Single or double-bedded nursing homes with quality care, privacy & autonomy are possible for $8 more a day per resident

Study by global strategy consultancy, Oliver Wyman, highlights how developed countries have moved away from medicalised dormitory-type nursing homes, towards a habilitative model with home-like environment, privacy & person-centred care

If the next 5,000 nursing home beds to be built by the government were to offer the habilitative care model, the incremental cost is less than the National Day Parade annually[1]

28 July 2016

"This is home, truly. Where I know I must be."

1. Some 12,000 nursing home residents would call their dormitory-style surroundings home, and perhaps sing this popular National Day song with a tinge of irony, longing for the home they wish for as they live under institutionalised care and environment. This is in contrast to how the elderly in nursing homes of developed countries are living. In recent years, leading countries in eldercare have moved towards a habilitative[2] model of person-centered care where residents live in single or double-bedded rooms in a home-like setting.

2. This is one of the key reasons why the Lien Foundation and Khoo Chwee Neo Foundation have commissioned global strategy consultancy, Oliver Wyman (OW), to evaluate the evidence and best practices of new models of care for nursing homes, and to evaluate what it would take to operationalise a basic version of this type of care in Singapore.

3. "Our elderly need more than a shelter and medical care," said Ms Peggy Goh, Founder and Board Member, Khoo Chwee Neo Foundation. "They need dignity, privacy, autonomy and a sense of purpose. Putting back the 'home' into our nursing homes is how we can respect and honour them, for they deserve to spend their twilight years with hope and love."

4. "Titled ***The Economics of Singapore Nursing Home Care***, the study modelled cost implications of the habilitative nursing home model that has benefited the elderly in leading countries like

[1] NDP 2016 costs $39.4mil. The cost of NDPs for previous years ranged between $15.7m to $20.6m. www.straitstimes.com/opinion/what-price-for-**ndp**-at-sports-hub

[2] Habilitative care, as opposed to medical care is, focused on promoting positive emotions, maximising skills and abilities that remain and reducing challenging behaviours.

Japan, Australia, the UK and US. Local nursing home care leaders, architects and clinicians worked with OW to propose a working habilitative nursing home model, dubbed '*Silver Hope*', that will enhance the elderly's autonomy, dignity and sense of wellbeing. Their inputs and OW's analysis have revealed the additional cost for such a model would be modest, starting from an estimated $8 more a day per resident, primarily due to construction and staffing costs. This is possible through clever space planning and reconfiguring staff to deliver personalised care in smaller groups.

5. The study is conducted against the backdrop of Singapore's fast ageing population, increasing incidence of dementia, and the government's drive to ramp up nursing home beds to 17,000 by 2020.

Caught in time warp

6. The race to raise nursing home capacity in Singapore has seen the number of nursing home beds growing by 27%, from 9,400 beds in 2011 to about 12,000 beds today. To ease entry barriers for nursing home operators, the Ministry of Health (MOH) has initiated the Build-Own-Lease (BOL) model to lower capital commitment for the sector. Despite this move, new BOL nursing homes have yet to offer residents better living arrangements, privacy, autonomy or a habilitative model of care. Hosting six to 15 persons in a room is akin to dormitory-style barracks caught in a time warp.

Whither the future of our nursing homes

7. To address such dismal prospects, the Lien Foundation and Khoo Chwee Neo Foundation had sought to start an innovative model of person-centred care offering privacy and comfort in a home-like environment last year. Called '*Jade Circle'*, it was to offer a habilitative model of care in a new extension wing of The Salvation Army Peacehaven Nursing Home. However, the project was halted, as the government did not agree to extend subsidies for eligible means-tested residents to stay in the proposed single and double-bedded rooms *Jade Circle* was comprised of. When the project stalled, it generated a fair amount of public discussion and questions on the future and kind of nursing homes Singapore should have, the cost for potential improvement and their financial sustainability.

Putting back the heart, home and humanity

8. To this end, OW's study will inform and reveal what it takes to have an improved and sustainable model of nursing home care that can restore heart, home and humanity to nursing homes in Singapore. "Today's nursing homes are Hobson's choice or simply put, 'bo pian'," said Mr Lee Poh Wah, CEO, Lien Foundation "The elderly are stripped of their privacy, dignity and autonomy, and reduced to living a regimen - all in the name of safety and efficiency. But we have a window of hope as 5,000 more nursing home beds will need to be built by 2020. There is *now* a chance to change course and enhance the quality of life and wellbeing for the elderly; or turn a blind eye and keep status quo, and continue building soulless institutions of last resort that will become a liability for future generations."

Global shift towards habilitative care

9. The OW study found that globally, nursing homes are evolving **away from the medicalised model** of care that focused primarily on medical and nursing needs, and moving **towards a habilitative model**, emphasising **ageing with dignity, respect and self-reliance**. Small group living (of six to 10 residents) in a **home-like environment** with single rooms allow for greater privacy. Many leading countries with ageing populations like Japan, Australia, the UK and US have made single and double rooms the norm, and nursing care is person-centred, often supported by technology. In fact, in Japan, single rooms have been a basic expectation for the elderly staying in residential care facilities since the 1990s[3].

