

# Managing a child with failing kidney

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26 มีนาคม 2551

# Acute renal failure

## ■ Definition

“Abrupt failure of the kidneys to regulate water and electrolytes homeostasis”

## ■ Incidence in ICU

Vary widely depending on the population studied and the definition used

# Incidence of ARF

	Incidence	Mortality
<b>Adult ICU</b> Semin Respir Crit Care Med 2006	3-25%	35-75%
<b>NICU/PICU</b> Pediatr Nephro 2000, An Pediatr 2004	8-30%	30-36%
<b>PICU (prospective, n= 1047)</b> Pediatr Crit Care Med 2007	4.5%	30% (VS 2%)

# Revised Definition of ARF

- 1998 Acute renal failure study group  
survey 598 doctors & nurses  
199 different definitions for ARF
- 2004 Acute Dialysis Quality Initiative Group  
(ADQI workgroup)  
“ Acute kidney injury (AKI)”  
3 grades of severity and 2 outcomes

# RIFLE Criteria

RIFLE	GFR criteria	Urine Output Criteria
<b>R</b> isk	↑ serum creatinine x 1.5 or decrease of GFR > 25%	< 0.5 mL/kg/hr for 6 hrs
<b>I</b> njury	↑ serum creatinine x 2 or decrease of GFR > 50%	<0.5 mL/kg/hr for 12 hrs
<b>F</b> ailure	↑ serum creatinine x 3 or decrease of GFR > 75% or serum creatinine ≥ 4mg/dL when there was acute rise > 0.5 mg/dL	<0.3 mL/kg/hr for 12 hrs or anuria for 12 hrs
<b>L</b> oss	Complete loss of renal function > 4 wks	
<b>E</b> nd stage	Need for renal replacement therapy > 3 mos	