



BENCHMARKING THE ELDERCARE WORKFORCE

A COMMUNITY FOCUS

Meghan Hendricksen and Joanne Lynn / February 28, 2018

Gordon and Betty Moore Foundation Grant # 5662

Report 1.4.1



SOLUTIONS THAT MATTER. HEALTH CARE THAT WORKS.

Contents

- Introduction 3
 - The Rationale for Benchmarking the Community Workforce 3
 - Who is Included in the Eldercare Workforce 3
- Literature Review 4
 - How We Searched 4
 - Findings 5
- Subject Matter Expert Interviews 5
 - Who We Interviewed 5
 - Summary of Findings 6
 - Issues in Using Agency Data 6
 - Potential Threats to Generating Data on Current Workforce 6
- Synthesis of an Initial Estimate: Washington, DC 7
 - Generating a Method and an Example 7
 - Basic Population Estimates 7
 - Projected Caregiver Requirements 8
 - Projected Nurse Requirements 9
 - Projected Requirements for Social Workers, Care Coordinators, and Counselors 10
 - Projected Requirements for the Medical Workforce 10
 - Projected Requirements for Other Professionals 11
- The Model for Other Communities 12
- Conclusions and Recommendations 12
 - Summary 12
 - Implications 12
- Acknowledgements 13
- Appendix: Report of the Literature Search 14



Introduction

THE RATIONALE FOR BENCHMARKING THE COMMUNITY WORKFORCE

The overall purpose of this report is to provide an initial, alpha-version, benchmark of the workforce within geographic communities to use for generating illuminating comparisons with their own workforce estimates. This baseline benchmark provides a tool for consideration, and users' feedback will improve the tool. In essence, we are creating the start of a learning system for optimizing the workforce in a geographic community. Once the estimates and ranges become substantiated in multiple communities and improvement activities, the maturing benchmarks will provide a trustworthy source of guidance for communities, where evidence is currently lacking, on what the priority needs are for the workforce that is serving older adults living in the community. This benchmark strategy also will provide a tool for monitoring improvements. Measuring the local workforce capacity also helps engaged community leaders to envision their whole system and its products, even though that "system" is owned and operated by many different entities that are not usually well coordinated.

Within the overall project, funded by the Gordon and Betty Moore Foundation, we aim to build tools that can guide the work of communities as they take on responsibility to improve the care of frail and disabled elders. Thus, we fully expect the shortcomings in this initial set of estimates to be addressed as communities start to work on eldercare as, at least in part, a public responsibility. This research focuses on workforce estimates for geographic populations, which requires estimating the population needs as well as the caseload for some workers and the hours of help needed by disabled elders. The benchmarks we sought are neither ideal nor merely descriptive of current practice. Instead, we sought to approximate estimates of the workforce that would be serving a typical community reasonably well and would have enough resilience to handle ordinary fluctuations in the needs for home-based care of frail elderly people. We recognize that younger disabled persons would need many of the same services and thus would expand the needed workforce, but we did not attempt to estimate the workforce needs for that expanded population.

WHO IS INCLUDED IN THE ELDERCARE WORKFORCE

This report presents the workforce in two broad categories, caregivers and the medical teams. Caring for this population requires a team approach with these two categories often working together. However, the services provided by and payment systems used by these two broad groups differ, so the benchmarking activity is more easily comprehended with these two categories.

- Caregivers in this report includes both home care workers (sometimes called "formal" and doing this work as a vocation) and family caregivers (sometimes called "informal" and including friends and neighbors who may not be "family." These are mostly working from the bonds of established relationships, though sometimes paid by family or innovative programs).
- Medical workforce estimates include; physicians, nurses, nurse practitioners, physician assistants, pharmacists, and dentists, serving the elderly in the community. We recognize the contributions of professional therapists (physical, speech, and occupational) but we do not here try to estimate that workforce.
- This benchmarking exercise focuses upon the workforce needed to serve disabled elders living in community settings. We certainly recognize that the elders move in and out of facilities such as



nursing homes and hospitals, and the workers likewise often move between facility and home care. However, facilities have a fairly stable resident population and workforce size, so they draw from the local pool of workers at a nearly stable rate. Furthermore, the size of the facility-based workforce could readily be estimated if needed. The workforce serving disabled elders at home is more variable and also much more difficult to tally or estimate, so that is the component addressed here.