Silver Hope for Singapore

10. For Singapore to move in this direction, the proposed *Silver Hope* model of habilitative care will offer an alternative to traditional nursing home practices - by 'de-institutionalising' it with a significantly redesigned philosophy of care approach that extends to the physical environment and operations. It will have :
    - Single and double rooms with ensuite toilets and space for personal effects
    - A home-like environment mirroring HDB rooms for residents
    - A living and dining area for cooking and socialising in each self-contained 'household' of up to 10 residents
    - Experienced team of senior care associates and nursing aides
    - Personalised care with a focus on the nursing, social and emotional needs of residents

11. Following global best practices, *Silver Hope* will emphasise person-centered care to let the elderly age with dignity, empower them with autonomy in the choice of their activities and respect them by giving them greater privacy. The homely environment fosters socialisation with communal dining rooms and residents' participation in meal preparation.

Benefits of positive outcomes

12. The above features of the habilitative type of care are also espoused by the American Green House model (see Annex B) that has shown positive results like improved quality of care and care outcomes, higher family satisfaction and staff satisfaction. Respect, privacy and dignity provided by the single and double rooms also improve residents' wellbeing (see Annex C). Care staff in these homes are trained to focus on the residents' nursing, social and emotional needs, leading to their higher quality of life.

13. A seminal Japanese study[4] on the behaviour of residents in single and four-bedded rooms was instrumental in Japan's shift towards single-room nursing homes. Dr. Tadashi Toyama's research debunked the notion that residents from single rooms did not socialise or were withdrawn. Instead, it reported that residents of multi-bedded rooms lived under the stress and worry of over-exposure to fellow residents. The study highlighted how the security and privacy of single rooms, as well as the option to personalise their rooms, gave the elderly

[3] A study on the introduction of private rooms and small scale units at long-term care insurance facilities", Dr. Tadashi Toyama, 2002

[4] A study on the introduction of private rooms and small scale units at long-term care insurance facilities", Dr. Tadashi Toyama, 2002

emotional stability and made them more willing to interact with other residents. In turn, the elderly displayed more interest in their daily activities, and improved in their appetite and quality of sleep. Furthermore, the care staff of single-bedded nursing homes reported greater job satisfaction as their workload was reduced and they spent less time supporting toileting and changing diapers. The study concluded that nursing homes should be a place for the elderly to *live* in, and not just as a place for them to *receive* care.

What it takes

14. According to the OW study, a basic nursing home under the *Silver Hope* model with 20% single and 80% twin rooms could be made possible at an additional $8 to $13 per resident per day, with a higher differential for dementia residents. It takes into account that dementia residents require more engagement and hence greater manpower, which is estimated to be 25% more. The bulk of this increase is due to construction and staffing costs.

15. The *Silver Hope* model suggests that overall care quality can be ramped up significantly with an 8-12% increase above the current average cost of $106.[5] Should the upcoming 5,000 new nursing home beds be built under this model of care, OW estimates it could cost about $19 million more each year, or 0.2% of MOH's FY2016 budget of $11 billion. Assuming the proportion of single rooms is 100%, the incremental cost would be $12-17 per resident per day.

16. "We believe the longer term benefits are significant for nursing home residents, and Singapore should consider how to transition and align to established models in other developed countries. Singapore has already committed S$8 billion to funding the Pioneer Generation Package which supports acute medical needs in the hospitals and clinics. The incremental investment in improving nursing homes should be seen in the larger context of overall healthcare funding and the national commitment to active ageing." said Dr Jeremy Lim, Partner, Head Of Health & Life Sciences, Asia Pacific, Oliver Wyman. The main drivers of incremental costs came from construction and manpower.

Invest in space and manpower

17. Based on life cycle cost projections, the OW analysis shows that *Silver Hope* will need higher investments in construction and manpower. The larger floor space and ensuite bathroom, as well as increased use of more experienced staff all contribute towards delivering person-centred care, and enhancing the residents' dignity and wellbeing. These factors are also crucial in improving the care of persons with dementia, especially when the incidence of dementia creeps up with an ageing population. These are erroneously thought to be expensive, but the space requirements can be reduced by efficient space planning to create a mix of single and double rooms, similar to the master bedroom in a traditional HDB-flat. Experts in nursing home space planning recommended the HDB bedroom size to allow for familiarity when an elderly transitions from his or her home to a nursing home.

Habilitative model to meet the dementia wave

18. Moving our nursing homes towards habilitative care will help meet increased care needs arising from the higher incidence of dementia. The number of people with dementia is expected to grow to over 100,000 by 2030. Research has shown that habilitative care is well suited to meet the needs and demands of the debilitating condition. This is because persons with dementia need an environment in which they can explore and find their own personal space. Environments that are restrictive can cause challenging behaviour because conflicts can arise from people getting in each other's way.[6]

Hope of success

19. Currently, persons with dementia in the Hope Resident Living Area (RLA) at The Salvation Army Peacehaven Nursing Home enjoy a home-like environment where they are empowered and encouraged to continue their daily functions and interests. Its staff ratio is similar to the *Silver Hope* model. Since its start in 2006, Hope RLA has grown in its size and success, indicating the potential for such habilitative models to grow deeper roots in Singapore.

