

A Multidisciplinary Central Nervous System Clinic Model for **RADI**ation Oncology **And NeuroSurgery (RADIANS)** Three-Year Experience for Brain and Skull Base Lesions in a Community Hospital Setting

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NASBS
North American Skull Base Society
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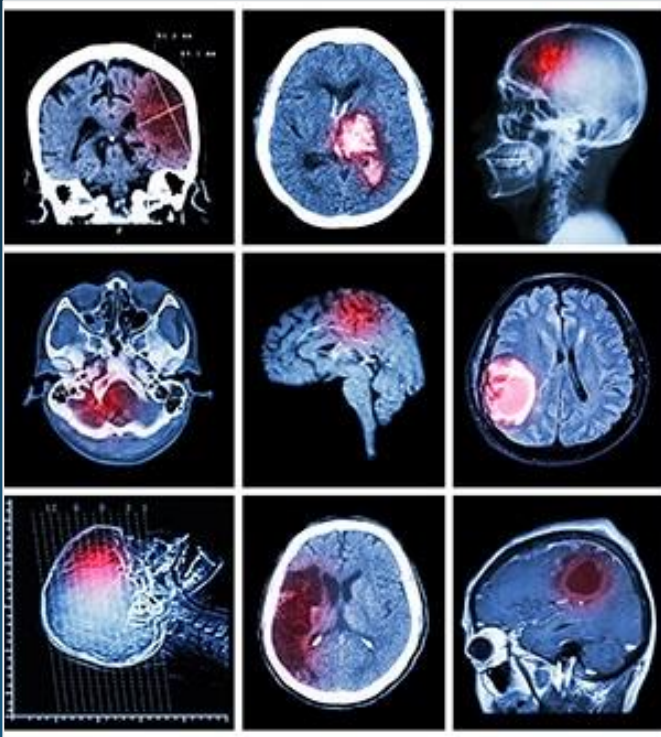


NASBS Presenter Disclosure Slide

Wencesley Paez, MD
Nothing To Disclose

Outline

- Background
- Patient Characteristics
- Malignant vs. Benign Lesions
- Treatment Allocation
- Treatment Outcomes
- Summary



RADIANS Background

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- Community Hospital Setting (Portland, OR)

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 - **simultaneous evaluation** with radiation oncologist and neurosurgeon

Voong et al., *Clinical Lung Cancer* 2019

Pawlik et al., *Ann Surg Oncol* 2008

Friedman et al., *J Multidiscip Health* 2016

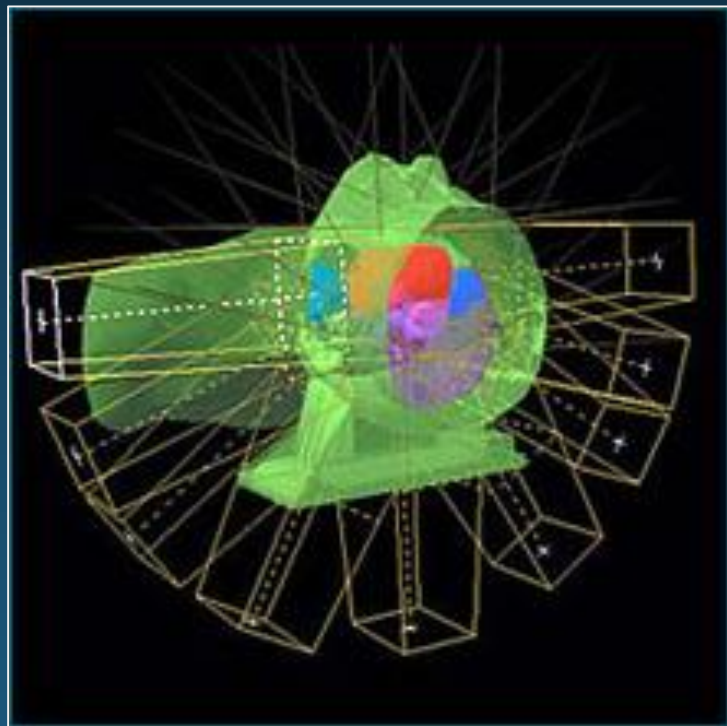
Gardener et al., *J Onc Prac* 2010

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 - **patient-centric** approach
 - **optimize** patient/physician time
 - **simultaneous evaluation** with radiation oncologist and neurosurgeon
- Medical Oncology (most common)
- Patient Satisfaction Score = 4.77/5 (McClelland 3rd, 2019)



Who did we treat?

