

# Timing of AVF creation

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# Why AVF creation?

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# Disclosure

- None
- Lifeline
- CIHR
- KFoC

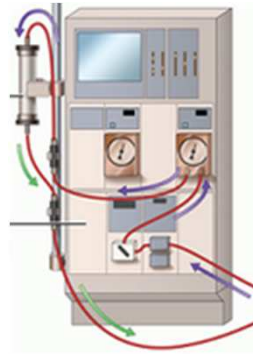


# VA planning: strong AVF promotion

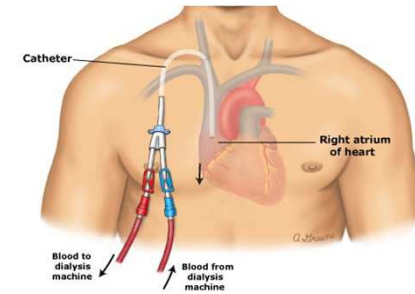
My kidneys still  
work ...



Is it worth it now?



My catheter still  
works ...



Is it worth it at all?

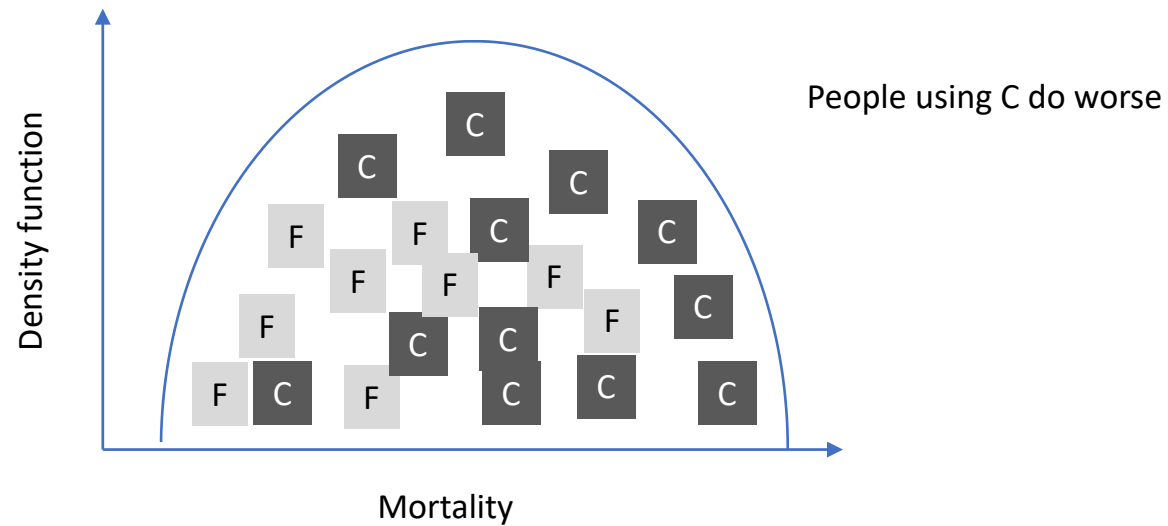
# Outline

- Are existing policy/recommendations justified?
- What do patients want to know?
- Addressing the intervention question: the ACCESS HD trial

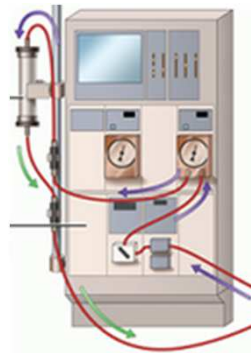
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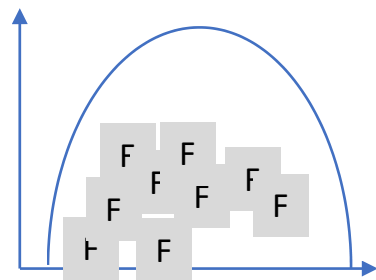
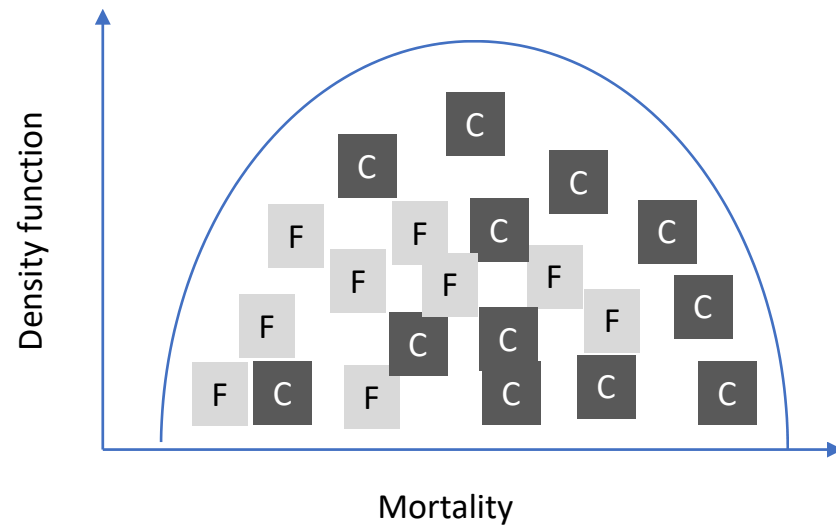