20. A model like *Silver Hope* will inject a new sense of purpose and professionalism in care staff. Executive Director of Peacehaven Nursing Home Mdm Low Mui Lang said, "The habilitative type of nursing home would need staff to be trained with higher skills for instance, like Senior Care Associates, and to have pastoral and psychosocial personnel. This would improve their care planning process for each resident. Through job redesign, these nursing homes could also create jobs for seniors or retirees. For example, they could work on a full-time or part time basis providing psychosocial support to residents."

Review, not regret

21. Even as the Enhanced Nursing Home Standards took effect in April this year, we are faced with the question if the improved standards will serve us well and for how long. Rising levels of wealth and better education in Singapore will drive desire and expectations for higher standards and innovative models of nursing care. However, the new nursing homes coming on stream remain dormitory-like, with hints of the past covered in new paint.

Voices from the public

22. To find out what Singaporeans want of eldercare services and nursing homes as they age, the Lien Foundation is conducting a public survey from today to 18 August 2016. The public is invited to participate in the online survey at http://bit.do/LFsurvey. As part of its efforts to advance care provided in nursing homes, the Lien Foundation and Khoo Chwee Neo Foundation will be releasing an in-depth study reflecting the voices of experts, practitioners and leaders in the eldercare and healthcare sector on their views of the challenges ahead and how Singapore can tackle the odds.

23. As Singapore becomes more affluent, and families continue to shrink in size, there is a growing need to review our existing nursing home care model, and boldly change to offer better options in tandem with rising aspirations.

[6] Krishnamoorthy and Anderson Progress in Neurology and Psychiatry

24. For $8 more per day per resident, would you upsize the future of nursing homes?

~oOo~

Annex A *Executive Summary of the Study*
Annex B *About the Green House Model*
Annex C *Benefits of Privacy with Single/Double Rooms on the Elderly & Persons with Dementia*

ABOUT THE LIEN FOUNDATION **www.lienfoundation.org**

The Lien Foundation is a Singapore philanthropic house noted for its model of radical philanthropy. It breaks new ground by investing in innovative solutions, convening strategic partnerships and catalysing action on social and environmental challenges. The Foundation seeks to foster exemplary early childhood education, excellence in eldercare and effective environmental sustainability in water and sanitation. It supports innovative models of eldercare, advocate better care for the dying and greater attention on dementia care.

Since 2005, the Foundation has harnessed IT for capacity building and enhanced the quality of care in healthcare nonprofits like hospices and nursing homes. In 2010, the Foundation commissioned the first-ever global Quality of Death index ranking 40 countries on their provision of end of life care. It has published research that unveiled the views of doctors and thought leaders on what would improve end-of-life care in Singapore.

ABOUT THE KHOO CHWEE NEO FOUNDATION **www.kcnf.org**

The Khoo Chwee Neo Foundation was incorporated in January 2015 to achieve its Founder - Peggy Goh's philanthropic aspirations. The Foundation's mission is to put God's love into action by creating lasting solutions to poverty and social injustice through the Foundation's well-rounded care programmes for the elderly poor, and education and rehabilitation programmes for children.

The Foundation's main programmes are to provide care for the physical and emotional needs of the elderly poor, and to provide access to education for underprivileged children and children with special needs in Singapore, as well as from other developing countries in Southeast Asia. The Foundation was named after the Founder's mother, Khoo Chwee Neo, to remember Madam Khoo's passion in helping the poor and needy.

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OLIVER WYMAN

ANNEX A

THE ECONOMICS OF SINGAPORE NURSING HOME CARE

EXECUTIVE SUMMARY

PREPARED FOR
LIEN FOUNDATION AND KHOO CHWEE NEO FOUNDATION

MARSH & McLENNAN COMPANIES

Introduction

Singapore is facing rapid societal aging with consequent challenges in providing for long term care for Singaporeans requiring constant medical/nursing supervision. The number of seniors aged over 65 years is expected to exceed 900,000 in 2030, thus placing huge demand burden on resources for nursing home care. This challenge is further exacerbated by the increasing prevalence of dementia in the population. People with dementia not only require more care and supervision but also a special living environment. Currently, about half of the residents in nursing homes are living with some form of dementia and this proportion will only increase in the future.

The prevalent model in Singapore for nursing homes is that of a medicalised care provided in a dormitory-style setting. This came into prominence due to real estate constraints and government's push towards standardisation and cost-efficiencies. While the current medical model delivers adequate nursing care, there are limited opportunities for autonomy, empowerment and personalisation of the care environment for the elderly, especially for those with dementia.

Balancing quality of care and costs needs constant review given the dynamic socio-economic environment, cost constraints and changing expectations. With a generational change, the expectation from nursing homes will not be limited to physical health alone but also include psychosocial well-being and dignity of living as well.

With this context, Lien Foundation and Khoo Chwee Neo Foundation engaged Oliver Wyman to conduct a study on different models of long term care and to evaluate the economic impact of Singapore adopting a different model of care.

Global models

Nursing home models are seen between two ends of the spectrum, medicalised vs habilitative, as shown in Figure 1. We reviewed care models in developed countries and found emphasis on habilitative care models, with private rooms and focus on social well-being in addition to attending to medical needs.

