

Nephrotic Syndrome Care Bundle: A Transition from Hospital-based to Home- based Patient Management

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Introduction:

What is Nephrotic Syndrome?

Most common Chronic Kidney Disease that poses significant disease burden to patients, families and consumes considerable healthcare cost.

Problems of existing management:

- Hospital-based monitoring for treatment response:
 - Average length of hospital stay of 7 days
 - Potential hospital acquired infections
- No objective assessment of caregivers understanding of the disease and home monitoring resulting in:
 - Poor compliance,
 - Unscheduled visits to outpatient clinics/emergency department and admissions

Objectives:

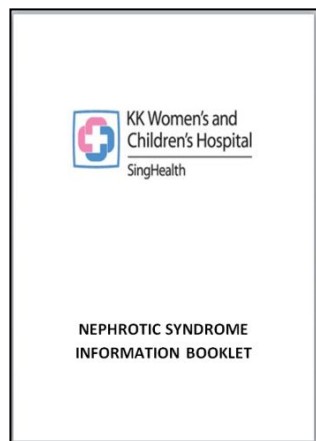
To achieve a smooth and safe transition from **Hospital-based to Home-based** patient management with the aim to reduce length of hospital stay and cost saving without compromising patient safety.

Methodology:

- All patients with newly diagnosed NS were retrospectively recruited from 2011 to August 2013 (control group), these were compared with a prospective group after implementation of the Nephrotic Syndrome care bundle in September 2013 (intervention group)
- An all-encompassing care bundle was designed with collaboration and cooperation of all stakeholders in patient care, including patients, caregivers, attending doctors and nurses.

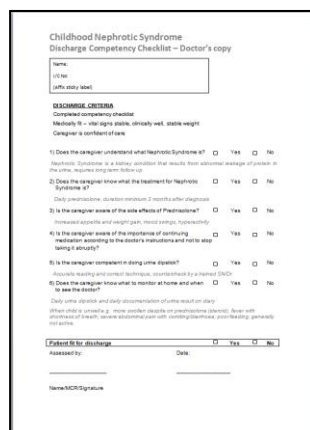
1. Education:

Upon diagnosis, the education and training for patients caregiver will commence. These are based on Nephrotic syndrome Information Booklet which contains essential information on the disease, particularly the presentation, treatment, monitoring, action plan and diary for charting of home monitoring findings.



2. Disease monitoring:

Daily caregivers competency check to ensure adequate understanding of the disease and reliable technique in monitoring of treatment response using simple urine test strips.



3. Assessment by Doctors and Nurses:

Discharge criteria was modified:

- Patient can be discharged if stable clinically without needing to wait for treatment, which may take up to 10 days.
- Caregivers are competent in patients monitoring

4. Ensuring patient safety after discharge:

- Follow up with phone calls after discharge
- Arrange early clinic visit
- Ensuring compliance by obtaining feedback from caregivers and checking their knowledge retention.

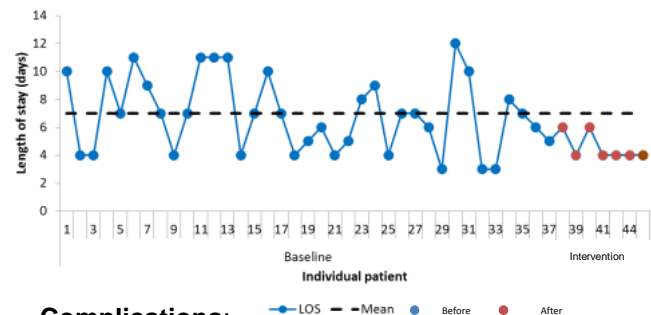
Results:

We analyzed 37 retrospective patients and 7 prospective patients. They had similar clinical and laboratory characteristics.

- After introducing the new management plan, there is a significant reduction in the length of hospital stay from a mean of 6.9 days to 4.6 days or a 34% reduction ($p < 0.01$). No patient had complication after intervention as compared to about 20% patients having complication prior to intervention.

Length of Hospital stay before and after intervention:

Length of stay – 4.6 vs. 6.9 days; $p < 0.01$

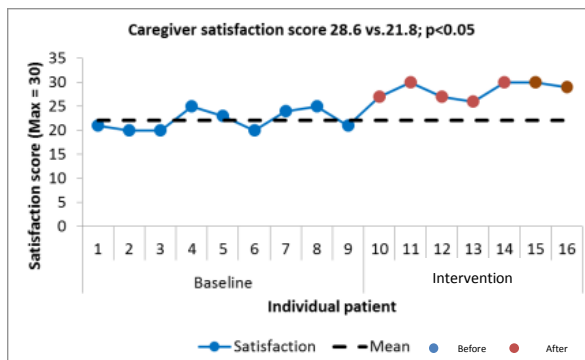
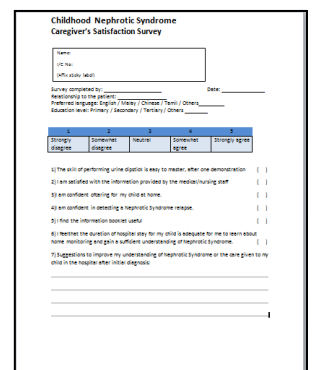


Complications:

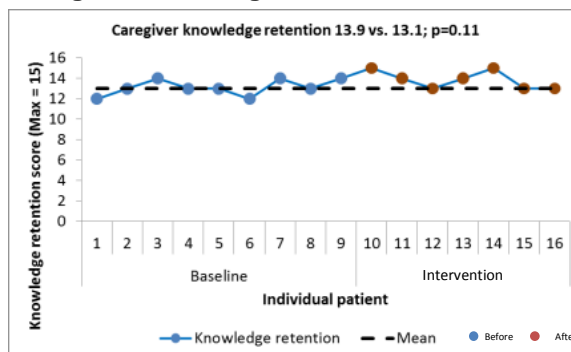
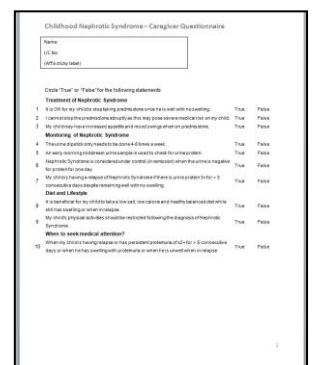
Outcome	Before Intervention	After Intervention
Infections	24%	0
Unscheduled visits/admissions	19%	0

- More than 85% of doctors found the care bundle was useful and user friendly. Caregivers satisfaction score improved after intervention from 21.8/30 to 28.6/30 ($p < 0.05$). There is also an improvement in caregiver knowledge retention from 13.1/15 to 13.9/15, even though this is not statistically significant ($p = 0.11$). The resultant better understanding and satisfaction of all stakeholders can help to ensure the sustainability of our intervention in the long run.

Caregiver satisfaction score

Caregiver knowledge retention score

- Cost saving from a shorter hospital stay translates to a saving of medical fee up to SGD 1200/patient at subsidized rate and an average saving of 2.5 days of hospital manpower and operation costs.

Conclusion: “Small Twist, Big Leap”

A small change in existing process can lead to a big improvement in patient care and substantial saving of healthcare costs.