- This research will assume that most IADL (instrumental activities of daily living, such as doing minor repairs and getting groceries) can be met by occasional neighborly or family help, but dependencies in ADL (activities of daily living such as dressing, toileting, moving about, and feeding) require daily help from someone who will need to be counted in the workforce. Thus, this estimate will focus upon elderly persons who have ADL dependencies.

Literature Review

HOW WE SEARCHED

We sought to find any helpful estimates of the caseload that various clinical service providers could carry and the hours of direct service needed by a population of disabled elderly people. We searched the following databases:

- Academic Search Complete
- JSTOR
- PubMed
- ProQuest
- Healey Library Databases and Indexes

Using the following key words:

- direct care workforce & demand;
- workforce demands & geriatric care;
- geriatric workforce;
- community workforce & elderly;
- community care & elderly & workforce;
- geriatric care & improvement;
- ideal workforce for the elderly;
- elderly workforce;
- workforce & elderly & community;
- home care nurse caseload;
- home health care;
- home care worker;
- home care aide caseload; and
- independence at home caseload.

When we expanded the search terms to include primary care and geriatrics, the resulting literature did not identify additional useful resources.



We reviewed 172,820 titles, 545 abstracts, and 96 published papers. The search process and summary findings from each search strategy are in the Appendix.

FINDINGS

The literature search found that the majority of applicable literature included the disciplines needed in care teams and generally how to increase the workforce to meet the care needs of the growing elderly population (see Appendix). For example, literature regarding the implementation of programs like IMPACT, AIM, GRACE, PACE, and the Green House Model (see Appendix for references) were frequently among the search results. However, we could find no numerical estimates of how many people in the workforce were needed or used in these models – neither caseload nor hours of direct services in aggregate. The literature about workforce supply or demand focused on warnings about future shortages, as well as the current overburdened workforce. Remarkably, we found no source that stated something like, “A home care nurse serving homebound elderly people in an urban setting was able to carry a case load of x people,” or “In a population of x elders living in the community with 2 or more ADL dependencies, we found that we needed to supply y hours of direct personal care.” We did find numbers in the Institute of Medicine report *Retooling for an Aging America* which gave national estimates of the caregiver workforce, but the data are increasingly dated and not directly applicable to a community estimate.¹

Subject Matter Expert Interviews

WHO WE INTERVIEWED

Due to the gap in the literature found during the review, we broadened our scope and conducted an environmental scan using subject matter expert interviews to explore the possibility of unpublished data that might be available regarding workforce estimates for communities. This included reaching out and speaking to leading researchers and service providers from organizations including:

- LeadingAge
- University of California San Francisco (UCSF) Health Workforce Research Center for Long-Term Care
- National PACE Association
- Eldercare Workforce Alliance
- PHI
- Bureau of Labor Statistics
- Family Caregiver Alliance
- Washington Hospital Center House Calls Program
- The Public Policy Committee of the American Academy of Home Care Medicine
- U.S. Department of Veterans Affairs, Home and Community-Based Care

For names of people interviewed, refer to the Acknowledgements section at the end of this paper.

¹ Institute of Medicine of the National Academy of Sciences. (2008). *Retooling for an aging America: Building the Health Care Workforce*. Washington: The National Academies Press. Retrieved February 8, 2018, from <https://www.nap.edu/catalog/12089/retooling-for-an-aging-america-building-the-health-care-workforce.aspx>



SUMMARY OF FINDINGS

The interviews were remarkably consistent regarding community-level data about workforce supply and demand:

- The data that are currently available are not reliable enough to serve to anchor any useful estimates of how many workers of each type would be needed to serve disabled elders in a community.
 - Data to evaluate and monitor performance at the state and community level are not generally collected.
 - Where some reporting exists, the data are poorly specified, are not audited, and do not include vacancy rates, turnover rates, actual scope of work, and other variables of interest.
- Our project has a very interesting and previously unaddressed research question. Indeed, most interviewees asked for a copy of the final report.
- Several interviews directed us towards national data sources as a starting point (Health Resources and Services Administration, Bureau of Labor Statistics) – but recognized that the data are only at state level and have validity issues.
- Having some workforce estimates would certainly help communities understand their needs and help set priorities, just as it does in other fields of work.
- Policy implications for a report like this could be widespread at the community, state, and federal level.

ISSUES IN USING AGENCY DATA

Agencies providing services to the disabled elderly do estimate their workforce needs; but they do not have a settled understanding of whether they are oversupplied or undersupplied, or by how much, even for the population that calls on their services (and certainly not for the geographic population).