In terms of infrastructure and space layouts, as shown in Figure 2, single or double occupancy rooms, to allow for adequate privacy and dignity for elderly residents, are the norm in developed countries. In comparison, Singapore has relatively low thresholds for space required for an elderly resident and houses the most number of people in a room.

Numerous studies in different countries have provided evidence that while shared rooms have some advantages (such as social bonding between residents, caregivers having a direct line of sight etc.), these are outweighed by the benefits provided by single rooms, especially for features favoured most by the elderly (such as enhanced dignity, privacy, feeling of 'at-home', comfort of rest and sleep, en-suite convenience, absence of negative dynamics by disruptive behaviours of other residents, reduced risk of infection etc.).

Figure 1: Medicalised vs habilitative models of care

	Traditional medicalised	Habilitative
Size	Usually 120+ beds divided into 20- to 40-bed units or larger	7–10 elders
Philosophy	Medical model emphasising provision of clinical services to residents	Habilitative model emphasising intentional communities and a developmental view of aging
Organisation	Hierarchy – nurses control unit activity	Flattened bureaucracy – empowerment of direct care staff; nurses visit the house to provide skilled services
Privacy	Typically shared bedrooms and bathrooms	Private bedrooms and bathrooms
Outdoor space	Often challenging to access, particularly without assistance or supervision	Easy access; fenced, shaded, and in full view of the hearth and kitchen to allow observation by staff
	Medicalised → Habilitative	
Country Examples		

Figure 2: Nursing home room standards and sizes in different countries

Country	Maximum # person in a room	Minimum Size of room	
		10.65 m² per bed	
		12 m² (Single)	16 m² (Double)
		14 m² (Single)	27 m² (Double)
		14 m² (Single)	23 m² (Double)
		6 m² per bed	

60–80% of rooms are single occupancy with double occupancy rooms used by couples

In the US, the Green House Project is a prime example of the habilitative model and has been leading the way in the de-institutionalisation effort that restores individuals to a home in the community. The Green House home is a self–contained residence, designed like a private home, housing 7–10 elders, each with his/her own bedroom and full bathroom. The physical space is not meant merely to be home-like but to be a home. Evaluations across numerous measures of quality of life, quality of care and satisfaction (of residents, families and staff) have shown positive outcomes when compared to the traditional medical model. Contrary to general assumptions that better care models are expensive, the Green House model provides evidence that with changes in nursing practice and culture, costs can be comparable (less than 1% increase in operational costs) with traditional nursing homes. Similarly in Japan, studies have shown that transitioning from a 6-bed ward system to single/double rooms improved active living in the elderly with limited impact on costs.

‘Silver Hope’ model

In evaluating the economic impact of transitioning to a habilitative model in Singapore, we worked with 5 nursing homes and engaged with experts in nursing home architecture and operations, and clinicians. The experts recommended a ‘de-medicalised’ and ‘de-institutionalised’ model adapted for Singapore, termed here as ‘Silver Hope’. Silver Hope’s philosophy of care, as shown in Figure 3, focuses on personalised care with dignity providing home-like living and encouraging autonomy and independence of residents.

Silver Hope – Staffing approach

Person-directed care and enablement are at the core in developing staffing norms and roles in Silver Hope. As shown in Figure 4, at the centre of this model are skilled Senior Care Associates (SCAs) who manage residents’ care in a household, with support from roving team of nurses and therapists. Single point of contact and staff empowerment changes the paradigm of care with greater responsiveness to non-clinical needs of residents. Silver Hope’s staffing model places greater emphasis on dementia with 25% more staffing by SCAs for dementia patients to allow for more communication and activities. With a single care-giver being the pivot of all care needs, residents are also expected to have greater bonding and commitment as they see someone responsible for them and do not want to let him/her down.

Silver Hope – Space layout

Silver Hope model, as shown in Figure 5, envisions self-contained households of 8–10 residents in a mix of exclusive single/double rooms (in 20:80 ratio). The bedroom design and sizes mirror HDB flats to facilitate home-like environment (Bedroom sizes are equivalent to an average size of 4RM master bedroom (~20 m^2) with additional allowance for wheelchair access). With smart space planning, each resident can be accorded relatively more space from the standard nursing home while effectively managing additional space costs.

Figure 3: Comparison of current nursing home model vs Silver Hope

	Standard, medicalised, dormitory-style	Model "Silver Hope"
Environment	• Institutional, hospital ward setting	• Residential, homely environment and small group setting
Nursing Care	• Emphasis on the provision of nursing care and assistance in ADL	• Emphasis on person-centred care and aging with dignity
Types of Wards/Rooms	• Typically open wards or 8–15 bedded wards • Wards are segregated by gender	• Single/Twin-sharing, for added privacy • Twin-sharing rooms may be used by couples or siblings
Size of Rooms	• Follows MOH's proposed minimum space of 6m^2 per patient bed	• Single Room: 12–16 m^2 • Twin-sharing Room: 21–24 m^2
Independence/ Autonomy/ Personalisation	• Activities, including waking, sleeping, eating and bathing are scheduled • Limited space for personal items	• More autonomy in choice of activities, including waking, sleeping and bathing • Ample place for personal items/effects
Care Structure/ Staff	• Nurses provide direct care to the residents and act as case managers	• Care teams manage the day-to-day care of small groups of residents in partnership with HCPs
Kitchen	• Central kitchen, off limits to residents and visitors	• Residents and visitors have access and may participate in meal preparation • One pantry and dining area per cluster
Dining	• Residents have their food served individually. Some are assigned their own table and lapboard	• Dining room encourages interaction between residents/family/friends
Facilities	• Activity rooms, therapy rooms and rehabilitation centre	• Activity rooms, therapy rooms, fitness gym, outdoor exercise corner, Dementia Day Care, garden, cafe with al-fresco dining, grocery store, hair salon
Bathrooms	• Typically shared bathrooms • 1 WC, 1 shower, 2 wash basins to 16 beds[1]	• Ensuite bathrooms for better privacy • 1 WC, 1 shower, 1 wash basin to 1 or 2 beds

