

So What Do We Do Now?

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**AKI Launch, NCEPOD
RSM 11 June 2009**

Acute Kidney Injury

- Common
- Under recognised
- Harmful
- Avoidable
- Treatable
- Poorly Managed

Confused messages: Multiple terms

Acute Renal Failure

Acute on Chronic
Renal Failure

Acute Tubular Neorosis

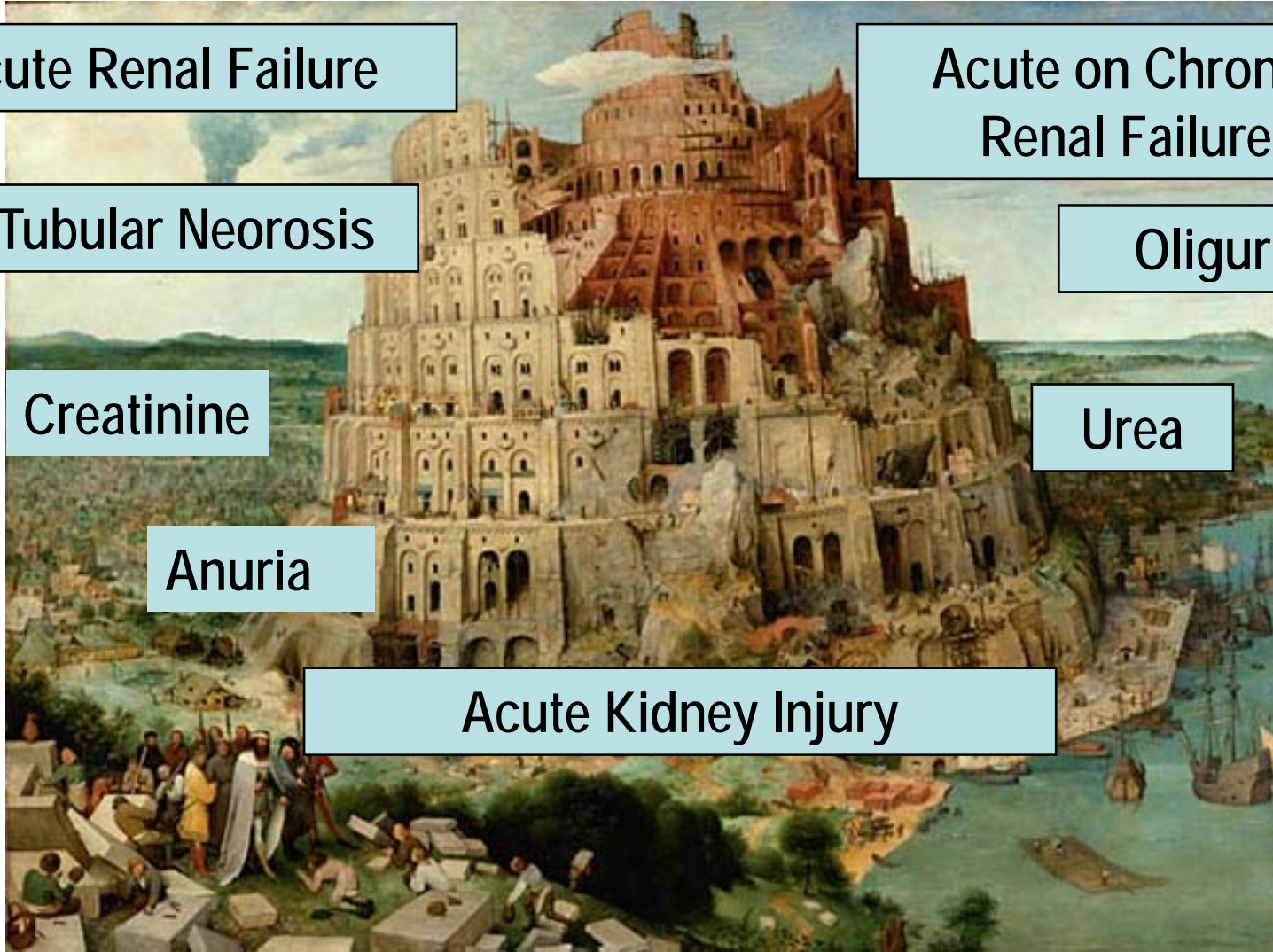
Oliguria

Creatinine

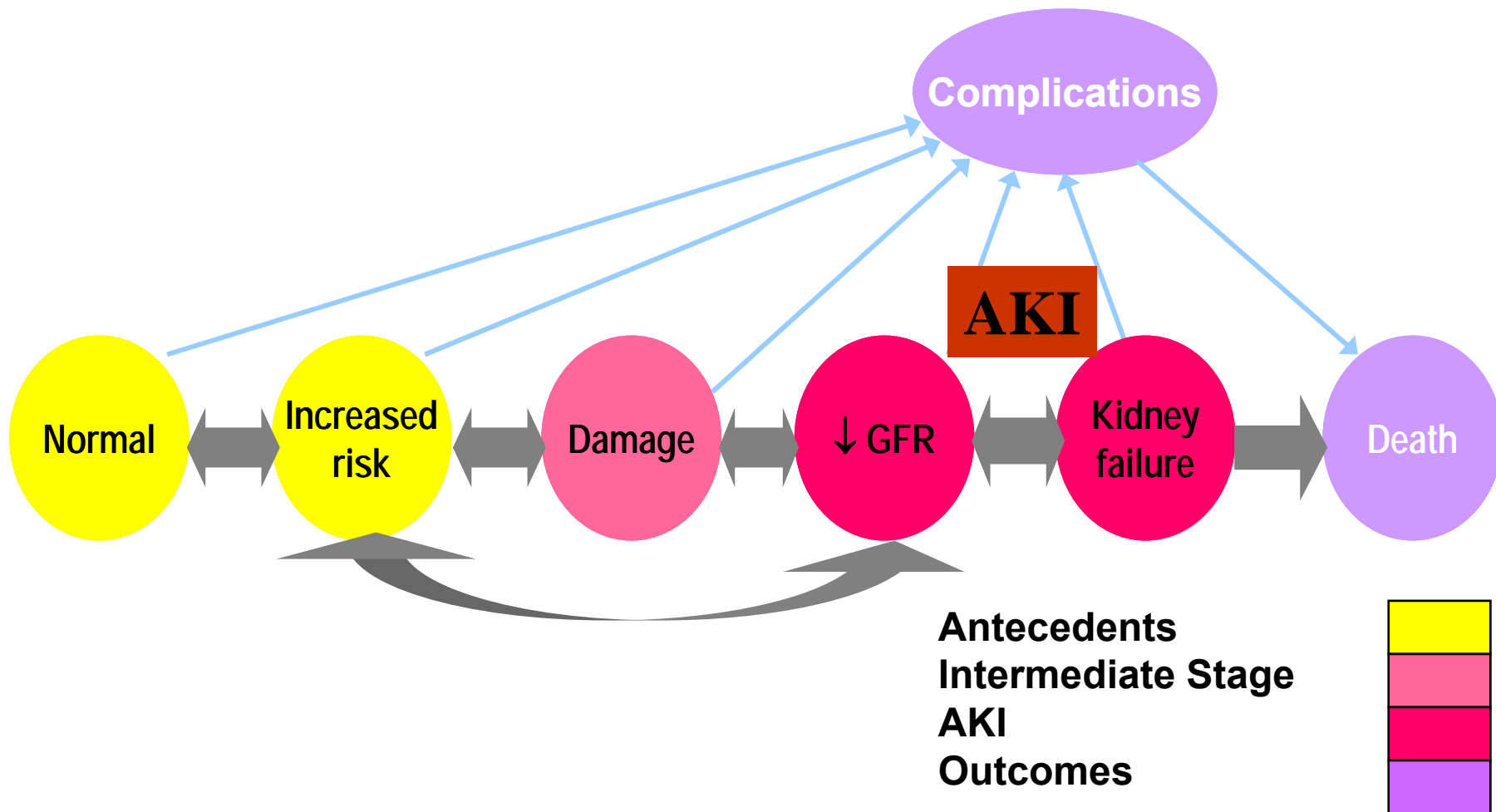
