Statewide Renal Clinical Network

South Australian Statewide Renal Key Performance Indicators

February 2014

SOUTH AUSTRALIAN RENAL CLINICAL NETWORK

KEY PERFORMANCE INDICTORS

February 2014

The Renal Key Performance Indicators (KPI's) are a set of measures to provide a perspective on the quality of the care provided by the South Australian Renal Services. The KPI's can be used to help renal services identify potential problem areas that may need further study and provide an opportunity to improve care.

ACKNOWLEDGEMENTS

The Renal Clinical Network acknowledge that the many of the Key Performance Indicators (KPI's) are based on the work and publications of the Victorian Renal Health Clinical Network (RHCN), Department of Health, Victoria September 2012, [i] and the ANZDATA Registry Key Performance Indicator Reporting (May 2013).

ACRONYMNS

ANZDATA	Australia & New Zealand Data Registry
APD	Automated Peritoneal Dialysis
AVF	Arteriovenous Fistula
AVG	Arteriovenous Graft
CAPD	Continuous Ambulatory Peritoneal Dialysis
CKD	Chronic Kidney Disease
CNARTS	Central Northern Adelaide Renal And Renal Transplantation Service
CVC	Central Venous Catheters
EPAS	Enterprise Patient Administration System
ESKD	End Stage Kidney Disease
ESRD	End Stage Renal Failure
FMC	Flinders Medical Centre
HD	Haemodialysis
KDOQI	Kidney Disease Outcomes Quality Initiative
KPI	Key Performance Indicators
Kt/V	Is a number used to quantify dialysis treatment adequacy
PD	Peritoneal Dialysis
RRT	Renal Replacement Therapy
WCH	Women's and Children' Hospital

SUMMARY OF THE KPI'S

KPI – 1

Proportion of new, planned (i.e. early referral) patients that have received Chronic Kidney Disease (CKD) education before starting dialysis.

KPI – 2

Proportion of new haemodialysis (HD) patients that use a permanent vascular access at first HD treatment.

KPI – 3

Proportion of dialysis patients that are dialysing at home, both incident and prevalent rates.

KPI – 4

Peritonitis rate of each service hub.

KPI – 5

Proportion of new live donor renal transplants that are pre-emptive.

KPI – 6

Proportion of new End Stage Kidney Disease (ESKD) patients' ≤ 65 years who have had a renal transplant or are on the active renal transplant waiting list within 6 months of requiring Renal Replacement Therapy

KPI – 7

Renal Transplant Patient and Graft survival for living and deceased donor renal transplants at 1 and 5 years.

KPI - 8

Patient expectation and satisfaction survey

KPI 1 - Proportion of new, planned (i.e. early referral) patients that have received Chronic Kidney Disease education before starting dialysis.

Rationale

Patients with Chronic Kidney Disease (CKD) face important decisions about their length and quality of life, as to whether they choose Supportive Care or Renal Replacement Therapy (RRT). The choices may be difficult because it may involve consideration of many social, financial and medical variables.

Pre-dialysis education has been shown to: improve patient satisfaction and confidence in modality selection. For those that commence dialysis it may improve illness coping mechanisms and patient compliance with RRT.[ii] [iii] [iv]

Definition

- CKD education is defined as either attending a CKD group or a one-on-one education session with a renal nurse patient educator. (not a nephrologist consultation only)
- This education session is to be documented in the patient's medical record or Oacis (or in the future EPAS)
- 'New' patients are defined as new End Stage Kidney Disease (ESKD) patients (i.e. not those returning to dialysis with a failed transplant)
- 'Planned' patients are those that were referred to a nephrologist more than 3 months before requiring RRT. This is consistent with the ANZDATA definition.

Exclusions:

- Late referrals (patients commencing dialysis within 3 months of first renal consultation)
- Patients with a failed transplant and re commencing RRT are not considered a 'new' ESKD patient
- Paediatric patients

Numerator:

- All new planned patients each month that have received CKD education before starting dialysis.

Denominator:

- All new planned patients each month that have started dialysis.

Target

- 90% of new, planned patients that start dialysis have attended a CKD education session.

Data Reporting

- Data to be reported monthly.

Data Review

- Renal Clinical Network to review six monthly

KPI 2 - Proportion of new haemodialysis (HD) patients that use a permanent vascular access at first HD treatment.

