PREVENTIVE CARE FOR INSTITUTIONALISED ELDERLY

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INTRODUCTION

There is a lack of research on Preventive Healthcare in Nursing Homes[1]. Locally, there is also a lack of papers on nursing homes, with a few notable exceptions[2]. However, there are good research and policy statements on preventive medicine and health screening in the elderly[3]. In a paper by Goldberg et al[4], he reviewed literature on preventive medicine and screening in older adults, and came to the following conclusions:

1. The goal of preventive medicine in older people should not only be the reduction of premature morbidity and mortality, but also the preservation of function and quality of life
2. Prevention of disease in old age must start in youth
3. After the age of 85 years, conventional screening tests are unlikely to be of benefit. However, care must be individualised
4. Emphasis should be on proven and most effective interventions for older persons with highest risk of important problems
5. The most well-accepted institutionalised-elderly specific preventive measures are:
   i) Hypertension control
   ii) Vaccination for infectious diseases (eg. influenza & pneumococcal vaccination)
   iii) Smoking Cessation
   iv) Physical exercise
6. Recent elderly preventive measures under investigation include:
   i) Cognitive impairment (screening for pre-dementia)
   ii) Peridontal disease
   iii) Falls and injuries (eg. hip protectors in the prevention of hip fractures).

Institutionalised elderly in Singapore exist in a wide spectrum of functional disability and degree of ill-health. For example, the elderly in a sheltered home are ambulant and relatively healthy, while those in nursing homes may range from RAF (Resident Assessment Form) 1 to 4. Hence, preventive health care must be individualised.

The discussion so far has been on evidenced-based primary prevention of medical and health problems in institutionalised elderly. However, I would like to now focus on a problem-based approach to preventive care that a healthcare professional can use for residents in a nursing home.

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Problem-based approach to preventive care for institutionalised elderly

Preventive strategies should be focussed on the common problems faced by nursing home residents[5]. These include:

1) Immobility (including Pressure Ulcers)	2) Falls & Injuries (including use of restraints)
3) Malnutrition	4) Dehydration
5) Incontinence	6) Constipation
7) Impaired Vision	8) Impaired Hearing
9) Dementia & "pre-dementia"	10) Delirium (common causes: 11 & 12)
11) Medication Iatrogenesis	12) Infection & Vaccination
13) Social Isolation	14) Abuse & Neglect (politically sensitive topic)

1. Immobility Prevention

What are the ill effects of immobility?

a) Neurological: Depression, lack of mental stimulation, social isolation
b) Skin: Pressure sores
c) Lungs: Stasis pneumonia
d) CVS: Cardiac deconditioning, postural hypotension
e) GIT system: Constipation
f) Genito-urinary System: Functional incontinence, UTI
g) Musculoskeletal System: muscle atrophy, contractures, osteoporosis.

There is a shortage of rehabilitation therapists in nursing homes in Singapore. All residents will benefit from maintenance rehabilitation to maintain mobility and ADL functioning. Even bed-bound residents will benefit from physiotherapy to prevent contractures. Residents who have the rehabilitation potential to improve their functional status should receive active rehabilitation.

2. Pressure Ulcers Prevention

a. Risk Assessment

The first step in preventing pressure ulcers is to identify the resident most at risk. In Singapore, we have adopted the Braden Scale for predicting pressure ulcer risk. It is based on measures of sensory preception, moisture, patient activity status, mobility, nutrition, and friction and shear potential. The lower the score, the higher the risk

b. Skin Care and Early Treatment

- Inspect skin daily while bathing

- Clean soiled skin promptly with non-irritating cleansing agent
- For incontinent residents, use highly absorbent diapers and topical moisture barriers
- Maintain mobility and adequate nutrition (discussed in other sections)
- Proper transfer techniques to prevent skin injury due to friction or shearing.

c. *Mechanical Issues*
- Reposition bed-bound residents at least every 2 hours. For residents in chair, reposition every hours. If possible, teach resident to shift weight every 15 minutes
- Use pressure-relieving devices like foam wedges, pillows, special mattresses, etc.

