# Poster Review for Clinical Studies

- The long term results of intracranial AVM treated by Proton Stereotactic Radiosurgery by *Daniel Kim, MD*

- Curative Surgical Resection of Adrenocortical Carcinoma: Determining Long-Term Outcome Based on Conditional Disease-Free Probability by *Yuhree Kim, MD*

- Pre-transplant HbA1c Predicts Post-transplant Diabetes Mellitus among Kidney Transplant Recipients
  by *Jung-Im Shin, MD*

- Quality measures that focus on patient and family engagement in oncology by *Song Kyungmin, MD*

Cerebral Arterio-Venous Malformation

Cerebral AVM: Tangle of abnormal blood vessels connecting arteries and veins in the Brain.
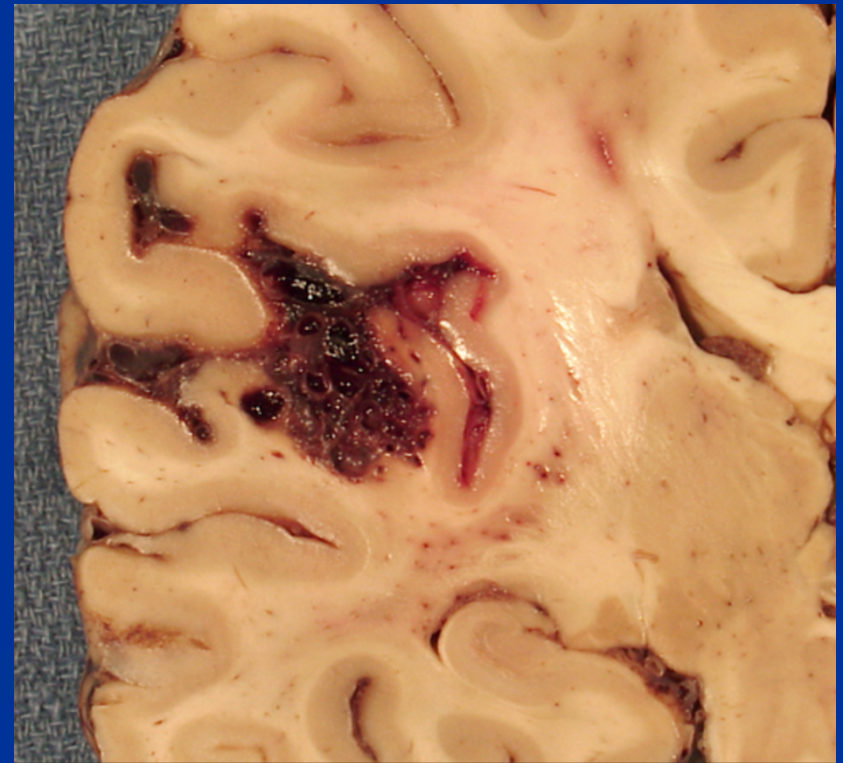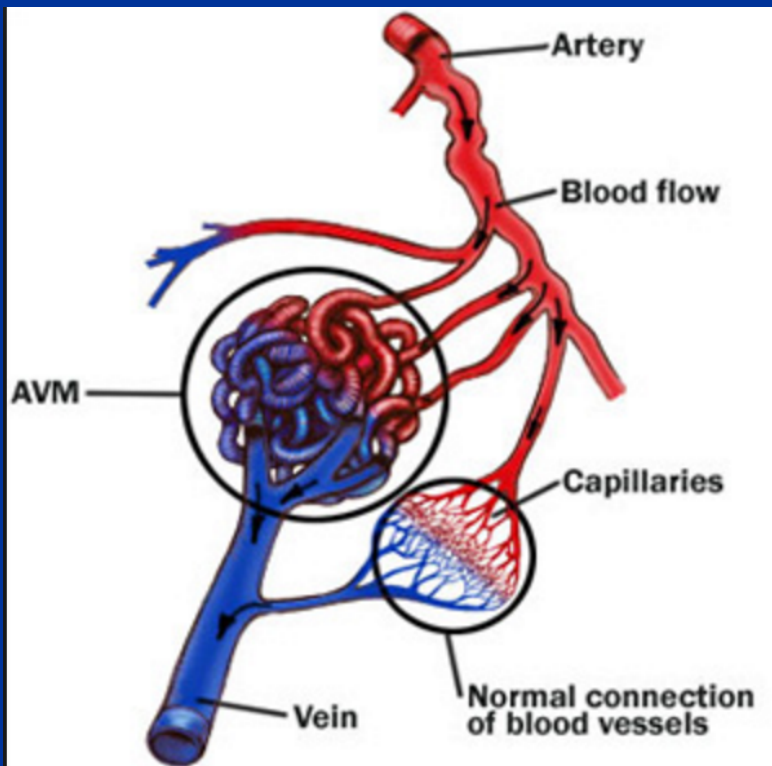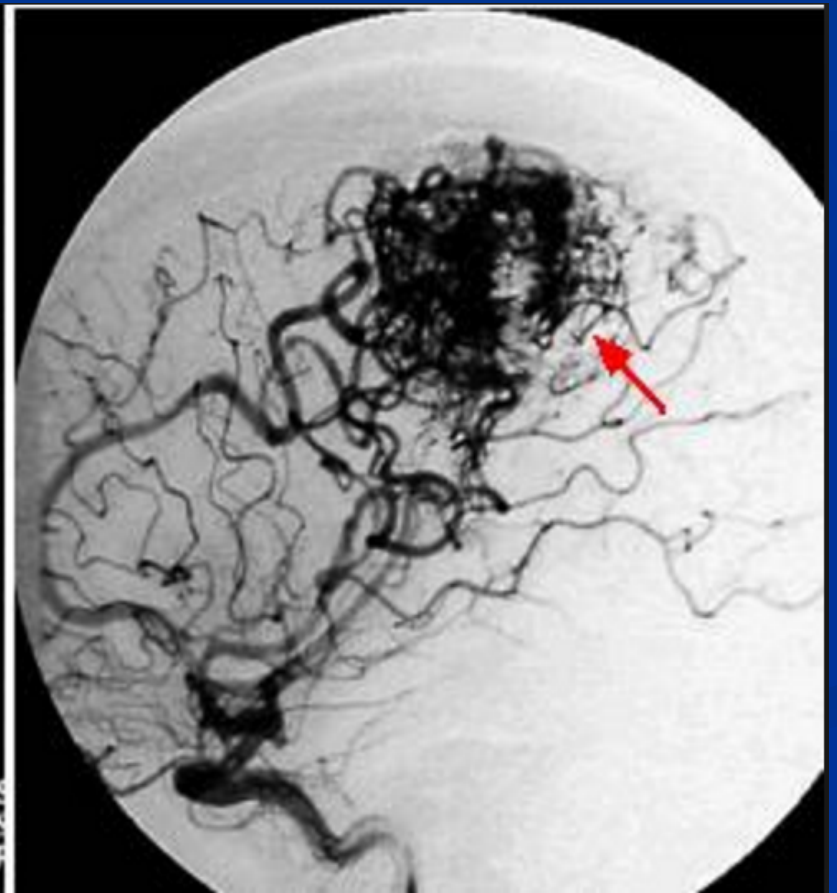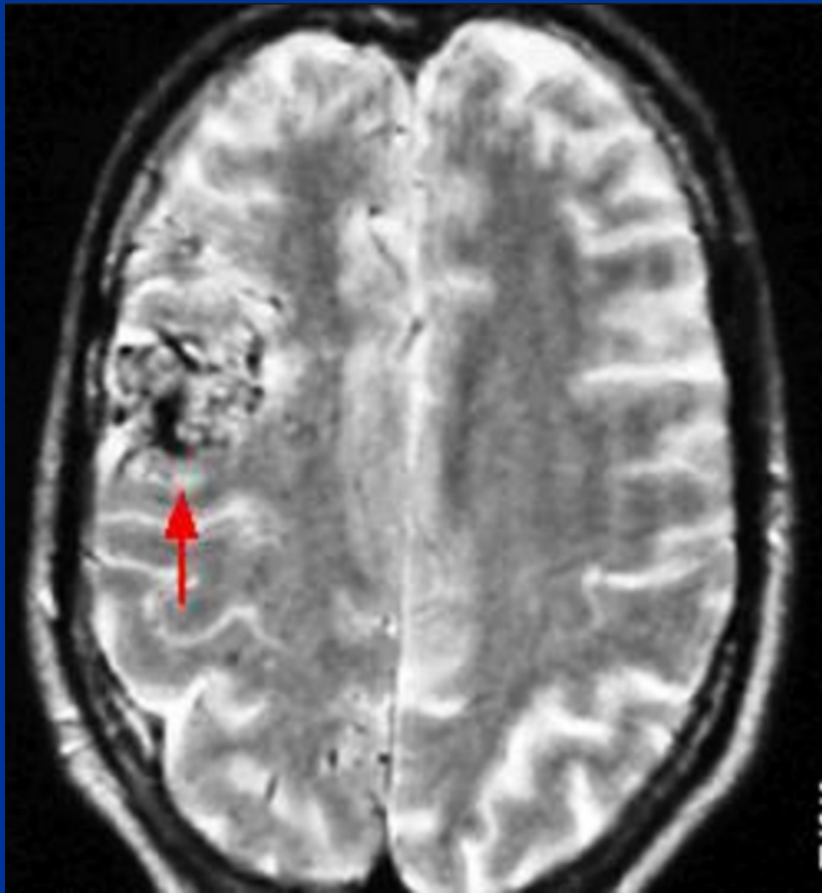
Cerebral Arterio-Venous Malformation

