



ACUTE KIDNEY INJURY (AKI) STUDY

National Confidential Enquiry into Patient Outcome and Death (NCEPOD)

Patient Care Questionnaire

CONFIDENTIAL

Hospital number of patient:

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Name of NCEPOD Local Reporter:

Specialty of doctor completing form:

What is this study about?

NCEPOD is examining the process of care of patients who die with a diagnosis of acute kidney injury (AKI) following admission to hospital, looking for areas where their care might have been improved (remediable factors). Data will be collected on all patients aged 16 years or over, who died with a primary diagnosis of acute kidney injury between 1st October 2006 and 31st March 2007. All NHS and independent hospitals that admit both acute and elective admissions in England, Wales and Northern Ireland; public hospitals in the Isle of Man, Jersey and Guernsey, as well as Defence Secondary Care Agency hospitals, will be included in the study.

Exclusions - Patients with known chronic kidney disease who have undergone regular renal replacement therapy prior to their final hospital episode

Questions or help?

If you have any queries about the study or this questionnaire, please contact NCEPOD at:
Email: acutekidneyinjury@ncepod.org.uk

Telephone: 020 7631 3444

Thank you for taking the time to complete this questionnaire. The findings of the full study will be published in late 2009.

CPD Accreditation

Consultants who complete NCEPOD questionnaires make a valuable contribution to the investigation of patient care. Completion of questionnaires also provides an opportunity for consultants to review their clinical management and undertake a period of personal reflection. These activities have a continuing medical and professional development value for individual consultants. Consequently, NCEPOD recommends that consultants who complete NCEPOD questionnaires keep a record of this activity which can be included as evidence of internal/ self directed Continuous Professional Development in their appraisal portfolio

How to complete this questionnaire?

Information will be collected using two methods: Box cross and free text, where your clinical opinion will be requested.

This form will be electronically scanned. Please use a black or blue pen. Please complete all questions with either block capitals or a bold cross inside the boxes provided e.g.

Was the patient referred to a nephrologist?

Yes No

If you make a mistake, please "black-out" the incorrect box and re-enter the correct information, e.g.

Yes No

Unless indicated, please mark only one box per question.

A list of definitions is provided on page 10.

Clinician specialty codes are listed on page 11

Please return the completed questionnaire and casenote extracts to NCEPOD in the SAE provided.

A copy **must not** be kept in the patient's notes.

Non-returned questionnaires will be followed up with your medical director.

FOR NCEPOD USE ONLY

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2 7 6 0 1 6 4 5 5 9 5 7 5

Please supply copies of the following casenote extracts for this admission period when returning your questionnaire

Inpatient annotations.

Nursing Notes.

Biochemistry results (LFT, U&E).

Drug charts.

Fluid balance charts (including urine output).

Observation charts (including TPR, CVP).

Weight chart.

Urinalysis

X-ray/CT/USS results

Any operating notes.

Do Not Attempt Resuscitation (DNAR) statement

Post mortem report

Please provide a clinical summary of the patient's care in hospital





A. PATIENT DETAILS

1. Age at time of death: years Unknown
2. Gender: Male Female

B. THE ADMISSION

3. What was the date of admission?
d d m m y y
4. What was the time of admission?
(please use 24-hr clock)
h h m m
5. Was the admission:
- A planned admission
 - An emergency admission
 - Inter-hospital transfer
 - Unknown
6. a. Primary diagnosis on admission:
- b. Final diagnosis at death:
7. a. Grade of doctor who undertook initial clerking (excluding Triage):
- FY1 SPR/ST3 or higher
 - FY2 Staff Grade
 - SHO/ST1-2 Consultant
 - FTSTA Other
- b. Specialty of consultant patient admitted under
(Please see codes on page 11)





C. RECOGNITION AND ASSESSMENT OF AKI

8. a. What were the patient's most recent U+Es and eGFR in the 6 months prior to admission (if available)?

Na mmol/L unknown

K . mmol/L

Urea . mmol/L

Creatinine umol/L

eGFR ml/min unknown

b. What was the date of the U+E measurements above?

d d m m y y

9. a. What were the patients first U+Es and eGFR during this admission?

Na mmol/L unknown

K . mmol/L

Urea . mmol/L

Creatinine umol/L

eGFR ml/min unknown

b. What was the date of the above U+E measurements?

d d m m y y

10. a. Did the patient have evidence of kidney disease on admission?