Rationale

Access failure in HD patients has been noted to be a leading cause of morbidity and mortality. Numerous peer reviewed studies and the Kidney Disease Outcomes Quality Initiative (KDOQI) Clinical Practice Guideline recommend that the use of Central Venous catheters (CVC) should be minimised because patients with CVCs have been found to have significantly lower mean Kt/V levels and increased thrombosis, infection, hospitalization, and mortality rates than Arteriovenous Grafts (AVG) and Arteriovenous Fistula's (AVF). Long term vascular access such as AVG's and AVF's should be maximised to reduce the frequency of access complications and to improve dialysis adequacy and patient survival. [v] [vi]

Definition

- New HD patients are those that have commenced long term Haemodialysis as the first renal replacement therapy (RRT) for End Stage Renal Disease (ESRD) treatment.
- Permanent vascular access is defined as either an Arteriovenous Fistula (AVF) or an Arteriovenous Graft (AVG)

Inclusions:

- Only patients where HD is the first form of RRT.

Exclusions:

- Peritoneal Dialysis (PD) is the first form of RRT.
- Patients that have a failed transplant and are returning to HD

Numerator:

- Number of new patients starting HD using an AVF / AVG.

Denominator:

- Total number of new patients starting HD.

Data reporting

- Reported at the end of each month and submitted (Online or paper based) to ANZDATA.
- Reported quarterly by ANZDATA electronically to Heads of Units (or their delegates) For South Australia this is:
    - Central Northern Adelaide Renal and Transplantation Service (CNARTS),
    - Flinders Medical Centre (FMC)
    - Women's and Children's Hospital (WCH).

ANZDATA Quarterly report has the follow information:

Centre	New HD Patients	AVF or AVG	Vascular Catheter	Missing Access Data	Quarterly Average of New HD Patients Previous year	AVF or AVG% (95 % CI)

The ANZDATA report will also stratify for early and late referral.

Data Review

- Renal Clinical Network to review six monthly

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KPI 3 - Proportion of dialysis patients that are dialysing at home, both incident and prevalent rates.

Rationale:

Apart from transplantation home based dialysis is the recommended choice by nephrologists[vii] for patients with End Stage Kidney Failure and it is preferred by funding bodies as the most cost effective form of dialysis[viii]. Home dialysis treatments can provide significant social and lifestyle benefits. Home haemodialysis enables patients to have longer and more frequent dialysis treatments. Emerging observation data indicates this gives significant survival advantage.[ix]

Incidence

Definition

- Proportion of new patients that are dialysing at home after 6 months of starting dialysis
- Home dialysis includes nocturnal and conventional haemodialysis (HD), automated peritoneal dialysis (APD) and continuous ambulatory peritoneal dialysis (CAPD)

Inclusions:

- Incidence calculation is retrospective (i.e. calculated on the previous 6 months to the reporting month – May 2012 covers patients starting dialysis in November 2011, April 2012 covers patients commencing dialysis in October 2011, etc.).
- New patients that die or leave dialysis within 6 months of starting dialysis
- Patients commencing home dialysis but returning back to facility dialysis within 6 months of starting month.
- All patients that are successfully on home dialysis during any of the 7 months (includes the starting month) are included

Exclusions:

- Patients that are training for home i.e. the patient must be fully established at home to be included.
- Paediatric patients

Numerator:

- Number of patients on home dialysis within 6 months of starting dialysis.

Denominator:

- Number patients that started dialysis 6 months prior to the reporting month.

Target

- This KPI will be reviewed as a trend.

Data Reporting

- Data to be reported monthly.

Data Review

- Renal Clinical Network to review six monthly.

Prevalence

Definition

- Proportion of total dialysis patients that are dialysing at home includes patients on HD, APD and CAPD.

Numerator:

- Number of patients on home dialysis.

Denominator:

- Number patients on all maintenance dialysis.

Target

- This KPI will be reviewed as a trend.

Data Reporting

- Data to be reported monthly.

Data Review

- Renal Clinical Network to review six monthly.

KPI 4 – Peritonitis rate of each hub service

Rationale

Peritonitis is a leading cause of morbidity and has been associated with mortality and the reason for ceasing Peritoneal Dialysis (PD) treatments.[x]

Definition

- Peritonitis is inflammation of the peritoneum.[xi]

- Diagnostic criteria for PD peritonitis is at least two of the following:
    - Signs and symptoms of peritoneal inflammation
    - Cloudy peritoneal fluid with and the effluent white blood cell count is greater than 100/mm^3 and at least 50% of the WBCs are polymorphonuclear leucocytes.
    - Demonstration of bacteria in the peritoneal effluent by gram stain or culture.[xii]

- Peritonitis rate is calculated as number of episodes of peritonitis (i.e. total number of peritonitis episodes experienced by all patients in a unit) divided by, months of peritoneal dialysis at risk (i.e. total number of months all patients have spent on dialysis), and expressed as rate per person-year and inverse (in months between episodes (e.g. 1 per 20 patients months).[xiii]

- Relapsing peritonitis - Peritonitis that occurs ***within*** 4 weeks of completion of therapy of a prior episode with same organism or culture negative episode.
    - Should be counted as a ***single*** episode of peritonitis.[xiv]

- Recurrent peritonitis – Peritonitis that occurs ***within*** 4 weeks of completion of therapy of a prior episode but with a different organism.
    - Should be counted as an episode.