Urea

Anuria

Acute Kidney Injury



Conceptual Model for AKI

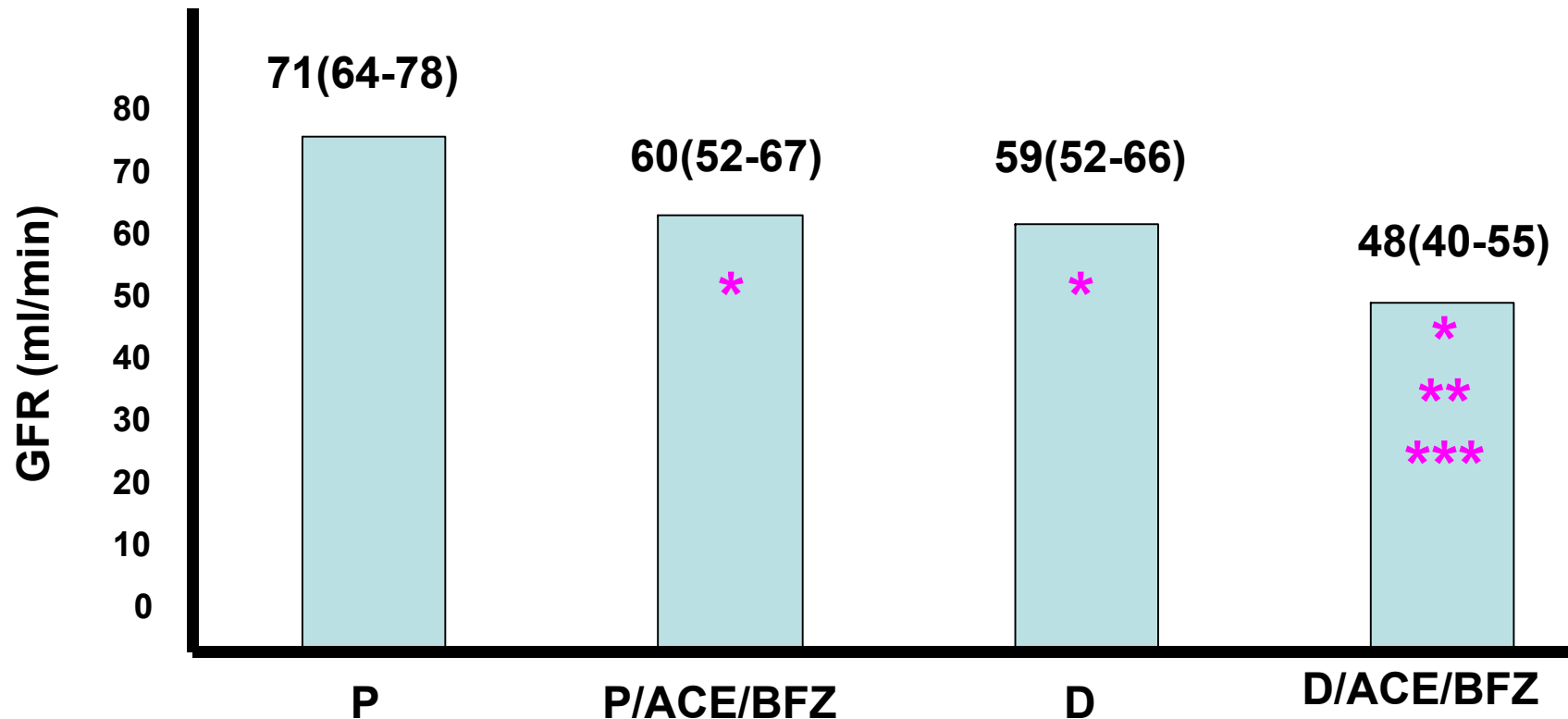


Racking Up The Risk

14 healthy elderly aged 67-78

Single dose of oral Diclofenac (50mg) or placebo

With or without pre-treatment with Enalapril & BFZ



US National Hospital Discharge Survey

- Projected 29,039,599 hospital admissions, 558,032 coded as ARF (1.92%)

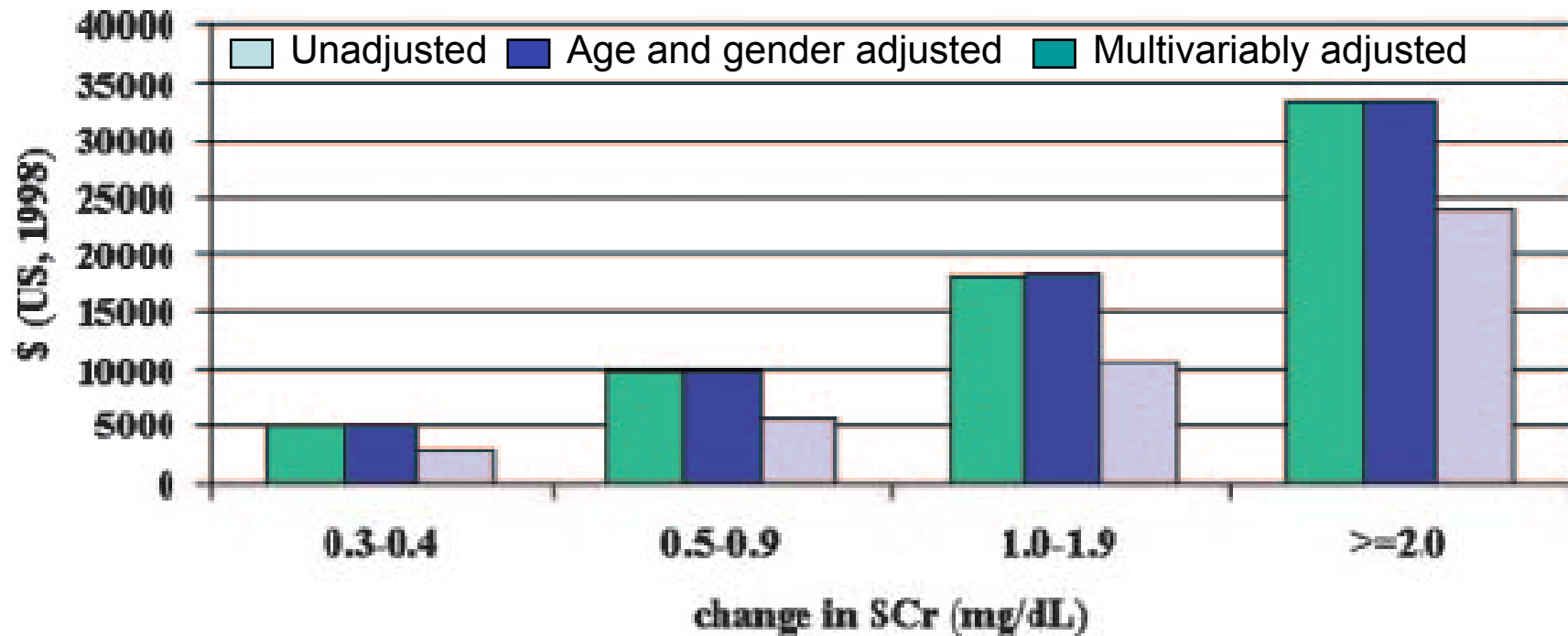
	Without ARF	With ARF
Median age (yr)	58.0	73.0
Median LOS (d)	3.0	7.0
Death (%)	2.3	21.3

The Effect of ARF on Mortality

- 16,248 radiocontrast media procedures
- 183 subjects with contrast-media associated ARF
- 174 paired subjects (age, procedure, baseline Cr)
- Mortality
 - 7% in those without renal failure
 - 34% in those with renal failure
- After comorbidity adjustment renal failure conferred an odds ratio risk of dying of 5.5

