

Policy and clinical practice: Audit tools to measure adherence

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Abstract

Background: Clinical practices are supported by policies and guidelines to assist nurses provide quality patient care.

Aim: To evaluate the level of renal nurses' compliance to policy and to develop strategies in improving staff's adherence, three selected renal policies were audited.

Method: A 30 day prospective audit on percutaneous vascular catheter exit site dressing and application of Mupirocin™ Ointment on 18 haemodialysis patients who had a newly inserted or reinserted percutaneous catheter was conducted. Two retrospective audits on peritoneal equilibration test (PET) and dialysis adequacy test (AT) on 164 peritoneal dialysis (PD) patients were also conducted.

Results: The results showed that the full adherence rate for percutaneous catheter exit site dressing was 50%. The audit revealed that 61% (n=11) had Mupirocin™ Ointment ordered in the medication charts but only 6 charts were signed by nurses. 65% (n=107) patients had PET performed as per policy. 84% (n=137) patients had AT performed during the survey period.

Conclusions: In order to improve quality patient care, continuous monitoring of policy adherence is vital. It is also important to provide education sessions and to encourage all staff to read and make aware of current and new policies.

Introduction

Hospital staff often fail to follow policies and procedures may lead to errors in patient management (Petty, 2005). Chatterjee et.al. (2004) showed adherence to written infection control policies and procedures resulted in significant improvement in sharp objects disposal, hazardous waste handling, and availability of personal protective equipment, isolation precautions, and staff knowledge regarding location of the exposure control plan. Another study measuring protocol compliance through a computer-based surveillance system that monitored evaluation form completion (Harwood, Nordin, Heibert, Weiser, Brisson, Skovron & Lewis 1997). The results showed significant change ($p < 0.001$) in physician compliance in completing a

standardized examination following an administrative mandate to change.

There are limited reports focusing on document control practices to determine how faithfully document control is being implemented in practice and whether particular approaches to document control result in better levels of compliance (Valenstein, Stankovic, Souers, Schneider & Wagar 2009). Therefore, health services are required to create, notify and review policies and procedures.

In order to evaluate the compliance rate to the clinical policies and guidelines of our staff, audits were conducted on three current policies within our Renal Unit. The objectives of the audits were to

Key Words

adherence, central venous dialysis catheters, peritoneal equilibration test, adequacy, nursing

examine staff compliance on three renal policies – vascular catheter exit site care; peritoneal equilibration test (PET); and peritoneal dialysis (PD) Adequacy; and to develop strategies to improve staff adherence to clinical policies. The aim of this paper is to describe and provide the results from these audits.

Central venous dialysis catheter audit

A central venous dialysis catheter (CVDC) is mainly used to establish a temporary vascular access to one of the patient's large veins (internal jugular, femoral or less desirably the subclavian veins) for acute haemodialysis (Emery, 2001; Akoh, 2002; Daugirdas, Blake & Ing, 2007; Choi & Frankel, 2007). This catheter is commonly used for patients with acute renal failure; initial management of unheralded chronic renal failure; a bridging modality while permanent access is being planned, revised or is maturing; a bridging modality between different forms of renal replacement therapy, i.e. peritoneal dialysis patients whose abdomens are being rested prior to a new peritoneal catheter placement for severe peritonitis (Daugirdas et.al., 2007; Choi & Frankel, 2007).

Catheter-related infection is regarded as one of the most common post-insertion complications and a leading cause of catheter loss. Infection can arise by migration from the patient's own skin flora through the puncture site and onto the outer catheter surface. It can also arise from contamination of the catheter connectors, lumen contaminations during dialysis, or infused solutions (Daugirdas et.al., 2007).

Catheter exit site care plays an important role in the prevention of micro-organism invasion

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(Centres for Disease Control and Prevention, 2002). All CVDCs are covered by a sterile transparent dressing, which permits continuous inspection of the site (Akoh, 2002).

Current policy on CVDC exit site care

To minimise the risk of infection, the CVDC must only be used for haemodialysis (Vascular Access Society, 2009), unless specifically ordered by a Nephrologist. Only trained dialysis staff (e.g. Registered Nurses and Endorsed Enrolled Nurses) should perform catheter connection, disconnection and exit site dressing under aseptic condition.