Patient Characteristics (n=67)

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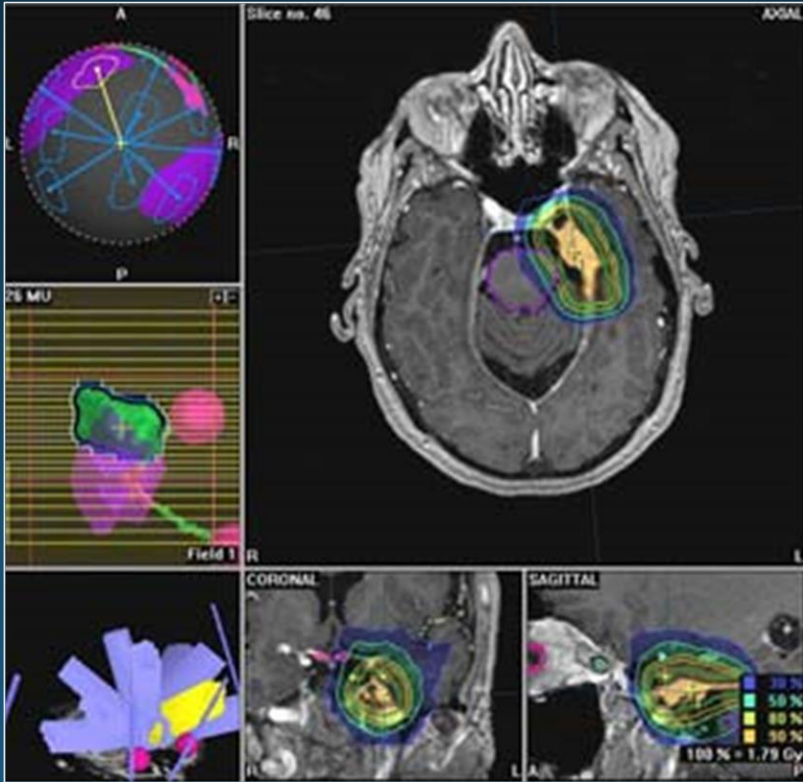
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