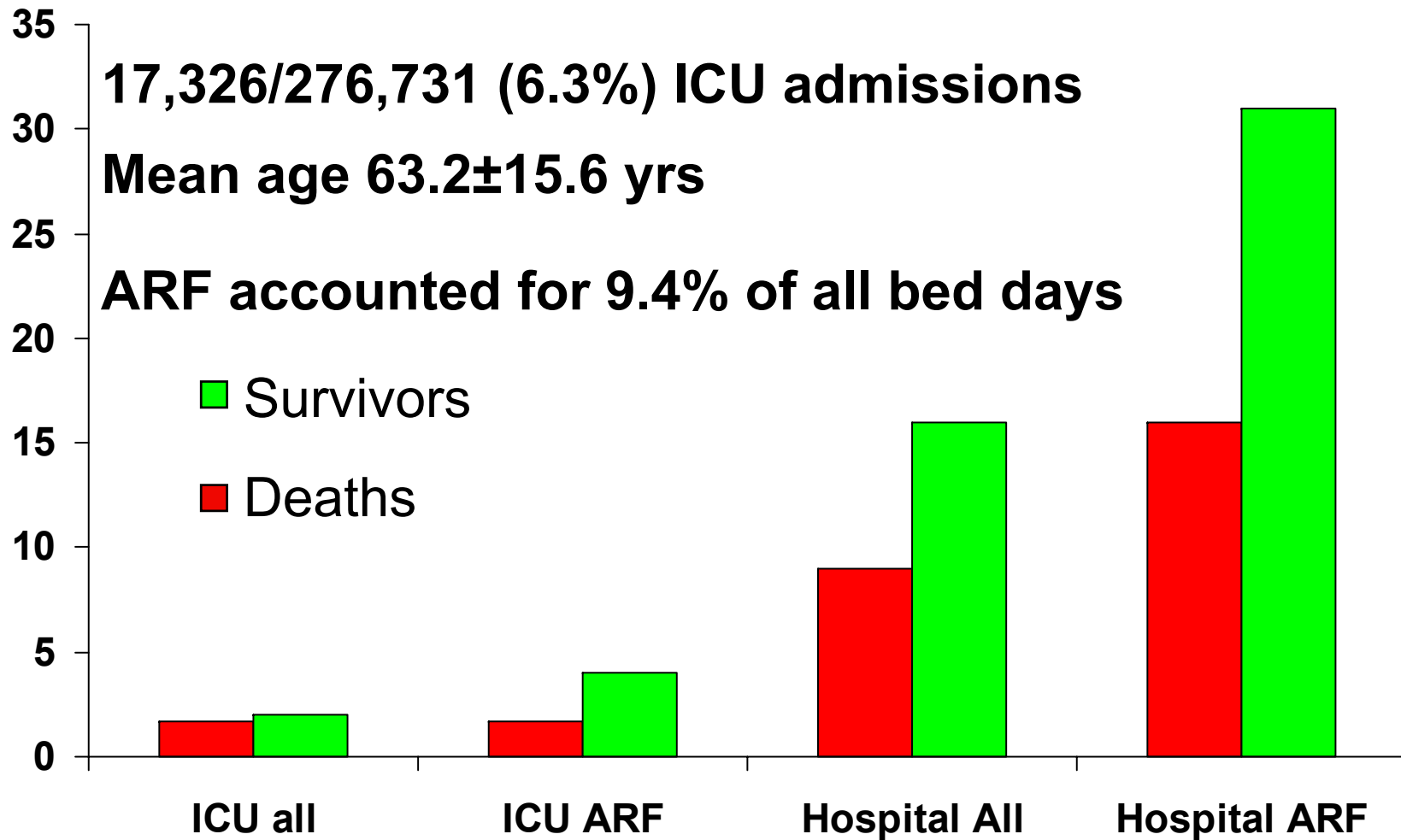
Acute Kidney Injury and Costs

- Consecutive sample of 19,982 adults
- In 1237/9210 (13.4%) SCr \uparrow by $\geq 44 \mu\text{mol/L}$
- 6.5x risk of death, 3.5d increased LOS



ICNARC: ARF Length of Stay

Days



Kohle, Stevens, Crowe et al Critical Care

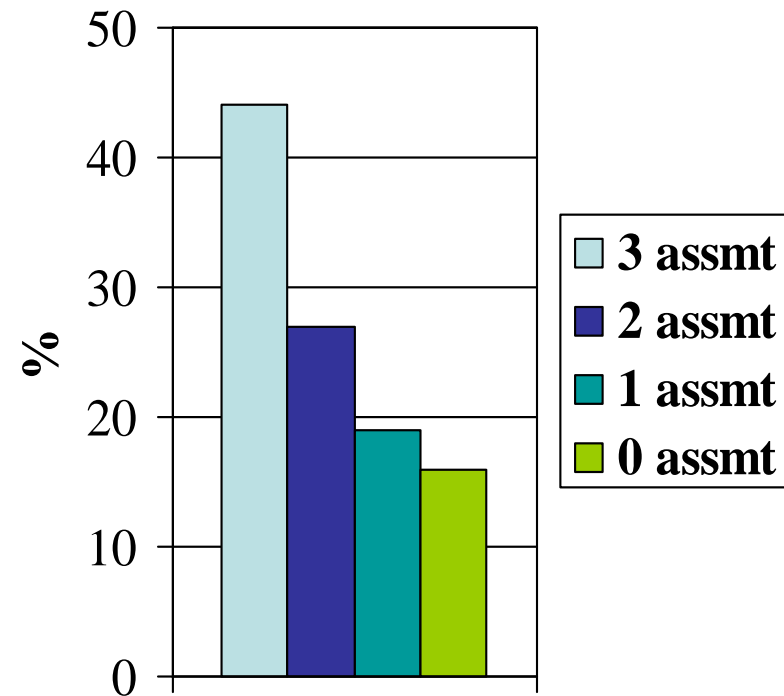
Rayner HC.

