

“CAN HE EVER BE CARED FOR AT HOME?” DISCHARGE CARE PLANNING FOR A NEW BEDBOUND ELDERLY

Dr Wong Peng Yong Andrew

ABSTRACT

This is a case of an elderly gentleman who suffered a sudden intracranial haemorrhage, rendering him severely disabled and dependent with high care needs. The attending family physician in the community hospital coordinated multidisciplinary support and facilitated discharge care planning. He also managed venous thromboembolism and enteral feeding and formulated care plans for subsequent medical crises. This illustrates the importance of good generalist care in supporting such patients, their family, and caregivers in the transition from hospital to home and sustaining them in the community.

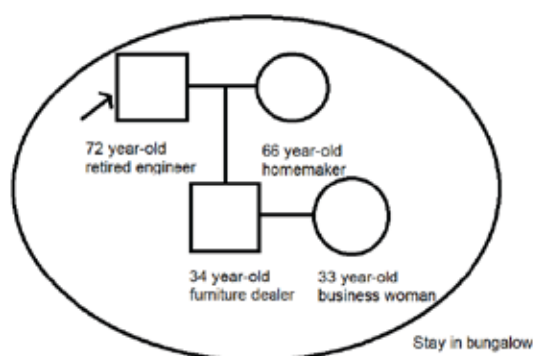
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INTRODUCTION

Many patients suffer sudden catastrophic illnesses that render them bedbound, severely disabled, and heavily dependent on carers. The family is usually caught unaware and have to decide on subsequent care plans. They wonder how these patients can transit back to the community and whether they can cope with their care. This case vignette illustrates the journey of a typical patient and his family and how these challenges are addressed.

Figure 1: AT's genogram



DR WONG PENG YONG ANDREW
Associate Consultant
SingHealth Community Hospitals

SITUATION

AT, a 72-year-old retired engineer, was admitted for step-down care in a community hospital (CH) following an intracranial haemorrhage (ICH). The author was the attending Family Physician (FP) registrar, under the oversight of the team consultant.

Background

Pre-morbidly, AT had well-controlled hypertension. He was independent and ambulated without aid in the community.

He was acutely hospitalised for a left spontaneous parietal ICH from chronic amyloid angiopathy, for which he presented suddenly with drowsiness and right-sided weakness. He underwent a burr-hole evacuation of the clot but subsequently developed scar epilepsy, another frontal ICH and acalculous cholecystitis which required percutaneous cholecystostomy.

Assessment

AT was bedbound and uncommunicative. His Glasgow Coma Scale (GCS) was E4V1M6 and BP was 120/85 mmHg. Significant findings included right hemiplegia, basal lung crepitations from basal atelectasis, and severe oropharyngeal dysphagia. He had the following inserted: an NGT, cholecystostomy, and urinary catheter (for post-stroke urinary retention). There were no pressure sores. His latest fasting lipid, glucose, renal, and liver profile were normal.

AT's problem list included:

- High risk of complications of immobility and oropharyngeal dysphagia
- Uncertain plans for medical crisis
- High care needs with uncertain care plans
- Recommendations

Managing Recurrent Desaturations

As AT experienced multiple desaturations from oropharyngeal secretions and previous aspiration pneumonia, his chances of functional recovery were minimal. Upon recovery, the team arranged for AT to receive influenza and pneumococcal vaccinations.¹ They accepted this information and were appreciative of the team's efforts.

Unfortunately, AT developed pulmonary embolism (PE), for which an IVC filter² was inserted as his recent ICHs precluded anticoagulation. The family accepted that despite

treatment, AT still ran the risk of a catastrophic PE but could receive anticoagulation³ once his subsequent scans showed stability of the ICH.

Eliciting Care Preferences

The family shared that AT had not previously stated his care preferences. As this ICH was sudden, they were unprepared to lose him. Although they requested for a trial of resuscitation should he collapse, they realised that such efforts might neither succeed nor result in a good quality of life. They agreed to consider the medical team's recommendations of what would be for AT's best interest.

