RRAM project

RRT health economic microcosting data.

The purpose of the “walk through” is to determine what consumable and human resources are required for renal replacement therapy using either heparin or citrate solution as an anticoagulant.

We are only interested in resource use above and beyond that required to care for a critically ill patient who was not receiving renal replacement therapy.

The starting point for measuring resource use is when a decision is made to initiate renal replacement. The end point is when renal replacement has finished and the vascular access devices have been removed.

For convenience the process of renal replacement therapy has been divided into a number of phases. These are initial tests, placing vascular access, priming the renal replacement machine, initiating renal replacement, running renal replacement, ceasing renal replacement, and vascular access removal. There is a separate page for each of these. This is preceded by a few details of the machine used and other baseline data.

We are interested in what is “normally” done. We don’t need to record all possible variants. Estimates of the time to do tasks are needed, not precise timings.

Baseline data

Date	
Interviewer name	
Hospital	
ICU type (general or service-specific	

RRT machine manufacturer	
RRT machine name/model	
Heparin or citrate anticoagulation	

Nurse interviewee name	
Contact for queries (email or phone)	
Doctor interviewee name	
Contact for queries (email or phone)	
Other interviewee 1 name and role	
Contact for queries (email or phone)	
Other interviewee 2 name and role	
Contact for queries (email or phone)	

Initial tests

Do you do any additional tests (beyond routine care) after a decision has been made to initiate renal replacement therapy?

Blood tests

Test name (We will obtain laboratory costs)	Nurse time to collect and send to laboratory and check result (min)	Doctor time to collect and send to laboratory and check result (min)	Are there any consumables beyond syringes, sample tubes, and packaging (List)?

Imaging

Test name (We will obtain radiology costs)	Nurse time to request, assist with imaging and review result (min)	Doctor time to request, assist with imaging and review result (min)	Are there any consumables supplied by the ICU (List)?

Other investigations

Investigation name (We will obtain non-ICU costs)	Nurse time to request, assist with investigation and review result (min)	Doctor time to request, assist with investigation and review result (min)	Are there any consumables supplied by the ICU (List)?

Placing vascular access

This refers to the placement of vascath or equivalent.

Consumables

Consumable	Used (Y/N)	Name or type/manufacturer/(amount)	If part of an "all in one" pack tick here
Vascular access catheter	**Y**		
Ultrasound probe cover and jelly		Not needed	
Skin prep solution		Not needed	
Drapes		Not needed	
Local anaesthetic			
Syringes			
Needles			
Sutures			
Flush solution		Not needed	
Dressing			
Gown packs			
Gloves			
Other (specify)			
Other (specify)			
Other (specify)			

Imaging for vascular access position

Imaging name	Nurse time to request, assist with imaging and review result (min)	Doctor time to request, assist with imaging and review result (min)	Are there any consumables supplied by the ICU (List)?
Use same ultrasound that was used to place access			Not needed
Formal radiological imaging using ultrasound			
Other (specify)			

Staff time for vascular access placement (don't forget HCA time if appropriate)
Don't include the imaging time recorded above

Staff type (and usual grade/band)	Total time involved in placing access including preparation and tidy up (min)
Staff 1	
Staff 2	
Staff 3	
Staff 4	
Staff 5	
Staff 6	
Staff 7	

Preparing the RRT machine

This refers to initial set up before connection to the patient.

Consumables

Consumable	Used (Y/N)	Name or type/manufacturer/(amount)	Notes
Circuit assembly (tubes etc)	**Y**		
Saline/Hartmann's to prime			Number of bags/bag volume
Other priming solutions			Type and number of bags/bag volume
Heparin prime			Only the priming heparin
CRRT fluid bag			Type and number of bags/bag volume
Effluent (filtrate) bags			Type and number of bags
Heparin for infusion			For infusion during RRT
Heparin diluent			For infusion during RRT
Citrate for infusion			For infusion during RRT
Citrate diluent			For infusion during RRT
Syringe for heparin/citrate pump			For infusion during RRT
Calcium solution for infusion			
Cartridge			
Other (specify)			
Other (specify)			
Other (specify)			

Staff time for RRT machine setup (don't forget HCA time if appropriate)

Staff type (and usual grade/band)	Total time involved in setting up machine including preparation and tidy up (min)
Staff 1	
Staff 2	
Staff 3	
Staff 4	
Staff 5	
Staff 6	
Staff 7	

Connecting the RRT machine to the patient

This refers to the connection of the RRT machine to the patient.

Consumables

Consumable	Used (Y/N)	Name or type/manufacturer/(amount)	Notes
Heparin intravenous dose			IV bolus to anticoagulated the patient, if used
Syringe to aspirate vascath			
Other (specify)			
Other (specify)			
Other (specify)			
Other (specify)			
Other (specify)			

Staff time for connecting the RRT machine to patient

Staff type (and usual grade/band)	Total time involved in placing access including preparation and tidy up (min)
Staff 1	
Staff 2	
Staff 3	
Staff 4	

Running RRT

This refers to the time whilst the RRT machine is running.

For consumables we need the approximate use for every 4 hours.

We will obtain fluid, citrate, heparin and calcium use from other sources

Consumables

Consumable	Used (Y/N)	Name or type/manufacturer/(amount)	Notes
Blood gas estimations per 4 hours			For any purpose related to RRT (pH, calcium, K^+ etc)
APTT estimations per 4 hours			For any purpose related to RRT
Other (specify)			
Other (specify)			
Other (specify)			
Other (specify)			
Other (specify)			

Staff time for running the RRT machine

Staff type (and usual grade/band)	Total time involved in care of a patient on RRT for tasks related to RRT only (obs, tests, adjustments etc) (min)
Staff 1	
Staff 2	
Staff 3	
Staff 4	

Disconnecting the RRT machine from the patient

This refers to the disconnection of the RRT machine from the patient assuming an elective take down (ie not because the circuit has clotted or the access is blocked).

Consumables

Consumable	Used (Y/N)	Name or type/manufacturer/(amount)	Notes
Dressing pack			
Flush solution for vascath			
Syringe for flush solution			
Saline/Hartmann's for flushing back blood in circuit			Number of bags and volume of bags
Other (specify)			
Other (specify)			
Other (specify)			

Staff time for disconnecting the RRT machine from patient

Staff type (and usual grade/band)	Total time involved including preparation and tidy up (min)
Staff 1	
Staff 2	
Staff 3	
Staff 4	

Removing the vascular access

This refers to the removal of the vascular access device.

Consumables

Consumable	Used (Y/N)	Name or type/manufacturer/(amount)	Notes
Dressing pack			
Dressing			
Cleaning solution			
Other (specify)			
Other (specify)			
Other (specify)			

Staff time for removing the vascular access

Staff type (and usual grade/band)	Total time involved including preparation and tidy up (min)
Staff 1	
Staff 2	
Staff 3	
Staff 4	

Additional information

Number of filter cartridges purchased over previous 12 months?	
If 12 month data not available, give cartridge numbers and time period.	

Cost of filter cartridge (per unit) for citrate?	
Cost of filter cartridge (per unit) for heparin?	

Blood gas machine payment option:

Outright purchase and consumable costs	Details
Machine loan and consumable costs	Details
Machine lease/rent and consumable costs	Details
Per-test payment	Details
Other	Details