UNIT NO. 3

USING THE SBAR4 MODEL FOR MANAGEMENT OF PATIENTS WITH COMPLEX COMORBIDITIES IN THE NURSING HOME — CASE STUDY

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ABSTRACT

Singapore faces a rapidly ageing population. By 2030, 19 percent of the population will be aged 65 years and older. The rise of the dual-income family, the decline of extended families, as well as the increase in age-related degenerative disorders consequent to increased expectancy of life, create challenging situations. Families which are manpower and expertise challenged will find it difficult to look after their elderly infirm at home, especially if the elderly members are frail, functionally dependent, and prone to falls. Such families will increasingly look to the nursing home as solutions. To aid in allocation to nursing homes, elderly patients are classified into 4 categories by the Resident Assessment Form: Category I patients are physically and mentally independent; Category II patients are semi-ambulant; Category III patients are wheelchair-bound or bed-bound; and Category IV are highly dependent. Categories I and II are primarily admitted to sheltered homes, while the limited nursing home places are mainly reserved for Category III and IV patients. The SBAR4 Tool is useful for clerking nursing home placement applications for placement decisions; for admission clerking; and for follow-up assessments and interventions. A case study of a patient who became bed-bound after hospitalisation for pneumonia due to deconditioning is used to illustrate the use of the SBAR4 Tool in a patient admitted to a nursing home, in implementation of recommendations, and in follow-up review of this patient a year later.

Keywords: Resident Assessment Form; Deconditioning; Pneumonia; Wheelchair-bound; Bedbound; Functionally dependent;

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INTRODUCTION

I. The Complex Patient in the Family Physician's World of One Discipline in Many Settings

Which patients qualify to be complex patients? A study by Loeb et al of the insights of 15 primary care physicians into a typology of the complex patient in primary care in 2015 provides useful information for everyday use. The participants described a typology of 4 overarching categories contributing to patient complexity. See Figure 1.

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Medical Complexity	Socioeconomic Factors Exacerbating Medical Condition	Mental Illness Exacerbating Medical Condition	Patient Behaviours and Traits
 Discordant conditions Chronic pain Medication intolerance Unexplained symptoms Cognitive issues 	Inability to afford medications, transportation Family stressors Poor health case literacy	Depression leading to poor medication adherence Addiction Anxiety confusing clinical picture	 Demanding (tests, medications) Argumentative (with staff or physicians) Anxious (regarding symptoms)
Source: Loeb et al.al (2015) ¹			

2. The Growing Importance of the Nursing Home in Today's Singapore

Singapore faces a rapidly ageing population. By 2030, 19 percent of the population will be aged 65 years and older.² The rise of the dual-income family, the decline of extended families, as well as the increase in age-related degenerative disorders consequent to increased expectancy of life, create challenging situations. Families which are manpower and expertise challenged will find it difficult to look after their elderly infirm at home, especially if the elderly members are frail, functionally dependent, and prone to falls. Such families will increasingly look to the nursing home as solutions.³

3. Who Are the Nursing Home Patients?

Two Singapore studies provide some answers. A study published in 2014,4 of factors associated with nursing home placement of all patients admitted for rehabilitation in Singapore community hospitals from 1996 to 2005, found the following: Of the 12,506 first admissions for rehabilitation in 4 community hospitals, 8,594 (90.3%) were discharged home and 924 (9.74%) patients were discharged to a nursing home. The odds of nursing home placement was found to be increased in Chinese, males, single or widowed or separated/divorced, and older (mean age 77 vs 73 years). A higher proportion was without caregivers (28 vs 7%), with lower functional scores at admission (mean Barthel Index score of 40 vs 48), lower rehabilitation effectiveness or efficiency at discharge, and higher proportion of patients with dementia (23 vs 10%). Patients admitted for lower-limb amputation or falls had an increased odds of being discharged to a nursing home by 175 percent (p<0.001) and 65 percent (p = 0.043) respectively, compared to stroke patients.

