

## UNIT NO. 5

# USING THE SBAR4 MODEL FOR MANAGEMENT OF A PATIENT WITH COMPLEX COMORBIDITIES IN THE HOME CARE SETTING — A CASE STUDY

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**ABSTRACT**

**This home care case illustrates how the SBAR4 model can be used for a complex patient during a transitional care period to define the active problems at hand and the conditions needed to ensure successful outcomes of the management plans. Two home visits are described in this article: first, a home visit done after multiple hospital admissions for fluid overload and congestive cardiac failure; and second, a subsequent visit done after a fall with a resultant clavicle fracture impacting patient's function and self-care abilities.**

**Keywords: Transitional Care; Home Care; Complex Care; Complex Patient; SBAR4;**

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**INTRODUCTION**

Transitional care (TC) is defined as a set of time-limited actions that are in place to ensure good coordination and continuity of care plans to prevent negative outcomes among high-risk patients as they move from one care setting to another.<sup>1-3</sup> Patients who benefit from transitional care are usually medically, functionally, and socially complex<sup>3-5</sup> who have frequent hospital readmissions and high hospital utilisation.<sup>6</sup> The SBAR4 model was introduced locally in 2016 as a framework for understanding and managing patients' complex co-morbidities.<sup>7</sup> It models after the Pendleton model, which is familiar to family physicians as a consultative model. This article will first describe a case study, followed by two transitional home care visits which use the SBAR4 model to delineate the active issues, followed by in-depth management plans which engage all parties involved and muster available community resources around the patient to ensure success in the care plans.

**CASE STUDY**

Mr L is an 82-year-old Chinese gentleman.

His active medical issues include:

1. Stage 4 chronic kidney disease (CKD) with recurrent hospital admissions for fluid overload.

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2. Heart failure with preserved ejection fraction (HFpEF). His last 2-dimensional echocardiography (2DE) in March 2016 showed a calculated ejection fraction of 62 percent, impaired diastolic function, raised pulmonary artery systolic pressure of 43mmHg and severe tricuspid regurgitation due to right heart volume overload.
3. Atrial fibrillation (AF) not on anti-coagulants due to previous peptic ulcer disease and falls risk.
4. Ischaemic heart disease (IHD) with a coronary artery bypass graft (CABG) done in 1989.
5. Liver cirrhosis on a background of hepatitis B carrier status. Child-Pugh classification B (score 7).

Other medical issues include:

1. Type 2 diabetes mellitus (DM) on diet control.
2. Hypertension.
3. Hyperlipidaemia on diet control.
4. Gout on allopurinol.
5. Trigeminal neuralgia which is well controlled with carbamazepine.
6. Peptic ulcer disease in 2009 due to an antral ulcer with a history of *Helicobacter Pylori* positive on biopsy. Completed triple therapy.
7. Osteopenia on a bone mineral density test in Oct 2014.
8. Periumbilical hernia.
9. Benign parotid cyst with a left superior parotidectomy in 2009.

His latest medication list is as follows:

1. Furosemide 80mg BD (8am and 4pm)
2. Bisoprolol 1.25mg OM
3. Clopidogrel 75mg OM
4. Omeprazole 20mg OM
5. Allopurinol 50mg OM
6. Carbamazepine CR 200mg ON
7. Calcium acetate 667mg TDS
8. Potassium chloride 1.2g OM
9. Senna 2 tabs ON
10. Lactulose 10ml TDS
11. QV cream 1 application BD
12. Betamethasone 0.1% cream 1 application BD

Socially, he is a single elderly living in a 1-room public rental flat. He has no next of kin but has a friend, Mr M, who comes several times a week to help with simple household chores, like ironing. Mr L previously did odd jobs and his last known job was as a cashier. Currently retired, he is dependent on

Public Assistance for his daily living expenses and his medical expenses in the public healthcare institutions are paid for by Medifund. He is known to a Senior Activity Centre (SAC) at his block, which he attends regularly; Home Nursing Foundation (HNF) for medication packing; Thye Hwa Kwan Moral Home Help for meals on wheels, escort services, and ensuite services.

