Our Island Home's Future: A Demographic Perspective

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As the Town modernizes Our Island Home (OIH) to meet today's standards, thought should be given to refining its fit with tomorrow's demographic landscape. That future landscape highlights one option for immediate consideration and further choices to contemplate in the future. The following technical analysis is intended to inform these choices. In what follows, I describe the evolving demographic context likely to affect OIH 20 years into the future and estimate the likely magnitude of potential future need for the services OIH now offers.

Based on this analysis, I see a strong case for preserving the future option to expand OIH. Looking 20 years ahead, potential demand for OIH beds will intensify sharply, possibly prompting taxpayers' support for that option. Thereafter, other complex choices may arise as beds become scarce.

Nantucket is one of a few communities offering its elderly residents access to local care at local taxpayer expense. That collective consensus reinforces universally held principles of family responsibility within the complex affiliations that define present-day families. The Town will soon finalize decisions affecting availability of such care in future decades. It behooves us to look into what the future holds, and how to refine our concept of OIH's mission on our collective behalf.

Simply put, here is what the future holds. Nantucket likely will be home to many more seniors, who will likely enjoy unprecedented longevity. A rising *proportion* of Nantucket residents will be their 80s and 90s as the baby boom generation matures into those ages. This demographic surge will boost the absolute *number* of elderly residents who cannot live independently—from roughly 63 today to roughly 103 by 2035. The appendix that follows provides technical details supporting this projection.

For some seniors, family members with the emotional will to care for their elderly will find they have no practical means of doing so.

Against this demographic backdrop, what are the limits and realistic future possibilities for OIH to sustain its core mission? Today, OIH meets the needs of 41 such residents, most (but not all) of them elderly. Twenty years from now, Nantucket's elderly population will surely

overwhelm its capacity. With that demographic future in mind, what are the priorities of today's taxpayers?

- *Future capacity*: Are 45 beds the permanent upper limit of what's wanted? Or do today's taxpayers want to maintain the option to add another 15-bed pod at some future time? At this conceptual design stage of OIH, this choice deserves immediate consideration.

Two distant—and more complex--choices may present themselves as the future unfolds:

- *Standards for admission*: Who among us would be entitled to an available bed at OIH--and to the peace of mind among that occupant's family members on island--at taxpayers' expense? Would preference be given to those elderly who have a well-established network of local support in place?

- *Length of stay*. Would admission to OIH guarantee lifelong residence, regardless of one's cognitive or health status? Would an occupant who no longer recognizes any visiting family member or acquaintance be entitled to stay on, postponing entry by another deserving occupant whose existing network of local support is strained to the breaking point?

Unless the latter two choices can be arrived at through future deliberation, they will in most instances ensue tacitly.

APPENDIX

SUPPORTING DATA AND ANALYSIS

1. *Persons 65 and older, especially those 80 and older, will comprise an increasing proportion of Nantucket's future residents.*

How many Nantucket residents 65 and older will there be in the future? No one can say for sure, but a plausible scenario can be derived from the Commonwealth's official population projection for Nantucket, summarized in Table 1.[1]

Table 1. Projected Population of Nantucket, by Age

Cumulative Age Group	Census 2010	Projected 2015	Projected 2020	Projected 2025	Projected 2030	Projected 2035	% increase, 2015-25	% increase, 2015-30	% increase, 2015-35
All ages:	10,172	10,667	10,678	10,895	11,371	12,004	2%	7%	13%
Pop. 65+	1,227	1,466	1,701	1,945	2,147	2,286	33%	46%	56%
Pop. 70+	858	1,019	1,196	1,398	1,589	1,735	**37%**	**56%**	70%
Pop. 75+	535	607	703	831	978	1,108	**37%**	**61%**	**83%**
Pop. 80+	317	343	372	434	523	617	27%	52%	**80%**
Pop. 85+	162	183	185	202	244	291	**10%**	**33%**	**59%**

Source: Massachusetts State Data Center. the UMass Donahue Institute.

Noteworthy points:

- In the next 20 years, Nantucket's total (all ages) population is projected to increase 13%.
- Persons 65 and older, by comparison, are projected to increase 56%.
- Persons 80 and older, while comparatively few, may increase 80%.

2. *As Nantucket's population ages, the number of elderly residents needing assistance with activities of daily living will increase markedly, and accelerate after 2030.*

One's ability to perform certain routine everyday activities without needing assistance often declines markedly after about age 80.[2] Needing the help of other persons becomes imperative: with bathing or showering, dressing, eating, getting in or out of bed or chairs, using the toilet, including getting to the toilet, and getting around inside the home. Needing help with such activities rises sharply with advancing age (see Figure 1 and Table 2 below).