Moreover, the team broached with the family regarding percutaneous endoscopic gastrostomy (PEG) and NGT feeding as AT was unlikely to recover from dysphagia due to his massive ICH. Although the team mentioned that some caregivers preferred a PEG for its less frequent change and reduced risk of blockage, there were no significant advantages over NGT pertaining to aspiration and mortality.⁴ The family could not accept the risk of PEG site complications (e.g., infection, leakage) and decided for NGT feeding.

Discharge Care Planning⁵

Initially, AT's wife was apprehensive about caring for him as she was new to bedbound care. His son and daughter-in-law travelled frequently and could not provide care due to their full-time business. The team shared that though his recovery was guarded, he could still be cared for at home. Finally, a shared decision was made: the family would employ a maid to care for him, assisted by his wife as he was heavy (70 kg). They would undergo inpatient caregiver training.

The team constantly reviewed the indications of his drains and collaborated with the gastroenterologist to wean him off the cholecystostomy drain when its output was minimal. However, he required the urinary catheter (as his post-void urine was consistently high up to 250 ml despite adequate bowel movement and negative urine cultures) and the NGT feeding (as speech therapists consistently noted uncoordinated swallowing). Deprescribing of unnecessary medicine (e.g., multivitamins) was initiated to ease the hassle of NGT medication administration. Foreseeing the difficulties in attending specialist appointments, memos were written to AT's specialists to consider safely prolonging the intervals between appointments or discharging him when indications ceased (e.g., gastroenterology). The family appreciated that their caregiving burden had reduced tremendously.

The team nurses taught AT's carers how to perform NGT feeding, maintain the urinary catheter, shower him, inspect his pressure areas, and suction oral secretions. The physiotherapist taught them passive range of movement exercises for the joints to prevent contractures. The carers were also taught how to use necessary equipment such

as suction equipment, hospital bed, BP monitor, pulse oximeter.

Lastly, the team contacted a General Practitioner (GP) and communicated AT's care needs to him. He performed home medical visits every three months whilst the home nursing foundation assisted to change AT's NGT and urinary catheter. A case-manager from IPCARE⁶ (Integrated Primary Care for At Risk Elders – a transitional care programme by the local CH, which supports GPs of patients having complex needs with multidisciplinary resources) helped review AT's care regularly and provided tele-consult support to his carers. A list of service providers was given to the family in anticipation of contingencies (e.g., dislodged NGT). Most importantly, AT's household was empowered with knowledge and skills for AT's care and troubleshooting difficult scenarios, e.g., desaturations.

Follow-Up

Currently, AT is cared for by the same GP in the community. His carers receive sufficient respite from weekly time-off and his periodic care in a respite nursing home. Readmission was minimised, aside from an occasional severe desaturation from aspiration pneumonia.

Gaining Insights

What are the challenges in caring for bedbound patients?

During the inpatient phase, the medical team and family will need to decide on a discharge destination and sustainable plan. This involves a careful consideration of the care requirements, logistics, manpower and training to deliver the care, access to healthcare services, financial commitment, and contingency plans (for medical emergencies, caregiving, and equipment malfunction). This is challenging for families with limited financial or social support, especially during the COVID-19 pandemic when the turnaround time for services may be prolonged.

Typical discharge destinations include the patient or caregiver's home, voluntary nursing home, or chronic sick unit (refer to Table 1). Application for residential and home-based services and subsidies would usually commence during the inpatient stay. Examples of such subsidises are listed in Table 2.

