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Delaware Journal of Public Health

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DELAWARE ACADEMY of MEDICINE
DPHA DELAWARE PUBLIC HEALTH ASSOCIATION
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APHA AMERICAN PUBLIC HEALTH ASSOCIATION
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COVER

The "road to value" is a bit like a bus traveling along with a variety of passengers - each seeking a slightly (or greatly) different goal - yet everyone is inexorably traveling in the same general direction, and no one seems to have a good map upon which all can agree.

The Delaware Journal of Public Health (DJPH), first published in 2015, is the official journal of the Delaware Academy of Medicine / Delaware Public Health Association (Academy/DPHA).

Submissions: Contributions of original unpublished research, social science analysis, scholarly essays, critical commentaries, departments, and letters to the editor are welcome. Questions? Write ehealy@delamed.org or call Liz Healy at **302-733-3989**.

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IN THIS ISSUE

Dear Reader,

"Value," as it turns out, is very challenging to define, since "value" is in the eye of the beholder. How a patient defines value can be dramatically different from how a healthcare provider or system defines it. Payers have yet another definition and set of metrics defining value, and on the global stage, value in per capita healthcare spending versus health outcomes provides yet another definition.

Truly then, the "road to value" is a bit like a bus traveling along with a variety of passengers - each seeking a slightly (or greatly) different goal - yet everyone is inexorably traveling in the same general direction, and no one seems to have a good map upon which all can agree.

A report published in 2012 from the Institute of Medicine (now the National Academy of Medicine), sums up the impetus for this issue of the Journal:

> *"Although primary care and public health share a goal of promoting the health and well-being of all people, these two disciplines historically have operated independently of one another. Problems that stem from this separation have long been recognized, but new opportunities are emerging for bringing the sectors together in ways that will yield substantial and lasting improvements in the health of individuals, communities, and populations."*

We are pleased to have DHSS Cabinet Secretary Dr. Kara Odom Walker as guest editor of this issue of the Journal. As you will read in her introduction, and in the articles to follow, supporting and enhancing primary care in Delaware is, indeed, a part of the road to finding the value and results we are all seeking in the healthcare system.

As per our custom for theme issues, we take the opportunity to also share peer-reviewed articles of broader interest to the public health, and medical community. In this issue we feature additional articles on nutrition, and social determinants such as homelessness.

As always, we welcome your feedback and hope you enjoy this issue of the Journal as much as we have in putting it together!

Timothy E. Gibbs, M.P.H.
Executive Director

Omar A. Khan, M.D., M.H.S.
President

Guest Editor

Dr. Kara Odom Walker

Cabinet Secretary, Delaware Department of Health and Social Services; practicing family physician

When people believe their basic qualities, intelligence, talents and abilities are simply fixed traits, we call that a "fixed mindset." According to Carol Dweck, a Stanford professor and author of "Mindset: The Psychology of Success," these people have a certain limit to the development of these traits.

But other people have a "growth mindset." This suggests that a person's basic talents and abilities can be developed and improved through experience, mentorship and other factors. It allows success to propel individuals and groups forward. It means that people can move beyond worries of how smart they are, or how they'll look to others, or what their mistakes might mean. With the speed at which health care is changing, we need a growth mindset: it allows us to take on challenges and to grow through our experience.

As I entered the field of medicine over 20 years ago, I was excited about the possibility of innovation and disruption. But it took merging lessons in engineering and business school classes to make me understand how a growth mindset connected everything. I saw how fast technology evolved and how smart "technicians" could work together in a multi-disciplinary team to solve problems.

Medical training moves in the opposite direction: although we are focused on finding the diagnosis and problem-solving, somehow we also are acculturated to a way of doing things with a "fixed mindset" that does not allow for much deviation. Learning the "art of medicine" requires learning the language, culture, and norms of health care systems, provider-to-provider interactions, and communicating in new nomenclature. It also makes it harder to be in a "growth mindset" because so much of medicine is about recognizing diagnoses and following the time-tested culture of medicine.

As medicine intersects with technology, personalized medicine, and genomics, we will need to evolve into new patterns of health care, new definitions of teams, new ways to deliver primary care and accelerate this work while aligning financial incentives to encourage innovation. We will need to have a growth mindset.

In this issue, policymakers and influencers from our state and beyond explore areas of innovation; and, I hope, push the envelope to help us to figure out how to make big strides in health improvement; expand and develop a new model of primary care specific to our state; address cost, quality and value; but, most of all, figure out how to do all of this with the patient in mind.