According to our organisation's policy, the CVDC exit site dressing must be changed weekly or as required (i.e. if the dressing appears soiled, with discharge, and if dressing has been lifting-off). Conditions of the CVDC exit site and any dressing change performed must be documented on the patient's clinical record. Mupirocin™ Ointment must be charted on the medication chart, and applied to every new catheter (including revised catheters) for one month on a weekly basis or as needed whenever dressings are attended to.

The peritoneal equilibration test (PET) audit

The peritoneal membrane can be considered as a "dialyser" membrane. The peritoneal membrane characteristics, such as: peritoneal solute-water transport, pore size, effective peritoneal surface area and the degree of vascularity of the peritoneum varies considerably from patient to patient. Other factors, such as infection and inflammation that occur during an episode of peritonitis, increased the membrane's vascularity and pore size, thus affecting ultrafiltration and clearance (Daugirdas, Blake & Ing, 2001).

PET is the standard assessment for solute equilibration, rate of glucose absorption, net ultrafiltration (UF) function and the types of peritoneal transport, defined by low, low-average, high and high-average (Daugirdas et.al. 2001). Peritoneal transport is assessed by using equilibration ratios between dialysate (D) and plasma (P) for urea (D/P urea), creatinine (D/P Cr), sodium (D/P Na) and glucose (D/P glucose) absorption. Equilibration ratios measure the combined effect of diffusion and ultrafiltration rather than either in isolation.

The PET should be performed one month

after PD commencement and repeated yearly or if there is a clinical evidence of a change in peritoneal membrane transport status e.g. peritonitis, decreased in ultrafiltration (UF) or unexpected fluid overload (Johnson, Brown, Lammi & Walker, 2005).

The adequacy test (AT) audit

The adequacy test is the measurement of both peritoneal and residual renal (urine) clearance of urea and creatinine in peritoneal dialysis (Daugirdas et.al., 2001; Johnson, Brown, Lammi & Walker, 2005). This test is performed by a 24-hour collection of dialysate effluent and the measurement of its urea and creatinine content. The aims of the test are to monitor, prescribe and achieve a urea and clearance target for peritoneal dialysis. The recommended urea clearance target should be at least 2L/week, and the creatinine clearance target should be at least 60L/week in high and high average peritoneal transporters; and 50L/week in low average and low peritoneal transporters (Baxter HealthCare Corporation, 2006). The 24-hour collection of dialysate effluent and urine are considered the golden standard (Daugirdas et.al., 2001).

The test should be performed one month after PD commencement and repeated bi-annually or if there is a clinical evidence of a change in transport status e.g. decreased in UF or unexpected fluid overload and repeated around four weeks of any alternation in dialysis prescription (Johnson, Brown, Lammi & Walker, 2005).

The PET and adequacy tests are objective evaluation. The results are useful in determining the most appropriate treatment modality and in writing the dialysis prescription (Daugirdas et.al., 2001). These procedures can be performed either in the clinic or in the renal ward area.

Method

A thirty day prospective audit on CVDC exit site care with dressing changes and the application of Mupirocin™ ointment was carried out. The Quality Manager together with staff from the dialysis units in a tertiary teaching renal dialysis network in Sydney conducted the audit on eighteen randomly selected haemodialysis (HD) patients who had new or re-inserted CVDCs in April 2007. All patients enrolled in the audit were

followed up for 30 days.

A retrospective audit on PD PET attended between March 2005 to February 2007 (two years) was performed. All 164 clinical files of PD patients at that time were audited by the Quality Manager together with staff of the CAPD Clinic. A retrospective audit on Adequacy tests was also performed at the same time with PET audit on the same 164 clinical files of PD patients.

Three separate audit tools were developed by the Quality Manager tailored for each audit. They were in the form of questionnaires. The questionnaire in each audit tool was generated according to each policy statement. All the audit tools were evaluated and approved by the auditors.