Additionally, the data at the agency level covers multiple communities at an uncertain market penetration and with unmeasured unmet need. The agency level data does tally how many people they are serving and with what workforce, but not their unused capacity or their overstretched workforce, nor does it say much about how many workers of various types the community needs. We found some data about how many hours a person with various specific characteristics usually requires, but this does not aggregate to the community level.

POTENTIAL THREATS TO GENERATING DATA ON CURRENT WORKFORCE

If a community set out to collect the data to characterize the various components of the eldercare workforce, our interviewees illuminated some potential threats to validity:

- Unlike institutional care or industrial job descriptions, workers in home care frequently work both above and below the scope of work for which they are trained. The physician may help with a Medicaid enrollment, or the home health aide may adjust or administer medications, just because the situation demands an appropriate response from the person who is on-site.
- Projections for the workforce demand may not adjust for changes in patterns of care due to the baby boomer generation entering old age. For example, a prediction may not account for the



abrupt worsening of the dependency ratio (number of working age people/number of people 65 and older).

- Including all payment types (Medicare/Medicaid, private pay, unpaid) and hiring types (e.g., private hire could be from home care and personal care agencies, hospice, assisted living, or supported housing) in geographic workforce estimates will both leave gaps and incorporate overlaps, and thus may be neither comprehensive nor replicable
- The participation of unpaid workers is large, unstable, and varying across communities, creating yet another factor to be weighed in the estimations.
- Some workforce estimates for a community are available, such as the number of physicians, and even the number of primary care physicians, but no category in the workforce has ready estimates of the number who are providing in-home care. Estimating this subset will require local knowledge.

Synthesis of an Initial Estimate: Washington, DC

GENERATING A METHOD AND AN EXAMPLE

We decided to test whether publicly available data, estimates from the literature, and estimates from interviewees could be combined to generate an initial set of workforce estimates, thereby developing a method that could be used more broadly. For this purpose, we have used Washington, DC, mainly because it is familiar to us in the same way that community leaders would know the general nature of eldercare and its workforce in their community. Below we present the example first and the general approach with useful sources follows.

BASIC POPULATION ESTIMATES

Starting with a general picture of how many elderly are in Washington, DC, we gathered a general population estimate.

- Washington, DC total population estimate for 2017: 693,972.²
- 11.6% of those people are 65+ (80,500).³
- Approximately 1.7% of the overall population are 85+ (10,315).⁴
- 2.6% of those who are 65+ are in nursing homes (2,093).⁵
- From these data, assuming that the population 85+ is a rough estimate of the number of people in the population who generally need daily help, we estimate that about 8,222 people need supportive services at home in Washington, DC.

² U.S. Census Bureau. (2017). QuickFacts. Washington, D.C: U.S. Census Bureau. URL verified 29 January 2018: <https://www.census.gov/quickfacts/DC>

³ U.S. Census Bureau. (2017). QuickFacts. Washington, D.C: U.S. Census Bureau. URL verified 29 January 2018: <https://www.census.gov/quickfacts/DC>

⁴ U.S. Census Bureau. (2017). QuickFacts. Washington, D.C: U.S. Census Bureau. URL verified 29 January 2018: <https://www.census.gov/quickfacts/DC>

⁵ Harris-Kojetin, L., Sengupta, M., Park-Lee, E., & Valverde, R. (2013, December). Long-term care services in the United States: 2013 overview. Vital and Health Statistics, 3(37). Retrieved February 1, 2018, from https://www.cdc.gov/nchs/data/nsitcp/long_term_care_services_2013.pdf



- The Health and Retirement Survey data shows that about 10% of the population 65+ has dependencies in 2 or more ADLs, which would be 8,050 people, of whom 2,093 are in nursing homes. So, this level of disability would be expected to be found in about 5,957 people.
- And, in yet another estimate, national studies show that ADL dependency afflicts elders, on average, for two years before death.⁶ Washington, DC, had 4971 deaths in 2015, of which 688 were accidents, trauma, or infants.⁷ So, about 4000 people died of illness. If all had the average of 2 years of 2+ ADL dependency, the prevalence would be about 8000, but some are under age 65.
- These figures confirm one another: 6000 to 8000 people are elderly and living with daily personal care needs in Washington, DC.

Once a foundation of the general population of elderly in Washington, DC was found, we looked further into estimating the number of disabled elderly and their level of disability in order to estimate the level of demand from the workforce.