We will have to figure out how to do this quickly, or companies such as Amazon, Apple and CVS are going to figure it out and create new models for us. They will address the interests of patients through improved access, convenience and connection. They will allow for price transparency and portable data. And they will make it happen over technology platforms that we have yet to imagine.

We will have to lead the way before it becomes too difficult to navigate. "Our Road to Value"[1] still exists that includes person-centeredness and improved population health and – with a growth mindset – we can make the journey to improved quality, patient/provider experience, and cost one that ultimately leads to a healthier Delaware for all.

1. *Delaware Department of Health and Social Services. (2017). Delaware's Road to Value. Retrieved from:* https://dhss.delaware.gov/dhss/dhcc/files/delawareroadtovalue.pdf

AMERICAN PUBLIC HEALTH ASSOCIATION
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HIGHLIGHTS FROM
The NATION'S HEALTH
A PUBLICATION OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

December 2019

Highlights from the Nation's Health: Bet of 2019.
Online-only news from The Nation's Health newspaper
Check out the most read stories of this year:

1. Suicide, opioids tied to ongoing fall in US life expectancy: Third year of drop
Fueled by "deaths of despair," U.S. life expectancy declined to 78.6 years in 2017, with suicide rates rising 33%.

2. Programs work from within to prevent black maternal deaths: Workers targeting root cause — racism
Maternal deaths among black women are at least three times that for white women. Health workers and advocates are working to close that gap.

3. President's budget would hinder US public health progress: Huge cuts proposed
The 2020 federal budget proposal included big cuts to major federal public health agencies.

4. Public health workers taking action on rising US STD rates: Gonorrhea, syphilis making comebacks
Despite the rising rates of STDs, federal funding has failed to keep up.

5. Video games and health: Sorting science from popular beliefs — Many believe games cause gun violence
There are pros and cons to playing video games, though one often-cited concern may need to be vanquished for good.

6. Colorado county named healthiest US community: Report scores 3,000 communities on health-related issues
The 2019 Healthiest Communities report rates communities on a wide range of metrics related to health conditions and behaviors, health equity and social determinants of health.

7. Barbershop interventions improving health outcomes: Studies support community involvement
Researchers have suspected for years that barbershops are ideal for health interventions in the black community. Now data is backing that up.

8. More public health grads being drawn to private sector jobs
Government health jobs used to be the main employer of public health graduates. But most of today's graduates are getting jobs at nongovernment organizations and companies.

9. Thousands lose coverage from Medicaid work requirements: New procedures causing confusion
The idea that denying people health coverage helps increase employment is not supported by data.

10. Study: Evidence of racism's effects can be found at cellular level
Research shows the stress of experiencing racism may lead to an increase in inflammation and a decrease in antiviral response.

Other features from The Nation's Health that were popular included our **Q&A on ending HIV with Brett Giroir.** Our most-read **Healthy You** shared ways to cope with seasonal affective disorder.

Climate change and health also remained in the public health spotlight in 2019, with readers enjoying stories on the ways **algae blooms** are threatening water supplies and how warming temperatures are increasing **vector-borne disease.**

Delaware Needs to Act to Save Primary Care

David Bentz
Representative, 18th District (Newark, New Castle and Bear); Chair, House Health and Human Development Committee

Delaware is rapidly losing primary care doctors and approaching a crisis in access to care[1], which requires immediate attention from all health policy stakeholders.

This was one of the more startling and motivating facts revealed to me as I began work as chair of the House Health and Human Development Committee shortly after taking office. Delaware, already ranked in the bottom half of the country in many public health statistics, has seen a six percent decline in the number of primary care doctors since 2013. To make matters worse, many of the remaining primary care practitioners in our state are at or nearing retirement age. In real terms, this decline has resulted in thousands of Delawareans being forced to find new primary care doctors, or lose access to critical primary care altogether. This continued decline in primary care capacity will only exacerbate existing public health problems and continue to drive health care costs in the state, which are already among the highest in the country on a per capita basis.

The good news is we know what is driving this decline. Primary care physicians face burnout, declining revenues due to stagnant reimbursement rates, and massive student loan debt pushing many recent graduates to higher-paying specialties. These are just to name a few.