Figure 4: Silver Hope staffing model

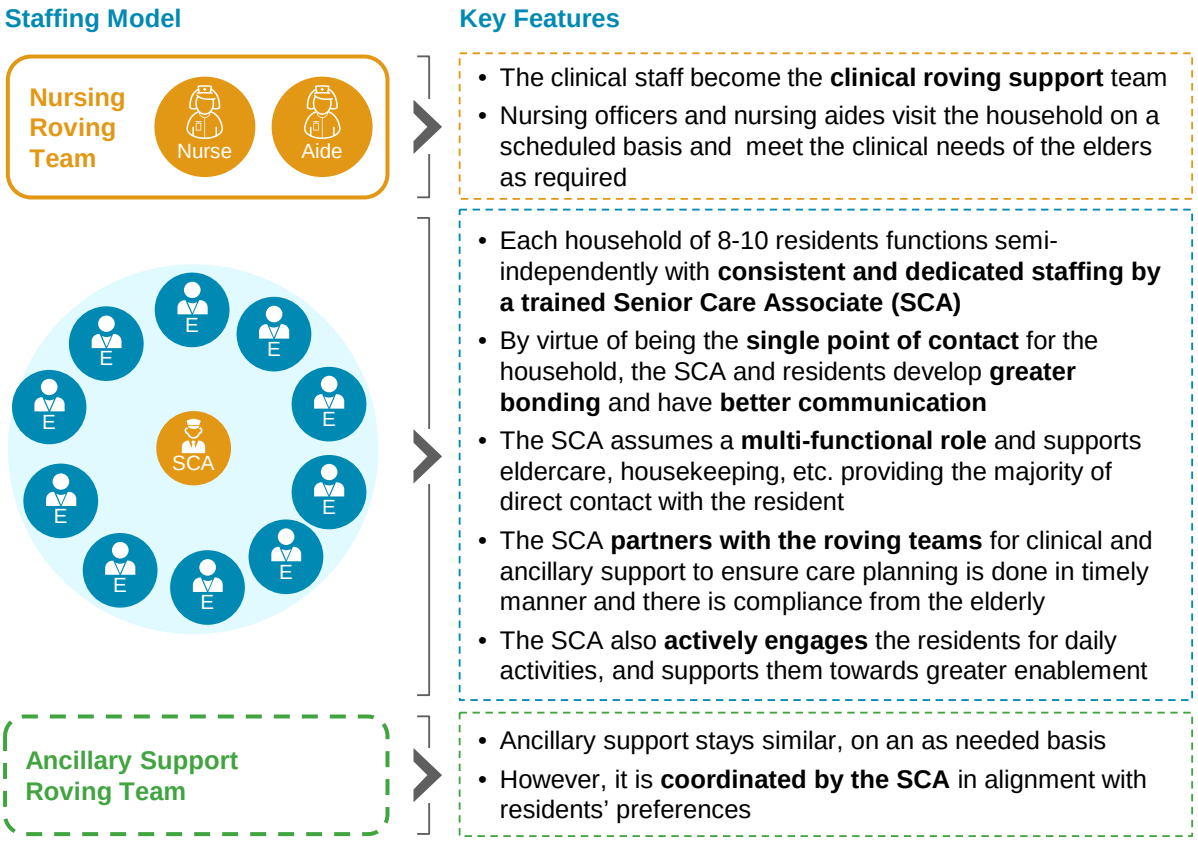
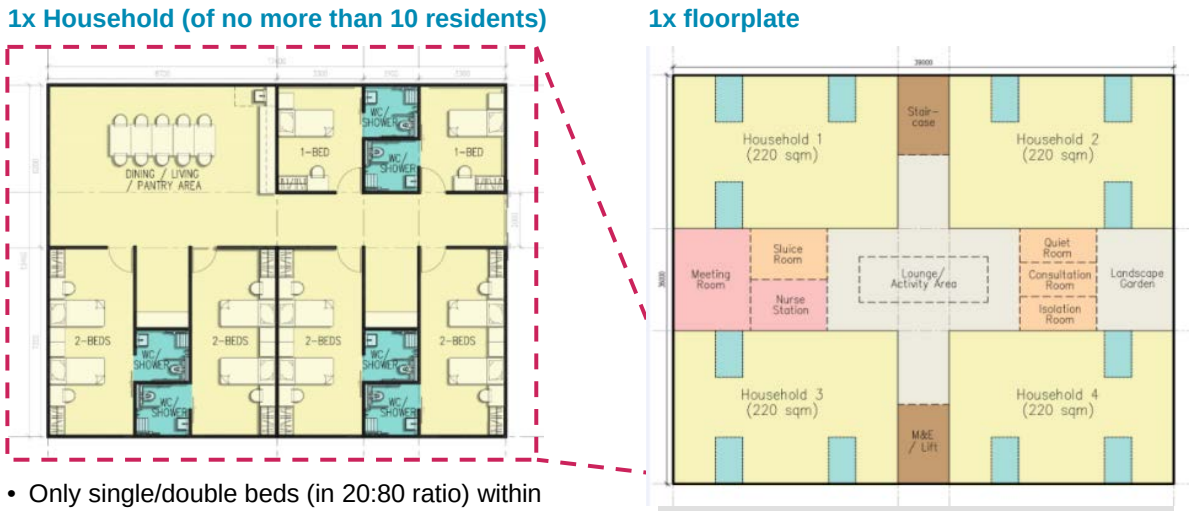