A model undergraduate core curriculum in adult renal medicine.

Med Teacher 1995; 17:409–2.

- CVP / fluid status
- Urinalysis
- Ultrasound

36 month survival



AKI in a UK DGH

- 12 month prospective survey of ARF
- Patients identified on a daily basis by computer extract and assessed at the time of identification
- Long-term follow up to determine survival
- Aims
 - Determine the epidemiology of ARF in East Kent
 - Evaluate the initial management of ARF
 - Determine what proportion of ARF is potentially avoidable

Community Acquired ARF

- 163/291 ARF present at time of admission
- 45% were associated with intravascular volume depletion and/or hypotension
- 28% were associated with obstruction
- 23% were associated with sepsis
- 23% were drug-related

Hospital Acquired ARF

- 125/291 ARF developed after admission
- 55% were associated with intravascular volume depletion and/or hypotension
- 34% were drug-related
- 29% were associated with sepsis
- 10% were associated with obstruction

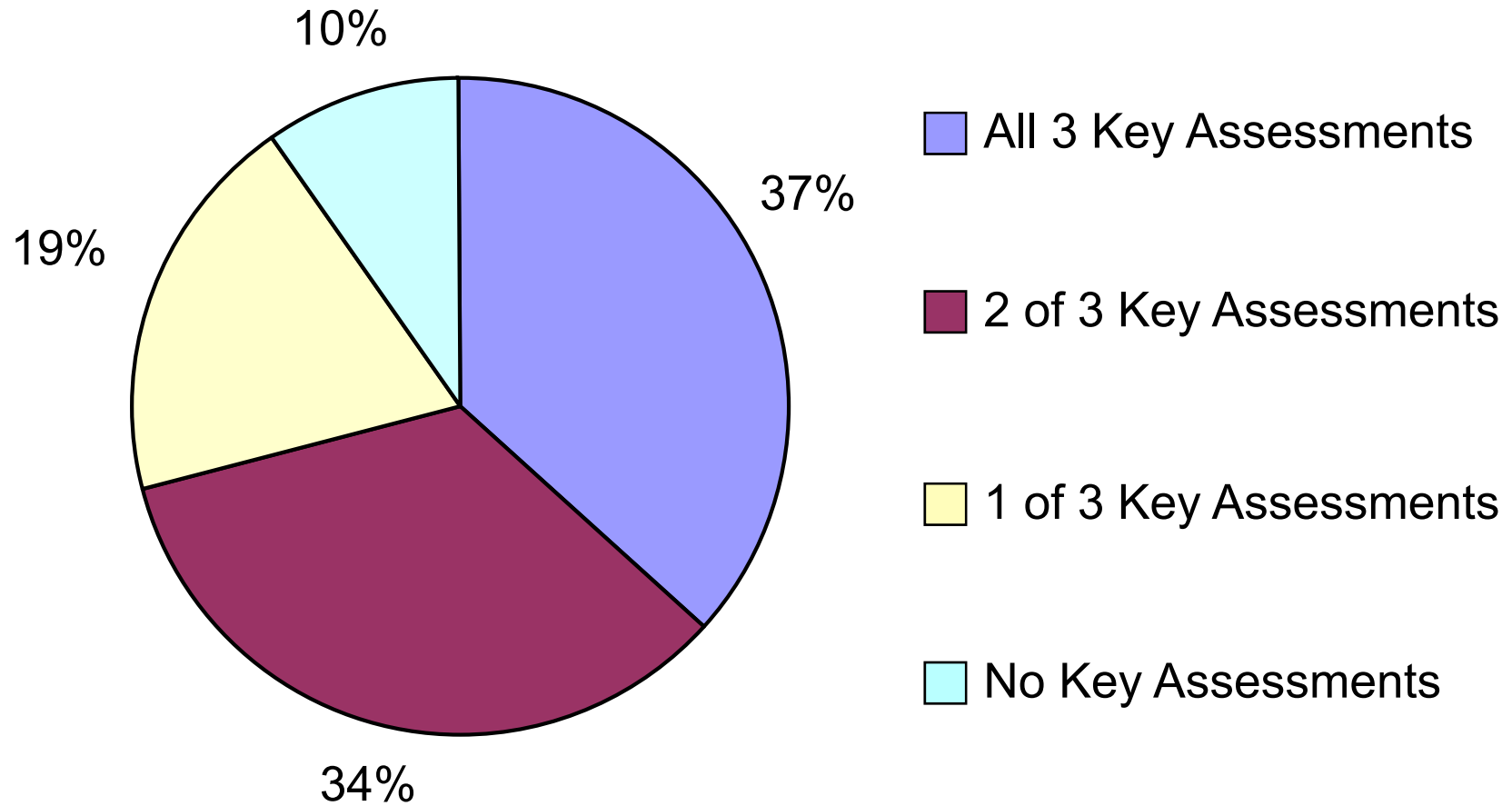
AKI in a UK DGH

Definitely Avoidable ARF: 54 of 291

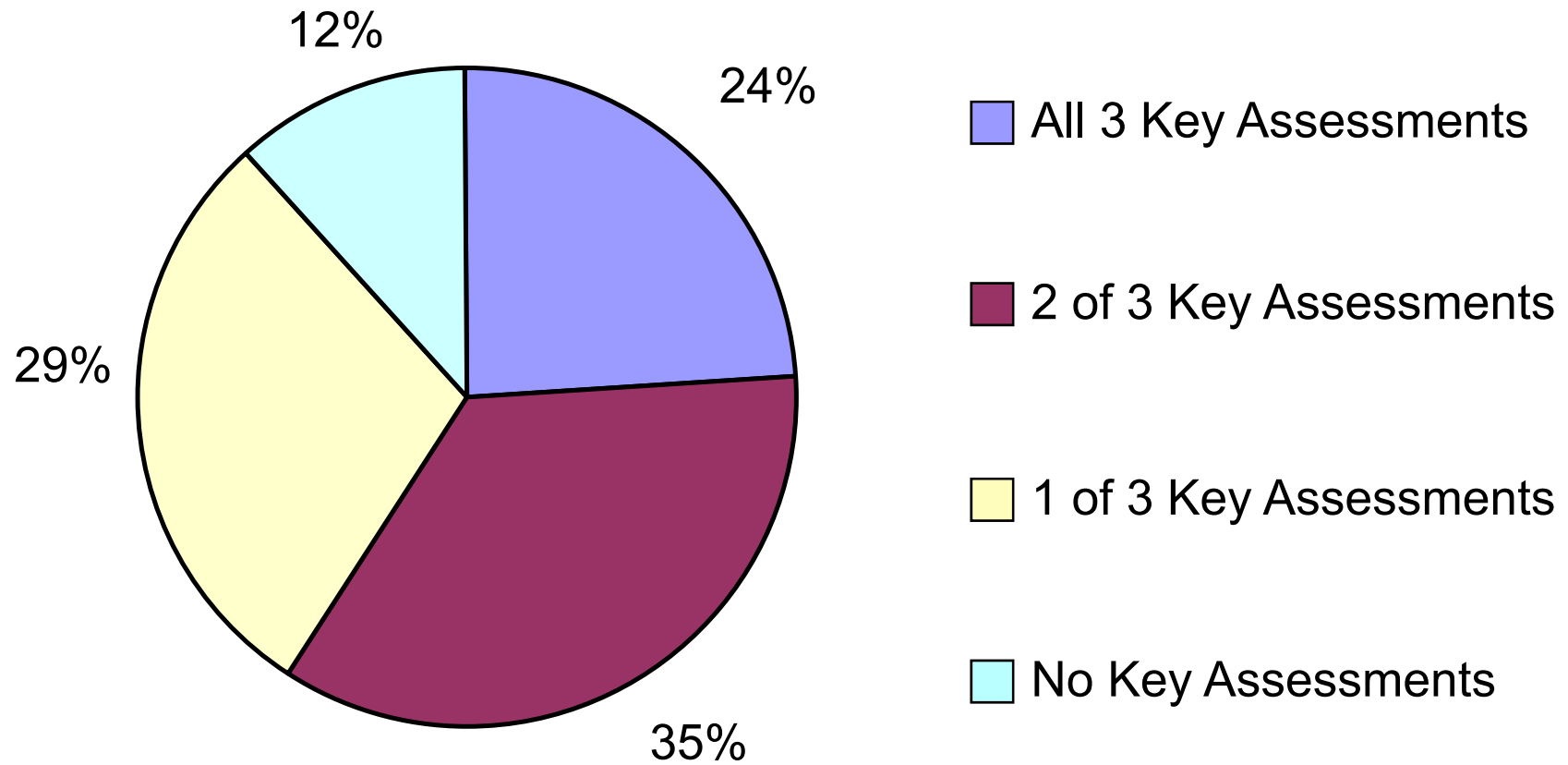
Potentially Avoidable ARF: 101 of 291

Probably Unavoidable ARF: 136 of 291

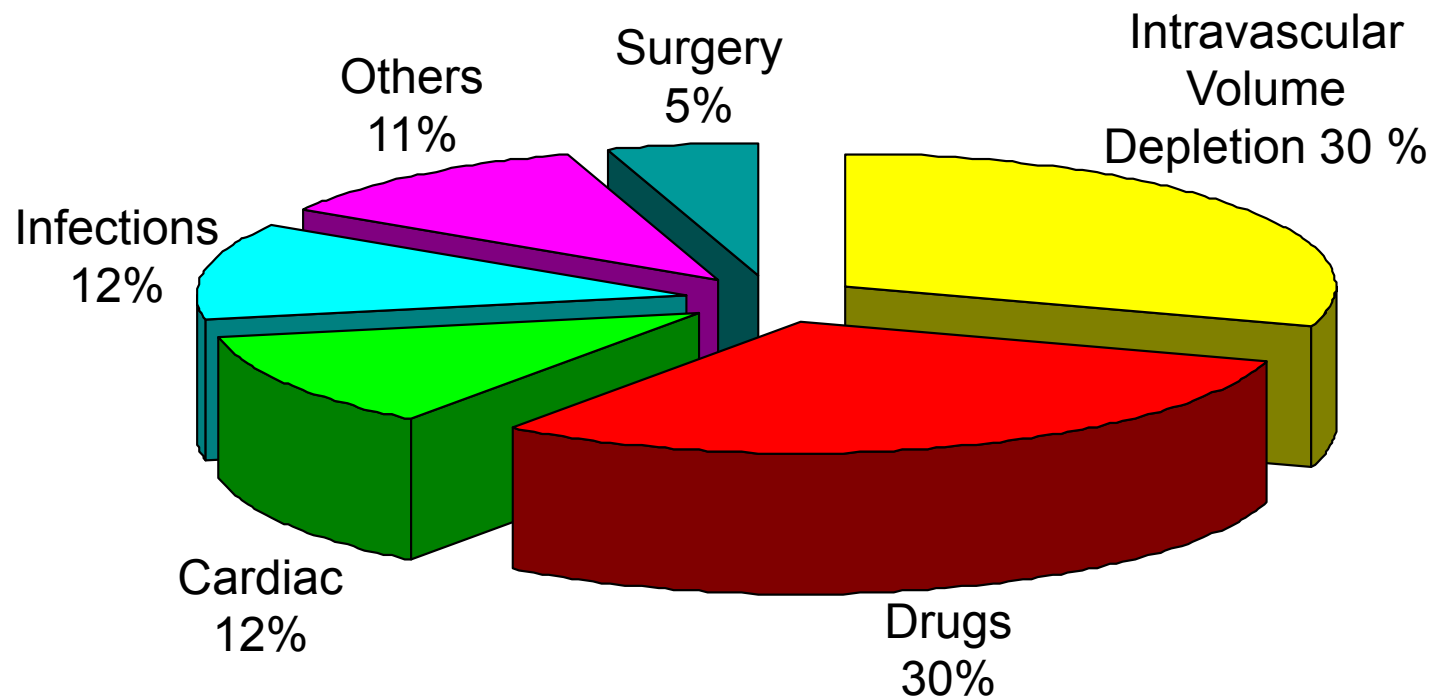
Key Assessments: Age <70



Key Assessments: Age ≥ 70



