

ABSTRACT

Home care is an integral part of primary community care. It is a multi-disciplinary holistic service providing personalised care to patients who are homebound. This encompasses both the medical and psychosocial aspects and allows patients to be treated in the comfort of their home, with reliable support from healthcare professionals, the community and caregiver. This article seeks to explore and discuss the provision of home care in Singapore.

Keywords: Home care; Continuing care; Comprehensive; Coordinated care; Multidisciplinary; Caregiver;

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WHO DOES HOME CARE CATER TO?

Home care is a form of personalised, assessable clinical care that can be customised based on patients' needs in their home setting.

The patients involved may range from paediatric to adult. However, in Singapore, with an ageing population, a large proportion fall within the senior age group.

Generally, patients can be classified into 5 broad groups: 1) well patients with acute reversible diseases; 2) patients with chronic diseases; 3) patients with complex chronic diseases; 4) frail patients — generally the elderly; and 5) dying patients.

Usually patients in Groups 3-5 would benefit from home care, especially if they are homebound. These patients are frequently prone to medical deterioration and increasing functional impairment post-recovery. This is illustrated in Figure 1.

The diagram below also illustrates the weaning off of the level of healthcare provision as a patient recovers from acute medical conditions. Upon exiting the continuum of disease, patients may face 4 general outcomes: 1) remain on long-term home care services; 2) improve enough to be able to be followed up in the outpatient clinic setting; 3) suffer medical decline with re-presentation to healthcare institutions; and 4) deteriorate at home and eventually pass on.

WHO FORM THE HOME CARE TEAM?**Patient**

Some patients may have the potential to look after themselves. In

fact, where patients have the ability to self-care, we should rehabilitate them and let them take care of themselves. This provides a measure of self-esteem for these patients. In doing so, we give the patients respect and dignity.

Generally, most of the frail, dying and acutely ill patients are likely to need help in the activities of daily living.

Caregiver

The success of care at home for a patient is largely dependent on the competency and compliance of the designated caregiver, the availability of appropriate equipment, and the safety of the home environment. The other factors include the medical stability and cost of home care.

Caregivers are usually the spouse, relatives, or foreign domestic workers (FDW). Caregivers need to be available, competent and motivated. They also need to be physically, cognitively, and emotionally able to handle the patients.

Optimal home care should encompass comprehensive coordinated continuing care. It is important to recognise that home care cannot be handled in isolation by the caregiver alone. It requires the support of healthcare professionals and the community (refer to Figure 2).

The caregiver plays a crucial role in home care by working hand-in-hand with healthcare professionals to: 1) attend to the basic needs of the patient, including hydration, feeding, hygiene, and safety; 2) perform home monitoring on the patient, such as checking blood pressure, heart rate, temperature and oxygen saturation, and providing feedback; 3) assist with management of the patient, such as administering of medications and ensuring compliance; and 4) arrange for transfer to healthcare facilities when the patient is too ill or when his/her conditions are too complicated to be managed at home. The caregiver may need to assist the patient return to outpatient clinics for investigation or special evaluation not available in home care.

Community — Social Service Support

Sometimes, the care and social needs of the dependent patients are beyond the caregiver(s) ability and capacity. If the patients and their families prefer that the patients are not institutionalised (placed in nursing homes), they will have to assess whether they can cope at home. If it is beyond their capabilities, they will have to look to the community for support. There are many options available for home help (see chart below), but the cost can be prohibitive. There are many different types of social services available for the patient at home. Coordinating and arranging for them can be challenging. As a result, the Eastern Health Alliance & National Healthcare group have set up a service called Neighbourers. This service can help to coordinate the social and health services for the patient.