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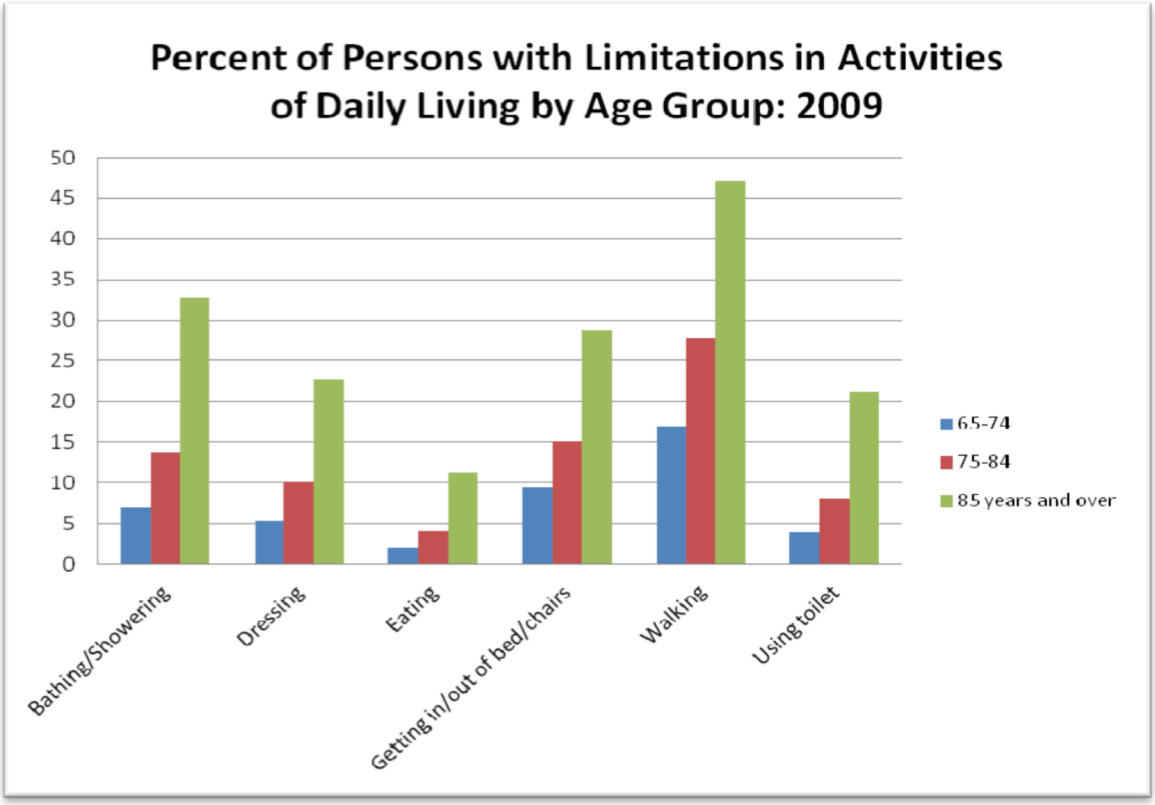
[1] Massachusetts' State Data Center, the UMass Donahue Institute (UMDI), publishes population projections for all Massachusetts municipalities at 5-year intervals to 2035. Accessed at: http://pep.donahue-institute.org

[2] The six basic "activities of daily living" (ADLs) are: eating, bathing, dressing, toileting, transferring (walking) and continence. An individual's ability to perform ADLs is important for determining what type of long-term care (e.g. nursing-home care or home care) and coverage the individual needs (i.e. Medicare, Medicaid or long-term care insurance).

Figure 1



Source: DHHS, Administration on Aging, *A Profile of Older Americans: 2011*, Figure 9.

Table 2. Period Prevalence of Limitations in Activities of Daily Living by Age: 2003-2007 (civilian noninstitutionalized population)

Limitations in Activities of Daily Living (ADL)				
	% Distributions of No. of Limitations in ADLs			
Age Group	Total	None	1	2+
65-74	100.0%	97.1%	0.7%	2.2%
75-84	100.0%	93.9%	1.4%	4.7%
85+	100.0%	82.2%	4.7%	13.2%

Source: CDC, *Limitations in Activities of Daily Living and Instrumental Activities of Daily Living, 2003-2007*, Table 4.