- On average, 25% of community living adults 65+ have at least one ADL dependency.⁸
- This prevalence of disability increases with age – 50% of community residing adults 85 and older require assistance with at least one ADL. This means for Washington, DC we can expect
 - >20,125 65+ people living in the community who require daily assistance
 - >5,178 85+ people living in the community who require daily assistance

PROJECTED CAREGIVER REQUIREMENTS

Estimations of caregivers and caregiver hours that will be required to serve the Washington, DC community dwelling disabled older adults were made using the number of hours the 65+ population currently requires as well as projections of the workforce in DC. According to a Congressional Budget Office (CBO) report,⁹ for people living in the community who receive care, the average reported caregiver hours are:

- 3.1 hours – 14.4 hours per day of combined home care worker and family caregiver care
- However, assume that half of those hours are provided by family caregivers (unpaid)
- Unsurprisingly, the population who requires the most hours are 85+ with 3+ ADL dependencies (11.3 - 14.4 hours per day).

⁶ Favreault, M., & Dey, J. (2015; Revised February 2016). *Long-Term Services and Supports for Older Americans: Risks and Financing Research Brief*. Retrieved February 9, 2018: <http://aspe.hhs.gov/basic-report/long-term-services-and-supports-older-americans-risks-and-financing-research-brief>

⁷ Murphy, S. L., Jiaquan, X., Kochanek, K. D., Curtin, S. C., & Arias, E. (2017). *Deaths: Final Data for 2015*. National Center for Health Statistics; National Vital Statistics System. Washington: U.S. Centers for Disease Control and Prevention. Retrieved February 6, 2018, from https://www.cdc.gov/nchs/data/nvsr/nvsr66/nvsr66_06.pdf

⁸ Figures that are cited here for number of people 65+ with ADL dependency and number of people 80+ with ADL dependency) are from Administration on Aging. (2006). *A Profile of Older Americans: 2006*. Report from the U.S. Department of Health and Human Services. Retrieved February 10, 2018, from <https://www.acl.gov/sites/default/files/Aging%20and%20Disability%20in%20America/2006profile.pdf>

⁹ Congressional Budget Office. (June 2013). *Rising demand for long-term services and supports for elderly people*. Washington: Congress of the United States. Retrieved February 1, 2018, from <https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/reports/44363-ltc.pdf>



If we estimate conservative figures, we will seek to serve 6000 residents of Washington, DC, who are living with daily personal care needs. The range of time needed is substantial, so let us assume that 1/3 need 4 hours per day, 5 days per week, 1/3 need 8 hours per day 6 days per week, and 1/3 need 12 hours per day 7 days per week. Then, the total hours needed is $(2000 \times 4 \times 260) + (2000 \times 8 \times 312) + (2000 \times 12 \times 360) = 2,080,000 + 4,992,000 + 8,640,000 = 15,712,000$ hours per year of personal care, or 16,000,000 hours as a rounded figure. By our assumption, half is provided by unpaid family caregivers, so 8,000,000 hours are to be supplied by home care workers. If the average full-time home care worker works 2000 hours per year, this population needs 4000 full time equivalents (FTE) in personal care.

According to a PHI analysis of the Bureau of Labor Statistics data,¹⁰ workforce numbers in 2016 for Washington, DC were approximately

- 4910 home health aides
- 5,260 personal care aides

Since 2/3 of this workforce works part-time or part-year, the average hours per year is about 1300 (median income of \$13,800 / median salary of \$10.49). Thus, the 10,000 paid personal care aides provide 13,000,000 hours of service per year, or 6500 FTE.

Overall, this would tend to reassure an evaluator that Washington, DC, probably has about the right personal care workforce for home care at this time, except for the substantial contribution of inefficient allocation. Most agency placements and many private arrangements insist upon minimum hour blocks of 3.5 hours, even if the person needs much less support. This consideration either requires redress toward efficient allocation of personal caregivers or will substantially inflate the calculated number of hours needed.

The predictable forces affecting the future may threaten the endurance of this conclusion, since the numbers of disabled elders will increase and the currently large immigrant component of this workforce may actually decrease. The cost of living and of transportation in DC is beyond the means of a person earning around \$13,800 per year, so the supply may decline unless the payment increases substantially.

PROJECTED NURSE REQUIREMENTS

Professional nurses are a singularly difficult group to estimate supply, since their roles are varied and their work settings are not usefully reported as being in the home. We can find that Washington, DC, has 4417 licensed active registered nurses in October 2017,¹¹ but they could be working in hospitals, nursing homes, doctor's offices, insurance companies, home care, and other settings. Licensed practical nurses are a smaller component with just 526 people, and they could be working in all of those settings as well.