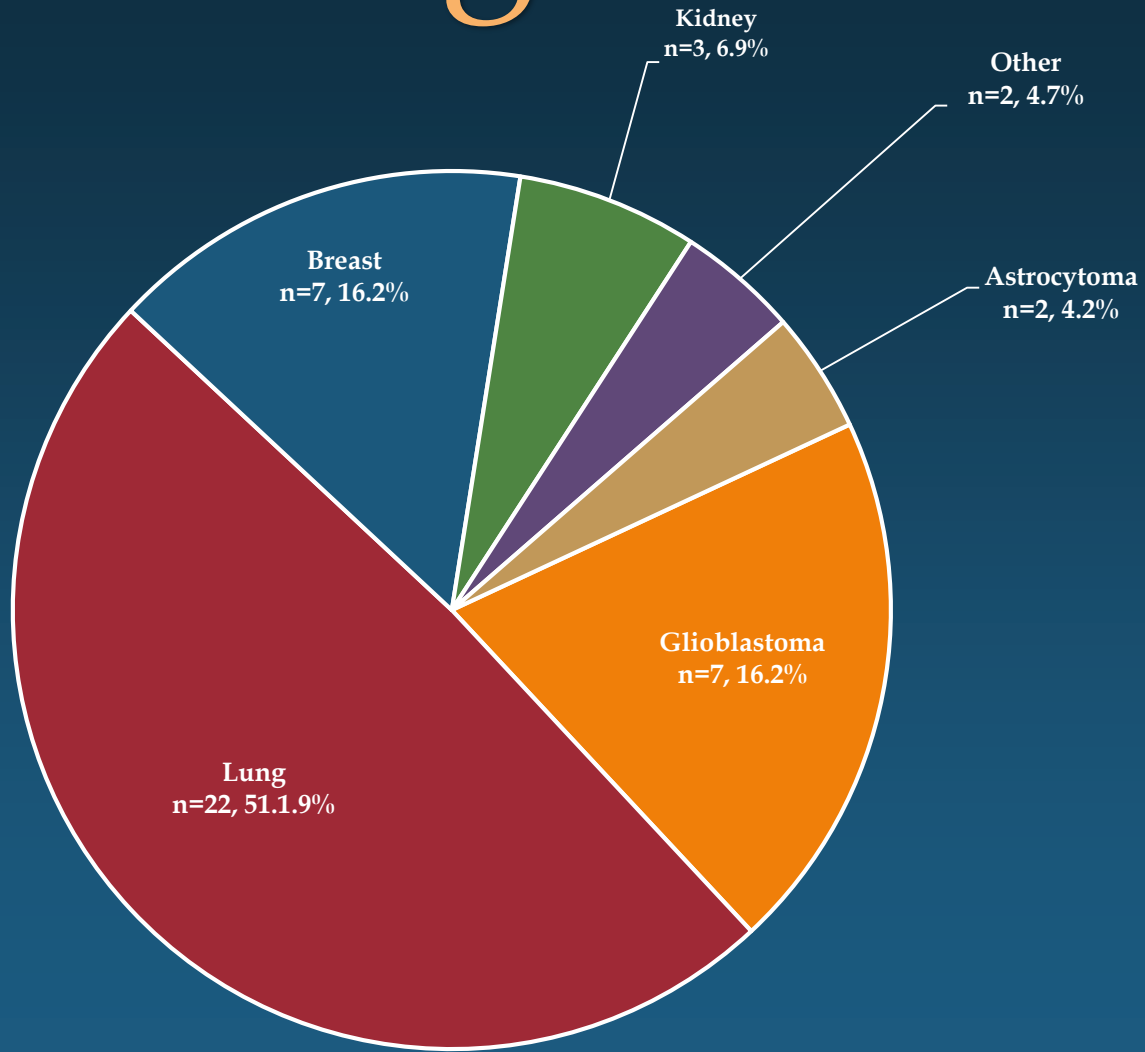
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- Obesity Class I (BMI = 30-34.9) = 11, 22.9%
Obesity Class II (BMI \geq 35.0) = 5, 10.4%