Functionally, he is largely homebound with limited community ambulation. He is still able to manage his activities of daily living (ADL) with modified independence and is ambulant with a rollator frame in the home setting. Due to low physical tolerance and endurance, he uses a motorised scooter in the community setting.

Because of his multiple recurrent hospital admissions to the Singapore General Hospital (Table 1), Mr L was referred to the Department of Family Medicine & Continuing Care (FMCC) during his admission in June 2016 for transitional home care and case management to optimise his medical and social care in the community.

**Table 1: Hospitalisation records of Mr L from Jan 2016 to Jun 2016**

Date of hospital admission (Length of stay)	Reasons for admission
17 Feb 2016 – 20 Feb 2016 (4 days)	Fluid overload
7 Mar 2016 – 9 Mar 2016 (3 days)	Fluid overload
15 Mar 2016 – 18 Mar 2016 (4 days)	Fluid overload Lower limb cellulitis
21 Mar 2016 – 30 Mar 2016 (10 days)	Mechanical fall with stable facial malar injury
15 Apr 2016 – 20 Apr 2016 (6 days)	Fluid overload
21 May 2016 – 29 May 2016 (9 days)	Fluid overload
7 Jun 2016 – 9 Jun 2016 (3 days)	Fluid overload  <i>*Referred to FMCC for Transitional Home Care and comprehensive case management</i>

## FIRST HOME VISIT

He was first reviewed at his rental flat by the Transitional Home Care (THC) team on 14 Jun 2016, 5 days after his discharge on 9 Jun 2016. Using the traditional subjective, objective, assessment, and plan (SOAP) model, which is familiar to most medical practitioners, the details of the encounter are as follows:

### Subjective

Mr L had been well since discharge and although the lower limb oedema was still up to his mid-shin, he was less breathless prior to his last admission. He habitually sleeps on 2 pillows and denies paroxysmal nocturnal dyspnoea. He was also back to his baseline in terms of function and activity tolerance. He was able to walk half-a-bus-stop's distance before resting due to breathlessness and would have exertional breathlessness with more strenuous tasks such as lifting or moving heavy things.

He claims compliance to fluid restriction, but does not routinely measure or record the volume of his fluid intake. He also eats out

daily for lunch and dinner with friends at a nearby coffee shop and has a habit of sucking on ice cubes. He also does not measure his weight even though he has a weighing scale at home. Although home nursing came to pack his medication into pillboxes once every 2 weeks, he was not completely compliant to his medications and was disorganised in his medication management. On further questioning, his non-compliance to his medication was further exacerbated by his waking and sleeping habits. He would wake up at 5am, but would only take his tablets after breakfast at 8am. He naps later in the afternoon after lunch and would wake at 6pm, missing his 4pm furosemide dose.

### Objective

On examination, Mr L was afebrile. Blood pressure was 130/70 mmHg, heart rate was 53 beats per minute, respiratory rate was 18 breaths per minute and he was saturating at 97% on room air. His weight was 57kg. His hydration was fair and jugular venous pulse was not elevated. Heart sounds were dual with no S3, S4 or any murmurs. Auscultation of the lungs revealed mild crepitations at both lung bases. Examination of the abdomen was largely unremarkable except for mild ascites.

### Assessment

1. Fluid overload secondary to poor fluid and medication compliance, poor health literacy and patient inactivation.
2. Underlying HFpEF, IHD, AF, cirrhosis, CKD stage 4, DM.

### Plan

1. Kept current dose of furosemide at 80mg BD.
2. Patient education about the importance of fluid restriction and medication compliance.
3. Taught patient to measure his fluid intake using a measuring jug.
4. Taught patient to weigh himself daily and to inform the team if he were to gain more than 2kg.
5. Repacked his pillbox for the next 2 weeks and updated community home nursing team for continuing medication packing.
6. Close monitoring via phone daily.
7. Review in 1 week.