- Repeat peritonitis – Peritonitis that occurs ***more*** than 4 weeks after completion of therapy of a prior episode with the same organism.
    - Should be counted as an episode.

Inclusions:

- Only patients where PD is their RRT at any time during the reporting period.
- Patients on PD at commencement of a reporting period.
- Patients that have transferred into a hospital part-way through the reporting period.
- Patient that have transferred out of a hospital part-way through the reporting period.

Exclusions:

- Peritonitis episodes before or at the start of or after the reporting period (e.g. after Tenckhoff catheter insertion but before commencement of dialysis.

Numerator:

- Number of peritonitis episodes in all patients while receiving peritoneal dialysis.

Denominator:

- Total number of patient months on PD during the relevant period.
    - Patient count included when they start PD (not just when they have the catheter insitu) or the transfer in to a centre during the reporting period.
    - Episodes are only relevant if they occur during the reporting period.

Target

- Peritonitis rate should be no more than 1 episode every 18 months.[xv]

Data reporting

- Data reported at the end of each month and submitted (Online or paper based) to ANZDATA.
- Reported quarterly by ANZDATA electronically to Heads of Units (or their delegates) For South Australia this is:
    - CNARTS,
    - FMC,
    - WCH.

ANZDATA Quarterly report has the follow information:

Centre	PD Patients	Episodes	Person-Years	Rate (95 % CI)	Months per Episode	Previous Year Episodes Quarterly Average

Data Review

- Renal Clinical Network to review six monthly

KPI 5 - Proportion of new live donor renal transplants that are pre-emptive.

Rationale:

Kidney transplantation provides the optimal survival and quality of life for patients with end stage kidney disease[xvi]. As kidney transplantation is limited by the number of organs available, by increasing the number of live donor transplants it could potentially increase the number of renal transplants undertaken.

Definition

- Pre-emptive transplant is defined as patients who are transplanted requiring no or < 4 weeks of dialysis.
- A Transplant recipient is defined as a patient who has a kidney organ transplant from a deceased or living donor.
- A Living Donor is defined as a patient who has had a kidney removed and transplanted into another person who has End Stage Renal Failure.
- A Live Donor Transplant recipient is a patient who has had a kidney transplant from a Living Donor.
- Renal Replacement Therapy (RRT), is
    - Renal Transplantation (deceased and living donor)
    - Peritoneal dialysis
    - Haemodialysis
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Inclusions:

New ESKD patients only

Exclusions:

If a patient has a failed renal transplant and re-commences RRT, they are not considered as a new ESKD patient and should be excluded from the data for this KPI.

Any patient that has a combined solid organ transplant (i.e. kidney / liver).

Patients aged over 70 years of age.

Indigenous Australians

Numerator:

Number of new pre-emptive live donor transplant per month.

Denominator:

Number of new live donor transplants per month.

Target

20% of live donor transplants are pre-emptive.

Data reporting

Data to be reported monthly

Data Review

Renal Clinical Network to review six monthly.

KPI 6 - Proportion of new ESKD patients' ≤ 65 years who have had a renal transplant or are on the active renal transplant waiting list within 6 months of requiring Renal Replacement Therapy

Rationale:

Kidney transplantation provides the optimal survival and quality of life for patients with end stage kidney disease[xvii] and significant cost savings when compared to dialysis. The time from commencing dialysis to transplantation has shown to be an important determinant of patient health.[xviii]

Australia has a relatively low percentage of patients (18%) younger than 65 years who are activated on the transplant waiting list compared to France 49%, United Kingdom 48% and in the United States 33%.[xix]

Definition:

New ESKD patients are defined as those new to ESKD i.e. not those that have previously had a transplant.

Requiring RRT is defined as the point at which either transplantation or dialysis is required to sustain life.

Inclusions:

- Any patient that has been on the "active" Waiting List within 6 months
- If the patient is added to the active Waiting List and then subsequently is removed then include as an active Waiting List count
- Pre-emptive transplant patients are included in the count of all transplant patients.
- If a patient dies during the 6 month period after commencing RRT they are still to be included in the data.