AVF from the start is best  
We advise all people to try

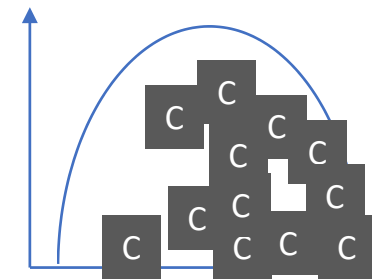


Better late than never  
We advise all people with CVC to try





50% risk increase

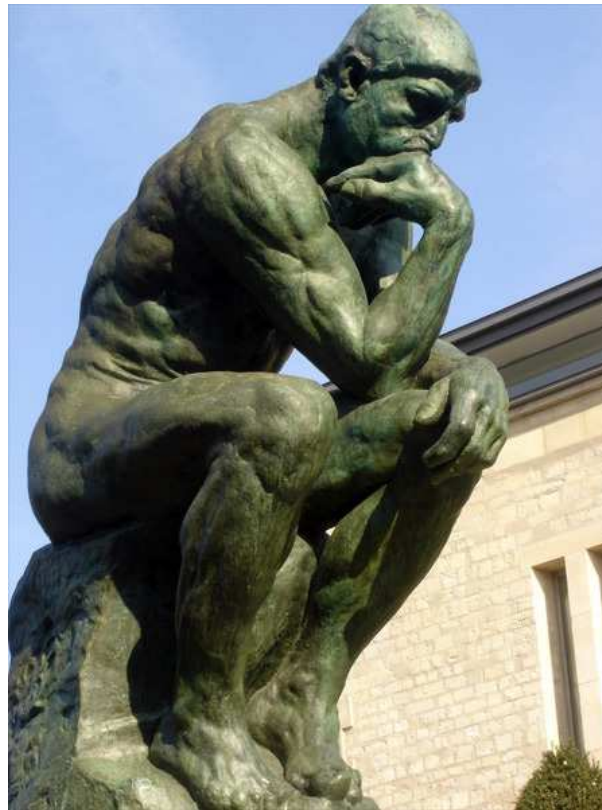


# Why existing evidence is at high risk of bias?

Intervention Q:  
Which VA is  
best/worse?



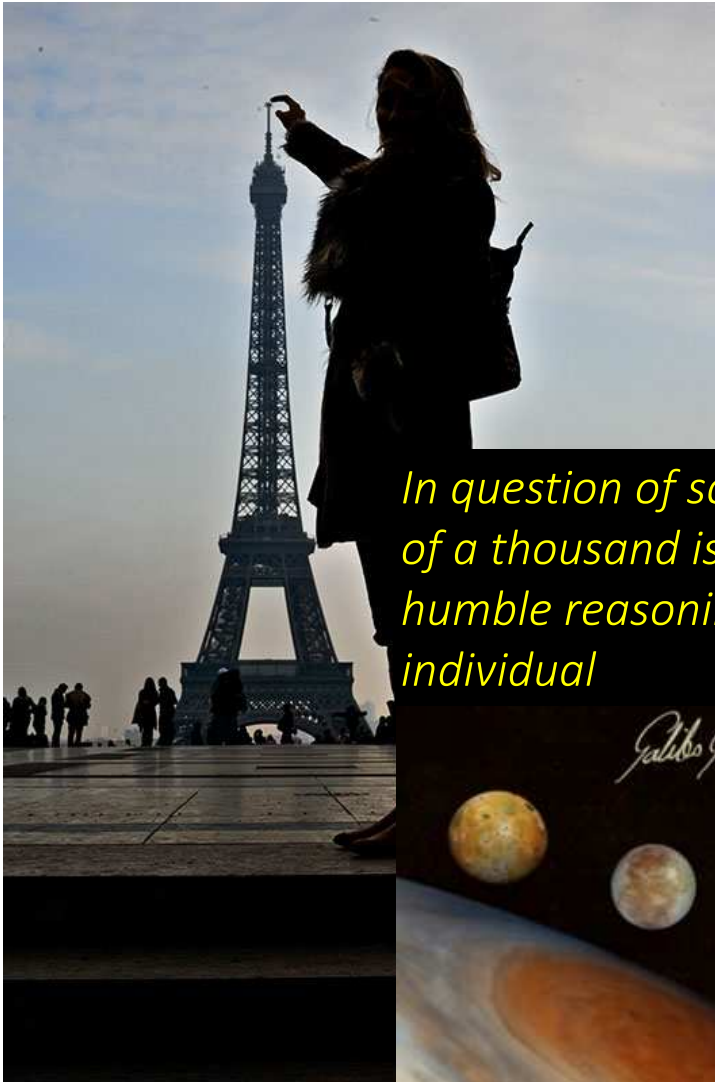
Proper study:  
Randomized  
Clinical Trial