The benefit of knowing the root causes of the problem is we can begin to develop strategies to reverse the negative trend. This was the goal when the Delaware General Assembly passed Senate Bill 227[2] in the late stages of the 2018 legislative session. In addition to increasing minimum reimbursement rates for primary care, the bill created the Primary Care Collaborative to examine the severity of these root causes, develop recommendations to curb the loss of primary care providers in the state, and increase their numbers in the long term.

One of the benefits of being in a state the size of Delaware is you can quickly bring together stakeholders for robust conversation on public policy challenges. The collaborative did exactly that by convening key players in our health care sector including providers, health systems, insurance providers, and policy makers. The collaborative met through the second half of 2018 and into 2019 to develop ways to improve the primary care sector in Delaware. In January of this year, the collaborative released its first report[3], which provided recommendations based on the feedback provided at these meetings. These recommendations included both long-term strategies to improve the value of our health care spending, and shorter-term methods to stem the loss of primary care physicians in our state.

The initial recommendations by the collaborative represented a road map for the state to stabilize the primary care sector and support growth going forward. This included setting a goal for 12 percent of our total health care spending to bolster primary care through a quality-focused and value-based payment model, and establishing an enforcement mechanism within state government to ensure that these goals are being met at an acceptable pace to reduce further deterioration of primary care capacity in our state.

All too often, reports generated by groups like the Primary Care Collaborative sit on a shelf and collect dust as opposed to leading to real progress. The motivation by everyone involved with the collaborative – to improve the health of all Delawareans – has ensured that was not the case with this report. Already, numerous legislative items have been signed into law or are in development that will implement key elements of the report's recommendations.

The first major initiative was passed before the collaborative even formally met. In addition to creating the collaborative, Senate Bill 227 increased minimum reimbursement rates for primary care to Medicare levels. Delaware was one of very few states that failed to meet this minimum level of reimbursement for primary care, and we needed to act. While this doesn't completely alleviate the concerns around inadequate reimbursement rates, it does provide a helpful boost to providers who find themselves at risk of having to close their practice or shift to a concierge model of payment in order to recuperate costs.

This past legislative session, lawmakers passed Senate Substitute 1 for Senate Bill 116,[4] which expands the membership of the primary care collaborative to bring in additional stakeholders, and creates the office of Value Based Healthcare within the State's Department of Insurance. This office will be critical in our efforts to increase the percentage of health care spending to support primary care, and to ensure involvement in value-based payment models is met by payers and providers. It will also help establish agreed upon metrics to adequately measure progress toward these goals and keep us moving in the right direction.

House Bill 257[5] was introduced in the closing days of this past legislative session. If passed, this legislation would establish a health care provider loan repayment program for qualifying primary care clinicians. Many of Delaware's top competitors for primary care providers offer similar loan repayment programs, putting us at a disadvantage in our efforts to recruit qualified primary care practitioners to our state. This will take on added importance in the years to come as we are forced to replace many providers who are nearing retirement with recent medical school graduates entering the workforce with massive amounts of student loan debt. The legislation has broad bipartisan support and I am hopeful it will become law when the General Assembly reconvenes.

As we look to the future, the Primary Care Collaborative will continue to find ways to grow a sustainable primary care sector in Delaware. It will prioritize efforts to increase the percentage of our total health care spending directed to primary care, encourage momentum toward value-based models of payment, emphasize workforce development in primary care, and pursue other efforts identified by the stakeholders in the collaborative. Meetings of the collaborative are open to the public and we welcome all interested stakeholders to attend and share their thoughts and ideas on how we can make progress for our entire state.

Many of our shared goals, including better public health, reduced costs, and an overall healthier Delaware, require a robust primary care workforce where all Delawareans have access to high quality preventative care. This will continue to take an "all-hands-on-deck" approach as exemplified by the early work of the Primary Care Collaborative. If we continue to pull in the same direction and prioritize the well-being of Delaware residents over individual industry interests, we can find success in this effort.

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Investing in Primary Care: A Work in Progress

Nancy Fan, M.D.

INTRODUCTION: THE NEED FOR CHANGE

"We are convinced that strengthening primary health care (PHC) is the most inclusive, effective and efficient approach to enhance people's physical and mental health, as well as social well-being, and that PHC is a cornerstone of a sustainable health system..."[1]

This opening statement from the World Health Organization (WHO) reflects the value of effective, quality primary care to the delivery of overall health care. While the WHO was addressing the continued need for systemic change to promote a strong primary care delivery system on a global level, there has been growing evidence of that need within the United States. One recent study from this year reported that overall investment in primary care (PC), as reflected by overall spending within the fee-for-service Medicare population, was as low as 2-3 percent in a narrow definition, but no higher than 4.88 percent in the broader definition (*see Figure 1*).