Noteworthy points:

1. Prevalence of 2+ ADLs increases sharply from 75-84 to 85+.

2. Growth of residents 85+ after 2030 implies accelerating growth in assistance needs.

Table 3. Projected Increase in Nantucket's Noninstitutionalized Population 65+ With Limitations in Two or More Activities of Daily Living

Age group	2010 (Census)	Projected 2015	Projected 2020	Projected 2025	Projected 2030	Projected 2035	% Increase		
							2015-25	*2015-30*	*2015-35*
Population									
65-74	692	859	998	1,114	1,169	1,178	***30%***	***36%***	***37%***
75-84	373	424	518	629	734	817	***48%***	***73%***	***93%***
85+	162	183	185	202	244	291	***10%***	***33%***	***59%***
Total 65+	1,227	1,466	1,701	1,945	2,147	2,286	***33%***	***46%***	***56%***
Estimated Population with Limitations in 2+ ADLs									
65-74	15	19	22	25	26	26	***30%***	***36%***	***37%***
75-84	18	20	24	30	34	38	***48%***	***73%***	***93%***
85+	21	24	24	27	32	38	***10%***	***33%***	***59%***
Total 65+	54	63	71	81	92	103	***28%***	***47%***	***63%***

Source: Morrison's calculations applying Table 2 prevalence rates to Table 3 projected population.

A straightforward demographic projection quantifies the future in store (see Table 3). Simply put, Nantucket's noninstitutionalized population 65 and older is projected to increase 33% by 2025, 46% by 2030, and 56% by 2035. Assuming that the prevalence rates shown in Table 2 remain constant in the future, this noninstitutionalized population 65+ will generate 28% more members who experience limitations in 2 or more ADLs by 2025, 47% more by 2030, and 63% more by 2035.

To grasp the significance of these changes, imagine substituting today's population of 10,667 persons with their projected counterpart population in 2035 (12,004 such persons). What would change? The 13% increase in overall numbers conceals a 56% increase in persons 65 and older (Table 1 above, comparing "All ages" with "65+"). Furthermore, the 56% increase in overall elderly persons 65+ itself conceals a 63% increase in persons with limitations in 2 or more ADLs (Table 3 above, comparing "Total 65+ population" with "Total 65+ Estimated with Limitations in 2+ ADLs").

In short, Nantucket would be home to just 13% more residents, but the number of elderly among them possibly unable to live independently without assistance would increase from 63 to 103—a 63% increase. By way of comparison, OIH has 41 residents (late 2015), 37 of whom are 65+.

3. ***The structural changes detailed above appear to be independent of whether one defines Nantucket's "resident population" according to the Census Bureau's concept or the Town Clerk's concept.***

The Census Bureau defines Nantucket's resident population as persons who report Nantucket as their "usual place of residence" on April 1. That definition undoubtedly excludes many additional Nantucket residents. The Town Clerk's annual census identifies many more residents, based on a more inclusive definition (including eligibility to vote). The substantial differences between these two sources raises the possibility that one or the other definition may prove misleading about the future elderly. To explore this possibility, I compare age-specific data from each source in Table 4.

Table 4. Age Distribution of Nantucket Residents 55 and Older
Based on Census Bureau and Town Census Enumerations

Cumulative Age Group	2015 Town Census		2010 U.S. Census		Town minus U.S. Census
	No.	% of 55+	No.	% of 55+	
Total, 55+	3,592	100.0%	2,512	100.0%	1,080
60+	2,659	74.0%	1,799	71.6%	860
65+	1,834	51.1%	1,227	48.8%	607
70+	1,155	32.2%	858	34.2%	297
75+	694	19.3%	535	21.3%	159
80+	373	10.4%	317	12.6%	56
85+	179	5.0%	162	6.4%	17
90+	73	2.0%	48	1.9%	25
95+	12	0.3%	11	0.4%	1
100+	1	0.0%	1	0.0%	-

Source: Town Clerk's 2015 census of residents; US Census Bureau, 2010 Census, SF1 Table QT-P2.

Noteworthy points:

1. Town Census (2015) and Census complete count (2010) closely agree in *relative* terms (compare "% of 55+" columns).
2. Agreement between Town Census (2015) and MA State Data Center's 2015 projected elderly distribution is even closer (data not shown).
3. Scale differences are apparent (see "Town minus U.S. Census" column) but do not distort relative agreement.

4. *The concept of "healthy life expectancy" (HLE) offers a useful objective starting point for setting future priorities in coming years.*

Healthy life expectancy (HLE) is a population health measure that combines mortality data with morbidity or health status data to estimate expected years of life in good health for persons at a given age. HLE accounts for quantity and quality of life and can be used to describe and monitor the health status of populations.

Life expectancy (LE)--expected years of life at a given age--is the average remaining years of life a person can expect to live on the basis of the current mortality rates for the population. HLE estimates the equivalent healthy years that a person can expect to live on the basis of the current mortality rates and prevalence distribution of health status in the population.