Clinical practice  
dogma: AVF best;  
CVC worst



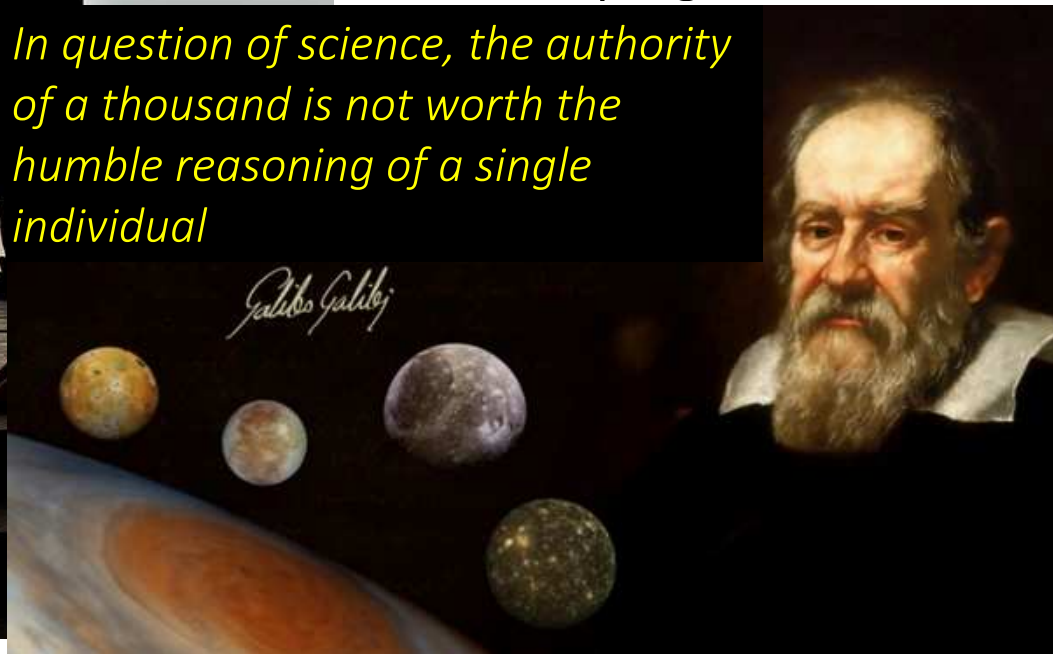
Available  
observational  
data



Observational  
data can be  
misleading ...

resulting dogmas  
slow scientific  
progress

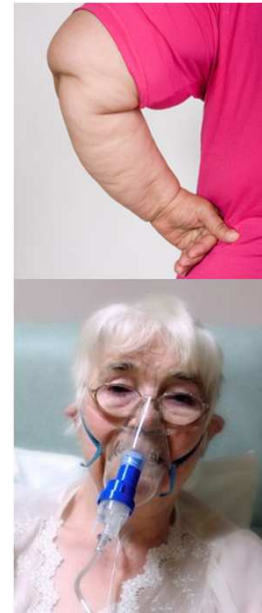
*In question of science, the authority  
of a thousand is not worth the  
humble reasoning of a single  
individual*