Yes No

b. If yes was this *A new diagnosis

*Chronic *CKD stage 1 2 3 4 5

*Acute on Chronic *stage of pre-existing CKD 1 2 3 4 5

* See definitions at back of questionnaire

c. If indicated above, what was the aetiology of the the CKD?

11. If No to 10a was there any documented consideration that the patient was at risk of AKI?

Yes No

12. What measures were made to specifically reduce the risk of AKI?





13. In the initial assessment at admission, which of the following factors were assessed and recorded in the patient's casenotes?

- Age Sepsis
 Co-morbidity Biochemistry
 Medication Urinalysis
 Previous CKD Weight
 Hypovolaemia Nutritional state

14. a. If the patient developed AKI post-admission was this recognised immediately? Yes No

NA

b. If no how long was the delay? days hours

c. Why was there a delay?

15. a. If the patient developed AKI post-admission was this in the post-operative period? Yes No

NA

b. If yes how long post-op? days hours

c. In your opinion was this directly related to: (answers may be multiple)

Poor surgical technique Unknown
 Complications of surgery

Poor post-operative management

Other

16. How was the AKI recognised? (answers may be multiple)

Deteriorating biochemistry

Oliguria

Anuria

Other

17. a. If the patient developed AKI post-admission what were the patients U+Es at the time AKI was recognised?

Na mmol/L unknown

K . mmol/L

Urea . mmol/L

Creatinine umol/L

b. What was the date and time of the U+E measurements above?

d d m m y y

Time (please use 24-hr clock)?

h h m m

18. What *stage AKI was the patient in? Stage 1 2 3

* See definitions at back of questionnaire





19. Was urinalysis undertaken?

Yes

No

20. At the time the AKI was recognised which of the following contributory factors were assessed/considered?

Sepsis

Drugs

Please list

Hypovolaemia

What was the clinical basis for this assessment of hypovolaemia (answers maybe multiple)?

Clinical examination

Fluid balance charts

Fluid prescription

Electrolytes

Other

Recent use of contrast

Contributory co-morbidity

Please list

Other

21. In the assessment of the patient with AKI, which of the following modalities were employed (answers maybe multiple)?

Fluid balance

Radioisotopes

Urinalysis

Sepsis recognition

USS

Acid base balance

CT

Renal biopsy

MRI

Other

22. Was a definitive diagnosis made to explain the cause of AKI?

Yes

No

If yes diagnosis

23. If the AKI was due to contrast nephropathy were any of following preventative measures undertaken (answers maybe multiple)?

Discussion with radiologist

Pre-contrast hydration

Which IV fluid was used?

Cessation of ACE inhibitors/NSAIDS

N-acetylcysteine





24. Did the AKI occur as single or part of multiple organ failure? Single Multiple Unknown

D. MANAGEMENT OF AKI

25. Please indicate which of the following were done to manage the patients AKI (answers maybe multiple)

TPR chart

Fluid balance chart

Daily weight chart

Catheter

Hourly urine output measurements Yes No

CVP

Correction of hypovolaemia

Type of fluid administered

Regular monitoring of biochemistry

Cessation of nephrotoxic drugs (including diuretics)

Which drugs

Diuretics administered

Other drugs administered

Which drugs

Patients medications altered to 'renal doses'

If yes which drugs?

Review by renal dietitian or nutrition team

Other





E. REFERRAL AND SUPPORT

- 26. a.** Was the patient referred to a nephrologist? Yes No
- b.** If yes how long after the patient developed AKI? days hours
- c.** If the patient was referred to a nephrologist what was offered (answers may be multiple)?
- Telephone advice Transfer to HDU/ITU
- Ward review Transfer to renal unit
- d.** Was there difficulty in contacting a nephrologist? Yes No
- e.** If the patient was transferred/admitted to a renal unit did they receive RRT? Yes No
- f.** If yes what type of RRT?
- Intermittent Haemodialysis
- Continuous Haemodialysis
- Intermittent Haemofiltration
- Continuous Haemofiltration
- Peritoneal dialysis
- g.** Were there any complications associated with the RRT? Yes No NA
- If yes what?
-
- 27. a.** Did the patient receive renal support/RRT in a level 2/3 setting (other than a renal unit)? Yes No NA
- b.** If yes what type of RRT?
- Intermittent Haemodialysis
- Continuous Haemodialysis
- Intermittent Haemofiltration
- Continuous Haemofiltration
- Peritoneal dialysis
- c.** Were there any complications associated with the RRT? Yes No NA
- If yes what?
-
- e.** If yes to 27a were the renal team involved during their level 2/3 stay? Yes No
- f.** What other organ support was provided during their level 2/3 stay?
- None Nutrition
- Respiratory Other
- Cardiac (ionotropes)
-
- 28.** If a decision was made not to treat the AKI who was involved in the decision? (answers may be multiple)
- Consultant in charge Patient
- Renal team Relatives
- ITU/HDU