A study of 331 nursing home applications during a 6-month period, published in 1998,⁵ showed the most common medical problems of the applicants then were neurological (e.g. stroke, normal pressure hydrocephalus, epilepsy), cardiac (e.g. hypertension, ischaemic heart disease, heart failure), orthopaedic (e.g. osteoarthritis, fractures of the neck of femur, and other fractures), and psychiatric conditions (e.g. dementia, depression, and history of schizophrenia/paranoid psychosis). This case mix is, empirically, likely to be similar to the present-day nursing home case mix.

4. Current Policy Towards Nursing Homes

There is a need for the public and professionals alike to keep abreast of the current policy towards nursing homes in order to best equip them, use them, and sustain them as quality healthcare institutions. Nursing homes are part of the wider eldercare initiatives that include Eldershield, services that encompass befriending, home help and respite care, and public education campaigns like the active ageing initiative.³

Notwithstanding the efforts to help seniors age in place, there will be some who will need nursing home care. It is projected that Singapore will need up to 15,600 nursing home beds by 2020.³ More recent figures from MOH Singapore say that we have 12,800 beds today in 2017, and the aim is to reach 17,000 beds by 2020.

To aid in allocation, elderly patients are classified into 4 categories by the Resident Assessment Form: Category I patients are physically and mentally independent; Category II patients are semi-ambulant; Category III patients are wheelchair-bound or bed-bound; and Category IV are highly dependent. Categories I and II are primarily admitted to sheltered homes, while the limited nursing home places are mainly reserved for Category III and IV patients. Category II patients may be admitted to nursing homes, but intake is highly restricted and capped.³

To help reduce the Government's financial burden of running nursing homes and ensure "shared responsibility" in line with the 1981 National Healthcare Plan, patients' families have to pay part of the costs of their stay and treatment. Patients from households with under \$2000 per capita monthly income would have a subsidy ranging from 10 percent to 75 percent. The remaining cost may be further covered under Eldershield, thereby helping to defray costs of long-term care.³

To enhance nursing home standards, a Nursing Home Standards Workgroup was set up in 2014.⁶ The set of standards covers 3 domains: clinical aspects of care; social aspects of care; and governance and organisational excellence. Since 2015, implementation of these standards have been set in motion. Training of staff to be compliant to the standards is taking place in all the nursing homes.

SBAR4 TOOL IN NURSING HOME CASE CLERKING

The SBAR Tool (Situation-Background-Assessments -Recommendations), in the hands of family physicians, has been found useful in clerking complex cases in acute care, transitional care, and home care. This is also a useful tool for clerking the patient in the nursing home setting, since it is likely that all of these patients will be complex.

Besides the use of this SBAR4 Tool in clerking the patient on admission, the Tool is also useful in the initial administrative

task of assessing the suitability of accepting the patient into the nursing home, as well as during the 6-monthly reviews of the patient that are required for nursing home patients. The existing SBAR information should be updated under each of the headings as the patient's physical problems, social support, nursing needs, and care situation will evolve with time.

In the SBAR4 model proposed by Lee and Low⁷ R4 stands for Recommendations, Resources, Responsibilities, and Relationship. (See Figure 2.) This is relevant in the community and stepped-down care settings such as nursing homes. Recommendations outline the action plan for each co-morbidity for the patient and stakeholders. Resources describe the medical and social help to be mustered to support the patient. Responsibilities describe the responsibilities of the patient, stakeholders, and care providers and how they can be activated. Relationship describes the relationship between the patient, caregivers, team members, and service providers which needs to be sustained to facilitate optimisation of care.

Figure 2: The SBAR4 Tool as Proposed by Lee and Low
S = Situation
B = Background
A = Assessments
R4 = Recommendations, Resources, Responsibilities, Relationship
Source: Lee KH & Low LL 2016 7

Since the nursing home patient is likely to reside in the home for extended periods of time, and for many until they pass on, it is important that the existing SBAR information be updated under each of the headings as the patient's physical and mental problems, social support, nursing needs, and care situation will evolve with time.