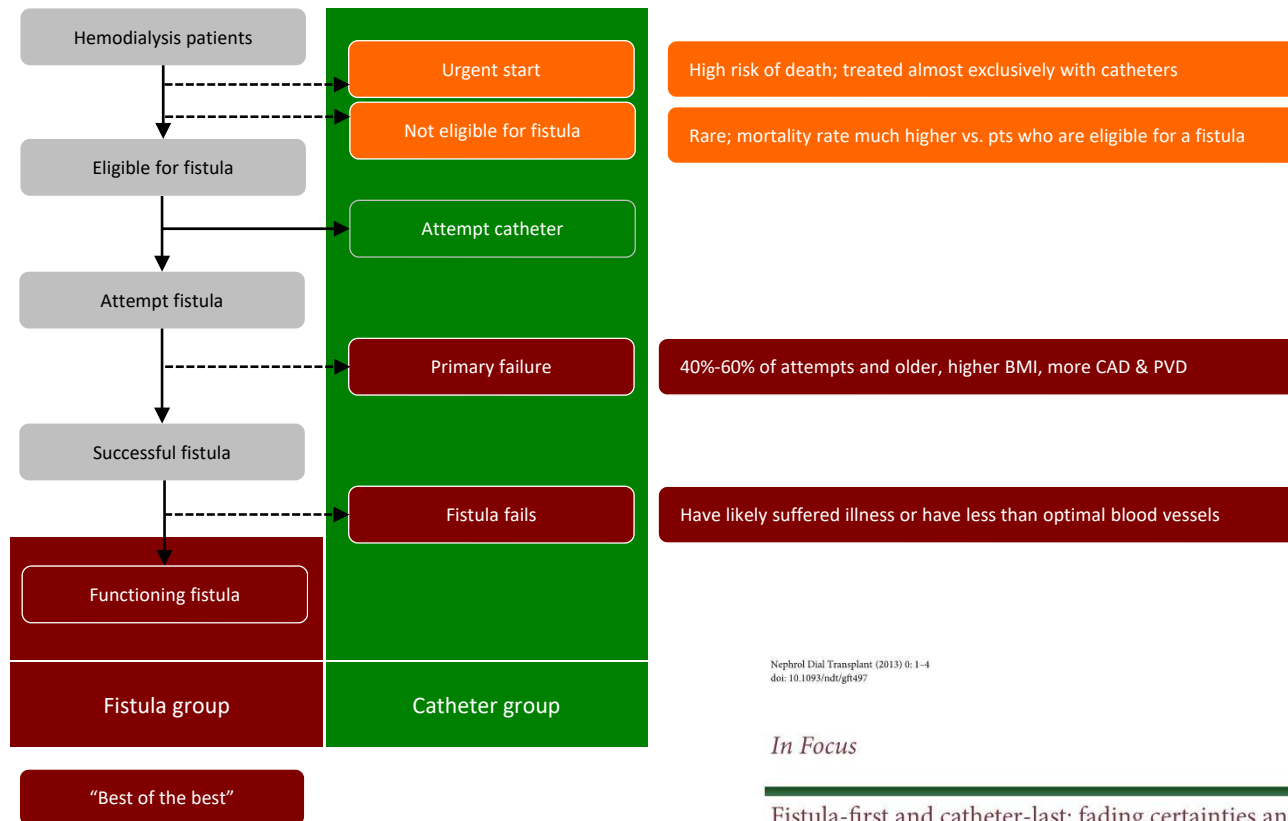
# Bias: friendly approach



Guess who will use a CVC (and die sooner)?



# Sources of Bias



Nephrol Dial Transplant (2013) 0: 1–4  
doi: 10.1093/ndt/gfz497



## In Focus

Fistula-first and catheter-last: fading certainties and growing doubts

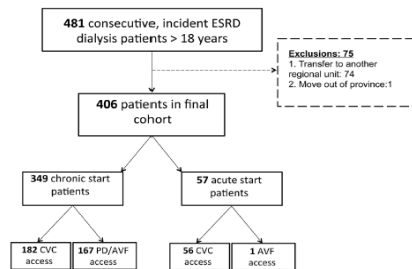
Robert R. Quinn<sup>1,2,3,\*</sup>  
and Pietro Ravani<sup>1,2,3,\*</sup>

<sup>1</sup>Department of Medicine, University of Calgary, Calgary, AB, Canada,

<sup>2</sup>Department of Community Health Sciences, University of Calgary, Calgary, AB, Canada and