3. Falls and Injury Prevention

Increasing mobility of nursing home residents must be balanced with fall and injury prevention. Falls are a major cause of injuries, of which the most feared are subdural haemorrhages and fractures, especially hip fractures. Minor injuries include skin damage (eg. bruise, lacerations) and contusions.

a. Fall prevention includes the following:
- Carer education of importance to adopt a fall prevention attitude and practice
- Environmental modifications to make the surroundings safe for ambulation and ADLs
- Adequate supervision during ambulation and ADLs
- Optimisation of medical illnesses (eg. postural hypotension, visual impairment, osteoarthritis)

b. Injury prevention includes the following:

Mechanical protectors like hip protectors and helmets
However, patient compliance to these devices are usually low due to a variety of factors. However, hip protectors have been shown to reduce the incidence of hip fractures in nursing home settings[6,7]. Hence, there is good evidence to implement a hip protector policy in nursing homes in Singapore.

Anti-Osteoporotic Therapy
In a patient who has had a fragility fracture, the diagnosis of osteoporosis is straightforward[8]. However, the objective assessment of a resident for osteoporosis who has no history of fragility fractures requires a bone-mineral densitometry (BMD), which is costly and inconvenient. Tools like the Osteoporosis Assessment Tools for Asians (OSTA) may be used as a filter for categorising patients for osteoporosis risk, with further decision-making based on other clinical risk factors to determine who should have BMD measurements[8]. The benefit of osteoporosis treatment to prevent fractures has been proven. However, the cost of BMDs and biphosphonate treatment remain obstacles against the full realisation of its potential benefits for all elderly, especially voluntary nursing home residents who are already socio-economically disadvantaged.

Use of Restraints
Restraints use in nursing homes is highly controversial and has have received great denouncement by the public in developed countries like the US, UK and Australia. However, in Singapore, restraints are still used and there is a poverty of data on its prevalence and appropriateness of use. Studies have shown that restraints can cause more injuries than it is purported to prevent, and there have been guidelines written on its appropriate use[9]. Injury prevention with use of restraints (eg. hand restraints for a demented person who keeps climbing out of bed) must be balanced with the risk of restraint-related injuries (eg. friction burns on wrists) and the ill effects of immobility.

4. Malnutrition

Malnutrition is another important problem faced by residents in nursing homes. In the US, malnutrition was found to be a serious problem among resident in nursing homes[5]. There is dearth of data on the nutritional status of nursing home residents in Singapore but there are ongoing studies currently being conducted. One of these researchers who gathered anthropometric studies on residents of a local nursing home reported verbally that about 60–70% of them had Body Mass Index (BMI) of less than 19, of which the majority were in the RAF category 3 and 4[11].

a) Risk Assessment
Like in pressure ulcer prevention, the first step to preventing malnutrition is to identify patients most risk. The BMI is a simple and useful tool but sometimes eye-balling a patient, while crude, can detect up gross malnutrition. Nutritional surveys and skin fold callipers measurements can also be used but the latter requires fair resident cognition to perform and the latter is inconvenient

b) Optimise Contributing Causes
There are many reversible causes for malnutrition and these should be optimised. Examples include poor dentition, depression causing poor appetite, undiagnosed dysphagia and other medical illnesses like cancer. Each of these causes require their own specific treatment and should be instituted (eg. fitting dentures for an edentulous resident, treating depression with anti-depressants and psychotherapy, modifying food consistency in a dysphagic resident in consultation with a swallowing therapist)

c) Improve Caloric and Nutritional Intake
- Modify food menus to suit the resident's preferences
- Use spices and condiments to improve the taste of food
- Feed the patient at his preferred times

- Encourage frequent snacks
- Supervision to encourage feeding
- Try nutritional supplements like Ensure, Ensure-Plus.

5. Dehydration

Singapore is a hot country and our residents usually stay in a non air-conditioned room. Even though the elderly have reduced sweating, they still have the potential to lose a lot of body water through sweating. Coupled with decreased thirst sensation in older people, their propensity for dehydration is high. Dehydration can lead to delirium, electrolyte abnormalities and renal impairment, and ultimately to death.

Poor water intake is usually associated with poor nutritional intake, and so malnutritioned patients should also have their hydration status monitored. All patients' hydration status can be monitored by noting it clinically (eg. mucous membranes), BP and by their intake and output (I/O) status.

Food with high water content like watermelon and soups can add to a residents total water intake. Remember to be careful in an elderly patient with heart failure who may need to be fluid restricted.