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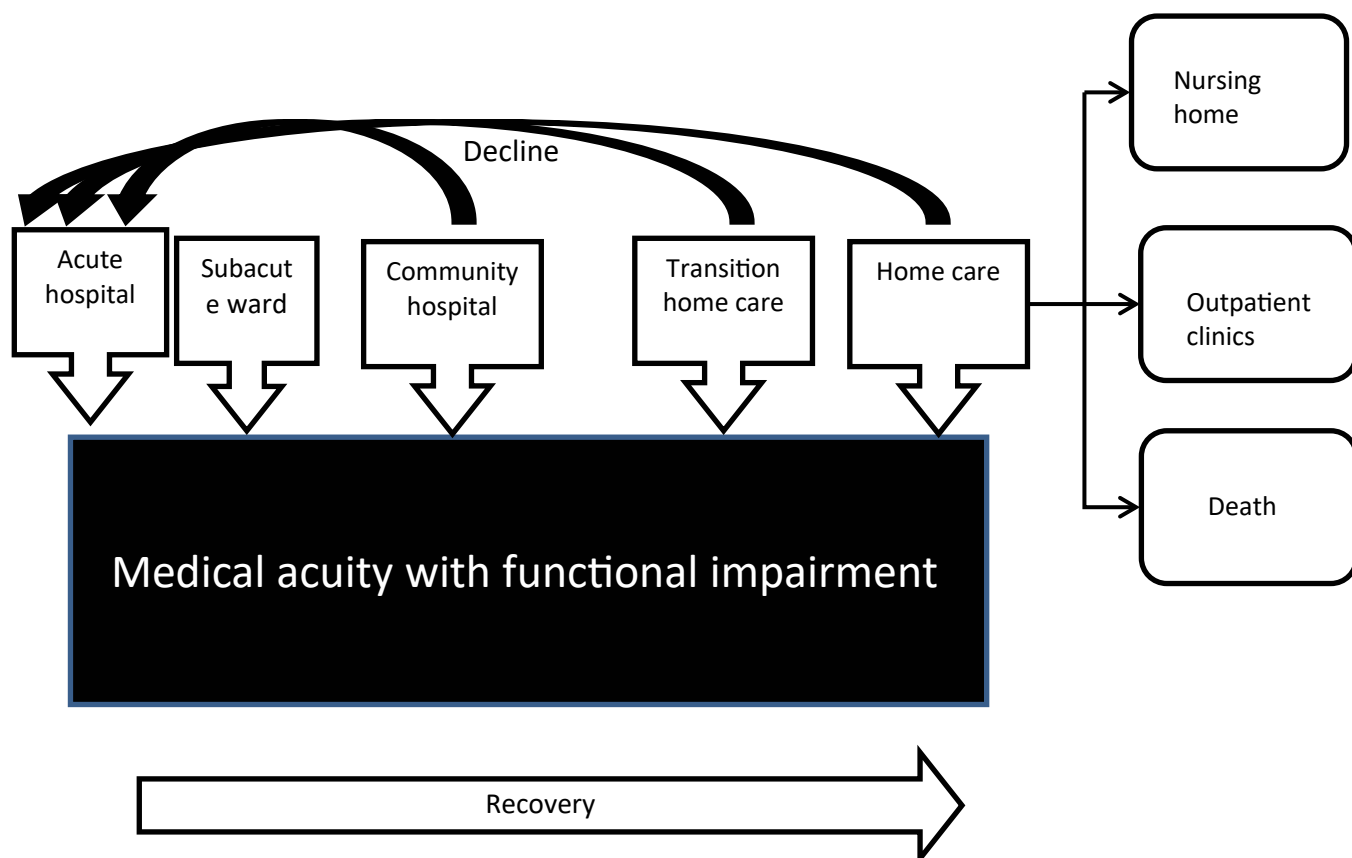


Figure 1: Schema of how patients travel within the healthcare institution and their home.

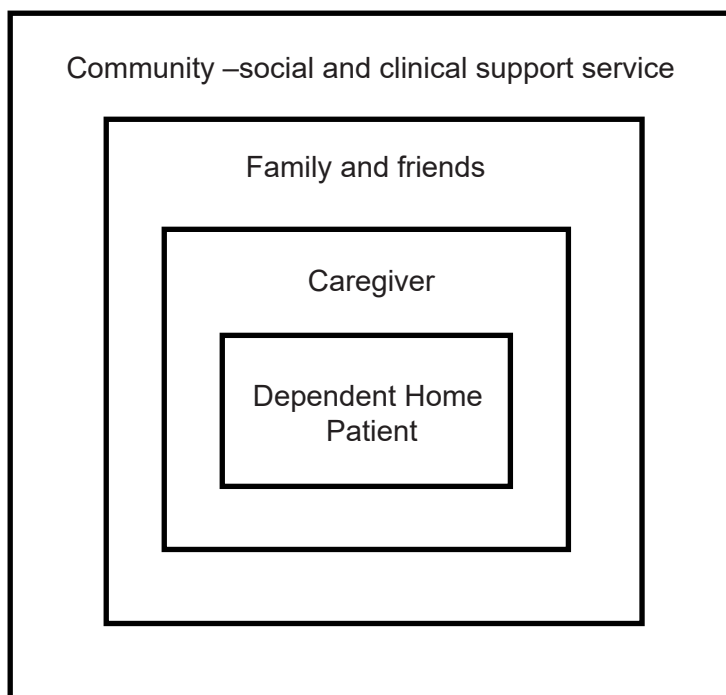


Figure 2: Dependent home patients and the important personnel providing supportive patient care.