F. COMPLICATIONS OF AKI

29. Which of the following complications occurred and which treatments were used to correct?

Complication

Treatment

Hyperkalaemia

Calcium gluconate

Insulin/dextrose

Bicarbonate

Salbutamol nebulisers

Calcium resonium

RRT

(type)

Other

Acidosis

Bicarbonate

RRT

(type)

Other

Oedema

Diuretics

Albumin

RRT

(type)

Other

Sepsis

Antibiotics

Inotropic drugs

Drainage of septic focus

Other

Serositis

RRT

(type)

Encephalopathy

RRT

(type of RRT)

30. a. On review of this case do you think the AKI was avoidable? Yes No

b. Please expand on your answer:



DEFINITIONS

Mode of presentation	Inclusion criteria
Acute renal failure	Presented unexpectedly with normal sized kidneys, or presented after known renal insult, previous renal function normal, or presented after known renal insult, previous function unknown but normal size kidneys
Acute-on-chronic	Presented either unexpectedly or after a known renal insult and known to have had previous serum creatinine > 150 mmol/l, or shown on ultrasound to have at least one small kidney (< 8 cm)
Chronic renal failure	Known to have had chronic renal failure followed by a physician, no obvious renal insult precipitating requirement for dialysis

CKD Stage	Estimated GFR	Urine output criteria
1	90+	Normal kidney function but urine findings or structural abnormalities or genetic trait point to kidney disease
2	60-89	Mildly reduced kidney function and other findings (as stage 1) point to kidney disease
3	30-59	Moderately reduced kidney function
4	15-29	Severely reduced kidney function
5	<15	Very severe or endstage kidney failure (sometimes called established renal failure)

AKI Stage	Serum creatinine criteria	Urine output criteria
1	Increase in serum creatinine of more than or equal to 0.3 mg/dl ($\geq 26.4 \mu\text{mol/l}$) or increase to more than or equal to 150% to 200% (1.5- to 2-fold) from baseline	Less than 0.5 ml/kg per hour for more than 6 hours
2	Increase in serum creatinine to more than 200% to 300% (> 2- to 3-fold) from baseline	Less than 0.5 ml/kg per hour for more than 12 hours
3	Increase in serum creatinine to more than 300% (> 3-fold) from baseline (or serum creatinine of more than or equal to 4.0 mg/dl [$\geq 354 \mu\text{mol/l}$] with an acute increase of at least 0.5 mg/dl [$44 \mu\text{mol/l}$])	Less than 0.3 ml/kg per hour for 24 hours or anuria for 12 hours



NATIONAL SPECIALTY CODES

S U R G I C A L	100 = General Surgery	110 = Trauma & Orthopaedics	170 = Cardiothoracic Surgery
	101 = Urology	120 = Ear, Nose and Throat (ENT)	171 = Paediatric Surgery
	103 = Breast Surgery	130 = Ophthalmology	172 = Cardiac Surgery
	104 = Colorectal Surgery	145 = Maxillo-Facial Surgery	173 = Thoracic Surgery
	105 = Hepatobiliary & Pancreatic Surgery	150 = Neurosurgery	180 = Accident & Emergency
	106 = Upper Gastrointestinal Surgery	160 = Plastic Surgery	190 = Anaesthetics
	107 = Vascular Surgery	161 = Burns Care	192 = Critical or Intensive Care Medicine
M E D I C A L	300 = General Medicine	340 = Thoracic/Respiratory Medicine	501 = Obstetrics
	301 = Gastroenterology	360 = Genito-Urinary Medicine	502 = Gynaecology
	302 = Endocrinology	361 = Nephrology	810 = Radiology
	306 = Hepatology	400 = Neurology	811 = Interventional Radiology
	307 = Diabetic Medicine	401 = Clinical Neuro-Physiology	820 = General Pathology
	314 = Rehabilitation	420 = Paediatrics	821 = Blood Transfusion
	320 = Cardiology	421 = Paediatric Neurology	822 = Chemical Pathology
	321 = Paediatric Cardiology	430 = Geriatric Medicine	823 = Haematology





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