<sup>3</sup>Libin Cardiovascular Institute of Alberta, University of Calgary, Calgary, AB, Canada

# Urgent Starts/Eligibility



Tennankore et al. *BMC Nephrology* 2012, **13**:72  
<http://www.biomedcentral.com/1471-2369/13/72>

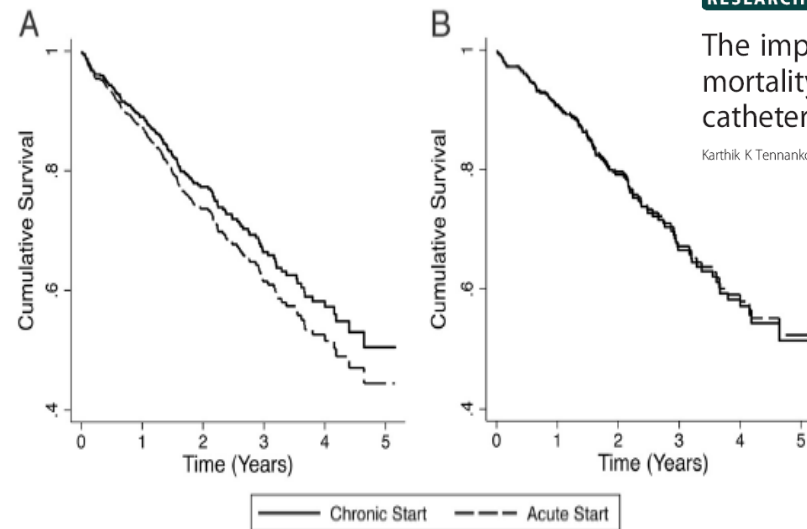


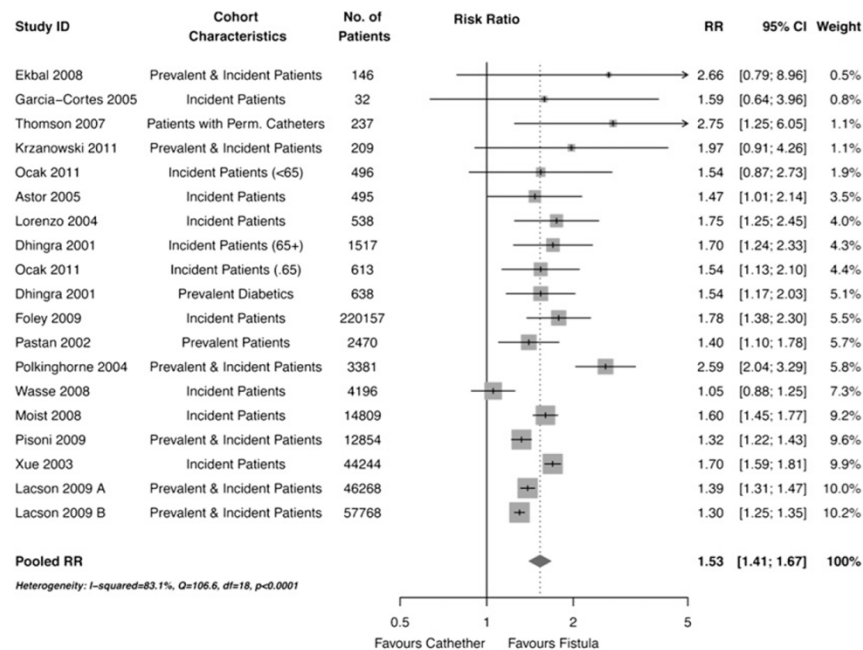
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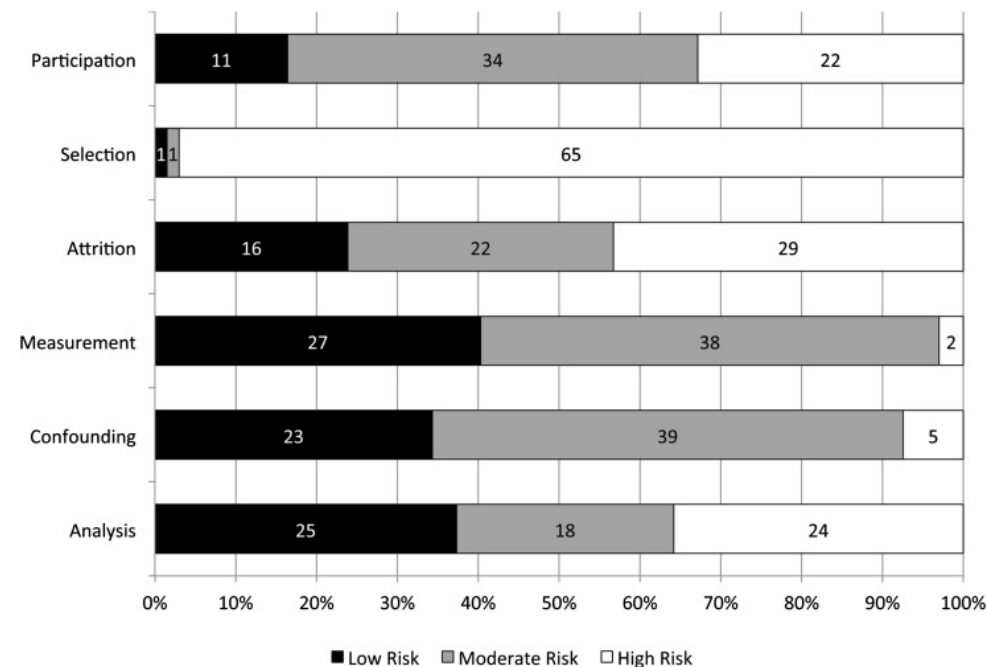
The impact of an “acute dialysis start” on the mortality attributed to the use of central venous catheters: a retrospective cohort study