Figure 5: Silver Hope space layout



- Only single/double beds (in 20:80 ratio) within home-like setting
- En-suite bedrooms modelled after typical HDB's master bedrooms, for elders to have familiarity
- Self-contained units with dining and living facilities, encouraging independence, autonomy and personalisation

- **Size of household: ~220m²**
- **Total number of beds: 40 (4x10)**
- **Total floor plate area: ~1,400m²**
  (compared to ~1200 m² for BoL standard floor plate)

Silver Hope – Cost modelling and projections

Our analysis, as illustrated in Figures 6 and 7, shows that on a current base of per resident per day cost of $106, Silver Hope will need higher capital investment and will incur additional costs. The key drivers of the higher cost will be:

- **Real estate[1], construction and depreciation** –
  - Silver Hope will require 18% larger floor plate area and incur 20% higher unit construction costs primarily due to an increase in the number of walls and en-suite bathrooms and toilets
  - Capital layout for construction and associated FFE (furniture, fittings and equipment) increases by 66%, however taking into account depreciation (30-years for building and 5-years for FFE), the increase in per resident per day cost is ~$4-5

- **Staffing** –
  - Nursing staff costs will increase by 4% and 20% respectively for non-dementia and dementia residents respectively due to dedicated staffing by 1 Senior Care Associate per household of 10 residents, and 25% more staff (SCAs and nursing aides) for dementia patients

- **Other costs[1]** –
  - We assume increase in housekeeping and utilities by 50% and 10% respectively
  - Other costs are considered to be similar or have minimal changes on a per resident per day basis

Overall, Silver Hope has an **incremental cost of 8-12%**; on a cost base of $106 (average per resident per day cost), this translates to **~$8 and ~$13 for non-dementia and dementia** residents (Simulation for 100% single rooms shows that corresponding costs will increase by ~$12 and ~$17 respectively[2])