Results

CVDC Audit

A questionnaire was developed as the audit tool for the CVDC audit (Table 1). The audit was carried out

For the CVDC exit site dressing changes, the audit showed that out of the 18 randomly selected patients with the vascular catheter, 50% of the patients had documentation indicating full adherence (4 times + if required) with dressing changes (Graph 1). Seven patients (39%)

As for the documentation on Mupirocin™ ointment application, 11 out of the 18 patients' medication charts (61%) had the Mupirocin™ ointment being prescribed in the medication charts. Seven patients (39%) had no Mupirocin™ ointment ordered in the medication charts (Graph 2). This could explain the low rate of application of Mupirocin™ ointment to the vascular catheter exit sites.

Graph 3 above showed that the applications of the Mupirocin™ ointment to the vascular catheter exit site were low. Among these 11 Mupirocin™ orders, only 6 (55%) had been signed by nurses 4 times and 5 (45%) had been signed by nurses ranging from 1-3 times. Overall, the full adherence rate for percutaneous catheter exit site dressing changes was 50%. The audit showed that 61% (n=11) had Mupirocin™ ointment ordered in the medication charts but only six (6) charts were being signed 4 times (full adherence) by nurses.

The PET audit:

All 164 patients' clinical records at that time were audited by using the questionnaire being developed as the audit tool Table 2. Among these 164 patients, 114 (70%) patients were on continuous ambulatory peritoneal dialysis (CAPD), 40 (24%) patients were on automated peritoneal dialysis (APD), and 10 (6%) patients were on both CAPD and APD (Table 3).

Of all the 164 patients, 107 (65%) patients had the PET performed according to the renal policy but 57 (35%) patients did not have the PET performed (Graph 4).

There were various reasons for the PET tests not being performed. Out of the 57 (100%) patients with PET not being performed, 20 (35%) patients had PET being performed just before the survey period; 11 (19%) patients fell into the clinical issues such as VRE or MRSA positive, Peritonitis, had abdominal surgery or just commencement of PD; 6 (11%) patients had social issues such as refusal by patients, no transport or no carers; while 20 (35%) patients were exit from the program such as deceased or being transferred to haemodialysis or transferred to other Area Health or countries (Graph 5). The adequacy audit:

The same 164 patients' clinical records as PET audit were audited by using the questionnaire being developed as the audit tool (Table 4). A total of 137 (84%) patients had the Adequacy Test performed, while

Table 1 – Haemodialysis Vascular Catheter Audit Tool

1 Patient is dialysed at:	
2 Has the patient had weekly documented vascular catheter exit site dressing change at least weekly (plus prn if any) for the first month?	a. Yes, documented weekly x 4 and plus prn b. Yes, documented _____ times only (less than 4) c. No documentation found
3 Has Mupirocin Ointment been charted in the medication chart?	a. Yes b. No c. No medication chart found
4 Has the prescribed Mupirocin Ointment been signed by a nurse?	a. Yes, at least 4 times in the first month b. Yes _____ time(s) only in the first month (put in the no. of times) c. No

27 (16%) patients did not have the test performed (Graph 6).

There were various reasons for the Adequacy tests not being performed. Out of the 27 (100%) patients with Adequacy tests not being performed, 7 (26%) patients had the tests being performed just before the survey period; 8 (30%) patients fell into the clinical issues; 1 (3%) patients had social issue; while 11 (41%) patients were exit from the program (Graph 7). Unfortunately, these were beyond the discipline of the CAPD Clinic staff.

Discussion

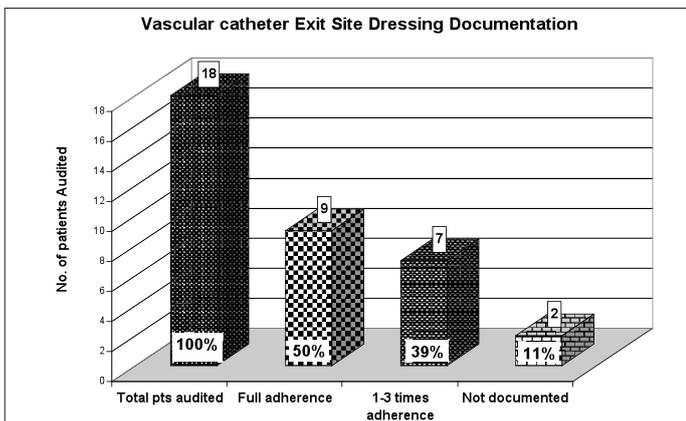
The development of the three audit tools to evaluate the adherence of the three renal policies showed that nursing staff still not fully adhered to the policies. Continuous evaluating, monitoring and auditing of the

adherence to clinical policies are vital in providing quality patient care. Further audit is recommended to explore the measures to ensure policies are fully complied with by nursing staff. The renal Clinical Nurse Educators and the renal Clinical Nurse Consultants play important roles in term of education and the promotion of policies adherence.