Community — Home Healthcare Team

The clinical healthcare team is a part of the professional community support for patients at home. The home healthcare team is a multi-disciplinary holistic service provided by healthcare professionals and the allied health staff. Pharmaceutical home delivery is also part of home care.

Healthcare teams can monitor and manage the patients with actual visits or telephonic reviews/communication using other electronic means. Healthcare professionals may also make use of information technology to help in the management of patients. With modern technology, these monitoring devices can be placed on patients and electronically linked to the healthcare monitoring stations and hospitals. But at these centres, we need trained persons to interpret and make the appropriate recommendations to the patients and caregivers.

A COMPREHENSIVE ASSESSMENT OF THE PATIENT AT HOME

Principles of Assessment

The assessment should be characterised by the following components:

1. Multidisciplinary (evaluated by various different relevant team members);
2. Comprehensive (evaluate all aspects of the patient's care, including the medical, psychosocial, patients' values and expectations, and function of the patients);
3. Coordinated (systematic and organised, with the home care team and, sometimes, the general practitioner and specialists clinics); and
4. Continuing care and timeliness (continuing assessment at appropriate intervals throughout the progression of the disease[s]).

Who to Assess the Patient?

Generally, the service is provided by a single primary homecare provider.

The patients and their families are usually assessed by the home medical doctors and home nurses, and for those with rehabilitation potential, their therapists can be involved.

Patients with complex social needs and who require counselling will need financial assistance, the social workers maybe involve. Case managers maybe involved if the cases have a lot of services to coordinate.

Some patients may be too complex for one organisation to manage them. For example, a few organisations may be involved in the care of a home-ventilated, urinary catheterised and nasogastrically fed, dying patient. This patient may need the home ventilation respiratory support service, palliative home hospice service, and home nursing foundation service together with community social partners to provide comprehensive timely care for the patient.

Medical Assessment

The medical assessment/evaluation may include:

- (presenting complaint) evaluation for resolution of the acute issues that the home care team has been called in for;
- new complaints or newly detected issues that surfaced during the home visit;
- assessment of the control, complications, and chronic conditions like hypertension, diabetes, and Parkinson's.
- general assessment of the patient at risk with screening questions/tests for fall risk, dysphagia, cognition, and a head-to-toe examination;
- assessment of the environment of the home with the aids and appliances the patient is using;
- assessment of the patient's current functions;
- assessment of the care for the patient at home, caregiver compliance, and caregiver stress; or
- understanding the patient as a person and a taking a social history.

We have to consider using syndrome approaches to frail patients if relevant. Some of the syndromes of elderly frail patients do help us in the assessment of the patients at home. Most common conditions seen in the home setting are cognitive impairment, incontinence, immobility, poor feeding, impaired swallowing, instability of gait, and poor sleep.

Drawing up a problem list

After comprehensive assessments of these patients, a problem list will be drawn up. The list should include:

1. Active issues with current management.
2. Background chronic conditions with complications and the current control management.
3. Past surgical and medical issues resolved.

UNDERSTANDING THE PATIENT

Before formulating a management plan, we need to understand the patient as a person.

With some patients, it is possible to discuss their advance care plan.

This is a great opportunity to understand the patient as a person — his life experiences, values and focus in life. Then the medical care plan can be seen as a means to help the patient achieve his or her goal. In this partnership approach, there is a higher likelihood of achieving greater compliance with the agreed management. This approach can also build better and more rewarding doctor-patient and doctor-family relationships.

BENEFITS OF HOME CARE

The benefits of home care include: 1) accessibility and convenience — patients just have to wait at their home for care to be delivered; 2) comfort — patients can be treated in the comfort of their own home, which helps improve compliance to and cooperation with treatment; 3) personalised care — the home care team has the benefit of being able to assess patients in their home environment, allowing them to tailor the patients'

care to their needs. Home care also reduces nosocomial multi-drug resistant infection, in comparison with hospital care.

TYPES OF HOME CARE

There are various home-based care resources available to facilitate the successful care of patients at home. The types of home care available and examples of each are summarised in Table 1.

Table 1: Types of home care available.