In home care, nurses could be doing mainly supervision and problem solving with personal care aides, administrative tasks and care planning, or direct care (e.g., wound care, medication administration, or

¹⁰ Paraprofessional Healthcare Institute. (2017). Policy Research: Workforce Data Center. Retrieved February 2, 2018, from <https://phinational.org/policy-research/workforce-data-center/#var=Employment+Projections&states=11> [To reach this link, copy and paste the URL into a web browser.]

¹¹ Kaiser Family Foundation. *Total Number of Professionally Active Nurses*. October 2017. URL verified 2 February 2018. [https://www.kff.org/other/state-indicator/total-registered-nurses/?currentTimeframe=0&sortModel={\"colId\":\"Location\",\"sort\":\"asc\"}](https://www.kff.org/other/state-indicator/total-registered-nurses/?currentTimeframe=0&sortModel={\)



assessment of the merits of treatment). As a first approximation, we will assume that the usual dependent elder will need 5 nurse visits per year, which amounts to 30,000 such visits, and that the usual nurse can do 15 per week, 50 weeks per year, at full-time home care, for 750 visits per year. So, at maximum efficiency, Washington, DC, would need 40 full time equivalent home care nurses.

Home care agencies and hospice home care could report the number of FTE nurses they employ and their caseload, though that is not already in place. Perhaps the method to assess the adequacy of the nurse workforce for home care would be to canvass relevant agencies as to whether they are fully staffed and how difficult it is to hire a new nurse.

PROJECTED REQUIREMENTS FOR SOCIAL WORKERS, CARE COORDINATORS, AND COUNSELORS

This eclectic group of workers is critical to efficient and reliable supportive services for frail and disabled elders, but they are very challenging to track, enumerate, and estimate unmet needs. Their services range from assessing needs and then navigating clients to sources of supportive services, to enrolling clients into those services, and to providing psychological and behavioral counseling to enable home care with challenging elder behaviors and family dynamics. There seems to be no comprehensive accounting for these workers, and they are recruited, trained, and paid in a variety of ways. Just as for nurses, we end up contending that a community will need to canvass various employers to see if there are vacancies and difficulties filling them.

PROJECTED REQUIREMENTS FOR THE MEDICAL WORKFORCE

Often, care for the geriatric patient population by medical teams falls to the primary care team, including the primary care physician (PCP), who usually is not a board-certified geriatrician.

- There are an estimated 2,810 primary care physicians in DC.¹²
- How to estimate the workload for those at home?
 - o We will continue to work with the conclusion above that there are about 6000 elderly persons needing daily help in Washington, DC, and that people who need daily assistance will need home visits by physicians (or physician equivalents).
 - o If we further estimate that a person will need 4 scheduled and 2 unscheduled home visits per year (a clinical estimate), we can estimate the demand for physicians at home to be
 - 24,000 scheduled, 12,000 unscheduled visits
 - After speaking with Housecall Management Solutions, a physician home visit agency for homebound elderly patients, estimations of the average workload were as follows:

¹² Government of the District of Columbia. (2015). D.C. Board of Medicine Physician & Physician Assistant Workforce Capacity Report 3.0: *A Summary of Findings from the Physician and Physician Assistant 2014 Workforce Survey in the District of Columbia*. Washington: Department of Health Board of Medicine. Retrieved January 30, 2018, from <https://doh.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/DC%20Board%20of%20Medicine%20Physician%20and%20Physician%20Assistant%20Workforce%20Capacity%20Report%203.0%20-%202015%20dec12.pdf>



- A FTE physician can do 2500 visits per year. Each physician has a monthly workload of 200 patients and sees 50-60 patients per week. For well-managed patients with no new issues, this agency's home visit physicians see every patient every 6-8 weeks on average.¹³ Thus, at full efficiency, the demand would be for about 15 physician FTEs

Note that we are counting nurse practitioners (NP) and physician assistants (PA) as if they were physicians, even though they require some supervisory time.

If one had access to Medicare claims, one could quickly compute how many physicians are engaged in providing medical care at home for a substantial number of elders by tallying the place of service in evaluation and management codes. In Washington, DC, there are three services that provide care to the elderly at home, and one could simply tally their physician equivalents. That number would fall far short of the predicted 15, a fact that is reflected in the high rate of emergency room use and rehospitalization in the city.¹⁴

PROJECTED REQUIREMENTS FOR OTHER PROFESSIONALS

Other considerations to account for when estimating the medical workforce include pharmacists, dentists, and behavioral health specialists. Pharmacists are a highly underutilized profession that could be moved into a major role in medication management, if there were a funding stream for their time. Consulting pharmacist is an emerging role for community providers, and estimating the optimal utilization parameters has not been worked out. Clearly, though, it would be more efficient to have community pharmacists assessing medication appropriateness and working on adherence than to have less-trained nurses or more expensive physicians. This is an area worth developing over time.