CNS Histologic Types

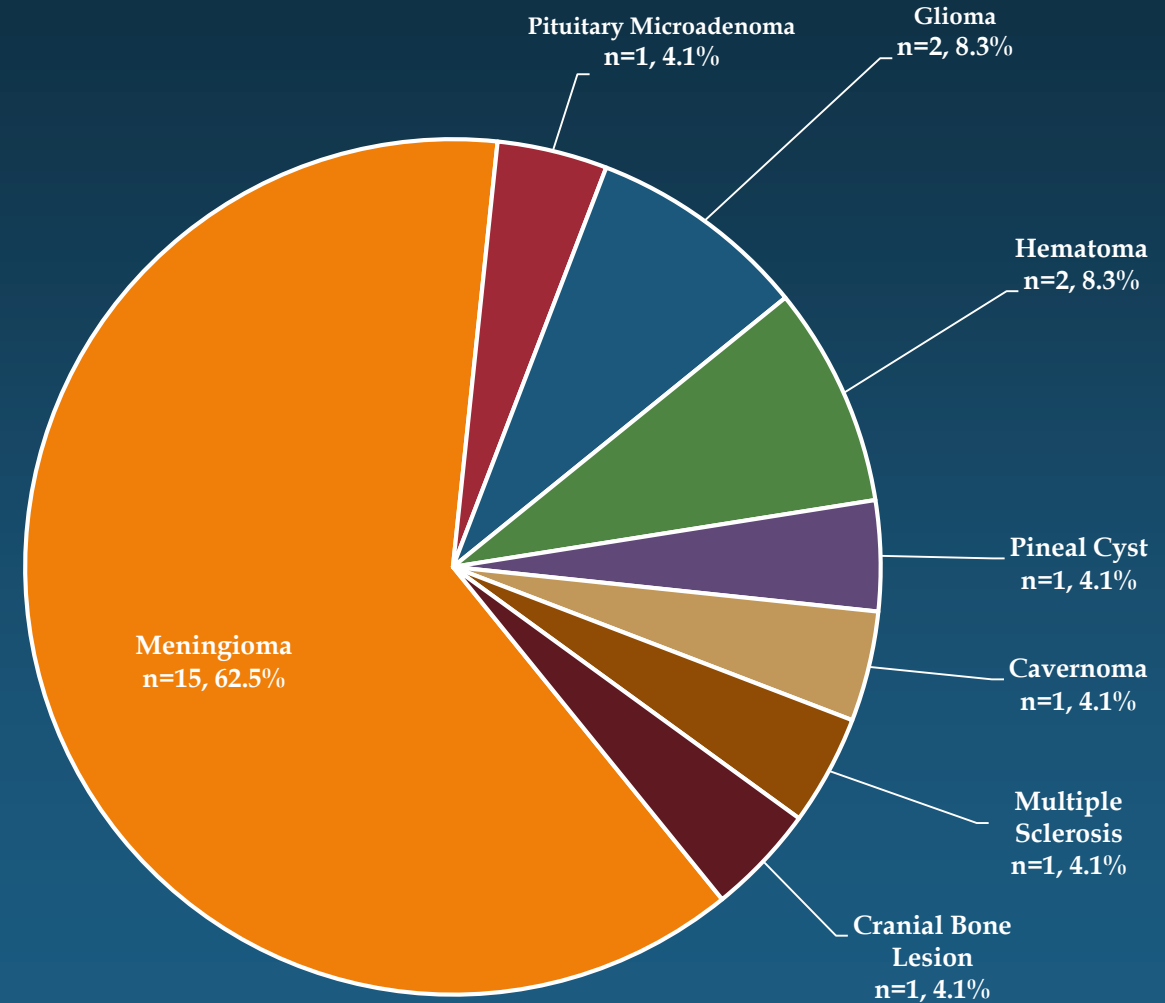


Malignant n=43

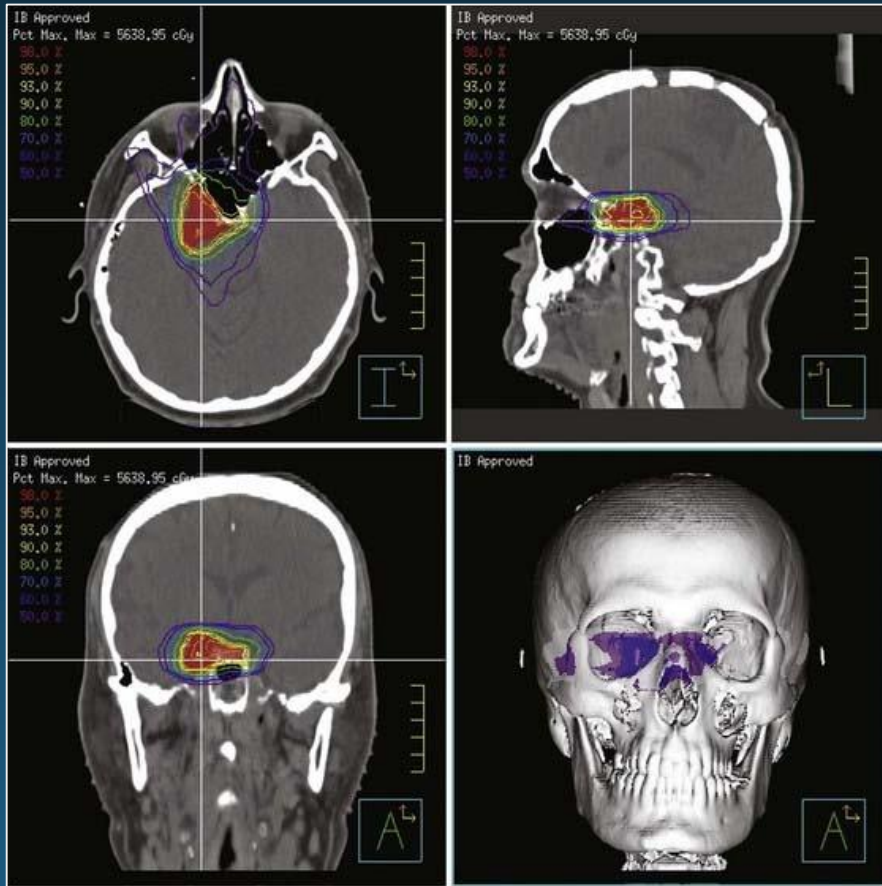


Metastatic Brain = 28
Metastatic Brain and Spine = 6