Table 1: Description of various placement options

Placement options	Description
Home Care	<p>Presence of a dedicated caregiver as well as resources for respite caregiving which may be provided by private healthcare providers (e.g. Homage, Jaga-Me)</p> <p>Usually accompanied by home medical care (for primary care), home nursing provider (for simple wounds and change of tubes) and home therapy, if required</p> <p>Interim Caregiving Service may be applied whilst waiting for a dedicated caregiver to come in 1-2 weeks after being discharged</p>
Normal Nursing Home	Usually chosen if there are no dedicated caregiver or the needs of caregiving are high
Chronic Sick Units	<p>Specialised nursing home providing frequent maintenance, medical and skilled nursing care on a long-term basis to persons with advanced and complicated chronic medical conditions (e.g., complicated pressure sores, tracheostomy)</p> <p>Examples of providers include Renci Hospital, Saint Luke's Hospital</p>

Table 2: Description of the available subsidies for the care of severely disabled patients

Subsidies	Payout	Eligibility
<p>ElderShield</p> <p>- Eldershield 300 (2002-2007)</p> <p>- Eldershield 400 (after Sep 2007)</p>	Monthly cash benefits of \$400 for 72 months or \$300 for 60 months, depending on the Eldershield scheme the policyholder is enrolled in	<p>Singaporean or Permanent Resident</p> <p>Unable to perform 3 or more basic activities of daily living [bADLs], certified by an appointed assessor</p>
CareShield Life	Monthly cash benefits as long as policyholder remains severely disabled. Payout starts at \$600/month and increases until age 67, or when policyholder makes claims, whichever earlier	<p>Singaporean or Permanent Resident</p> <p>If the policyholder is born in 1980 or later</p> <p>If born between 1980-1990, one will be automatically covered by CareShield life in 2020. If born after 1990, one will be automatically covered by CareShield life when policyholder reach age 30.</p> <p>If the policyholder is born in 1979 or earlier</p> <p>One can choose to join CareShield Life in 2021, if one is not severely disabled. One will be automatically covered by CareShield Life from 2021 if one is a Singapore Resident born between 1970-1979, insured under Eldershield 400 scheme and not severely disabled. If one is automatically insured and does not want to participate in the scheme, one can chose to opt out by 31 Dec 2023 and get premiums refunded.</p>
<p>Interim Disability Assistance Program for the Elderly (IDAPE)</p> <p>(For those ineligible to join ElderShield in 2002)</p>	\$150/month or \$250/month over 72 months, depending on the applicant's per capita household monthly income	<p>Singapore Citizen</p> <p>Either born on or before 30 Sep 1932, OR born between 01 Oct 1932 and 30 Sep 1962 (with pre-existing disabilities as at 30 Sep 2012)</p> <p>Household has per capita monthly income of \$2,800 or less, OR belong to a household with no income and living in a residence with Annual Value of \$13,000 or less.</p> <p>Unable to perform 3 or more basic activities of daily living [bADLs], certified by an appointed assessor</p>

ElderFund (New from Jan 2021)	Cash benefits up to \$250/month as long as the policyholder is eligible	<p>For Singapore Citizens</p> <p>Age 30 and above and residing in Singapore</p> <p>Guiding financial criterion:</p> <ul style="list-style-type: none"> - Household monthly income per person is \$1200 or less and Medisave balance less than \$10,000 - Not a CareShield Life or ElderShield recipient and not eligible for IDAPE or not an active recipient of ElderShield or IDAPE. - Unable to perform 3 or more BADLs
Pioneer Generation Disability Scheme (PGDAS)	\$100 a month	<p>Singapore Citizens</p> <p>Currently part of the Pioneer Generation (PG) scheme</p> <p>(i.e., Living Singapore Citizens who meet 2 criteria:</p> <ul style="list-style-type: none"> - Born on or before 31 December 1949 - Aged 65 and above in 2014 <p>and</p> <ul style="list-style-type: none"> - Obtained citizenship on or before 31 December 1986.) <p>Unable to perform 3 or more basic activities of daily living [BADLs], to be filled up on a Functional Assessment Report [FAR] by a certified disability assessor (if concurrently claiming for ElderShield or IDAPE)</p>
Foreign Domestic Worker (FDW) Levy Concession for Persons with Disabilities/ Elderly	Lower monthly concessionary FDW levy of \$60	<p>If care recipient is Singapore Citizen (SC)</p> <ol style="list-style-type: none"> 1. Care recipient, FDW employer and FDW must reside in the same address; and 2. Care recipient must always require some assistance with at least 1 ADL or Care recipient is at least 67 years old* <p>*Seniors who meet the age, citizenship, and residential eligibility criteria do not need to apply for FDW Levy Concession as MOM will process the levy concession automatically with the FDW application.</p> <p>If care recipient is Singapore Permanent Resident (PR)</p> <ol style="list-style-type: none"> 1. Care recipient is at least 67 years old, and is the parent, parent-in-law, grandparent, or grandparent-in-law of the FDW employer; 2. The FDW employer or FDW employer's spouse must be SC; and 3. Care recipient, FDW employer and FDW must reside in the same address
Caregivers Training Grant	Up to \$200 per eligible care recipient per financial year	<p>Singapore Citizen or Permanent Resident</p> <p>Care recipient must be aged 65 years old and above, or be certified to have a disability by a doctor; and</p> <p>Caregiver must be the main caregiver (immediate family member or FDW) looking after the care recipient and must complete any of the CTG-approved training courses.</p>