Karthik K Tennankore<sup>1\*</sup>, Steven D Soroka<sup>2</sup> and Bryce A Kiberd<sup>2</sup>





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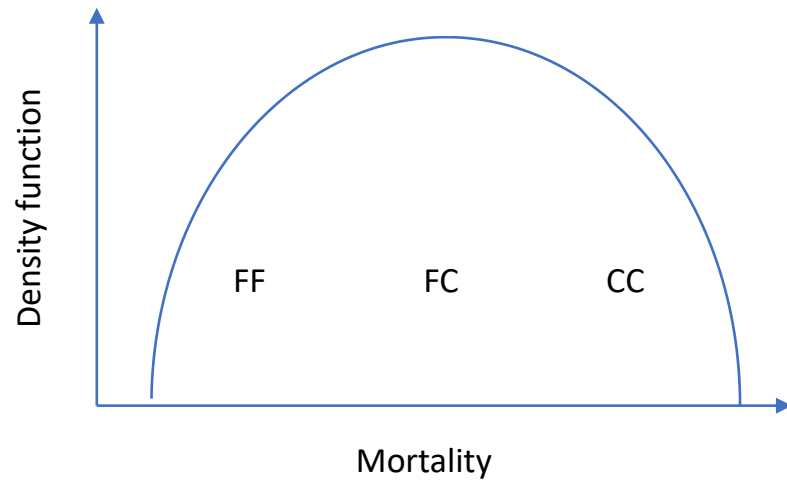
## Associations between Hemodialysis Access Type and Clinical Outcomes: A Systematic Review

Pietro Ravani,<sup>\*††</sup> Suetonia C. Palmer,<sup>§</sup> Matthew J. Oliver,<sup>||</sup> Robert R. Quinn,<sup>\*††</sup> Jennifer M. MacRae,<sup>\*</sup> Davina J. Tai,<sup>\*||</sup> Neesh I. Pannu,<sup>\*\*</sup> Chandra Thomas,<sup>\*</sup> Brenda R. Hemmelgarn,<sup>\*††</sup> Jonathan C. Craig,<sup>†††§§</sup> Braden Manns,<sup>\*††</sup> Marcello Tonelli,<sup>\*\*</sup> Giovanni F.M. Strippoli,<sup>††§§||†||</sup> and Matthew T. James<sup>\*††</sup>

CVC/AVF RR ~ 1.5 ...