ROLE OF THE FAMILY PHYSICIAN IN NURSING HOME CARE

Principles of Practice

The principles of nursing home care are nicely described by Unwin et al in two papers in the American Family Physician^{8,9}. Notwithstanding the fact that these two papers describe nursing home care in the American primary care setting, the principles are applicable to the local setting as well.

The following are the key principles of nursing home care:

- The family physician is a visitor to the nursing home and leads the multidisciplinary team that provides for the medical, emotional, functional, nutritional, social, and environmental needs of the patients.
- The well-being or otherwise of the patients is very much a co-operative surveillance of the nursing staff and the attending family physician. Clinical assessment focuses on presence of acute symptoms of pain, fever, cognition deficits, alertness, mood, disability, skin integrity, and medication management.
- The treatment of nursing home patients is a dynamic process

of ongoing assessment, transitions, and sifting care plans as medical events occur in these patients.

- The nursing home medical record and treatment orders document the interdisciplinary findings and care plan. Efforts must be made to keep it complete and accurate.
- Advance care planning includes the development of realistic goals of care with the patient and family. Good communication and good relationships are important.
- Transitions between different healthcare environments are facilitated by communication among healthcare professionals and detailed transfer documentation.
- Palliative care and end-of-life care encompasses continuing reassessment of goals of care, general supportive care, and legal planning.
- Good infection control processes are important, and routine practices of hand hygiene, and cleaning of reusable medical equipment should be kept at a high standard.

CASE STUDY

Madam P was admitted to a Nursing Home in June 2016 because the caregiver was not confident of caring for the patient at home.

Biodata and Admission Dates

Mdm P. Age 93 (DOB: 1924). Female. Date of admission to Acute Hospital for pneumonia 27 April 2016.

Date of application to Nursing Home 12 May 2016. Date of admission to Nursing Home 02 June 2016.

SBAR4 Situation

Madam P recovered from pneumonia in the left-upper zone but the acute illness, the ensuing hospitalization, and bed rest resulted in deconditioning and functional decline. She was unable to ambulate after the illness and at discharge from the hospital. Patient's son who was her caregiver was willing to look after her but he had no confidence in caring for the patient at home since she required 2-man assist for moving her around. The family decided to apply for nursing home placement.

Background

The 5 background domains of the comprehensive geriatric assessment (physical, mental, social, functional, and environmental) have been grouped into three in this patient and ordered by priority of plan of action. (See Figure 3.)

Figure	Figure 3: SBAR4 Tool—Background at Time of Admission to Nursing Home						
Co-morbidities Status			Details				
Functi	Functional status in ADL & IADL						
1	2016 – Functional decline CAT 4 (57 points) – as assessed on 12 May	Active	Pre-morbid ADL assisted – Showering and dressing. Lives with son as the main caregiver. With pneumonia and deconditioning, resulting in loss of mobility – able to ambulate after discharge from hospital				
Social	and environmental issues						
1	2016 – Son is main caregiver but is unable to cope with the disability from deconditioning of patient.	Active	Son is willing to look after her but unable to because of the deconditioning – family decision for home placement.				
Physi	cal and mental co-morbiditi	es					
1	2016 – Clostridium difficile diarrhoea	Resolved	Culture positive 2X. Started on metronidazole 400mg 8H X 14 days from 16 May 2016. Diarrhoea resolved. Stools type 5 since then.				
2	2016 – Deconditioning from pneumonia, hospitalisation and bed rest	Active	Premorbid – ADL-assisted in showering and dressing. After hospitalisation – required 2-man assist in ADL.				
3	2016 Oro-pharyngeal dysphagia	Active	Unsafe for swallowing – NG tube inserted from 30 Apr 2016.				
4	2015 – Cystic mass, left breast	Active	Needed biopsy for work up. Family not keen for intervention or surgery. No intervention.				
5	2013 – DM since 2013	Controlled	On diet control only.				
6	2010 - COPD since 2000	Active	Spirometry done 2010: FEV1 62% FVC 42%. Stable.				
7	2007 – Osteoporosis with compression fracture L1/ L2; R distal radius fracture May 2007	Stable	Walking exercise. Not on medications.				

