Running the Numbers

A Periodic Feature to Inform North Carolina Health Care Professionals About Current Topics in Health Statistics

Aging and Cost of Health Care in North Carolina

Health care spending accounts for 17.8% of the US gross domestic product (GDP) and is projected to increase to 19.9% by 2025 [1]. Spending a large portion of the GDP is not, in and of itself, bad. Health care spending creates jobs for providers, hospitals, the pharmaceutical industry, insurers, and others. However, the cost of that spending is borne by consumers; employers; taxpayers; and local, state, and federal government. The North Carolina Chamber, for example, has identified both the unpredictable costs and the high costs of health care as one of the most important issues to their members. This has led to the initiative known as the Roadmap to Value Driven Health [2]. The United States spends far more on health care per capita and as a portion of our GDP than any other developed country. Despite this expense, the United States has the worst outcomes by most measures [3].

The rate of increase in health care spending compared to the GDP is driven mainly by 3 factors: an increase in health care costs over time, which outpace the rate of inflation; changes in consumer and provider habits, which lead to increased consumption; and an aging population. This "Running the Numbers" column focuses on the contribution of aging to the increasing cost of health care.

It is widely acknowledged that the United States has an aging population in what some have termed the "Silver Tsunami." Those born in 1946–1964, known as the Baby Boomers, are aging into the 65 and over demographic. Since 2010, the 65 and over population in North Carolina has grown from 1.24 million to 1.62 million residents in 2017, an increase of 30% in just 7 years. Over the next 20 years, the 65 and over population in North Carolina is expected to increase by another 1 million, growing to 2.64 million in 2037; this represents an increase of 63% over the current population. The 85 and over population is expected to grow even faster, rising from 181,000 in 2017 to just over 381,000 in 2037, a 112% increase [4].

Individuals aged 65 and over consume more health care resources than younger people, with care for the "oldest-old" (85+) costing, on average, twice as much as health care for the "young-old" (65–84) [5]. Care for older North Carolinians is primarily paid for by Medicare, a federal insurance program for those over 65. Consumers bear a large share of the cost of care, with some Medicare beneficiaries paying 20% of the cost of services. Most Medicare beneficiaries (86%) are covered by supplemental coverage, such as Medicare Advantage plans, Medigap plans, employer plans, or Medicaid [6]. Employers bear significant health care costs for those over 65 by way of retirement health insurance programs typically purchased as supplemental Medicare plans or Medicare Advantage plans. For low-income seniors, Medicaid, a joint state and federal insurance program, pays for much of the health care costs for seniors living at or below 100% of the federal poverty level. In 2015, 14% of North Carolinians aged 65 and over were Medicaid beneficiaries. Among nursing home residents, 62% were Medicaid beneficiaries, and Medicaid paid for 39% of the cost of nursing home care [7].

This analysis uses current health care costs compiled by the Centers for Medicare & Medicaid Services [5] and demographic estimates from

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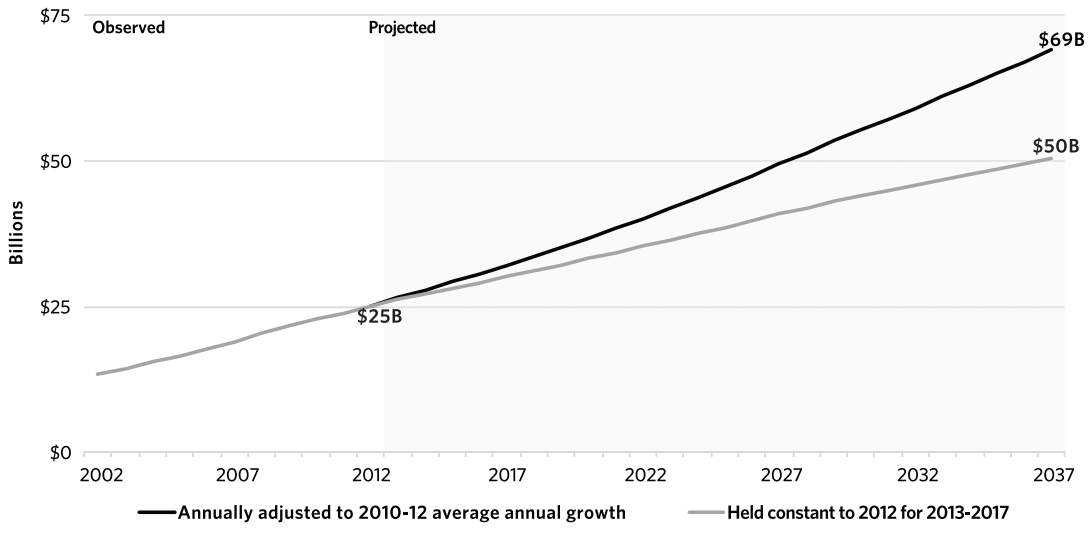
the North Carolina Office of State Budget and Management [4] and applies future growth models to predict the cost of health care for the 65 and over populations in North Carolina for the next 20 years. Figure 1 shows observed and projected total personal health care expenditures for North Carolina seniors aged 65 and older from 2002 to 2037. In 2012, the cost of health care for state residents aged 65 and over was $25 billion. Holding costs constant to 2012 but adjusting for growth in the 65 and over population suggests total costs will grow to $50 billion in 2037, representing an increase of $25 billion or 100%. Using the per capita growth rate in the cost of care from 2010–2012 and projecting to 2037 results in a total projected cost of care for the 65 and over population of $69 billion, or an increase of nearly 180%. Population aging alone is projected to double the cost of health care for the 65 and over population by 2037; continued cost increases suggest total costs may nearly triple [4, 5]. These increases will be borne by local, state, and federal government, as well as employers and individuals.