Exclusions:

- If the patient has a failed transplant and re commences RRT then they are not considered as an ESKD patient and should be excluded from this data.
- Any patient that has a combined solid organ transplant (i.e. kidney / liver) is excluded from this data.
- Indigenous Australians

Numerator:

- Number of patients' ≤ 65 year who have had a transplant or on the "active" Waiting List within 6 months of requiring RRT.

Denominator:

- Total number of patients' ≤ 65 year olds who began RRT 6 months prior.

Targets:

- 70% of new ESKD patients' ≤ 65 year have been transplanted or on the active Waiting List 6 months after requiring RRT.

Data reporting

Data is to be reported monthly

The monthly data values for this KPI are reported retrospectively. In any month work back to the 6 months previously and count all the ≤65yo patients that first required RRT in that month.

Then of that total, count the number of patients that were either transplanted or placed on an active list within 6 months of requiring RRT.

In essence the calculations for this KPI give the patients an extra month to achieve active or transplanted status. This is to counter any effect of patients that may commence RRT late in the starting month.

The reporting months are outlined in the table below:

Reporting Month	Jan year X	Feb year X	Mar year X	Apr year X	May year X	Jun year X	Jul year X	Aug year X	Sept year X	Oct Year X	Nov Year X	Dec year X
6 month KPI – Report on new RRT starts from	Jul of previous year	Aug of previous year	Sep of previous year	Oct of previous year	Nov of previous year	Dec of previous year	Jan year X	Feb year X	Mar year X	Apr year X	May year X	Jun year X

Table1: The corresponding data for each reporting month for KPI 6

For example in calculating the KPI for April year X

6 months

- Count the number of patients ≤ 65 y.o. that required RRT in year X = 5
- Of those patients, count the number that are now transplanted or active = 4
- April year X KPI (6 months after requiring RRT) = 4/5 = 80.0%

KPI 7 – Renal Transplant Patient and Graft survival for living and deceased donor renal transplants at 1 and 5 years.

Rationale:

To compare renal transplant patient and graft survival in South Australia (SA) with National survival rates using the ANZDATA Registry survival analysis by Kaplan-Meier methods.

Definition:

- A Renal Transplant Patient is defined as a patient who has a kidney organ transplant from a deceased or living donor.
- Graft survival is defined as a live patient who has a kidney organ transplant and has kidney function without a dialysis requirement.

Inclusions:

- All South Australian patients who were aged ≥ to 15 years and grafted in South Australia between 1 Jan and 31 December of the 5 year period before the most current report from ANZDATA.
- Pre-emptive transplant patients.
- Primary deceased donor and living donor grafts
- Patient survival is analysed from transplant until death or most recent follow-up.
- Graft survival is analysed from transplant until death, return to dialysis or most recent date of follow-up.

Exclusions

- Any patient that has a combined solid organ transplant (i.e. kidney / liver).
- Second and subsequent deceased and living donor grafts.
- Interstate patients who had their renal transplant surgery in SA.

Targets:

- 3 Standard Deviations below the National mean at 12 month intervals.

Data reporting

- Through established ANZDATA Registry reporting pathways.

Data Review:

- Renal Clinical Network to review yearly.

KPI 8 – Patient Expectations and Satisfaction Survey

Rationale:

Patient Centred Care is the focus of our service. Evidence is increasing on the association between consumer experiences of care and quality of care. The Australian Commission on Safety and Quality in Health have developed *The National Safety and Quality Health Service Standards,* of which *Standard 2: Partnering with Consumers,* advises us that by seeking and using consumer feedback through surveys, focus groups, compliment and complaints processes is a useful mechanism for establishing partnerships, informing quality improvements and improving patient experience.[xx]

This KPI will report on an annual survey of patient expectations and satisfaction of their experience of a renal service or services in South Australia.

Definition:

Patient satisfaction is defined as fulfilment of one's wishes, expectations, or needs.

Expectation is defined as a strong belief that something will happen or be the case, or a belief that someone will or should achieve something.[xxi]

Consumer centred care: A consumer centred approach to care involves:

- Treating consumers and or carers with dignity and respect.
- Communicating and sharing information between consumers and or carers and health care providers
- Encouraging and supporting participation in decision making
- Fostering collaboration with consumers and or carers and health care organisations in the planning, design, delivery and evaluation of health care.[xxii]

Inclusions:

Adults greater than 18 years of age

Exclusions

Children under the age of 18 years

Targets:

Initially view as a trend and analysed to set targets for the future.

Data reporting

Data Review:

Renal Clinical Network to review yearly

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