Types of Home Care	Services Provided	Examples (not exhaustive)
Home Help	<ul style="list-style-type: none"> ● Personal hygiene (e.g. showering) ● Companionship and recreational activities <ul style="list-style-type: none"> ○ Mentally stimulating activities for seniors with dementia ● Physical maintenance exercises ● Grocery shopping ● Light housekeeping ● Meals preparation/delivery (e.g. Meals on Wheels) ● Respite care (during maid's or caregiver's days off) ● Escort services (e.g. medical appointments) 	Thye Hua Kwan Home Help Service (THK HHS) ¹ TOUCH Caregivers Support (TCS) ² NTUC Home Personal Care Services (NTUC Care@home) ³
Home Therapy	Therapy Services <ul style="list-style-type: none"> ○ Physiotherapy (PT) ○ Occupational therapy (OT) <ul style="list-style-type: none"> - Enhancement for Active Seniors (EASE) ● Other therapy services <ul style="list-style-type: none"> ○ Speech therapy (ST) ○ Respiratory therapist (RT) in Home Ventilation Respiratory Support Service 	Ang Mo Kio Community Hospital (AMKCH) Home Care Community rehabilitation programme (CRP) ⁴ <ul style="list-style-type: none"> ● Island-wide ● Works with primary doctor ● For subsidised patients only Handicaps Welfare Association ⁵ Private home therapist
Home Nursing	<ul style="list-style-type: none"> ● Nursing procedures include continence care, nasogastric ● Caregiver training ● Medication management 	Home Nursing Foundation (HNF) SATA home nursing ⁷ Private home nursing
Home Medical	<ul style="list-style-type: none"> ● Diagnosis and management of acute medical issues for existing patients <ul style="list-style-type: none"> ○ E.g. New symptoms or exacerbations ● Sign Certificate of Cause of Death (CCOD) 	Acute responders home medical team (respond within 1-2 days) <ul style="list-style-type: none"> ● AMKCH Home Care⁸ ● Home Joy Service⁹

	<ul style="list-style-type: none"> ● Management of chronic medical conditions <p>Prescription and/or titration of chronic medications</p>	<p>Chronic diseases</p> <ul style="list-style-type: none"> ● Home Nursing Foundation ● TOUCH ● Thye Hua Kwan home medical <p>Private - examples:</p> <ul style="list-style-type: none"> ● MW Home Medical care¹⁰ ● Tetsuyu Home Care¹¹ ● GPs who do house calls
Specialised Home Medical:	Help cognitively intact patients on home ventilator with cough assist and we also do tracheostomy care/change at their homes	Island-wide coverage
<ul style="list-style-type: none"> ● Home Ventilation and Respiratory Support Service (HVRSS) 		
<ul style="list-style-type: none"> ● Home Palliative 	End-of-life care for patients terminally ill with cancer or illness with end-stage organ failure	<p>Assisi Hospice¹²</p> <p>Dover Park Hospice¹³</p> <p>HCA Hospice¹⁴</p> <p>HOListic care for MEDically advanced patients (HOME Programme)—for patients with organ failure¹⁵</p>
<ul style="list-style-type: none"> ● Psychogeriatric Outreach Service 	Provides assessments and treatments for homebound or frail elderly with mental health disorders	Aged Psychiatry Community Assessment and Treatment Service (APCATS) ¹⁶
Transitional Home Care	Multidisciplinary team follow up patient for a period of three months upon discharge from hospital before transiting the patients to community services.	<p>CGH — Care@Home¹⁷</p> <p>KTPH — Transitional Care Service (TCS)¹⁸</p> <p>SGH — Transitional Home Care Programme¹⁹</p> <p>TTSH — Post - Acute Care at Home (PACH)²⁰</p>
Home Case Management	Help to coordinate care for the patient with usually poor and complex social support in the community	<p>Community case management officers</p> <p>Caring Assistance from the Neighbors (CAN)</p> <p>Befrienders</p>

Home Help

Home help services assist patients in three main domains within the house:

1. Attend to patients' basic needs,
2. Help patients and family with their household chores,
3. Provide respite care so that caregivers can take a break.

They also provide out-of-home services whereby they bring patients to their medical appointments or for recreational activities.

All these help to reduce caregivers' burden, increase sustainability of care of patients at home, and may improve patients' and caregivers' quality of life.

Home Therapy²¹

Home therapy services are for homebound older adults who are unable to attend a day rehabilitation centre but require rehabilitation to improve and maintain their activities of daily living such as dressing, feeding, and walking.