- Rare- affect less than 1 percent of the population

- The cause of AVMs is not clear -most people are born with them, but they can occasionally form later in life.

- They are rarely passed down among families genetically

- Mostly asymptomstic, some have headache or seizures. AVMs are commonly found after a brain scan for another health issue or after the rupture and cause bleeding in the brain (hemorrhage) – mortality rate of 40 %, 66 % of survivors suffer permanent neurologic deficits.

- Rate of spontaneous rupture: 2 % / year

- Prevention of Rupture is important

Cerebral Arterio-Venous Malformation
## Imaging findings

Cerebral Arterio-Venous Malformation Treatments

- **Microsurgical Resection**: Immediate and Successful but risky for Large AVM or AVMs located in eloquent area

- **Stereotactic Radiosurgery**: Mostly successful (> 80 % Obliteration Rate for small AVM, < 3 cm diameter). Takes 2 – 5 yrs for the obliteration after treament

- **Endovascular Embolization**:Reduce the size of AVM but does not eliminate AVM by itself. Usually used in conjunction with Surgery or Radiosurgery

Cerebral Arterio-Venous Malformation
Radiosurgery
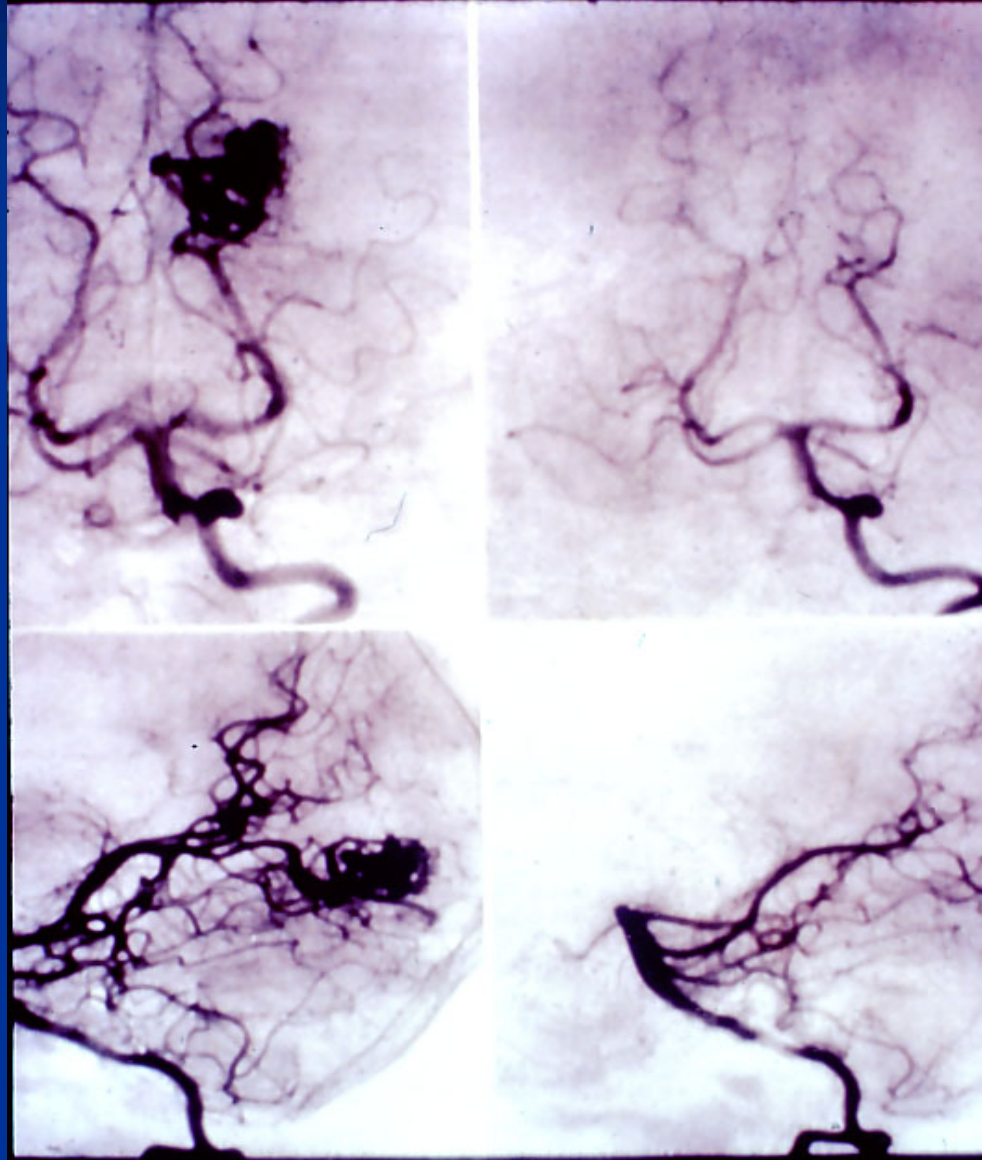
Cerebral Arterio-Venous Malformation
Radiosurgery: Findings from this study

- 248 Patients with AVM treated by Proton Radiosurgery
- 10 year Obliteration Rate: 91 %
- Post-treatement 5 year hemorrhage rate: 7%
- Size (median 3.5 cc, maximum 28 cc) and Location of AVM (23% deep, critical locations)
- Dose prescription (most common 15 Gy)
- Higher obliteration rates for Smaller target volume and Higher prescribed dose
- Future study: Comparison with Gamma knife Radiosurgery

Cancer Statistics

- "There are three kinds of lies: lies, damned lies and statistics." Disraeli - *Mark Twain*

- "In this world nothing can be said to be certain, except death and taxes." Benjamin Franklin

Cancer Statistics

- Overall Survival (OS): 3, 5, 10, 15 years
- Disease Free Survival (DFS)
- Disease Specific Survival (DSS)
- Biochemical disease free Survival (BDFS)
- Local Control (LC)
- Toxicity Profile
- Conditional Disease Free Survival (CDFS)

Cancer Statistics

- Overall Survival:Length of time for a cancer patient is still alive after Dx. or Tx.