A comparison of this with the more comprehensive SBAR4 model, which is an in-depth summary of the issues identified during the encounter as well as a comprehensive management plan, would be as follows:

## Situation

This describes the current reason for encounter as well as the expectations of the team seeing him. This goes beyond solely describing the subjective complaints and presentation of the patient as illustrated in the traditional SOAP model.

The situation for this visit would be: *This is a planned transitional home care visit of Mr L who is known to have recurrent hospital admissions for fluid overload and was last discharged 5 days ago for the same (reason for encounter). The purpose of this visit is to assess his medical condition since hospital discharge, assess for factors affecting the poor control of his fluid status, as well as address unmet social needs (expectations of the team).*

## Background

This includes important medical co-morbidities and their interdependency. It should be succinct and need not contain every medical issue that the patient has. Any previous significant events, healthcare utilisation behaviour, social or functional circumstances that are related to the current issue should also be included for a more holistic assessment.

For Mr L, a succinct background would be: *An 82-year-old Chinese gentleman with significant history of HFpEF, IHD, AF, stage 4 CKD on a background of diabetes mellitus and Child's B cirrhosis (pertinent medical issues that contribute to fluid overload). He has been admitted to the hospital at least once a month for fluid overload for the past 5 months (healthcare utilisation). He is single, stays alone in a rental flat and has limited social support (social circumstance).*

## Assessment

The assessment is concluded after a detailed history and physical assessment of the patient and it should reflect back on why the home visit was conducted in the first place. It should consist of Mr L's current medical condition since the recent hospital discharge, pertinent medical co-morbidities that contributed to his recurrent fluid overload and their management, as well as other issues identified that have contributed to the patient's poor disease control.

An assessment of Mr L for this particular home visit would be: *Mr L is still in fluid overload as evident by the lower limb oedema, but is not in acute pulmonary oedema as his JVP is not elevated and has good pulse oximetry readings (current medical condition). The underlying pathology for his fluid overload is contributed by his HFpEF, IHD, AF, stage 4 CKD and cirrhosis. These are managed medically with clopidogrel, bisoprolol and furosemide (pertinent medical co-morbidities). His poor disease control is further exacerbated by his non-compliance to fluid restriction and medication, poor health literacy, poor patient activation and poor social support (issues identified contributing to poor disease control).*

## Recommendations

*For his fluid overload, he will need continuing diuresis with his current dose of diuretics and optimisation of medications for each of his co-morbidities. There was a need to change the timing of medication administration to suit the timing of his lifestyle. He was advised to take his morning medications when he wakes up at 5 to 6am with some biscuits and his 4pm furosemide was changed to pre-lunch. This was to ensure compliance and the earlier timing was to minimise the effects of diuretics on nocturia, reduce his risk of night-time hypotension and falls risks.*

To achieve success, the patient needs to be activated to take part in his own care. This is further elaborated below.

## Resources

For the socially disadvantaged elderly, if their social needs are unmet, it is unlikely that they will pay attention to their medical needs. Hence both social and medical needs are equally important in complex patients and appropriate community resources have to be activated for the successful management of such a patient in the community. These include financial aids; social services that can assist with basic needs such as meal delivery and personal hygiene; health enablers such as medication packing and escort services for medical appointments to ensure that patients can access medical assistance; and community programmes that help with their emotional needs.

## Responsibility

For any chronic disease control to be successful, both patient and system have to be activated. In this case study, systems were already in place in the form of a prepared, proactive and practiced transitional home care team with their close monitoring of the patient as well as access to an already established electronic medical record. It is then the responsibility of the team to activate the Mr L, educate and empower him since he was not yet engaged with his own medical care at the first encounter. On Mr L's part, his responsibility is to start taking charge of the management of his own health. Activation of this (if any) patient may not happen with just one encounter, but may require time and persistence on the part of both the patient and the healthcare team.

## Relationship

The responsibility of the THC team is to maintain a good doctor-medical team relationship with the patient, as well as work closely with the community partners. Good communication between all parties with pertinent updates is also a must.

