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
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
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
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
Nuclear Cardiology Images

Normal Heart

Myocardial Perfusion Slices

RVEF = 34% / LVEF = 53%

Let’s make things better.
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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)
- U.S. NM: 50%
- Non U.S. NM: 25%
- Non U.S. PET: 19%
- U.S. PET: 6%

'CAGR forecast 13%

'04 NM MARKET (~$ 1.3 Bln)
- U.S. NM: 38%
- Non U.S. NM: 34%
- Non U.S. PET: 17%
- U.S. PET: 11%

Source: NEMA, 2001 Strategic Plan and PMS Internal analysis
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
PET Case Study: Lung Cancer Staging

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

Outcome: Patient Inoperable

Chemotherapy
## Expanded reimbursement increasing utilization

<table>
<thead>
<tr>
<th>Year</th>
<th>Indications</th>
<th>New Cases ('000’s per year in US)</th>
<th>% Cancer Types Reimbursed</th>
</tr>
</thead>
</table>
| 1998        | • Solitary Pulmonary Nodules
               • NSC Lung Cancer staging                                                   | 85                                | 9.1%                       |
| 1999        | • Recurrent Colorectal Cancer
               • Hodgkin’s & non-Hodgkin’s Lymphoma
               • Recurrent or Meta-static Melanoma                                         | 125                               | 21.9%                      |
| 2000-2001   | • Broad coverage, diagnosis, staging Lung, Esophageal, Colorectal, Lymphoma, Melanoma, Head & neck
               • Myocardial viability with FDG
               • Epilepsy (refractory seizures)                                            | 280                               | 44.3%                      |
| Future      | • Breast Cancer
               • Alzheimer’s                                                               | 575                               | 62.1%                      |
Cardiology continues to drive US market growth

US NM PROCEDURE TRENDS/PROJECTIONS

Historical

- Total: 4.4% CAGR
- Cardiac: 0.7% CAGR
- Non-Cardiac: 10% CAGR

Projected

- Total: 5% CAGR
- Cardiac: ~10% CAGR
- Non-Cardiac: 0-1% CAGR

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

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

Europe/Asia
- Less Cardiology
- Lower growth

Let's make things better.
## Future applications in Nuclear Cardiology

provide significant opportunities for growth

<table>
<thead>
<tr>
<th>Clinic application</th>
<th>Biochemical Process</th>
<th>Imaging agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plaque detection</td>
<td>Platelet activation</td>
<td>Tc-99m GPI</td>
</tr>
<tr>
<td>Angiogenesis eval.</td>
<td>Apoptosis</td>
<td>Tc-99m Annexin V</td>
</tr>
<tr>
<td>CHF diagnosis</td>
<td>Apoptosis</td>
<td>Tc-99m Annexin V</td>
</tr>
<tr>
<td>EP applications</td>
<td>Apoptosis</td>
<td>Tc-99m Annexin V</td>
</tr>
<tr>
<td>Myocarditis</td>
<td>Apoptosis</td>
<td>Tc-99m Annexin V</td>
</tr>
</tbody>
</table>

### Apoptosis Publications / Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of publications</th>
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<tbody>
<tr>
<td>1972</td>
<td></td>
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<tr>
<td>1977</td>
<td></td>
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<td>1982</td>
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<td>1992</td>
<td></td>
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<td>1997</td>
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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
U.S. PET Market Share

Source: Philips-ADAC, Biotech
Nuclear Gamma Camera Market Shares 2000

Worldwide
(100% = $ 600 Mln)
- Philips: 37%
- GE: 28%
- Siemens: 25%
- Other: 10%

U.S.
(100% = $ 410 Mln)
- Philips: 42%
- GE: 26%
- Siemens: 23%
- Other: 9%

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

Let’s make things better.

PHILIPS
Customer perception of Technology Leadership

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

Source: TMG independent post / SNM survey: n = 29
Philips - ADAC Customer Retention

Clinical Excellence in Products + Service
= Retention & Share Growth

% Retention

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
PET Detector Innovation

Philips Allegro provides the best performance and price premium.

PET Price Performance

Source: Customer Surveys, 2001 Strategic Plan and PMS Internal analysis
Allegro: Premium PET Providing Speed & Quality

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

Let's make things better.
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
CardioMD: Ideal fit for cardiology offices

- Cardiology Office, fastest growing Nuclear Medicine segment
- Unique & Differentiated offering
- Low cost design delivers high margins
SKYLIGHT™: State of the Art Nuclear Medicine

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