Dentists do not usually serve the elderly population exclusively, but they are an essential part of health for elderly patients. It is well-known in Washington that it is very difficult to get essential dental care for an elderly person who is not mobile, and especially for one that has cognitive or behavioral challenges. The challenges of dental work for frail and disabled elders are substantial and the payment is uneven and often low. Meeting this acknowledged need will require creative strategies, and measuring the gap and the gains will be novel work.

The highly prevalent mental health disorders of the elderly – dementia, delirium, and depression – are usually relegated to their primary care physician. However, an increasing number of elders are presenting with substance abuse (opioids, alcohol, marijuana, and street drugs) and some of the behavioral manifestations of the more common conditions go beyond the skill set of primary care physicians. Again, there is a widely acknowledged dearth of expert behavioral health services for frail and disabled elders, and no ready way to tally the shortfall, to create improvement strategies, or to monitor improvement. These will need to be developed as part of community improvement work.

¹³ Stokar, D. (2018, January 31). Vice President, Housecall Management Solutions. (M. Hendricksen, Interviewer)

¹⁴ Goodman, D., Fisher, E., & Chiang-Hua, C. (September 2011). *After Hospitalization: A Dartmouth Atlas Report on Post-Acute Care for Medicare Beneficiaries*. Lebanon (NH): The Dartmouth Institute for Health and Clinical Practice. Retrieved February 2, 2018, from

http://www.dartmouthatlas.org/downloads/reports/Post_discharge_events_092811.pdf



The Model for Other Communities

Using conservative numbers from the alpha estimates produced for our Washington DC example, we have developed a general model for other communities to use in order to estimate the workforce they would need for their elderly population. Below is a table of estimates for every 1000 elderly people in a community needing daily assistance or having any ADL dependencies. The numbers included in the table are for FTE workers. Communities can estimate their own workforce and compare those figures to this initial benchmark.

Because of the lack of numerical estimates for some workforce populations (e.g. social workers, dentists, care coordinators, and pharmacists), we have not included them in these estimates.

Table 1
Workforce Supply Estimates (per 1000 elderly in community)

Workforce Group	Workforce Supply Needed (per 1000 disabled elderly)
Home Health Aides	1334
Personal Care Aides	1083
Home Care Nurses	7
Physicians	2.5

Conclusions and Recommendations

SUMMARY

Major gaps in the literature regarding supply and demand in the eldercare workforce at the community level required that we interview leaders in the field, but they also did not have data ready to directly estimate workforce for a community. From diverse sources and reasonable clinical assumptions, we developed an estimation for Washington, DC. The rates found would be useful to leaders in that city and the predicted rates to meet the needs can serve as a starting point for replication of the work in other communities.

IMPLICATIONS

Collection of community level data about the workforce for the elderly has, so far, not been completed at a sufficiently complete and detailed level to allow us to create an authoritative benchmark for communities. However, the fact that major industry leaders could quickly see the usefulness of an estimate of the desired and actual community level workforce lends support for the work. In our work, we propose to estimate the workforce requirements for communities which are trying to improve their local eldercare system, using the method developed for Washington, D.C., which can serve as a benchmark temporarily. The communities will have various ways to estimate their actual workforce and then leadership can reflect upon the gaps and potential oversupply issues this identifies. In the process, they will also refine the methods and add to the growing body of insight as to workforce needs. At some point in the process of maturing the methods and the benchmarks, a set of rigorous research projects would make the resulting tools more authoritative.



Acknowledgements

We would like to thank the following people for their participation in our interviews and reviewing this report:

- Amy York, Eldercare Workforce Alliance
- Joanne Spetz, UCSF Health Workforce Research Center for Long-Term Care
- Stephen Campbell, PHI
- Robert Espinoza, PHI
- Thomas Edes, Washington DC VAMC
- George Taler, MedStar Washington Hospital Center
- Peter Boling, Medical College of Virginia
- Natasha Bryant, LeadingAge
- Daniel Stokar, Housecall Management Solutions
- Robert Sowislo, The Public Policy Committee of the American Academy of Home Care Medicine
- Kathy Kelly, Family Caregiver Alliance
- Tom Nolan, Associates in Process Improvement



Appendix: Report of the Literature Search

This Appendix shows results for our searches broken down by conceptual category.

