotech

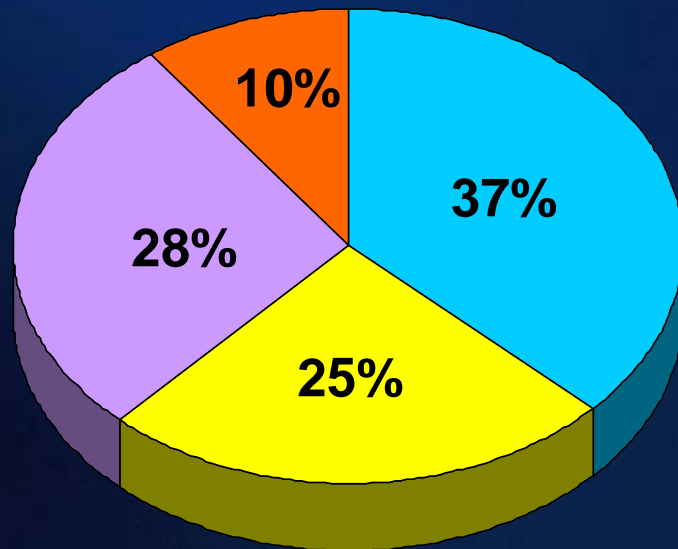
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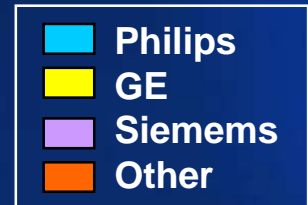
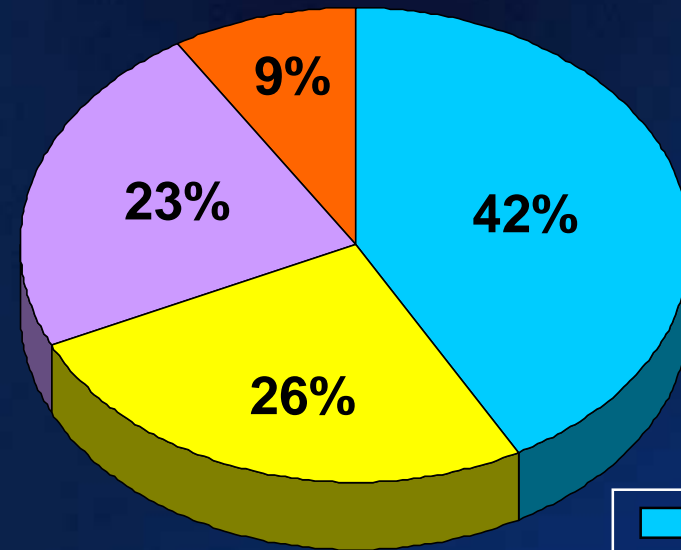
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Nuclear Gamma Camera Market Shares 2000

Worldwide
(100% = \$ 600 Mln)



U.S.
(100% = \$ 410 Mln)



Source: TMG, NEMA, 2001 Strategic Plan and PMS Internal analysis

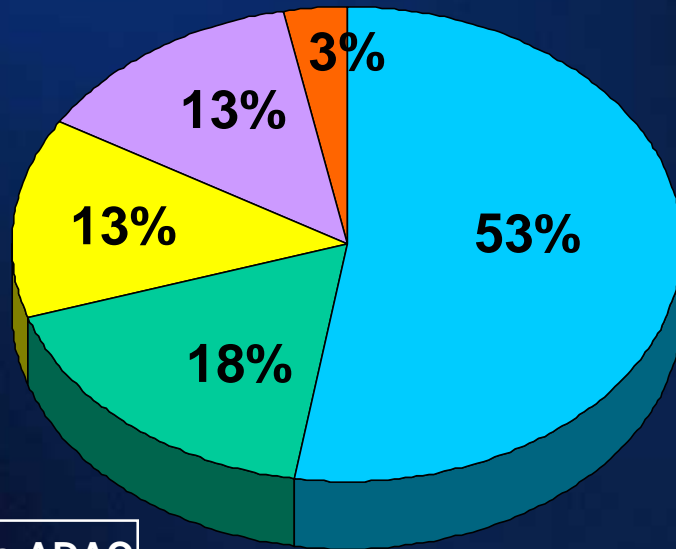
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Customer perception of Technology Leadership

Technology Leader in Nuclear Medicine Equipment



Source : TMG independent post / SNM survey: n = 29

Philips-ADAC "FIRSTS"

- '91 Dual Head Camera
- '93 Variable Angle Camera™
- '96 Cardiac Attenuation Correction™
- '96 PET on a Gamma Camera
- '01 Open Gantry Camera
- '01 GSO based PET

