

Using a Remote Two-Way Patient Management System to Tailor APD Therapy

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Abstract

Introduction: Sharesource is a 2-way remote patient management platform, that allows the PD team to securely view their patients recently completed home dialysis treatment data; enabling early detection of treatment-related issues and proactive remote adjustment to home device settings.

Objective: To evaluate the impact of Remote Patient Management (RPM) on PD resource utilisation, nursing decision-making and individualised tailoring of patient care.

Method: The same Renal Nurses were observed during ordinary working days within Renal Units pre and post Claria Sharesource introduction.

Results: A total of 2,187 minutes of PD nursing time was observed pre and post Claria Sharesource introduction. Pro-active nursing behaviour increased; frequency and length of clinic visits decreased; valued tasks increased; and clinicians reported improved patient care.

Conclusion: The reduction in routine tasks in conjunction with increased overview of the PD patient cohort, allows better time management and the ability to prioritise patients' needs

Results

A total of 2,187 minutes of PD nursing time was observed across the 6 observations. 1114 minutes before RPM and 1073 minutes, 6-13 months after RPM was established. The same renal nurses were observed during ordinary working days within Renal Units before the Claria Sharesource device was introduced and again after it was established.

1) Proactive Behaviour

Proactive patient care was 2% pre Sharesource and increased to 37% post Sharesource. Proactive nursing behaviours included increased computer time, clinician discussions, phone calls and home visit activities. Post Sharesource reactive activity dropped from 45% to 28% and routine activity dropped from 45% to 32%. Daily dialysis records were reviewed at best 3-4 weekly and at worst 4-6 monthly pre Sharesource. Post Sharesource they were reviewed at best daily and at worst weekly.

Figure 1: Pre Sharesource

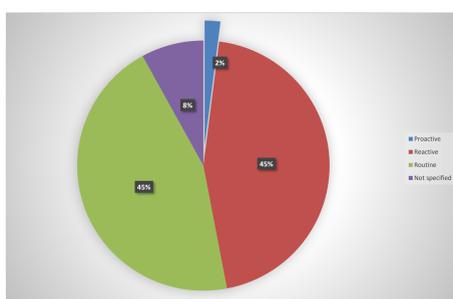
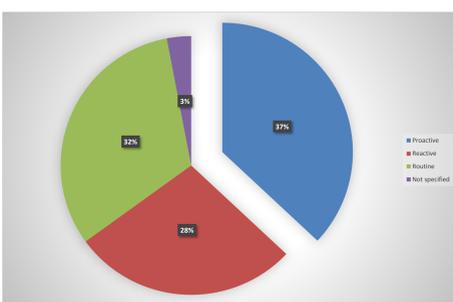


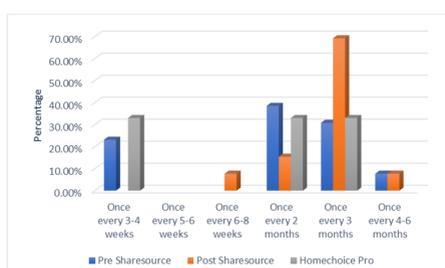
Figure 2: Post Sharesource



2) Nurse – Patient Contact

The introduction of Sharesource resulted in an increase in: phone calls to patients (2.8%); computer time checking patients results and records (6.4%); and time talking to clinicians (6.8%). The impact of Sharesource was to reduce the: frequency of routine clinic visits, with <3 monthly visits dropping from 61% to 23%; length of mean clinic visits reduced from 55 to 34 minutes. Whilst routine monitoring reduced, 36% of patients indicated an increase in phone calls and 11% were visited more often at home.

Figure 3: Clinic visit frequency changes pre and post Sharesource



3) Valued Tasks

Of the eight value tasks, rated by patients and staff as increasing confidence to dialyse at home, time spent on the top four tasks increased post Sharesource including: phone support (8.1%), reviewing daily records (6.2%) along with increased PD training and educating patients. Three of the four lower-rated tasks consumed less time post Sharesource including: physical examinations; past history and treatment options. Patients also reported feeling safer and more confident using their home treatment with an increase from 68% to 99% post Sharesource introduction.