The components of increases in cost may also be important for future planning. Understanding the distribution of services and attempting to redistribute services (from institutions to homes, for example), may be one part of future efforts to control cost. Important drivers of health care cost for the 65 and over population include home health, nursing homes, and assisted living. Lower cost services that are currently utilized at low rates include hospice and adult day services. Table 1 shows the number of individuals using those services in North Carolina in 2016 and the average cost per user. The payer also varies by service and may be important for state budget planning. Medicaid is the predominant payer for skilled nursing facilities and represents 39% of payments to nursing homes (combined state and federal dollars) [7]. Most of the cost of nursing home care is paid for by individuals, sometimes with help from long-term care insurance policies. The current federal match (FMAP) for North Carolina Medicaid is 68% [8]. In contrast, Medicare is the predominant payer for home health and hospice; increases in cost associated with those service lines are critical for Medicare planning, but they are less important for state budget planning.

Figure 2 shows the increase in cost by service line for home health, hospice, nursing home, and assisted living. This figure adjusts for projected increases in the cost of services for the over 65 population by 3.6% annually, the average medical

FIGURE 1.
Total Personal Health Care Expenditures, North Carolina Ages 65+, 2002–2037



Source. North Carolina Office of State Budget and Management [4] and Centers for Medicare & Medicaid Services [5].

TABLE 1.
Users and Costs for Common Service Lines, 65 and over, 2016

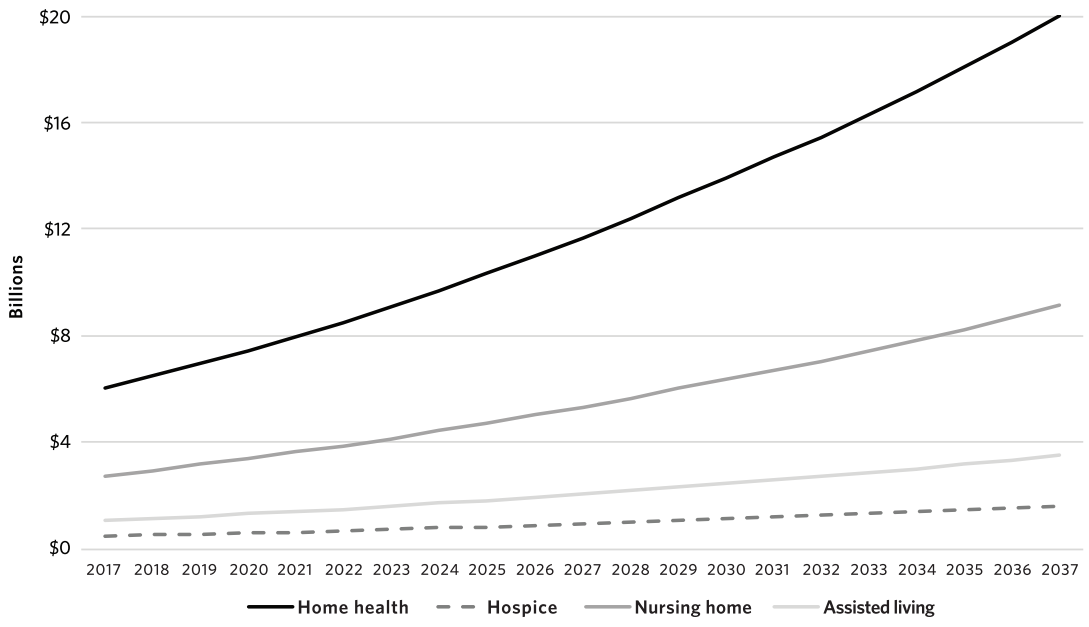
Service line	Individual users (2016)	Average cost per user	Total cost (2016)
Adult day services	3,168	$13,780	$44 million
Home health	141,533	$41,184	$5.8 billion
Hospice	44,217	$10,591	$468 million
Nursing home	32,371	$82,125	$2.7 billion
Assisted living	26,211	$39,000	$1.0 billion

Source. Individual users estimated by applying North Carolina-specific service utilization rates (CMS 2014) to estimated population (NC OSBM) [4,5]. Apart from hospice costs (CMS 2015), average costs per user were obtained from Genworth. Total costs were obtained by multiplying total users by the average cost per user.

care consumer price index for the last 20 years [9]. The cost for home health is projected to increase from $6 billion in 2017 to $20 billion in 2037. The cost for nursing home care is projected to increase from 2.7 billion in 2017 to 9.1 billion in 2037 [9].