- Disease Free Survival: Length of time for a cancer patient survives without any sign or symptoms of that cancer.

- Conditional DFS: The chance of surviving additional length of time for those who have already survived for certain period of time from the diagnosis (Example: $CDFS3 = DFS(x+3)/DFS(x)$
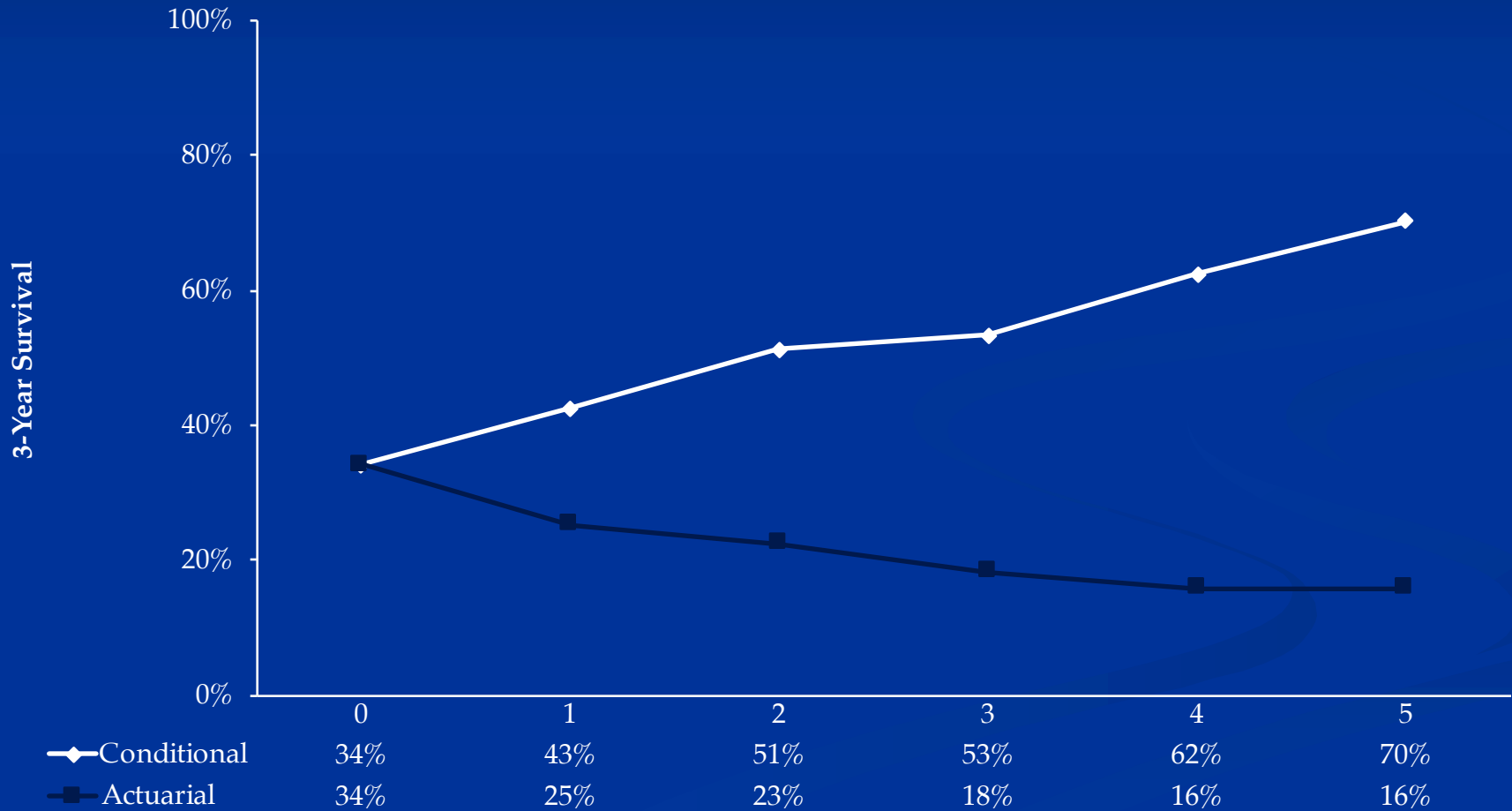
Cancer Statistics
(Overall and Disease Free Survival)
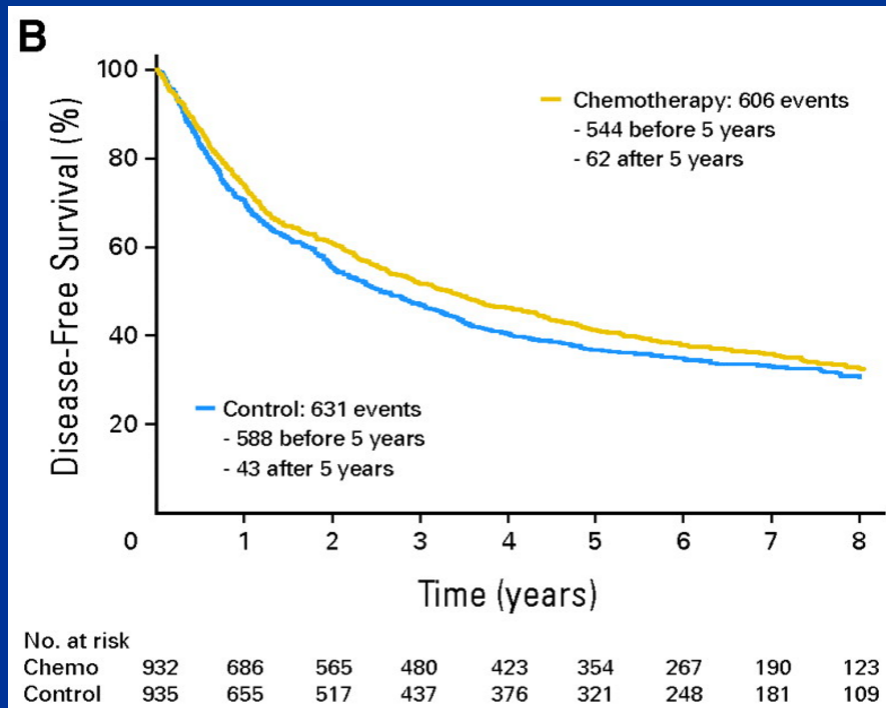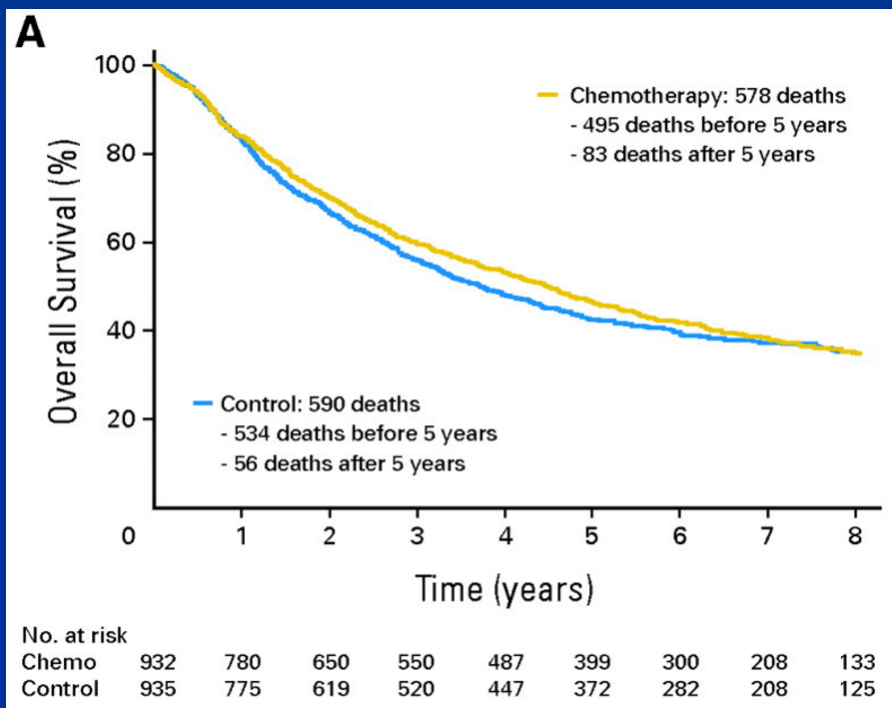
Adrenocortical Carcinoma s/p Curative surgery (n=192)
(Conditional Disease Free Survival)