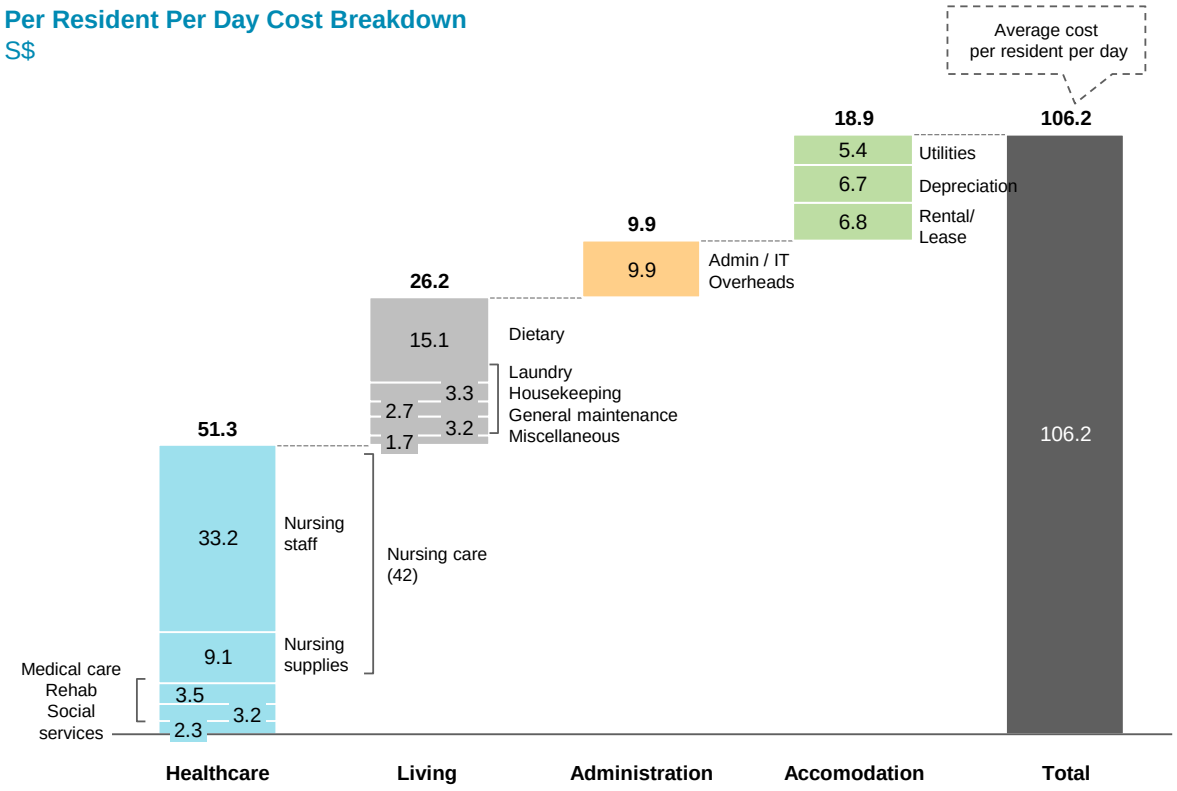
Silver Hope – Implications

5000 new nursing homes are planned to meet the 2020 demand-supply gap. Assuming the new nursing homes adopt the Silver Hope model (with 50% beds for dementia), we estimate the total incremental costs to be ~$19 million per year[3]. When considered against the annual public healthcare expenditure of $11 billion, the increment is equivalent to ~0.2%.

Relevant models of care evolve in alignment with national thinking and resource availability. We hope this study helps to address some of the uncertainties around financial impact of improving nursing home care models in Singapore.

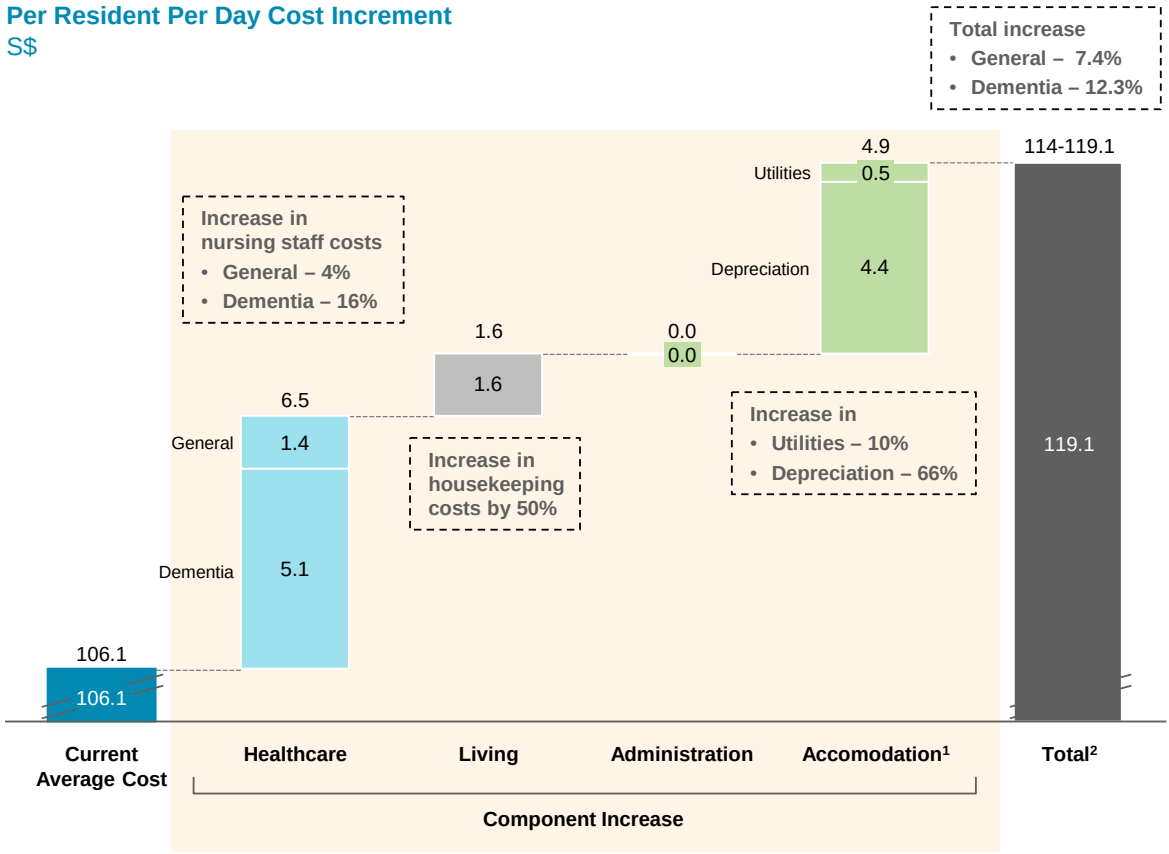
[1] Rental/lease costs will increase due to requirement of larger area. The nursing homes in the study incurred rental/lease costs in the range of $0.9-1.2 M, most of which was subvented by the government. Given the high variability in real estate costs based on the location, incremental costs are not considered in these calculations
[2] 11-16%on percentage basis
[3] Excluding incremental real estate rental/lease costs

Figure 6: Current total incurred costs – Per resident per day



Notes
1. Costs breakdown is that of a representative nursing home
2. Costs indicated are incurred costs without taking any subsidies or grants into consideration
3. For the purposes of analyses, the staffing and supplies components have been taken together as some NHs provide select services in-house whereas some NHs outsource them
4. Depreciation costs here include the furniture, fittings and equipment; and estimated building costs (based on current construction benchmarks)
5. Rental/lease arrangements with parent group. Other nursing homes in the study had rental subventions in the range of $0.9-1.2M
6. Across the 5 nursing homes, average per resident per day costs are in range of $90-120