NATIONAL TRENDS

Of the multiple components to a sustainable level of investment in primary care, the most common starting point is the measurement of primary care spending within total health care spending. This has been studied globally and to a limited degree, within the United States. The Organization for Economic Co-operation and Development (OECD) provided a general definition of primary health care in 2004:

"Primary health care, i.e. the subset of diagnostic and therapeutic activities considered as being the first line of organized personal medical care (in contrast to specialized medical care such as provided by medical specialists and in hospitals). Apart from general forms of diagnosis and treatment, the Panel regarded the coordination of care between different providers and the provision of guidance to patients through the health care system as key functions of primary health care."[5]

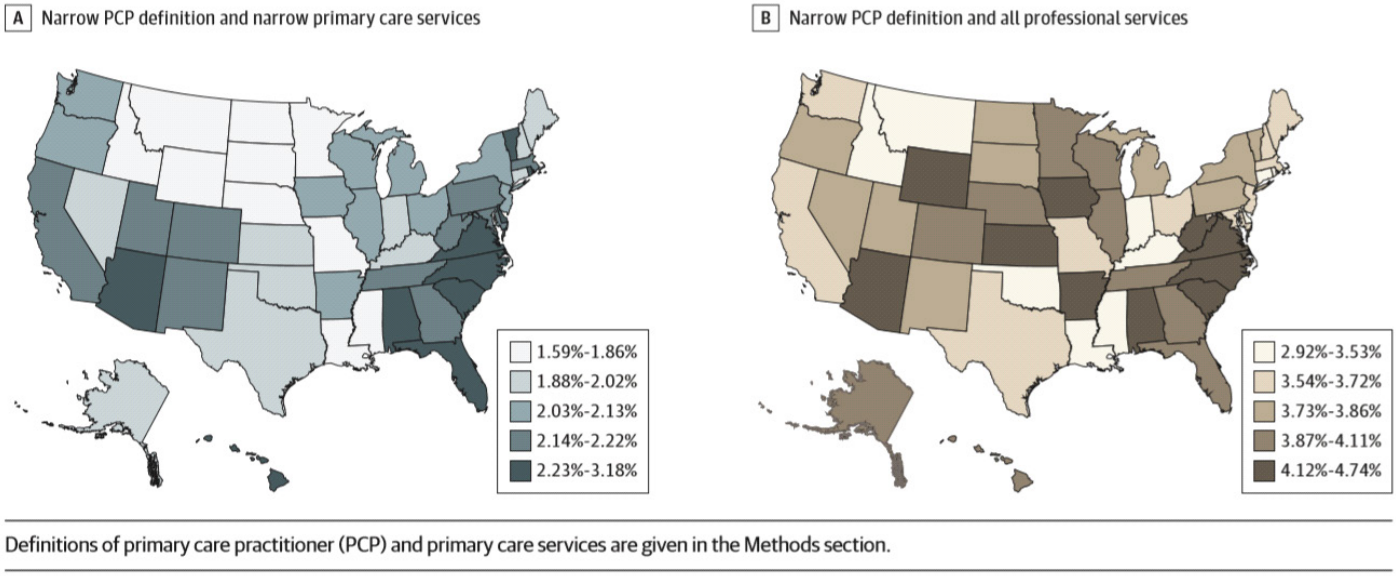


Figure 1. Primary Care Spending as a Proportion of Total Medical and Prescription Spending Among Fee-for-Service Medicare Beneficiaries[2]

This significant underinvestment has continued to exist, despite increased interest in optimizing access to primary care, as it may not only provide quality and effective health care but also may decrease the total cost of health care spending.[3] It is a well-established fact that the overall health care spending in the U.S. is out of proportion to our health outcomes with the United States, spending twice as much per person as the average for most other industrialized countries (*see Figure 2*). Supporting a stronger and more sustainable primary care system is essential to achieving better health outcomes and bending our cost curve. However, the greater investment necessary at multiple levels, such as innovative care and payment models, expansion of workforce incentives and decreasing infrastructure costs to providers, may require a more systemic change than what has occurred incrementally over the past 10 years.

To that end, several states, including Delaware, have passed legislation which is specifically focused on analyzing and increasing investments in primary care. These legislative efforts should not be considered cumulative, but rather foundational to the necessary elevation of systemic investment in primary care.