But poor quality =

**H0 still to be rejected**

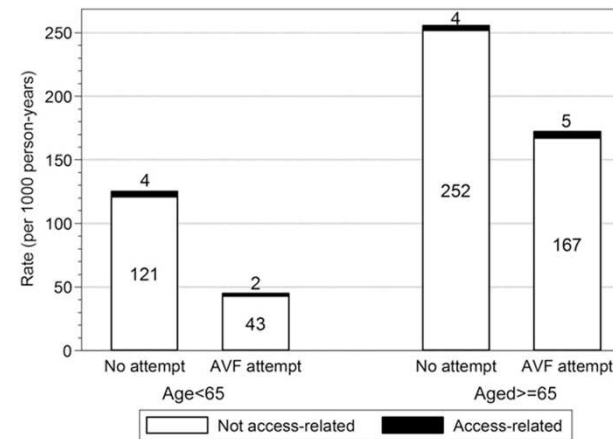


## The Survival Benefit of “Fistula First, Catheter Last” in Hemodialysis Is Primarily Due to Patient Factors

Robert S. Brown,\* Bhanu K. Patibandla,<sup>†</sup> and Alexander S. Goldfarb-Rumyantzev\*

## The Effect of Predialysis Fistula Attempt on Risk of All-Cause and Access-Related Death

Robert R. Quinn,\*<sup>†</sup> Matthew J. Oliver,<sup>‡</sup> Daniel Devoe,\* Krishnan Poinen,\* Rameez Kabani,\* Fareed Kamar,\* Priyanka Mysore,\* Adriane M. Lewin,\* Swapnil Hiremath,<sup>§</sup> Jennifer MacRae,\* Matthew T. James,\*<sup>†</sup> Lisa Miller,<sup>||</sup> Brenda R. Hemmelgarn,\*<sup>†</sup> Louise M. Moist,<sup>¶\*\*</sup> Amit X. Garg,<sup>¶\*\*††</sup> Tanvir T. Chowdhury,<sup>‡‡</sup> and Pietro Ravani\*<sup>†</sup>





# TH-OR119

Choice of Vascular Access (VA) and Clinical Outcomes among Elderly Hemodialysis Patients Timmy C. Lee,<sup>1</sup> Mae Thamer,<sup>2</sup> Qian Zhang,<sup>2</sup> Michael Allon,<sup>1</sup> Yi Zhang.<sup>2</sup> <sup>1</sup>Univ of Alabama at Birmingham; <sup>2</sup>Medical Technology and Practice Patterns Inst.

ESRD patients from the USRDS age  $\geq 67$  who initiated HD from 7/1/2010- 6/30/2011 with a CVC (no secondary VA) and who received an AVF (n=7,016) or AVG (n=2,228) within the ensuing 6 months.

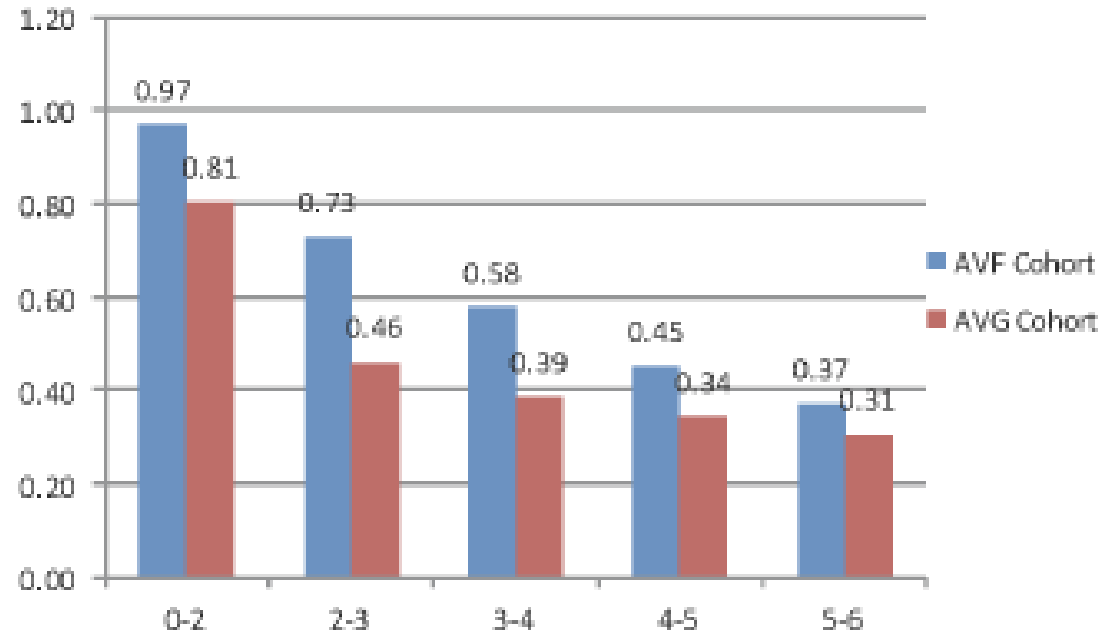
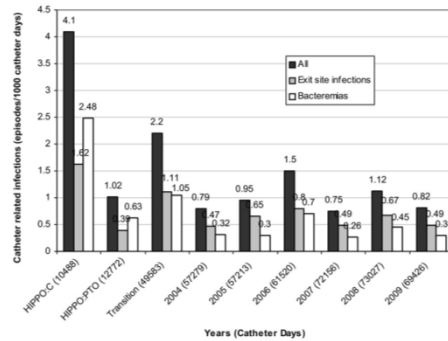