Home Physiotherapy Service

The home physiotherapist can assess, treat, prevent, and manage abnormal bodily movement.

He or she can prescribe treatment modalities and exercise programmes that help the patients with their flexibility, endurance, strength, balance, and gait. They aim to help the patients gain movement and independence to resume as normal a life as possible. They also can do respiratory therapy to help with secretion management for our patients. The physiotherapist may prescribe a suitable walking aid for the patient.

Home Occupational Therapy Service

The home occupational therapist (OT) can help to develop and improve patients' function and help them maintain a capacity to do daily activities and perform their roles which are important to a meaningful and productive life.

They also prescribe equipment like wheelchairs and home fixtures.

The OT also facilitates the application for Enhancement for Active Seniors (EASE), which is a home modifications scheme for Singaporean households. EASE provides:

- a. Slip-resistant treatment to existing floor tiles of 2 bathrooms/toilets;
- b. 8 or 10 grab bars for first toilet and within flat, and 6 grab bars for second toilet; and
- c. Up to 5 ramps within flat to negotiate one level difference in the flat and/or at single-step main entrance

Speech and Respiratory Therapist

There are also other therapists such as speech therapists (STs) and respiratory therapists (RTs). The ST usually works with transitional care services and assists patients with speech, communication and swallowing issues. Likewise, the RT works with HVRSS to provide expertise with regards to ventilatory support equipment, e.g. ventilators and cough-assist machine.

Home Nursing

Home nursing provides services such as nursing procedures, caregiver training, medication management, continence care. Nursing procedures may include nasogastric tube (NGT) change, indwelling catheter (IDC) change, wound care and medication administration. Currently, the largest home nursing service provider is Home Nursing Foundation, a Voluntary Welfare Organisation (VWO) which has island-wide coverage as well as extended hours till 9 pm. However, there is still a gap in service over weekends and public holidays which are usually filled by private nursing agencies and these services may not be as affordable for low-income patients, thus, some may choose to present at the Accident and Emergency Department of restructured hospitals in the hopes of getting all their needs attended to. In addition to nursing procedures, experienced nurses may also take on case management to coordinate care for patients with high-level and complex needs to ensure seamless and holistic care.

Home Medical

Home medical services can manage acute conditions, exacerbations of underlying medical problems and chronic medical conditions. They also review patients' medications, and provide assessment for various schemes, e.g. application for day rehabilitation, and assessing mental capacity for means testing. Doctors in home medical teams in VWOs can also give prescriptions which allow patients or their family members to collect medications from the polyclinic. Most of the government-subsidised VWOs operate during office hours. There is a great need for acute medical services outside of office hours, to cover medical needs during the night, early morning from 12 midnight to 8 am, weekends, and public holidays. This duration forms more than two-thirds of the time in a week when there is no subsidised home medical care available to the homebound patients. They generally end up in the Accident and Emergency Departments or neighbourhood clinics that open beyond the standard working hours. After-hours, the only available home medical care is usually provided by the private medical services. This can be relatively expensive for the general public when compared to the Accident and Emergency visit.

Specialised Home Medical

Specialised home medical services include Home Ventilation and Respiratory Support Service (HVRSS) and Home Palliative. HVRSS helps cognitively intact patients on home ventilation with cough assist and tracheostomy care, including changing tracheostomy tubes. Home Palliative provides end-of-life care for patients who are terminally ill with cancer or other illnesses. There is also the HOListic care for MEDically advanced patients (HOME) programme which is run by AIC for patients with chronic obstructive pulmonary disease (COPD) and end-stage heart or kidney failure with a prognosis of 6 to 12 months remaining. The patient and family must agree that the preferred place of care is at home and agree with the palliative goal of care.

Transitional Home Care

The transitional period from hospital to home can be a stressful period for patients and caregivers after discharge, hence transitional home care teams play an important role of easing

this phase. An example would be the Post-Acute Care at Home (PACH) service provided by Tan Tock Seng Hospital which provides home care services for patients for a short period of up to 3 months post discharge.

Transitional home care aims to stabilise and rehabilitate home-bound patients in their familiar home setting with a professional team of doctors, nurses, therapists, and social workers. The service is also supported by the hospital laboratory and pharmacy. The team currently operates in the central region of Singapore.

Examples of patients suitable for transitional home care are those who:

Require close monitoring of medical conditions and/or titration of medications to prevent recurrent hospital admissions and emergency department visits;

1. Are homebound and have difficulties going for clinic follow up or rehabilitation program; or
2. Need assistance in the evaluation and improvement of the level of care provided by caregivers.