<p>Home Caregiving Grant (Replaces Foreign Domestic Worker Grant from October 2019)</p>	<p>Monthly cash payout of \$200</p>	<p>If the care recipient is a Singapore Citizen (SC) 1. Care recipient must always require some assistance with at least 3 ADLs; 2. Care recipient and his/her household has per capita monthly income of \$2,800 or less, OR belong to a household with no income and living in a residence with Annual Value of \$13,000 or less; 3. Care recipient is not in a residential long-term care institution (e.g. nursing home).</p> <p>If the care recipient is a Permanent Resident (PR) 1. Care recipient must have a parent, child or spouse who is a Singapore Citizen; 2. Care recipient must always require some assistance with at least 3 ADLs; 3. Care recipient and his/her household has per capita monthly income of \$2,800 or less, OR belong to a household with no income and living in a residence with Annual Value of \$13,000 or less; 4. Care recipient is not in a residential long-term care institution (e.g. nursing home).</p>
<p>Seniors' Mobility and Enabling Fund (ESMF) (For assistive devices or home healthcare items)</p>		<p>Singapore Citizens</p> <p>Home Healthcare Items</p> <ol style="list-style-type: none"> 1. Care recipient must be Singapore Citizen (SC); 2. Care recipient must be aged 60 years and above; 3. Care recipient must undergo assessment to determine the need and type of consumables home healthcare items needed (to be done by service providers); 4. Care recipient must be receiving services from: <ol style="list-style-type: none"> a. A home care provider; b. Singapore Programme for Integrated Care for the Elderly (SPICE) programme or Integrated Home and Day Care (IHDC) Packages; or c. A home palliative care provider; 5. Care recipient and his/her household has per capita monthly income of \$2,000 or less or Annual Value (AV) of residence reflected on NRIC of \$13,000 and below for households with no income; and 6. No other sources of concurrent subsidy for similar consumables home healthcare items <p>Assistive Devices</p> <ol style="list-style-type: none"> 1. Care recipient must be Singapore Citizen (SC); 2. Care recipient must be aged 60 years and above; 3. Care recipient must undergo assessment to determine the need and type of mobility device (to be done by a qualified therapist or relevant professional); <p>and</p> <ol style="list-style-type: none"> 4. Care recipient and his/her household has per capita monthly income of \$2,000 or less or Annual Value (AV) of residence reflected on NRIC of \$13,000 and below for households with no income.