The state-specific HLE for 65-year-old Massachusetts residents is 13.8 years (males) and 15.9 years (females).[3] Simply put, one expects a population of 65-year-old males to have, on average, 13.8 "healthy" future years of life expectancy. The corollary is that 78.8 years of age marks the stage of life at which OIH becomes relevant to the remaining non-healthy years of life. For females, the corresponding age marking the conclusion of HLE is 80.9 years of age (i.e., 65 plus 15.9).

In round numbers, then, age 79 for men and age 81 for women are objective criteria for anticipating the average age of the onset of need for a stay at OIH. For any particular individual, of course, that onset may occur at a younger or older age.

The corresponding entire life expectancy (LE) for 65-year-old Massachusetts residents is 18.2 years (males) and 20.9 years (females). These LE's mean that at age 78.8, the average male faces an additional 4.4 non-healthy years of life; and that at age 80.9, the average female faces an additional 5.0 non-healthy years of life. Again, these durations may be shorter or longer for any particular individual. However, they furnish objective measures for anticipating future *durations of stay at OIH* by those needy elderly who gain admission. In round numbers, then, the duration of stay would be around 4.4 - 5.0 years for the average would-be OIH resident.

5. *Our Island Home capacity vs. current and projected future need.*

OIH currently has 41 residents, 27 of them ages 80 or older. This population of 27 corresponds roughly to persons who are passing through non-healthy years of life expectancy, and whose average duration of stay at OIH will be 4.4 - 5.0 years.

These 27 residents comprise 7.2% of all 373 persons 80 and older, as enumerated by the Town Clerk's census (see "80+" row in Table 5). These data imply that OIH now meets roughly 7% of the latent need for assistance among Nantucketers as they live out their remaining non-healthy years of life expectancy. We can anticipate a 52% increase in

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[3] Source: CDC, "State-Specific Healthy Life Expectancy at Age 65 Years — United States, 2007–2009," *MMWR* (access at www.cdc.gov/mmwr/index.html)

Nantucket's population 80 and older by 2030 and an 80% increase by 2035 (see Table 1 above). Those increases imply that a fixed OIH capacity (27 persons 80+) would meet a declining percentage of this latent need for assistance: from 7% in 2015 to just 5.2% (2030) and 4.4% (2035).

Contemplating this scenario opens our eyes now to the necessity of refining our collective priorities and vision of Our Island Home's place in the community. Otherwise, we could face the prospect of one needy population segment (e.g., persons 80+) crowding out another, with no explicit public consensus on how to balance competing needs of younger and older residents.

The ultimate justification for focusing a modest amount of local support on a need of far broader proportions could be a continuing local commitment to what families alone do best—care for their own members, whatever their age—and to sustaining that function within Island-resident families.

Table 5. Our Island Home Residents vs. Town Census and U.S. Census Counts

Cumulative Age Group	2015 Town Census		2010 U.S. Census		Town minus U.S. Census	2015 Our Island Home Pop.		OIH pop. as % of:	
	No.	% of 55+	No.	% of 55+		Number	% of 55+	2015 Town Census	2010 U.S. Census
Total, 55+	3,592	100.0%	2,512	100.0%	1,080	41	100.0%	1.1%	1.6%
60+	2,659	74.0%	1,799	71.6%	860	38	92.7%	1.4%	2.1%
65+	1,834	51.1%	1,227	48.8%	607	37	90.2%	2.0%	3.0%
70+	1,155	32.2%	858	34.2%	297	36	87.8%	3.1%	4.2%
75+	694	19.3%	535	21.3%	159	34	82.9%	4.9%	6.4%
80+	373	10.4%	317	12.6%	56	27	65.9%	7.2%	8.5%
85+	179	5.0%	162	6.4%	17	20	48.8%	11.2%	12.3%
90+	73	2.0%	48	1.9%	25	11	26.8%	15.1%	22.9%
95+	12	0.3%	11	0.4%	1	3	7.3%	25.0%	27.3%
100+	1	0.0%	1	0.0%	-	0	0.0%	0.0%	0.0%

Source: Town Clerk's 2015 census of residents; US Census Bureau, 2010 Census, SF1 Table QT-P2; Our Island Home data *circa* November 2015. Projections by Umass Donahue Institite, "Population Projections for Massachusetts Municipalities," accessed 11/18/2015 at www.pep.donahue-institute.org

Observations:

1. Today, ages 75+ account for 19-21% of census populations but 83% of OIH residents.
2. Populations generate OIH residents at noticeable rates starting around ages 75+.