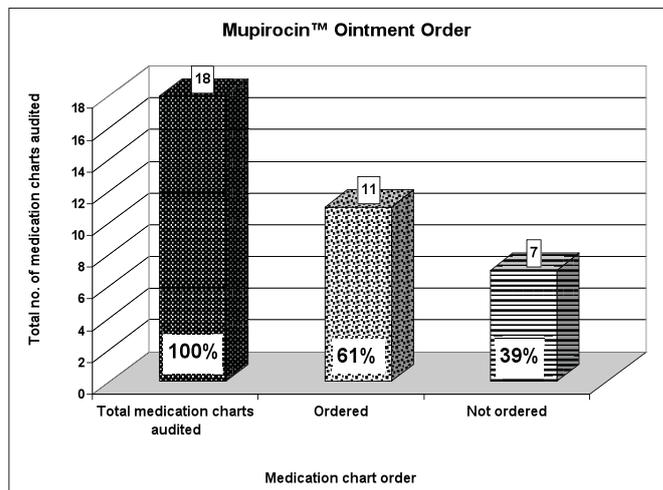
Conclusion and recommendations

Clinical guidelines serve as guides in clinical practice. Nurses can support clinical practice and can reinforce documentation that contributes to quality patient care. Departmental and Unit education sessions should be provided to staff regularly to encourage the promotion of evidence-based clinical policies.

Graph 1 – Vascular Catheter Exit Site Dressing Documentation



Graph 2 – Mupirocin™ Ointment Ordering



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Graph 3 – Frequency of Mupirocin™ Ointment Application

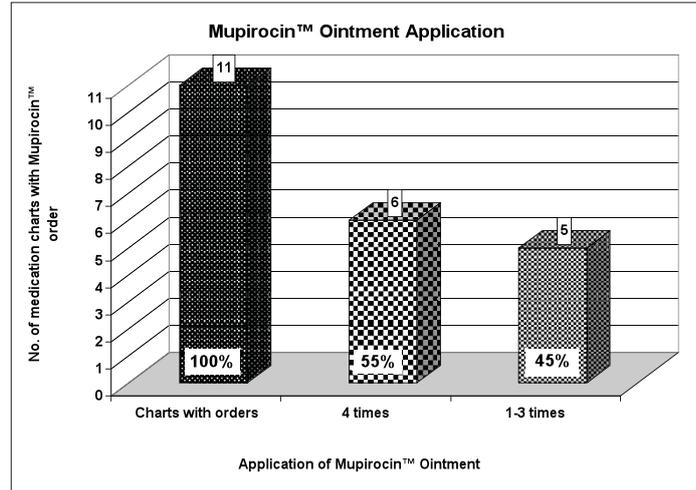


Table 2: PET Audit Tool

1. The patient started CAPD or APD or both in	(month) _____ (year) _____
2. Did the patient have a PET within the retrospective audit period.?	yes no
3. The reason(s) for not having had a PET during the retrospective audit period because of:	<p>a. Patient fell into the exclusion criteria (can choose more than one):</p> <ul style="list-style-type: none"> • VRE or MRSA +ve • Mechanical failure • Abdominal operation • Was transferred to haemodialysis <p>b. Other subjective reason(s)</p> <ul style="list-style-type: none"> • Patient refused the scheduled test • No transport arrangement available for the patient to come for the test • No carer available to bring the patient in for the test • Patient on both PD and HD • Patient's other test results demonstrated within a reasonable range <p>c. Other reason (please specify):</p>