Assessment

Functional decline in ADL and IADL

The patient, before admission to acute hospital for pneumonia, was community ambulant with ADL assistance required for showering and dressing. At time of admission to nursing home, Mdm P was bed-bound.

Social and environmental issues

Mdm P is widowed. She has 9 children, one of whom has passed away. She was staying with the sixth son and the eighth son who are also her spokespersons. The other children are staying apart from her. The sixth son had been the main caregiver until her admission to the nursing home. Figure 4 shows the health status and social circumstances of her children.

Figure 4: Mdm P's Children in 2016 at Time of Admission to Nursing Home		
<u>Staving with Mdm P:</u> Pt's sixth child, a son, is single and not working. He is the patient's primary caregiver and main spokesperson. Pt's eighth child, a son, is single and working as a storeman. Second spokesperson.		
<u>Staving apart from Mdm P</u> Pt's oldest child, a son, is married with three children. He is retired. Pt's second child, a daughter, is married with three children. She is retired. Pt's third child, a son, is married with two children. He is retired. Pt's fourth child, a daughter, is married with three children. She is retired. Pt's fifth child, a son, is single and retired. Pt's seventh child, a son (Steven) is married with one child. He is working in sales.		
Passed away Pt's ninth child, a daughter, has passed away.		

Physical and mental co-morbidities

These are shown in Figure 3. There were 7 co-morbidities. The Clostridium difficile infection was treated in the acute hospital and was already resolved at the time of Mdm P's admission to the nursing home.

Questions

- 1. What recommendations do you have for managing this patient's problems?
- 2. What advance care planning would you like to establish with the patient and family?

Recommendations

Clostridium difficile diarrhoea. A course of metronidazole 400mg 8H for 14 days was curative. Routine hand hygiene and adequate cleaning of reusable medical equipment (RME) continue to be the best defence in infection control. The patient had no further recurrence of diarrhoea.

Functional ADL and IADL reconditioning

Physiotherapy exercises were prescribed. These were effective in reconditioning the patient. Mdm P's enthusiasm and compliance were essential in the process of improvement.

Oro-pharyngeal dysphagia

In view of her poor oro-pharyngeal control, Mdm P was deemed unsafe for swallowing. An NGT was inserted from 10 April 2016. In September 2017, the speech therapist reviewed the swallowing and found poor oro-pharyngeal control and delayed swallow. NGT was continued up till the present time.

Chronic medical conditions

<u>Breast mass.</u> The family was not keen that the nature of the breast mass be investigated and the mass was therefore managed conservatively.

<u>Diabetes mellitus.</u> Mdm P's diabetes was managed with the Glucerna feeds, 5 feeds in 24 hours (See Figure 5). She did not need medications. Her diabetes was monitored with daily and then weekly fasting and evening postprandial blood sugar readings.

<u>COPD.</u> Exacerbations will be managed in the usual way. The patient did not have any exacerbations.

<u>Osteoporosis</u>. Age is a risk factor in this patient. Prevention of falls through physiotherapy to optimize the patient's balance, strength, and gait training was instituted.

Resources

The nursing home was adequately resourced. The cost of the healthcare in the nursing home per month was covered by a combination of Government subsidy, IDAPE, and contribution from the children.

Responsibilities

The multidisciplinary team in the nursing home discussed the care of this patient shortly after admission and a care plan was presented by the medical, nursing, allied health, physiotherapy, and occupational therapy members of the team.