While this broad definition precludes true uniformity, since then, OECD has received data annually from 22 of the 36 contributing countries regarding the level of spending on primary care services within the total health care spending. The latest report estimates that in other countries, primary care accounts for approximately 14 percent of total health care spending (*see Figure 3*).

When compared to the data from the fee-for-service Medicare study, the United States investment in primary care appears to be significantly low, at less than half of other OECD countries. However, the lack of a "standard" definition for primary care (PC) nationally has prevented alignment by providers, insurers and policymakers on what is an accurate assessment of PC spending in the U.S. and what should be an acceptable, meaningful investment into primary care. This has led to individual states, such as Rhode Island and Oregon, to establish their own key components for primary care spending (*see Figure 4*).

At first view, it would seem that Rhode Island began its work in primary care in 2010, with the passage of its affordability standards, which not only mandated insurers to increase their

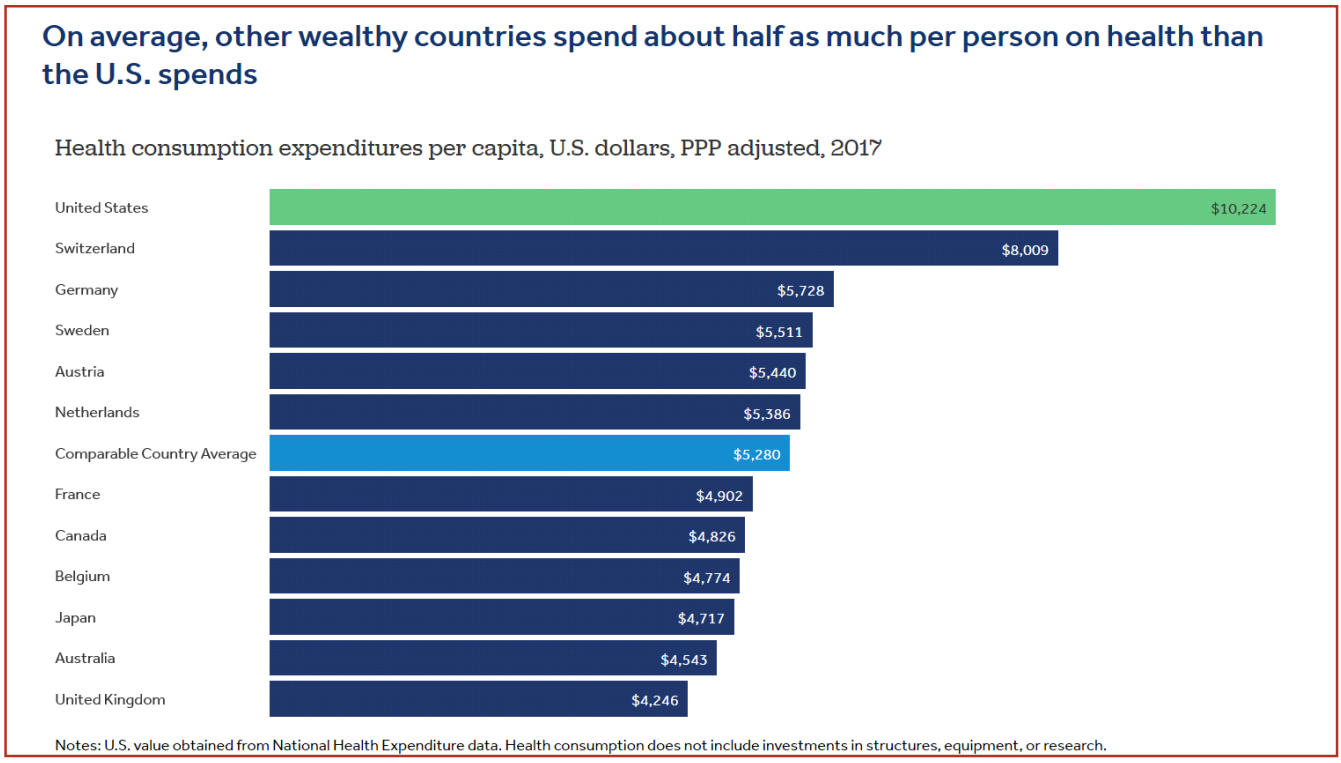


Figure 2. Health consumption expenditures per capita, U.S. dollars, PPP adjusted, 2017[4]