Table 3: Number of Patients Audited

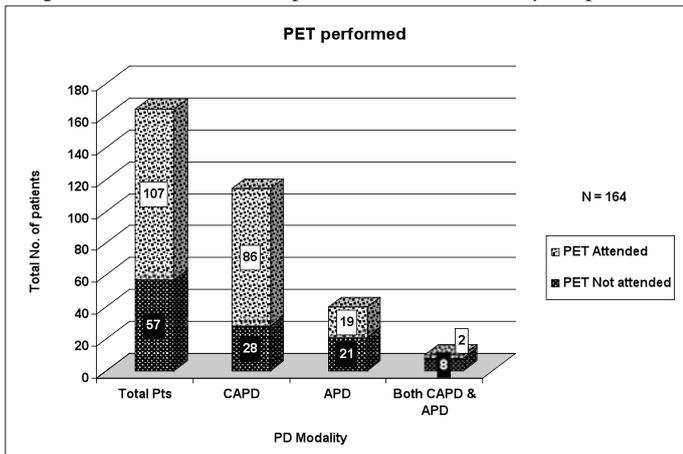
Patient Modalities	No. of Patients	Percentage
CAPD	114	70%
APD	40	24%
Both CAPD & APD	10	6%
Total	164	100%

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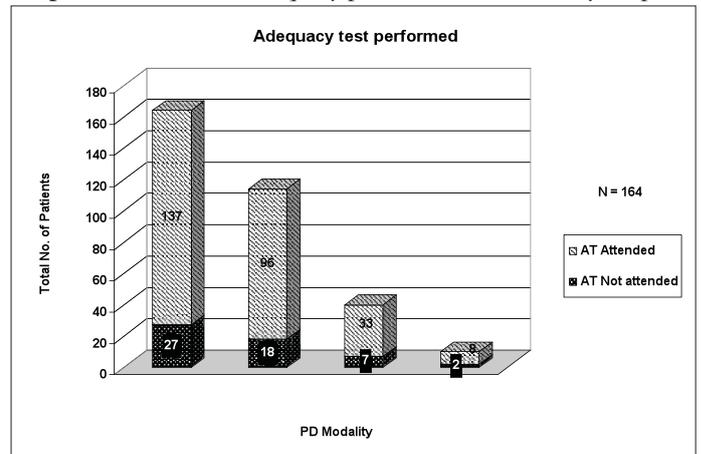
Table 4: Adequacy Test Audit Tool

1. The patient started CAPD or APD or both in	(month) _____ (year) _____
2. Did the patient completed an Adequacy test within the retrospective audit period?	Completed Not completed
3. The reason(s) for not having had an Adequacy test during the retrospective audit period because of:	<p>a. Patient fell into the exclusion criteria (can more than one):</p> <ul style="list-style-type: none"> • VRE or MRSA +ve • Mechanical failure • Had abdominal operation • Less than one month post peritonitis/change in PD prescription/commencement of PD (please circle the appropriate reason(s)) <p>b. Other subjective reason(s)</p> <ul style="list-style-type: none"> • Patient refused the scheduled test • No transport arrangement available for the patient • No carer available to bring the patient in for the test • Patient on both PD and HD <p>c. Other reason</p>

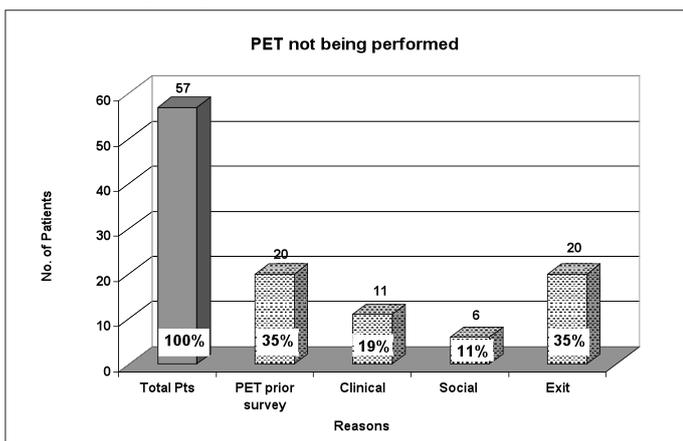
Graph 4 – Number of PET performed within the 2 years period



Graph 6 – Number of Adequacy performed within the 2 years period



Graph 5 – Reasons for PET not being performed within the 2 years period



Graph 7 – Reasons for Adequacy not being performed within the 2 years period