Home Care Coordinators

Home coordination is case management services in place to ensure regular monitoring of the patient who is usually elderly, aged 60 years and above, with poor social support. Home visits are made by community case managers, Caring Assistance from the Neighbourers (CAN)²² carers, and/or befrienders. These community care teams, will do home visits to assess the needs of the patients and the caregivers. They can flag medical and social needs that need attention. Subsequently, they will try to coordinate health and social care with medical care providers, grassroots organisations and government agencies, and link up with befrienders. The befrienders can monitor the patients and caregivers once their social situations have stabilised.

Interim Caregiver Service (ICS)²³

ICS is a Ministry of Health initiative provided by National Trades Union Congress (NTUC) Health and Thye Hua Kwan Home Care Services. ICS provides interim post-discharge support at home while awaiting long-term caregiving arrangements, such as the arrival of a foreign domestic worker or nursing home placement. ICS provides a temporary English-speaking caregiver for 2 weeks (excluding Sundays and Public Holidays) for either 8 am to 8 pm (day shift) or 10 pm to 8 am (night shift). Alternatively, the client can choose to have a 6-day 24-hour shift. The drawback of ICS is that it is currently limited to inpatients discharged from restructured or community hospitals. ICS cannot be engaged from the community. Another limitation of the service is that they cannot support tracheostomised patients.

The trained ICS staff can provide basic nursing care like NGT feeding, showering, bathing, and transfers.

Paediatrics Home Care

This home care service which caters to paediatric patients is provided by the KK Women's and Children's Hospital, with the home service mainly manned by nurses. The ultimate goal is for

the nurses to train caregivers in managing patients in their care and maintaining their tubes, including the changing of percutaneous endoscopic gastrostomy (PEG) and/or tracheostomy. They also have a central pool of equipment, mainly ventilators, that they rent out to their patients. This is important because the paediatric population will grow in size and weight, and will change their needs over time.

Despite these, there remain areas for improvement in the provision of home care in Singapore.

CHALLENGES IN THE PROVISION OF HOME CARE

Lack of Funding and Manpower — cost to society, cost to patients

- Currently, there is limited funding and subsidies available for home care services. Subsidies are provided based on means testing and, sometimes, patients who require home care may not have access to it due to financial constraints. Families and patients refusing to be subjected to a means test done by social workers and administrative support staff are at risk of not having financial resources for these home services.

Efficiency — travelling time and cost

- Home care service providers spend a significant amount of time travelling from office to patients' homes. In addition, usually home care providers may travel via taxis due to the large and heavy medical and monitoring devices needed during the home visits. This adds to the financial cost of running the home care services.

Limited Resources — equipment available in home setting is limited

- Sometimes, certain specialised equipment may be required in the diagnosis and management of patients. Bulky equipment such as an electrocardiogram machine, or an ultrasound machine for bladder scans may add to the inconvenience of travelling, while X-ray facilities are not available in the home setting.
- A possible suggestion for operators to consider is to focus their efforts on a limited geographical area. Perhaps they can be based at the neighborhood day care or day rehabilitation centres or polyclinics. These can circumvent the travelling time needed and the staff that provide home care will be familiar with the surroundings and may even be familiar with some of the patients who now need home care because of their deteriorating conditions.

A Large Part of the Success Is Dependent on Family and/or Caregivers

- The caregivers and family members are the hands and feet of the home care team as they are the ones who are caring for the patient 24/7 and act on the advice of the home care team. The home care team can only be as good as the caregivers, and families also have the right to (and sometime do) reject home care services and refuse to be compliant with the treatment and medications. Hence, society must recognise and

respect the caregivers' role.

Difficulties in Sustaining Comprehensive Coordination of Care at Home

- It is challenging to find sustainable, long-term care teams able and willing to handle and coordinate most issues for home care patients. As such, patients usually have complex medical needs which require expertise spanning across multiple medical aspects of care from tertiary to primary care, and functional and/or social issues.

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LEARNING POINTS

- **Patients who are homebound can benefit from home care.**
 - **Current home care services need to build their capacity to expand their coverage to serve all who need them.**
 - **True home care is personalised care where we individualise the care of the patient according to his or her home situation, caregiver availability, and their setting.**
 - **Optimal home care should encompass comprehensive, coordinated, continuing care.**
 - **For dependent patients, the success of staying at home depends a lot on the capacity, ability, and motivation of their caregivers.**
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