SG Enable Assistive Technology Fund	<p>Subsidies to be means tested</p> <p>Up to 90 percent of the cost of the recommended assistive device, with a lifetime cap of \$40,000</p>	<p>Singapore Citizen or Permanent Resident</p> <p>Certified to have permanent disability of any of the following:</p> <p>Physical disability</p> <p>Hearing disability</p> <p>Visual disability</p> <p>Intellectual disability</p> <p>Autism spectrum disorder</p> <p>Underwent qualified assessor's review (e.g., therapist) to determine the need and type of assistive device</p> <p>Household gross monthly income of \$2000 and below</p> <p>Currently not on any other similar subsidies (e.g.ESMF)</p>
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(Source: Healthcare subsidies, Ministry of Health, Singapore¹⁰; SG enable)

The work of caregiving for bedbound patients cannot be underestimated as there are numerous physical, psychological, and social implications for them (e.g., musculoskeletal injuries, anxiety, social isolation). The managing physician should proactively screen for high caregiving burden (e.g., using Zarit Burden Interview⁷) and burnout. This is especially true of caregivers who have health problems and those caring for severely dependent patients.⁸ A multimodal approach (e.g., caregiver support group, regular respite, or even an additional caregiver) may address this issue. Some transitional care programs (e.g., Hospital-to-Home programme⁹) could assist in guiding the management of such patients across care transitions.

Which Mode of Enteral Feeding Is Preferred for Patients With Severe Oropharyngeal Dysphagia?

Common modes of enteral feeding include nasogastric tube (NGT) and percutaneous endoscopic gastrostomy (PEG). Currently, there is insufficient evidence favouring either one. A discussion involving the caregiver(s) needs to entail previously communicated preferences (if any), procedure of insertion, cost, frequency of change, risks, and the required training. This comparison¹¹ is summarised in Table 3. Nonetheless, a systematic review⁴ showed that over six months, although treatment failure (e.g., interrupted feeding, blocked tubes) is less in the PEG group (relative risk 0.18 [0.05-0.59]), there is no statistically significant differences in rates of adverse events (especially pneumonia) and mortality.

Table 3: Comparison between common modes of enteral feeding

	Nasogastric tube (NGT)	Percutaneous Endoscopic Gastrostomy (PEG)
Venue of insertion	Inpatient or outpatient setting	Day surgery, requires local anaesthesia and sedation
Frequency of change	3 monthly	6 monthly
Who changes the tube?	Trained doctors and nurses	General surgeon or gastroenterologists
Advantages	Easily removed	Easily concealed
Disadvantages	<p><i>Acute</i></p> <ul style="list-style-type: none"> Discomfort in insertion Bleeding Malposition (airway placement, coiling) Perforation <p><i>Chronic</i></p> <ul style="list-style-type: none"> Blocked tubes Migration/ dislodgement Local irritation (e.g., pressure on vocal cords, gastric erosion) 	<p><i>Acute</i></p> <ul style="list-style-type: none"> Bleeding <p><i>Chronic</i></p> <ul style="list-style-type: none"> Bleeding Migration/ dislodgement Parastomal hernia Formation of granuloma Peristomal leak and maceration Cellulitis/ Peritonitis

How Should Venous Thromboembolism (VTE) Be Managed?

The prevalence of VTE is as high as 18 percent amongst immobile patients nursed at home or long-term care facilities.¹² Its risk factors are common in elders, such as circulatory stasis (e.g., immobility, fluid overload), endothelial injury (e.g., recent surgery, trauma), and hyper-coagulopathy (e.g., malignancy, sepsis). The 30-day mortality rates are as high as 30 percent (with PE) and 3 percent (proximal DVT),¹³ and our local Appropriate Care Guidelines recommended early treatment unless contraindicated.¹⁴ Absolute contraindications include severe bleeding diathesis, uncontrolled active bleeding, and acute haemorrhagic stroke in AT's case. Therapeutic options are shown in Table 4. Lifelong anticoagulation may be required for chronic bedbound patients.