Primary Instigating Factors for AKI



eGFR = % Kidney Function

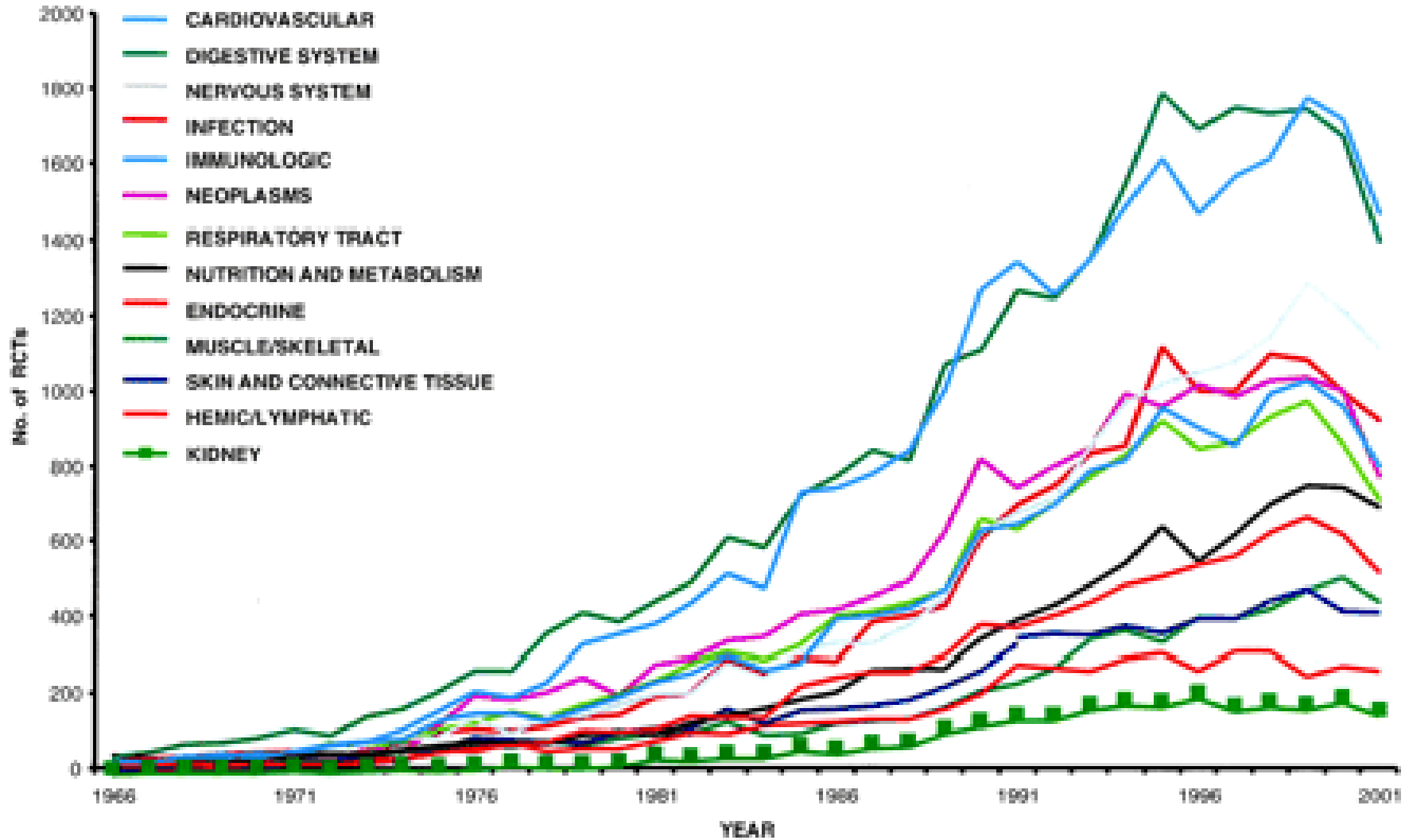


SCr 120, eGFR 30 ml/min



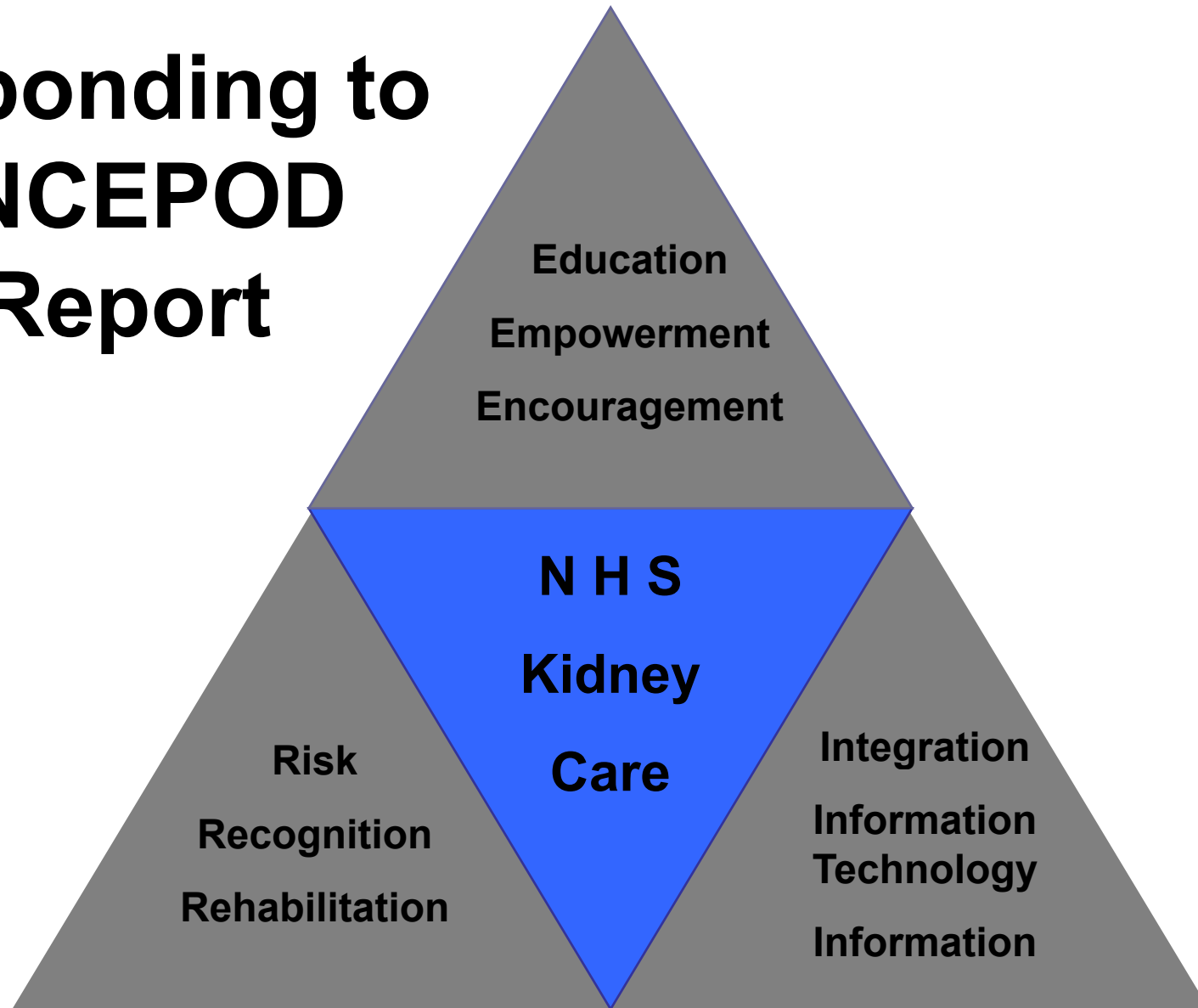
SCr 120, eGFR 130 ml/min

Knowledge is the enemy of disease



Number of RCTs published in Nephrology and 12 other specialties in internal medicine 1996-2002
Strippoli et al. JASN 15:411-419, 2004

Responding to the NCEPOD AKI Report



Systematic Reporting – Serial Serum Creatinine