Table 1: Value task activity changes post Sharesource

Patient Activities	Value Ranking of Patient Activity	Post Sharesource Activity Changes
Train patients on how to use and/or how to manage their dialysis at home	1	↑
Phone support for patients and/ or their carers	2	↑
Education for patients on condition and treatment and answer questions and concerns	3	↑
Review patients' Daily Record Book and /or test results to monitor how well the dialysis is working	4	↑
Discuss treatment options and/ or treatment plan and/ or medication details with your patients	5	↓
Conduct patient examination to assess their condition	6	↓
Establish patient history and feedback to assess their condition	7	↓
Letter or/ email to patients to help them with their dialysis at home	8	↑

4) Healthcare Professional Experience

"Treatments are prescribed quicker. Problems and issues are resolved sooner".

"Prevents some drainage problems becoming a problem".

"I feel Sharesource has given me and the patient more confidence that patients are doing and getting the most effective dialysis".

"More accurate, easier to access dialysis information. Trends are easily identified and treatment can be prescribed more quickly".

"Better case load management".

"We are starting to see a more proactive approach to fluid management problems in particular".

"If you have sufficient manpower dedicate just one nurse to Sharesource every morning and phoning patients. Picking up problems early saves time in the long run and reduces hospital admissions".



Conclusions

Tailoring healthcare services to individuals' needs, preferences and values is a cornerstone of modern healthcare delivery.⁷ Sharesource's two-way remote patient management capability, facilitates rapid tailoring of individuals' regime and alarm parameters, to accommodate their clinical needs and lifestyle on APD. The visibility of patients' daily dialysis and the associated increase in: proactive nursing behaviours; nurse-patient communication; and early identification of problems enhances patients' confidence on home dialysis.⁸

The reduction in routine tasks in conjunction with increase overview of the PD patient cohort, allows better time management and the ability to prioritise patients' needs. Future studies and experience will show if: early intervention increases dialysis adequacy and time on therapy; reduces the incidence of fluid overload; improves dialysis fluid utilisation to reduce patients' glucose exposure; and if registry scale data analysis can identify early peritonitis warning signs.

References

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Background

Remote patient monitoring has been shown to improve some clinical outcomes for patients with chronic disease. A reduction in emergency visits and hospitalisation result in lower healthcare costs per patient.^{1,2} Patient satisfaction, concordance and quality of life show improvement, with a concurrent reduction in care giver burden.^{1,2,3} PD concordance is an issue as >10% non-concordance is associated with technique failure, peritonitis, hospitalisation and mortality.^{4,5} Furthermore, 30% of patients have been identified as missing 4 or more treatments (>10% non-concordance) in their first month of PD.⁶ Sharesource is a 2-way remote patient management platform, that allows the PD team to securely view their patients recently completed home dialysis treatment data; enabling early detection of treatment-related issues and proactive remote adjustment to home device settings.

Objective

To evaluate the impact of RPM on PD resource utilisation, nursing decision-making and individualised tailoring of patient care. In essence does the introduction of Claria Sharesource:

- Allow PD nurses to make more pro-active therapy decisions about their patients?
- Save the clinic time with monitoring ongoing APD patients?
- Allow renal nurses to spend more time conducting tasks that have greater value for their APD patients?
- Effect renal nurses and clinicians experience of APD and with Claria Sharesource.

Methods

An analytical observational longitudinal study pre and post Sharesource device introduction. A tool was designed that measured the time renal nurses take to complete all the individual tasks during an ordinary working day. Each task observed was recorded within a category, activity and task. The same Renal Nurses were observed during ordinary working days within Renal Units before the Claria Sharesource device was introduced and again after it was established. Clinicians within units who had adopted Claria Sharesource were telephone interviewed after the device was established.