Intravenous rehydration therapy in a dehydrated resident is useful in the nursing home setting to prevent readmission to an acute hospital. However, in Singapore, there is a lack of expertise and confidence among nursing staff to provide infusion therapy in nursing homes. While nursing home staff should upgrade their skill in this important area, dehydration can be effectively eliminated if it is detected and treated early.

6. Incontinence

This may be urinary or faecal incontinence. In a nursing home setting, the commonest cause for faecal incontinence is faecal impaction with spurious diarrhoea, and the commonest cause of urinary incontinence is functional incontinence.

The prevalence of dementia is high is nursing home residents and if they are unable to call to pass urine, they will be incontinent and will require a urinary pad. However, before condemning a patient to a life of diapers, efforts must be made to see if the resident can be potted regularly or if he can communicate his need for help to pass urine.

To prevent premature use of diapers in a nursing home, there must be enough staff to pot patients regularly. Inadequate staffing is a common problem in local nursing homes.

The management of incontinence is too large a topic to be discussed here but one can refer to the excellent book, *Clinical Handbook on the Management of Incontinence*, published by the Society of Continence of Singapore[12].

7. Constipation

The ill effects of faecal impaction include delirium, urinary retention (and increased risk of UTIs) and subacute intestinal obstruction (I/O).

Constipation is a major problem in a nursing home and to prevent it, we must first be able to monitor the bowel movement of residents. It is only then that we can detect constipation.

Patients who are bed-bound should have regular laxatives and all nursing home should have a bowel protocol to prevent faecal impaction.

8. Impaired Vision

Impaired vision will increase the risk of falls, cognitive dysfunction, social isolation and depression in the elderly. Cataracts are highly amenable to surgery and the subsequent improvement in quality of life dramatic and proven. All patients should be screened for visual impairment and cataracts, and referred for cataract surgery if limiting social and physical function. Even if cataracts are not the cause for visual impairment, fitting for eyeglasses by an optician/optometrist is an important aspect of holistic eye health.

Glaucoma and senile macular degeneration are other common causes of blindness in the elderly but unfortunately, there are no effective screening tools to date.

9. Impaired Hearing

Presbycusis is the commonest cause of deafness in the elderly. However, impacted ear wax is also a common cause for hearing impairment in the elderly and is highly amenable to removal. All nursing home residents should be assessed for hearing impairment and checked for impacted ear cerumen.

Any other ominous symptom or sign or organic ear disease should be referred to the ENT specialist.

Hearing aids are also an important adjunct to hearing in the deaf older person and should be prescribed if the resident, after adequate counselling, is receptive to its use.

10. Dementia (and "Pre-dementia")

Preventive health care for multi-infarct type of dementia is fairly straightforward, as it involves controlling risk factors for strokes (ie. hypertension and less significantly, diabetes mellitus and hyperlipidaemia). However, preventive care for Alzheimer's dementia is relatively unclear. With advent of anti-acetylcholinesterases (Anti-AchEs), we have found that treatment of Alzheimer's dementia holds the best prognosis when treated early. Hence, there is a need to promote early detection and diagnosis of Alzheimer's dementia among healthcare professionals.

The DSM IV criteria for the diagnosis of dementia require that the patient's cognitive dysfunction be severe enough to impair his social function. However, with the evidence that Anti-AchEs can significantly retard progression of early dementia, there is a drive for researchers to examine if Anti-AchEs can be effective in very early dementia, *before* the disease affects the sufferer's social function. This very early stage of dementia is coined "pre-dementia" and there are studies underway to explore this area of psychogeriatrics. However,

presently, there is insufficient evidence for or against screening for dementia in older adults[13].

There is some evidence that mental stimulation prevent the onset of dementia. Hence, there is some need for nursing homes to provide mentally stimulating, intellectually engaging activities for their residents. These activities may be organised by occupational therapists or geriatric psychologists.

11. Delirium

The prevention of delirium in residents in the nursing homes involves the prevention of preventable medical conditions. Examples include good pressure ulcer management to prevent skin-related sepsis and appropriate food consistency to prevent aspiration pneumonia. Prevention if malnutrition and dehydration, discussed previously, also prevents delirium.

The two commonest causes of delirium are medication iatrogenesis and infection, which will be discussed in the following sections.