Relationships

A good relationship has been built between the nursing home team and family members. The ACP was also discussed and decisions made, e.g. the management of the breast mass. For acute reversible conditions, transition of care to the acute hospital as per nursing home standard operating procedures was in place. The patient has continued to do well and such transitions have, to date, not been required.

Progress of this patient

The progress of the patient over the last year is shown in Figure 5. The patient's functional status has improved. She is able to walk with assistance, compared to being bed-bound on admission a year earlier.

Co-m	norbidities	Status	Details
Fund	ctional status in ADL & IADL		
1	2017 – Functional status had improved	Improved	On physiotherapy once in 2 weeks. Physiotherapist reports that patient is very compliant and willing to learn. Walks with assistance 1 round in the gym. Patient needs assistance in bathing and toilet. On NGT feeding. Speech: able to say a few words now.
Soci	al and environmental issues		opecon: usic to sulf a lew words now.
1	2017 – Possibility of patient going home discussed with family	Active	Patient keen to go back home but family not keen. There is a need to explore again when the patient is able to show further recovery. Meanwhile, the care plan is to continue to improve patient's ADLs.
Phy	sical and mental co-morbidit	ies	
1	2017 – Reconditioning was partially successful.	Improved	Patient walking with assistance. (See under functional status above.)
2	2017 – Oro-pharyngeal dysphagia with silent aspiration risk still active	Active	NG tube inserted from 30 Apr 2016. ST review 21 Sep 2016 – Poor oro-pharyngea control and delayed swallow. Continued on NGT feeding. Feeding regimen: Glucerna 1 can 250 ml plus water flush 50 ml. Beneprotein resource 2 scoops daily. Feeding times: 0330H/0830H/1200H/1430H/1730H Total 1,500 ml. Calorie content from Glucerna = 0.93 X 1500 = 1395 Cal.
3	2017 – DM since 2013	Controlled	On diet control only. Quarterly fasting blood glucose & weight Jun 2016 5.6 mmol/L. 50.2 kg Oct 2016 6.5 mmol/L Dec 2016 5.8 mmol/L. Jan 2017 51.5 kg Mar 2017 5.3 mmol/L Jun 2017 5.6 mmol/L BP 120/60 – Jun 2017
4	2017 – Cystic mass left breast now 10X12 cm (measured 21 Jun 2017)	Active	Mass has increased in size. Visible. Non- movable. Hard. Family's decision was the same: no intervention.
5	2017 – COPD since 2000 Stopped smoking 2007	Stable	Spirometry done 2010: FEV1 62% FVC 42%. Stable. No exacerbation.
6	2017 – Osteoporosis	Stable	Osteoporosis with compression fracture L1/L2 R distal radius fracture May 2007. No further developments.

CONCLUSIONS

- 1. The nursing home accepts elderly patients who are Category III and IV by the RAF criteria, namely, wheelchair-bound or bed-bound, and highly dependent respectively. These are likely to be complex patients.
- 2. The current policy towards nursing homes is to restrict nursing home beds to Category III and Category IV patients. Those in Category II are placed in sheltered homes.
- 3. The SBAR4 Tool is useful for clerking nursing home placement applications for placement decisions; for admission clerking; and for follow-up assessments and interventions.
- 4. A case study of a patient who became bed-bound after hospitalisation for pneumonia due to deconditioning is used to illustrate the use of the SBAR4 Tool in a patient admitted to a nursing home, in implementation of recommendations, and in follow-up review of this patient a year later.

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LEARNING POINTS

- Nursing homes receive patients who are Category III and Category IV in the Resident Assessment Form classification.
- Nursing home patients are likely to have complex co-morbidities.
- The SBAR4 Tool is a useful tool for assessing and managing nursing home patients in the various situations of care.
- There are 8 key principles of nursing home care that need to be remembered and routinely implemented.