## SECOND HOME VISIT

Mr L was coping well in the community for a month, prior to his next hospital admission for a fall. He sustained a right clavicle fracture that was conservatively managed. He was also in mild

fluid overload and was mildly confused, which was attributed to hepatic encephalopathy and opioid analgesia. His condition was stabilised and he was discharged home with a follow-up visit by the THC Team. The following describes the SBAR4 model for the second visit.

## Situation

The purpose of the visit is to follow up on Mr L who was recently admitted for a fall with a resultant clavicle fracture, mild fluid overload, as well as confusion possibly contributed by his underlying cirrhosis. The responsibilities of the team are to ensure that the patient is coping well with the injury, with adequate pain control and minimal loss of function; assess for falls risks and minimise the risk of subsequent falls; address risk factors that could contribute to delirium and decompensated hepatic encephalopathy; monitor the underlying fluid overload.

## Background

Mr L is an 82-year-old Chinese gentleman who had a recent admission for an accidental fall which resulted in a right clavicle fracture which was conservatively managed. He was also confused, which was attributed to his cirrhosis and opioid analgesia. He has other significant history of HFpEF, IHD, AF and stage 4 CKD on a background of diabetes mellitus with recurrent admissions for fluid overload.

## Assessment

Mr L has the following subacute issues:

1. Clavicle fracture. Pain was adequately controlled with an arm sling for immobilisation and oral paracetamol at 1g TDS. He verbalised difficulty with showering, otherwise functionally still able to mobilise at home.
2. Falls risk due to diabetic peripheral neuropathy, bilateral cataracts and ongoing furosemide use. Environmental factors include inadequate lighting and can be made safer with decluttering and additional grab bars.
3. Background of cirrhosis.
4. Ongoing fluid overload with continuing diuresis.

## Recommendation

For his clavicle fracture, he was reminded to use his arm sling and analgesia for pain control. His medication box was also topped up with the latest discharge medications. Ensuite service for personal hygiene was activated for him through Thye Hua Kwan to tide him over this subacute period to help him with his showers. It was also not safe for him to ride on his personal mobility device and he was advised to rest until he had regained more function of his right arm. For this, he was referred to the THC occupational therapist for help with rehabilitation.

To reduce his falls risk, he was given an appointment to an ophthalmologist for assessment of his DM retinopathy and suitability for cataract surgery. Decluttering and improved lighting was done with the help of local volunteers, and additional grab bars were installed with the help of the occupational therapist and the Housing Development Board's (HDB's) Enhancement for Active Seniors (EASE) programme.

He was advised to ensure that he is able to open his bowels at least once a day, observe compliance with the fluid restriction and oral furosemide. Daily telephone calls from the THC team were done during this period to ensure that he was compliant and coping well.

## Resources, Responsibilities and Relationships

These are similar to the points previously described in the first home visit.

## CONCLUSION

The SBAR4 model can be a useful framework to crystallise acute problems that need to be actively addressed for a patient requiring home care. As an extended model, it defines the responsibilities of every party involved in the care of the patient; describes the relationships amongst the parties; and reminds the team that community, social and medical resources should be mustered around the patient to ensure increased success of the care plans. Although this case example focused mainly on transitional home-based care, the SBAR4 model is equally useful in other categories of home-based care: home medical, palliative home care, home ventilation programme, and even home case management,<sup>8</sup> each with its own complexity and goals.

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## LEARNING POINTS

- **Successful management of complex patients in the home setting requires patients to be activated to take charge of their health and medical problems. Otherwise, active steps have to be taken to identify roadblocks to patient activation and remove them. Potential barriers include poor health literacy, poor motivation, lack of a dedicated caregiver, and lack of physician support.**
  - **The healthcare team providing the home-care support will also need to be organised to take on complex patients. They will need to be prepared, proactive and practiced, in providing the close monitoring of patients during the periods apart from the home visit, with frequent phone monitoring and subacute home visits if necessary.**
  - **Complex patients require complex interventions, often requiring not only the management of the medical, nursing and allied health team, but also help from our community care partners as well.**
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