Figure 7: Incremental costs for Silver Hope – Per resident per day



Notes
1. Real estate rental/lease costs will increase due to requirement of larger area. The NHs in the study incurred rental costs in the range of $0.9-1.2 M, most of which was subvented by the government. Given the high variability in real estate costs based on the location, any incremental costs are not considered in the calculations
2. Excluding incremental real estate rental/lease costs

Qualifications, assumptions and limiting conditions

Oliver Wyman was commissioned by Lien Foundation and Khoo Chwee Neo Foundation to conduct a study on different models of long term care and to evaluate the economic impact of Singapore adopting different models.

Oliver Wyman shall not have any liability to any third party in respect of this report or any actions taken or decisions made as a consequence of the results, advice or recommendations set forth herein.

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ANNEX B - THE GREEN HOUSE® Model

THE GREEN HOUSE® model that started in the U.S since 2003 is an effort to deinstitutionalise nursing homes. It combines small homes with the full range of personal care and clinical services expected in high-quality nursing homes.

The model changes the philosophy of care, staffing assumptions, organisational configuration, and architecture of nursing homes.

What is THE GREEN HOUSE® home

- A self–contained residence, designed like a private home, housing 7–10 elders, each with his/her own bedroom and full bathroom.

- Specially trained certified nursing assistants (STCNA) take care of each residence and provide a wide range of assistance including personal care, activities for the residents, preparing and serving meals. Together with the elderly, they are the primary decision-makers for each community.

- The STCNAs report to and are coached by a nursing home administrator, who is responsible for overall operations and quality of services in the home.

- Each Green House home is supported by a clinical support team that includes nurses, social workers, activities experts, therapists, nutritionists, a medical director and a pharmacist.

Philosophy of THE GREEN HOUSE®

THE GREEN HOUSE® long-term care model seeks to enhance the quality of life of the elderly by:

- Creating small homes where intentional communities are developed and high levels of care are offered
- Recognising and valuing individuality of elders and staff
- Honouring autonomy and choice
- Supporting elders' dignity
- Providing privacy
- Offering opportunities for reciprocal relationships between elders and staff
- Fostering enjoyment
- Offering meaningful activity and engagements
- Promoting maximal functional independence
- Facilitating physical comfort
- Fostering spiritual well–being
- Offering comprehensive care
- Creating an atmosphere of security

Source:

Guide Book for transforming long-term care, The Green House Project,

http://blog.thegreenhouseproject.org/wp-content/uploads/2011/12/THE-GREEN-HOUSE-Project-Guide-Book_April_100413.pdf

Annex C: Benefits of Single/Double Rooms On Elderly & Persons with Dementia

Benefits	Research
Enhanced feelings of security for PWDs who can easily be overwhelmed, confused and/or distracted when faced with large groups or spaces. **Better control and dignity** comes with more privacy offered by single rooms.	**Excellence in Design: Optimal Living Space for People with Alzheimer's Disease and Related Dementias** **(Alzheimer's Foundation of America, 2014)** **http://www.alzfdn.org/documents/ExcellenceinDesign_Report.pdf**
Reduced infection and hospitalisation due to infection for residents in private versus those in shared rooms (Cited UK's NHS study) **Lower operational costs** - less time needed to clean, manage conflict (due to not having a roommate) and handle transfers	**Evidence Behind the Green House and Similar Models of Nursing Home Care** **(Aging Health, 2010)** **http://www.medscape.com/viewarticle/740653**
Reduced anxiety and aggression found in facilities with greater bedroom privacy and more personalisation	**Exploring the cost and value of private versus shared bedrooms in nursing homes** **(Ideas Institute, 2007)**
Satisfaction level of the residents improved after they moved from shared room to single rooms. Although Japanese culture tends to be communally focused, it was nevertheless surprising that even those who indicated they did not want a private room and expected not to like having a private room, were completely satisfied with their private room by eight months after the move.	**The Terakawa Study, 2004** http://iaps.architexturez.net/doc/oai-iaps.id-iaps_18_2004_592
More willing to interact with others as residents have their own personal space. Those living in multi-bedded rooms have the tendency to ignore the existence of others in order to secure their personal time and space. **Improved quality of life and mobility.** Residents spent more time out of bed, sitting on chairs and interacting with staff. Their appetites improved, they were able to sleep better, and there was less conflict between residents. **More personalised care** as residents had better mobility, leading to **reduction in care staff workload** & **higher staff satisfaction**.	**A study on the introduction of private rooms and small scale units at long-term care insurance facilities by Dr. Tadashi Toyama, 2002**
Reduction in conflict between PWD residents due to greater privacy and personal space **Less intervention required** as residents with advanced Alzheimer's disease and other types of dementia spent more time in their rooms during the day and required fewer interventions (including medications) to promote sleep at night.	**Multiple Occupancy Versus Private Rooms on Dementia Care Units** **(Environment and Behavior, Jul 1998)** **http://eab.sagepub.com/content/30/4/487.abstract**

Other reference: Guide Book for Transforming Long-term Care (The Green House Project, 2010)