Table 4: Characteristics of commonly used anticoagulants

Agents	Mechanism of action	Treatment doses	Renal dose adjustment
Enoxaparin	Accelerates antithrombin action	1mg/kg twice daily	1mg/kg once daily if CrCl <30ml/min
Warfarin	Vitamin K antagonist	Day 1-2: 5mg once daily Day 3 and beyond: INR-adjusted	-
Dabigatran	Direct thrombin inhibitor	Days 1-5: Use Low Molecular Weight Heparin (LMWH) Day 6 and beyond: 150mg twice daily	Consider dose reduction to 110mg twice daily from day 6 onwards if CrCl 30-50ml/min with high bleeding risk Not recommended if CrCl <30ml/min
Rivaroxaban	Direct factor Xa inhibitor	Days 1-21: 15mg twice daily Day 22 and beyond: 20mg once daily	Consider dose reduction to 15mg once daily from day 22 onwards if CrCl 30-50ml/min with high bleeding risk Not recommended if CrCl <30ml/min

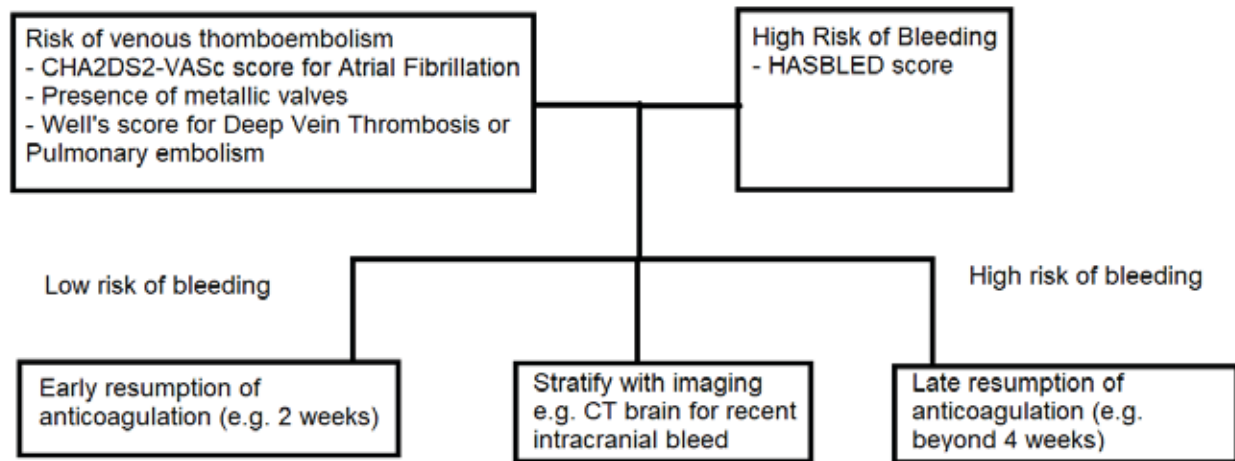
Apixaban	Direct factor Xa inhibitor	Days 1-7: 10mg twice daily Days 8 – 7 months (if required): 5mg twice daily 7 months and beyond: 2.5mg twice daily	Not recommended if CrCl <30ml/min
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(Adapted from Agency of Care Effectiveness, Ministry of Health, Singapore)

IVC filters are an alternative to anticoagulation in VTE, albeit showing conflicting results. A meta-analysis showed that whilst an IVC filter confers a lower risk of subsequent PE (Odds Ratio [OR] 0.50; 95 percent confidence interval [95 percent CI] 0.33-0.75), there is an increased risk for DVT (OR: 1.70 [1.17-2.48])² with no change in all-cause mortality. Furthermore, patients with such filters risk complications. This could occur during its insertion (e.g., bleeding, access site thrombosis, filter tilt or migration, mal-positioning), after insertion (e.g., filter fracture or perforation), or during retrieval (e.g., IVC injury).¹⁵

The one-year risk for a recurrent ICH for patients without prior anticoagulation ranges from 0-8 percent and the optimal time of initiating anticoagulation after a haemorrhage stroke remains unknown.¹⁶ Li et al³ proposed a risk stratification approach to guide decision making, supplemented with CT imaging (refer to Figure 2). To further mitigate the risk of ICH, another attractive option is the use of novel anticoagulants as shown in a meta-analysis by Chatterjee (OR of ICH: 0.49 (0.36-0.65) as compared to traditional anticoagulation such as warfarin).¹⁷ For AT, he suffered a second ICH, hence his family was not ready upon inpatient discharge to reconsider anticoagulation.