12. Medication Iatrogenesis

Medication errors are common in nursing home settings. It may involve errors in dispensing or pharmacodynamic drug interactions. Singapore nursing homes can benefit from better drug management systems, documentation and pharmacist input. Doctors working in nursing homes must be very cognizant of principles of treating elderly such as:

- Start low and go slow
- Drug-drug and drug-disease interactions
- Decreased bioavailability and metabolism of drugs in the elderly
- Avoid polypharmacy
- Constant review of drugs administered, their intended effects, adverse effects.

This remains an important area for improvement and problem prevention in nursing homes.

13. Infection & Vaccination

Annual influenza vaccination is recommended for all persons aged 65 years and above[3], and residents in nursing homes are no exception. In fact, in these times of SARS when it is difficult to distinguish between SARS and influenza, this proven and efficacious primary prevention measure should be seriously looked into, especially in institutionalised elderly.

The US Preventive Task Force also recommends that older persons above 65 years should also receive at least one dose of pneumococcal vaccine in their lifetime, with high- risk patients receiving a second dose in 6 years[14].

14. Social Isolation

Social isolation for nursing home residents is a real problem as they are often relegated to the fringes of society and forgotten by all. Social isolation leads to depression and cognitive dysfunction. Besides organising activities within nursing homes, effort must also be made to better integrate residents with the world outside. Singaporeans, of all age groups, should be encouraged to volunteer time in nursing homes to befriend and provide companionship to residents. Family members should also be encouraged to be filial and visit their relative regularly in nursing homes. Nursing homes should in turn foster family-friendly policies to facilitate visitors. Outings for nursing residents should also be organised regularly to demystify the stigma of nursing home residents and provide residents an opportunity to interact positively with society.

15. Abuse & Neglect

There has been some evidence of active abuse of nursing homes residents in other countries (eg. US, UK) but such data is lacking for Singapore. Active abuse includes physical, verbal and sexual abuse, but such forms of abuse are relatively uncommon when compared to passive abuse. Neglect, a far more subtle form abuse, is common is nursing homes in developed countries like the United States.

Poor quality care has been an enduring feature of many of the 16,500 residential nursing facilities that provide care to 1.6 million people in the United States[15,16]. Despite three decades of public concern, government surveys and data collected by the federal government continue to show that residents of nursing homes experience problems in their care. In 1998 and 1999, 25–33% of nursing homes had serious or potentially life threatening problems in delivering care and were harming residents[17,18]. In 1999, US state inspectors found that 26% of the nation's nursing facilities had poor food hygiene; 21% provided care that was inadequate; 19% had environments that contributed to injuries in residents; and in 18% pressure sores were treated improperly.

<u>Regulating US Residential Nursing Institutions - Lessons for Singapore</u>

Over the past three decades, the poor quality of care in nursing homes in the United States has continued to be a problem. The nursing home industry has been increasingly controlled by large and politically powerful corporations. These corporations have wide discretion over the spending of large amounts of public funds, but at the same time, there is little financial accountability. Financial mismanagement is widespread throughout the industry as is poor quality care.

Although strong US federal quality standards were established by law in 1987, the crucially important standards for staffing continue to be weak; staffing accounts for the largest share of the cost of care. Small numbers of staff, who are paid low wages and have few benefits, and high turnover rates are recognised features of the industry. There is also a reluctance to use the enforcement penalties and sanctions available.

The US government is reluctant to impose higher standards for staffing because of concerns over cost. Although the US

government pays 62% of nursing home bills, financial accountability for expenditure does not extend to rules governing the services to be provided, the types of services, how much profit can be made, and how much is spent on administrative costs and other expenditures.

The story of long term care in the United States holds lessons for the Singapore. Because the market is increasingly dominated by profit making corporate providers, our government must be prepared to intervene in areas that affect profit margins and must also retain control over the expenditures of providers in the areas of adequate staffing, skill mix, training, and services provided. Failure to do this leaves regulation in the realm of symbolism and vulnerable, frail elderly people at risk of serious harm.

CONCLUSION

Preventive care for our elderly residents in nursing institutions falls largely in the healthcare provider's domain, and there is much we can and should do. It has been said that "an ounce of prevention is better than a pound of cure", and an alert, attentive and careful approach to problem prevention in nursing home residents will go a long way in improving their care. However, we should also be aware of the forces outside our control that influence our standards of care in our nursing homes. While not directly in control of such forces, we are nevertheless in the position to advocate for our patients through public education and discussion.

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