Direct care workforce & demand

of Results: 22,800. Abstracts: 60. Articles Read in Full: 15.

How we narrowed the results: Results that had mention of the elderly population were focused on first, next were articles mentioning a shortage, or a program that was implemented to "meet workforce needs." Results were dropped if focused on pediatrics, or other areas that were not related to this project (e.g., management, training, psychology of the workforce, etc.) Results were also dropped if not based in the United States.

Useful information found: Information about the shortages within workforces (nursing, physicians, home care aides). Many results focused on the demands and shortages of the dementia care workforce. We found no estimates that were useful.

Workforce demands & geriatric care

of Results: 16,000. Abstracts: 40. Articles Read in Full: 10.

How we narrowed the results: Demographic studies about the aging population were dropped from results, as were international examples. Qualitative studies and studies about technology were also dropped. Relevant studies included those about retooling the current workforce, healthcare workforce economic projections, and nursing and geriatric care.

Useful information found: Information about reshaping the current workforce was useful, but did not provide hard numbers. Most articles that were relevant provided high level analysis or anecdotal evidence of the needs for change, but did not provide the level of data detail needed for this report.

Geriatric workforce

of Results: 11,200. Abstracts: 100. Articles Read in Full: 20.

How we narrowed the results: International studies were dropped, as well as studies about training and education of the workforce, workflows, management, and recruitment.

Useful information found: This had the most relevant literature that we found. Useful articles are cited in the text and come from HRSA reports concerning workforce enhancements, transforming the geriatric workforce, expanding the geriatric workforce, and local workforce perspectives.

Community workforce & elderly

of Results: 17,700. Abstracts: 45. Articles Read in Full: 0.

How we narrowed the results: These search parameters came up with many irrelevant results - physical fitness, pharmaceutical studies, randomized control medical trials, international studies, and health improvement studies (without a restructuring of the workforce) – which were all dropped. Community based health, long-term services and supports (LTSS) in the community, and enhancing the workforce were reviewed.



Useful information found: Mental health workforce development, person centered care workforce, primary care workforce, and growth in community-based care were the most relevant topics. Articles still did not present findings from a community level or provide specific numbers on the workforce.

Community care & elderly & workforce

of Results: 17,300. Abstracts: 30. Articles Read in Full: 0.

How we narrowed the results: Many of the same results from the "Community workforce & elderly" search parameters

Useful information found: Nothing additional was useful.

Geriatric care & improvement

of Results: 16,400. Abstracts: 100. Articles Read in Full: 30.

How we narrowed the results: Program implementations that focused on improving outcomes by changing the care team structure were of most interest from these search results. International, technology, cost analyses, injury prevention were dropped.

Useful information found: From these results, we created a list of 18 programs that reported improvement and gave data of a reasonable quality. We evaluated whether the published literature on these 18 also gave specific counts or workload concerning the workforce. There were no results that had the level of information needed regarding those studies.

1. Improving Mood: Promoting Access to Collaborative Treatment for Late Life Depression (IMPACT)

https://www.acl.gov/sites/default/files/programs/2017-03/IMPACT_summary.pdf

2. Geriatric Resources for Assessment and Care of Elders (GRACE)

https://www.nhpf.org/uploads/Handouts/Counsell-slides_10-28-11.pdf

3. The Green House Model

https://www.rwjf.org/content/dam/farm/reports/program_results_reports/2007/rwjf64459

4. The Advanced Illness Management (AIM) Program

<https://www.amga.org/docs/Meetings/IQL/2014/Breakouts/Sutter-GornetUPDATED2.pdf>

5. Programs of All-Inclusive Care for the Elderly (PACE)

<https://www.acl.gov/sites/default/files/programs/2017-03/PACE-ADEPP-Summary-2014.pdf>

6. Evercare

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1764106/pdf/bmj-334-7583-res-00031-el.pdf>

7. Social HMO Demonstrations

https://innovation.cms.gov/Files/Migrated-Medicare-Demonstration-x/SHMO_Report.pdf



8. Community Nursing Organization Demonstration

https://innovation.cms.gov/Files/Migrated-Medicare-Demonstration-x/CNO_Final_Report.pdf

9. Care Management for High Cost Beneficiaries (2005)

https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Reports/downloads/CMHCB_CLM_McCall_2010.pdf