Projecting the increasing cost of health care associated with an aging demographic is critical for several reasons. When the medical care consumer price index outpaces economic growth, the cost of health care increases as a percent of the GDP. With aging residents, health care utilization of most types will increase even more rapidly as a portion of the GDP and the gross state product. The responsibility for these services will fall to local, state, and federal government, as well as families and employers. At the same time that Baby Boomers age, prime working-age (and tax paying) adults who support programs such as Medicare and Medicaid will be declining as a share of the population: in 2017, adults aged 25–64 were 51.9% of state population, a share that is projected to decrease to 49.5% by 2037 [4]. This is because—after the baby boom—the United States experienced a rapid decline in the birth rate (sometimes called the baby bust), resulting in the relative decrease in working age adults.

FIGURE 2.
Drivers of Cost by Service Line, 65 and Over



Source. ForecastChart [9].

Total Medicaid spending for those aged 65 and over in North Carolina in 2014 was nearly $2.2 billion (state share of $0.7 billion) [10]. If Medicaid spending on the 65 and over population grows at the same rate as the rest of health care spending, the over 65 population will cost the Medicaid program over $6 billion in 2037. North Carolina should expect the state share to be almost $2 billion, or almost triple the current cost [4]. Nursing home care accounted for nearly half of North Carolina Medicaid expenditures on the 65 and over population in 2014, with Medicaid spending just over $1 billion in nursing home care ($1.07 billion) [7]. The state paid for 32% of that cost, or $344 million in 2017 [8]. If Medicaid continues to cover 39% of nursing home care expenditures and current demographic and cost estimates are accurate, Medicaid will pay over $3.5 billion in nursing home costs by 2037. In 2037, the state share of nursing home payments would be $1.1 billion, more than triple the current cost [4].

We anticipate the cost of health care to go up as we age. On average, older people have more chronic health conditions, take more prescription medicines, spend more days per year in the hospital, and are more likely to have cancer [11]. The increasing cost of care that exceeds the rate of inflation has been an underlying problem, with health care increasing as a portion of the GDP. However, the aging of the Baby Boomers will almost certainly exacerbate these trends over the next 20 years or more. Nursing home care will be the largest driver in the increased cost of Medicaid and the cost to the state budget. Home health care, though expensive, is more often borne by Medicare and consumers. Palliative care and adult day services are much less expensive and, for appropriate clients, can support ongoing care and end-of-life care in the home at far lower costs. NCMJ

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References

1. Keehan SP, Stone Dam, Poisal JA, et al. National health expenditure projections, 2016-25: price increases, aging push sector to 20 percent of economy. Health Aff (Millwood). 2017;36(3): 553-563.
2. Salamido G. Roadmap to value driven health care. N C Med J. 2017;78(4):273-277.
3. The Commonwealth Fund. U.S. health care from a global perspective. Commonwealth Fund website. http://www.commonwealthfund.org/publications/issue-briefs/2015/oct/us-health-care-from-a-global-perspective. Accessed December 19, 2017.
4. North Carolina Office of State Budget and Management. County/state population projections. NC OSBM website. https://www.osbm.nc.gov/demog/county-projections. Accessed December 19, 2017.
5. Centers for Medicare & Medicaid Services. Age and gender: health care expenditures by age and gender. CMS website. https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Age-and-Gender.html. Updated November 21, 2017. Accessed December 19, 2017.
6. Cubanski J, Swoope C, Boccute C, et al. A primer on Medicare: key facts about the Medicare program and the people it covers. Kaiser Family Foundation website. https://www.kff.org/report-section/a-primer-on-medicare-what-types-of-supplemental-insurance-do-beneficiaries-have/. Updated March 20, 2015. Accessed December 19, 2017.
7. The Henry J. Kaiser Family Foundation. Medicaid's role in nursing home care. Kaiser Family Foundation website. https://www.kff.org/infographic/medicaids-role-in-nursing-home-care/. Updated June 20, 2017. Accessed December 19, 2017.
8. The Henry J. Kaiser Family Foundation. Federal medical assistance percentage (FMAP) for Medicaid and Multiplier. Kaiser Family Foundation website. https://www.kff.org/medicaid/state-indicator/federal-matching-rate-and-multiplier/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D. Accessed December 19, 2017.
9. ForecastChart. US medical care cost inflation. Forecastchart website. http://www.forecast-chart.com/inflation-medical-care-cost.html. Accessed December 19, 2017.
10. The Henry J. Kaiser Family Foundation. Medicaid Spending by Enrollment Group. Kaiser Family Foundation website. https://www.kff.org/medicaid/state-indicator/medicaid-spending-by-enrollment-group/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D. Accessed January 8, 2018.
11. Lehnert T, Heider D, Leicht H, et al. Review: health care utilization and costs of elderly persons with multiple chronic conditions. Med Care Res Rev. 2011;68(4):387-420.