Primary Brain = 9

Benign n=24

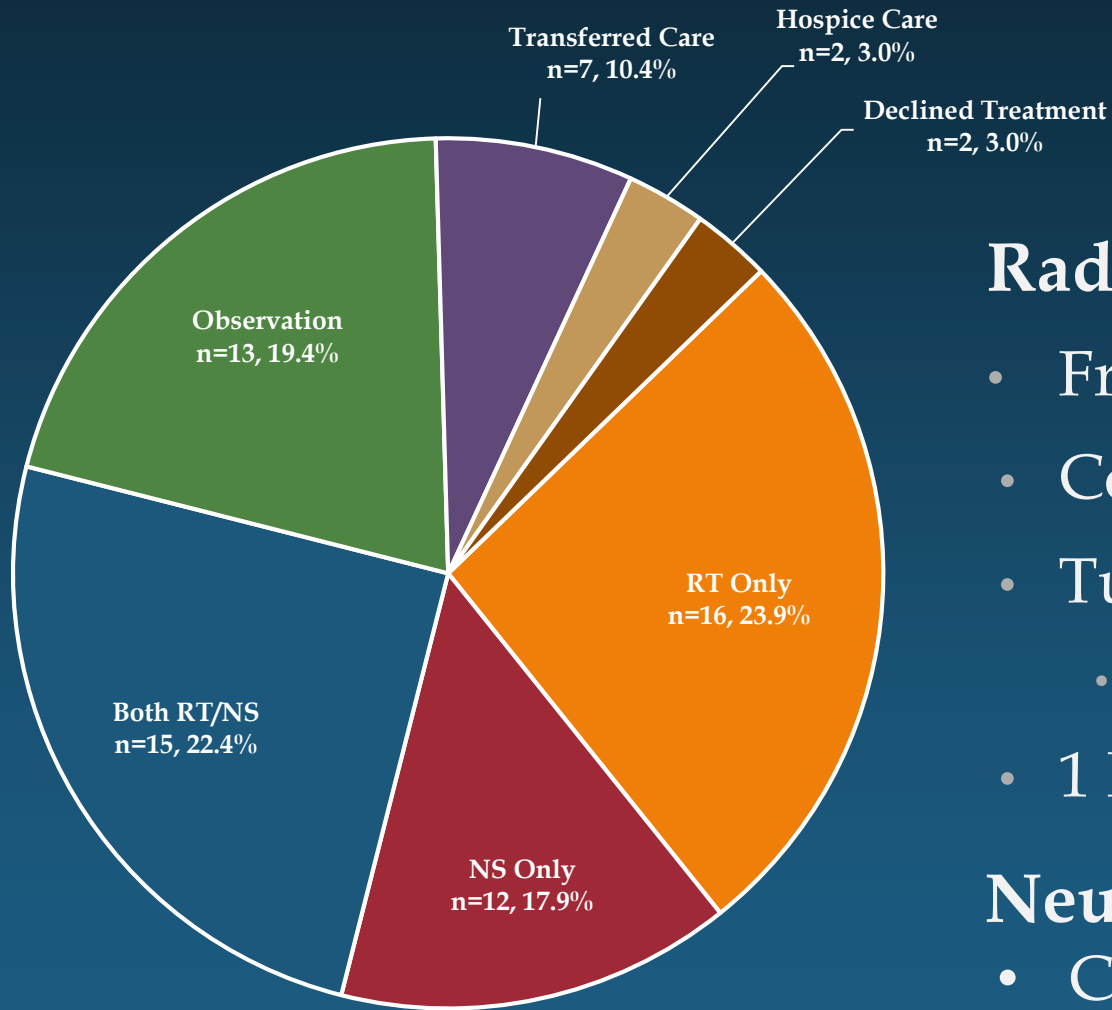


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How did we treat?