Table 1. Adjusted Kaplan-Meier survival curve results based on VA type: AVF vs. AVG (ref)

Cohort	Hazard Ratio (HR) 95% CI
Whites 67 – 80 yrs	0.77 (0.70-0.85)
Whites >80 yrs	0.81 (0.73-0.91)
Blacks 67 – 80 yrs	0.71 (0.60-0.85)
Blacks >80 yrs	0.66 (0.53-0.83)

# How do CVCs kill patients?

- Infection
- Inflammation



Infection rates with polysporin: 0.3 per 1000 catheter days = 1 episode per person in 10 years (Battistella AJKD 2011)



### Prevention of Dialysis Catheter Malfunction with Recombinant Tissue Plasminogen Activator

Brenda R. Hemmelgarn, M.D., Ph.D., Louise M. Moist, M.D., Charmaine E. Lok, M.D., Marcello Tonelli, M.D., S.M., Braden J. Manns, M.D., Rachel M. Holden, M.D., Martine LeBlanc, M.D., Peter Faris, Ph.D., Paul Barre, M.D., Jianguo Zhang, M.Sc., and Nairne Scott-Douglas, M.D., Ph.D., for the Prevention of Dialysis Catheter Lumen Occlusion with rt-PA versus Heparin (PreCLOT) Study Group

### Risk of Catheter-Related Bloodstream Infection in Elderly Patients on Hemodialysis

Mariana Murea,\* Kimone M. James,\* Greg B. Russell,<sup>†</sup> Graham V. Byrum III,<sup>‡</sup> James E. Yates,<sup>‡</sup> Nicholas S. Tuttle,<sup>§</sup> Anthony J. Bleyer,\* John M. Burkart,\* and Barry I. Freedman\*

Bacteremia in the treatment group: 0.4 per 1000 catheter days (no polysporin)

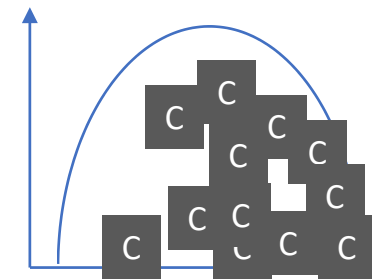
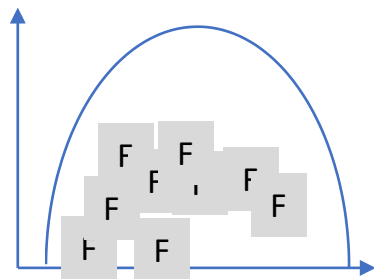
Unselected population of CVC users: rates of bacteremia lower in the elderly (0.55 vs. 1.97 per 1,000 CVC-days)

# How plausible is it?

- 100 people with CVC for one year
- 10 episodes expected
- Mortality associated with bacteremia  $\sim 5\%$
- 0.5 deaths in 100 person-years
- How does this translate into a 50% increase in mortality (i.e. from 10 to 15)?



Similar characteristics,  
different prognosis



*No RCT =  
H0 still holds*

# Outline

- Are existing policy/recommendations justified?
- **What do patients want to know?**
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# Questions patients ask

- What is the **success** rate?
- What is the **complication** rate?
- Will access use be **painful**?
- Will there be **bleeding**?
- Will I **live longer** with this access?





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## Shared Decision Making — The Pinnacle of Patient-Centered Care

Michael J. Barry, M.D., and Susan Edgman-Levitan, P.A.

Nothing about me without me.

— Valerie Billingham

Through the Patient's Eyes,  
Salzburg Seminar  
Session 356, 1998

## Patient-centered care definition:

*"Care that is respectful of, and responsive to, individual patient preferences, needs and values ..... and that ensures patient values guide all clinical decisions"*

(Institute of Medicine 2001)

# Decision-making at fateful cross-roads