10. Medicare Disease Management Demonstration

https://www.cbo.gov/sites/default/files/cbofiles/attachments/WP2012-01_Nelson_Medicare_DMCC_Demonstrations.pdf

11. Medicare Coordinated Care Demonstration

<https://innovation.cms.gov/Files/reports/mccd-hqp-finaleval.pdf>

12. Informatics for Diabetes Education and Telemedicine (IDEAtel)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1863578/pdf/tacca118000289.pdf>

13. Medicare Case Management (Early Coordinated Care) Demonstrations

<https://innovation.cms.gov/Files/reports/Best-Prac-Congressional-Report.pdf>

14. The Arizona Long-Term Care System

<https://www.azleg.gov/ilbc/psaxsaltcs.pdf>

15. Senior Health Options (Minnesota)

https://mn.gov/dhs/assets/2018-seniors-contract-ucare_tcm1053-323178.pdf

16. Family Care (Wisconsin)

<https://www.medicaid.gov/medicaid-chip-program-information/by-topics/delivery-systems/managed-care/downloads/wisconsin-mcp.pdf>

17. Cash and Counseling

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1955336/pdf/hesr0042-0446.pdf>

18. Hospital Elder Life Program (HELP)

<https://www.ncbi.nlm.nih.gov/pubmed/11129764>

Ideal workforce for elderly

of Results: 15,700. Abstracts: 60. Articles Read in Full: 3.

How we narrowed the results: Results were eliminated if they did not relate to the geriatric or disabled population, were not based in the US, or did not have any relevance to the geriatric workforce (i.e., interpersonal skills, slowing aging, fertility rates, etc.) Further examination was given to results about home care workforces, health assistants, and digital workforces.



Useful information found: These parameters gave many non-related results. Most of the relevant results gave insight to how the workforce may change as the location of care changes for the elderly population (e.g. keeping more elderly at home means more home based care needs), but the articles did not give specific numbers.

Elderly workforce

of Results: 17,900. Abstracts: 40. Articles Read in Full: 5.

How we narrowed the results: Most popular results were international, and were dropped. Community based care, workforce distribution, and primary care workforce were keywords of interest from these search results.

Useful information found: Information from these results focused mostly on the older adults who were still participating in the workforce, and not on the workforce taking care of the elderly. Some results regarding improving use of pharmacists, nurses aides, and family physicians as points of access for geriatric population were useful in framing thinking for this report, but they did not give solid figures to help estimate workforce for a community.

Homecare Nurse Caseload

of Results: 2,660. Abstracts: 10. Articles Read in Full: 5.

How we narrowed the results: International results were dropped, abstracts were read when results mentioned measuring nurse's caseload, or tools that were developed to measure caseloads. Most results did not specify a geriatric patient population.

Useful information found: Results from this search were not used, since articles that were read did not give specific numbers, and most articles did not focus on the older population.

Independence at Home Caseload

of Results: 6,060. Abstracts: 20. Articles Read in Full: 3.

How we narrowed the results: International results were dropped, abstracts were read when results mentioned measuring homecare caseload, or the independence at home interventions. Additional abstracts were read if keywords of "elderly, geriatrics, older adults" were included in result.

Useful information found: Results included ethnographies and anecdotal information about keeping older adults "independent at home." The articles regarding the independence at home interventions were read but did not provide concrete information that would help with our estimation of a workforce for a community.

Home Care Caseload

of Results: 11,400. Abstracts: 15. Articles Read in Full: 5.

How we narrowed the results: International results were dropped, abstracts were read when they mentioned caseloads for home care aides, community-residing older adults, or continued care. Abstracts about person centered care, new models of care, and home care agencies were read.



Useful information found: Most results were specific content about interventions to improve outcomes for older adults. They did not include any community estimates that would have been useful to this report but gave a general estimate of study-specific population and aide caseload. Home care agency articles did not include data that would have been useful to this benchmark report.

Workforce & Elderly & Community

of Results: 17,700. Abstracts: 25. Articles Read in Full: 0.

How we narrowed the results: Results were narrowed by eliminating international studies, studies about cultural competence, descriptive analytics of elderly in communities, and elderly workers. Keywords of focus were workforce needs, community-based older adults' needs, primary care workforce, and workforce innovation

Useful information found: We read the abstracts that focused on community health workers, workforce growth, social workers, and care for community dwelling elderly were key words or topics. We did not find content that was useful in producing numbers of workforce in communities