Treatment Allocation $n=67$



Radiation Therapy Delivered $n(\%)$

- Fractionated Stereotactic Radiosurgery = 21, (67.7)
- Conventional Fractionated RT = 10, (32.3)
- Tumor Treating Fields (GBM)= 2/7, (28.6)
 - Conventional Fractionated RT and TTF
- 1 Patient Received WBRT and SBRT to the Spine

Neurosurgery Performed $n(\%)$

- Craniotomy w/Tumor Resection = 27, (40.3)

Treatment Outcomes $n=43$

RT Only $n=16$

5 Patients Followed-Up with Med Onc for Systemic Disease Treatment or Deceased Prior to Follow-Up with RADIANS

11 Patients with 3 Month Repeat Imaging:

- **Radiation Necrosis** = 0% (0/11)
- **Local Control*** = 54.4% (6/11)
- **CNS Disease Progression*** = 45.5% (5/11)

*treated w/ palliative intent; Stage IV

NS Only $n=12$

Neurologic Deficits = 0% (0/12)

At 3 Month Repeat Imaging:

- **Local Control** = 100% (12/12)
- **CNS Disease Progression** = 8.3% (1/12)

Treatment Outcomes $n=43$

Both RT/NS $n=15$

Surgical Resection Followed by Post-Op Radiation Therapy
to Tumor Cavity + Unresected Lesions

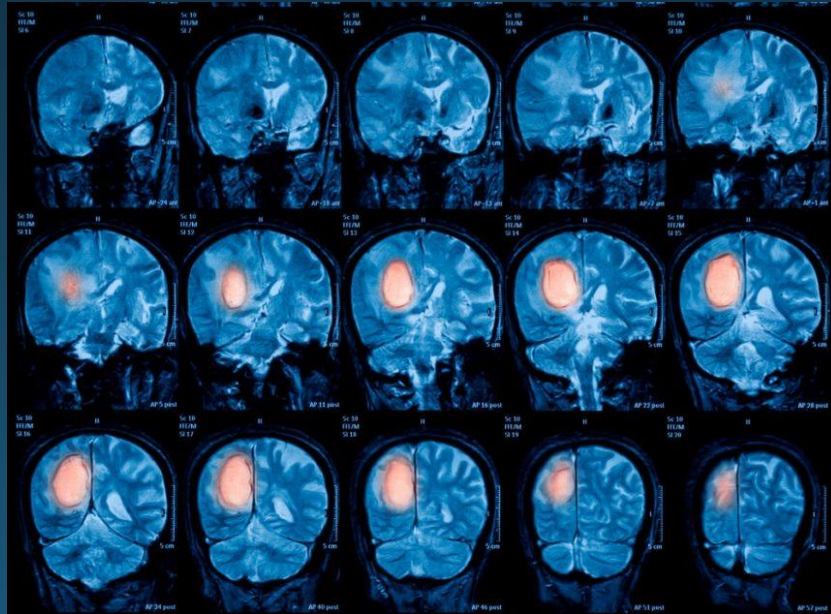
Neurologic Deficits = 0% (0/15)

At 3 Month Repeat Imaging:

- **Radiation Necrosis = 6.6% (1/15)**
- **Local Control = 93.3% (14/15)**
- **CNS Disease Progression = 26.6% (4/15)**

Treatment Outcomes

- Active Follow-Up = 37
- Transfer of Care = 7 (RT treatment closer to residence; NS at university hospital)
- Hospice Care = 6
- Declined Treatment = 2
- Deceased = 15 (12/15 Stage IV)



What did we learn?

Summary

- Unique **Community-Hospital Based** CNS Clinic Model

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- Good **Local Control** and Low Rates of (G3/4) **Radiation-Induced Toxicity**
- Access to **On-Going Clinical Trials**
- Analyzing Cost-Benefit, CNS Morbidity/Mortality Rates, Early Detection Rate, Elderly Adult Patient Outcomes, and Caregiver Impact



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Thank You!
Questions?