Figure 2: Decision-making algorithm regarding reinitiating anticoagulation following recent ICH



(Adapted from Giakoumettis' article on Antithrombotic Treatment Management in Patients with Intracerebral Haemorrhage: Reversal and Restart.)

Table 5: Comparison between various modes of advance planning²⁰

	Advance Care Planning	Advance Medical Directive	Lasting Power of Attorney	Will
Contents	State medical treatment and care preferences	Decide on extraordinary life-sustaining treatment	Appoint ≥ 1 donees to decide on one's behalf on property and personal issues when mental capacity is lost	Decide on asset and property management
Legal document	No	Yes	Yes	Yes
Minimal requirements of applicant	≥ 21-year-old with mental capacity	≥ 21-year-old with mental capacity.	≥ 21-year-old with mental capacity. Not declared bankrupt if applying for LPA for property matters	≥ 21-year-old with mental capacity
Activation	Medical crisis and when patient lose decision making capacity	Terminal illness & imminent death (agreed by 3 doctors, of which 2 are specialist and 1 hospital doctor)	When patient loses decision making capacity	After death
Can be revoked by	Doctors, in patient's best interest	-	Court after investigation by Office of Public Guardian	-

(Adapted from Sim's *The Need for Contextualised Advance Care Planning Advocacy and Conversation*)

How Should a Doctor Plan for Medical Contingencies in the Absence¹⁸ of an Existing Advance Care Plan?

ACP is an ongoing conversation with patients and their family assisting them to decide on their care preferences, upon considering their values and goals of management.¹⁹ It also helps the medical team in making decisions during medical crises, in the event where one loses his capacity to decide. This is particularly helpful for bedbound patients as they have a higher risk of repeated deterioration due to complications of immobility. The differences between ACP and other forms of advance planning are highlighted in Table 5.

However, the absence of ACP should not hinder the physician in guiding the family in crafting out a crisis plan. Being grounded in good ethical principles, being sensitive to the family's needs, and walking them through stages of acceptance of the disease trajectory are ingredients for eventual success. There isn't a one-size-fits-all formula, and it is important to know that the physician will need to decide the final course of action, weighing the chances of successful intervention, the goals of treatment, and whether it's in the patient's best interest.

What Is the Role of the FP in the Care of Bedbound Patients?

FPs have an important part to play for these patients and their families in their journey from hospital to the community, and this is summarised using the CanMEDS-Family Medicine competency framework 2017²¹ in Table 6.

Table 6: Roles of the Family Physician based on the CanMEDS-Family Medicine competency framework 2017²¹

Role	Description
Manager	Manages physical resources and healthcare manpower
Collaborator	Collaborates with the family, multidisciplinary team, specialists, community service providers and fellow GPs/FPs
Health advocate	Advocates for the health and wellbeing of the patient and the caregivers (e.g., vaccination, preventing burnout for caregivers)
Scholar	Appraising latest evidence behind medical complexities Shares best practices with fellow colleagues
Communicator	Being sensitive to the needs and emotions of caregivers

Professional	Achieves high standards of medical competencies
Family Medicine Expert	Having a general view of overall care.

One point to emphasise is that FPs are unlikely to succeed alone. The author encourages fellow FPs to adopt principles from Asset Based Community Development (ABCD),²² particularly using a strength-based approach and tapping on available community assets. For AT, the strengths are the family's strong commitment to him and their financial stability. Community resources included a proximate GP, home nursing foundation, and case-management support from IPCARE within the Regional Healthcare System.²³

CONCLUSION

Many acutely bedbound patients experience enormous difficulties in receiving care beyond the hospital stay. The FP, aided by the multidisciplinary team, is well-positioned to facilitate this transition, addressing various challenges to sustain their care with close collaboration with relevant stakeholders.

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