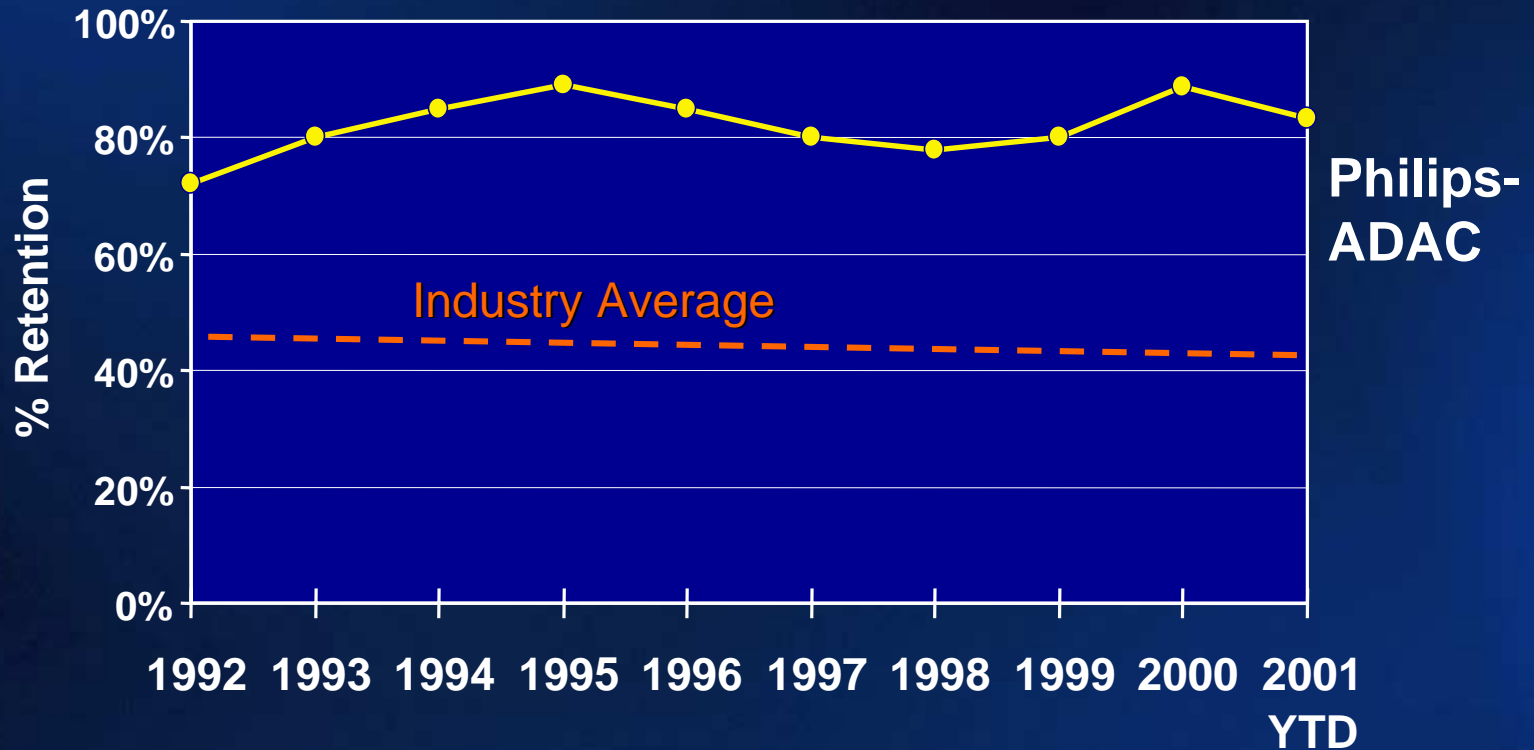
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Philips - ADAC Customer Retention

Clinical Excellence in Products + Service
= Retention & Share Growth



Source: TMG

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PET Competitive Developments 2001-2002

PET Scanner Detector Innovation

- Faster scans for throughput,
- Better image quality for smaller tumors

Philips: Allegro GSO

Combining PET and CT Scanners in one device

- Physiological and Anatomical information from one scan

Philips: Gemini

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PET Detector Innovation

Philips Allegro provides best performance and price premium

PET Price Performance



Source: Customer Surveys, 2001 Strategic Plan and PMS Internal analysis

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Allegro: Premium PET Providing Speed & Quality

- Price premium
- High throughput:
 <30 min. WB studies
- Best image quality



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Gemini PET- CT: Unique open design

- **Combines industry best:**
PET – Allegro
CT – MX8000
- **Increases Acceptance/Growth:**
Patient – OPEN
Physician – Interpretation
- **Highest margin Philips-ADAC product**



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CardioMD: Ideal fit for cardiology offices

- Cardiology Office, fastest growing Nuclear Medicine segment
- Unique & Differentiated offering
- Low cost design delivers high margins



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SKYLight™: State of the Art Nuclear Medicine

- Unique and Differentiated product in mature market
- Open & Flexible Value creates Price Premium



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Philips Research Projects

- **Improvements in PET design**
 - New cone beam reconstruction
 - New detector materials and designs
- **PET/CT Image Fusion**
 - Organ segmentation
 - Image registration - correct for breathing motion
- **Solid state system applicability to NM**

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Summary

Strong market growth for Nuclear Medicine

- PET market growth Worldwide
- Nuclear Cardiology procedure growth in US

Excellent products for market share gains

- Significant new technology in PET
 - Allegro: most advanced PET scanner available
 - Gemini: unique open PET/CT design
- Continued leadership in Nuclear Medicine
 - CardioMD: ideal for the office-based cardiology
 - Skylight: first open gantry gamma camera

Share gains from Philips distribution outside US

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