	0	1	2	3	4	5
Conditional	34%	43%	51%	53%	62%	70%
Actuarial	34%	25%	23%	18%	16%	16%

New-onset DM after Renal Transplantation (NODAT)

- About 1/3 of non-diabetic kidney transplant recipients develop DM by 6 months posttransplantation

- Age, Obesity, African-American/Hispanic,

  Family Hx, impaired glucose tolerance

- Immunosupression, HLA mismatch, Sex Type of underlying renal disease.

New-onset DM after Renal Transplantation (NODAT)

- One Year Survival: 98 % for non-NODAT
  83 % for NODAT

- Mean Survival: 11 years for non-NODAT
  8 years for NODAT

- Pretransplantation screeing is important; Life style modification, Management of cardiovascular risk factors such as hypertension and dyslipidemia

New-onset DM after Renal Transplantation (NODAT)

Study Findings

- **Glycated hemoglobin (HbA1c) is a form of <u>hemoglobin</u> that is measured primarily to identify the three month average <u>plasma glucose concentration</u>**

- **HbA1c > 6.5 % diagnostic of DM (ADA)**

- **HbA1c: 5.7 % - 6.4 % considered to be prediabetic (ADA)**

- **1,499 patients of non-diabetic primary kidney transplant recipients' HbA1c values analyzed retrospectively in relation to PTDM.**

- 395 recipients out of 1499 patients developed PTDM

- HbA1c, < 5.4 %:not associated with PTDM

- HbA1c, > 5.4 % was associated with PTDM (Hazard ratio of 1.85) – well below current threshold for prediabetes

New-onset DM after Renal Transplantation (NODAT)

Study Findings

- Univariate analysis Vs. Multivariate analysis
- What other risk factors (family Hx, obesity, race, sex and etc) were analyzed in addition to HbA1c ?
- Were any other risk factors independently associated with PTDM ?
- What % of patients who had pre-transplant HbA1c between 5.4 % and 5.7 % developed PTDM ?
- What % of patients who had pre-transplant HbA1c > 5.7 % developed PTDM ?

Quality Measures Focused on Patient and Family Engagement in Oncology

- "Pay for Procedures" → "**Pay for Performance**"
- Affordable Care Act of 2010 include provision to develop the Hospital Value-Based Purchasing program.
- How to measure performance on quality of care ?
- Physician assessment vs. Patient self assessment or
  Other measures?
- Validity and Reliability
- CMS in 2014 established mortality outcome measures in acute myocardial infarction, pneumonia and heart failure.

Quality Measures Focused on Patient and Family Engagement in Oncology

- Dept. of Health and Human Services: Emphasizes that each person and family are engaged as partners in their care.

- Studies have shown patient engagement can lead to improved healthcare outcomes and reduced costs

- Alvalere assessed patient and family engagement measures related to oncology including patient education, care preference, and care planning.

Quality Measures Focused on Patient and Family Engagement in Oncology
Study Findings

- Five oncology-specific measures related to person and family engagement studied.

- Those are

  Physician Quality Reporting System Record   I

  Electronic Health Record Incentive Programs

  Three measures related to documenting end of life care:

  two related to care planning for pain and depression

  one related to patient education on treatment.

- None of the studied measures were related to specific cancers(?) or cancer outcomes (?)

- Conclusion: Standardized methodology for measuring engagement to be developed to improve quality of care in Oncology.