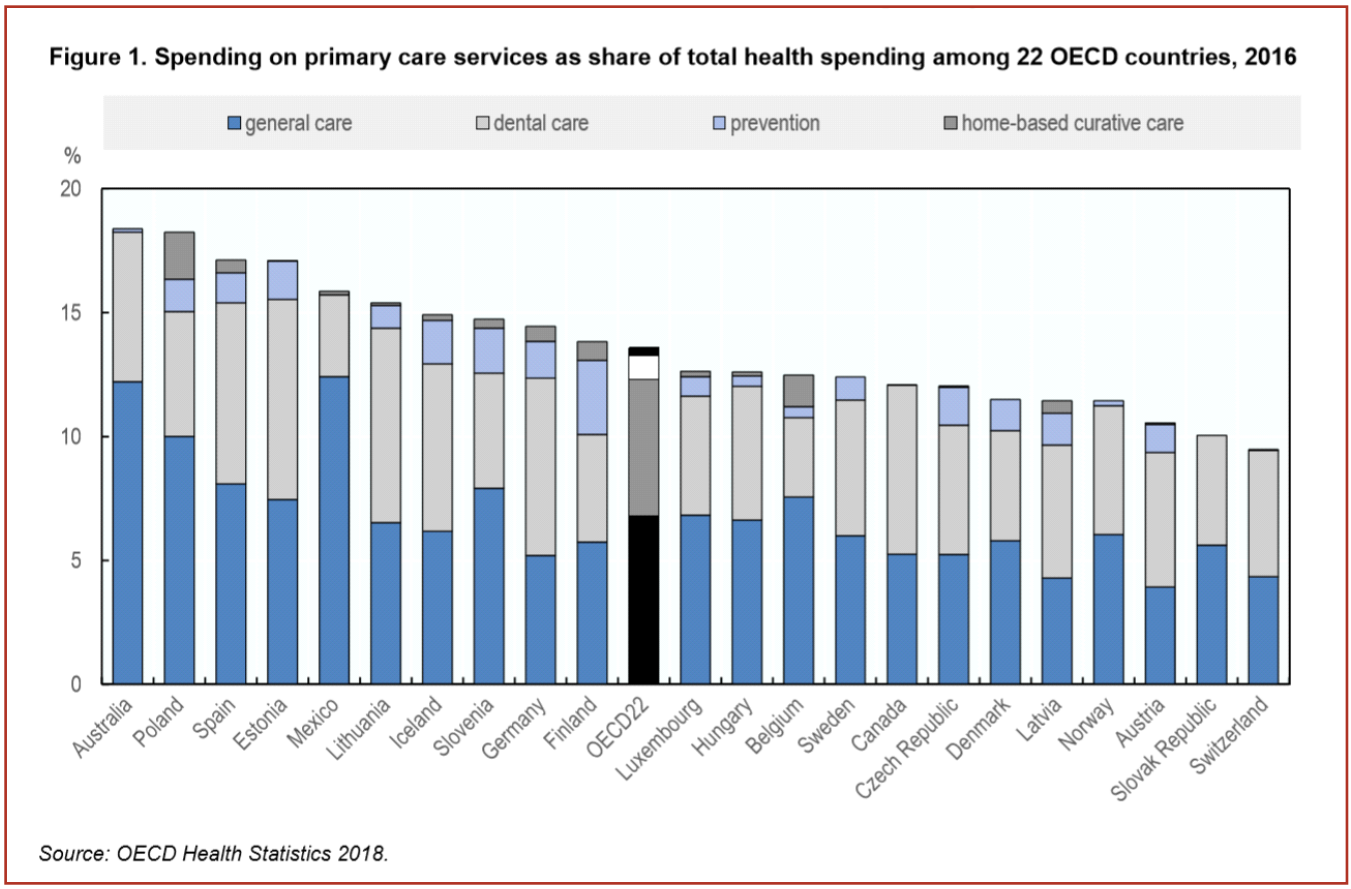


Figure 3. Spending on primary care services as share of total health spending among 22 OECD countries, 2016[6]

PC payments by one percent per year to a statewide benchmark of 10.7 percent, but also to increase participation on the part of providers in patient-centered medical homes (PCMH).[7] However, in 2004 the state had already established the cabinet-level Office of Health Insurance Commissioner. This office provides crucial infrastructure for the data analysis of the state's health care spending as well as regulatory capacity to address possible issues of non-compliance by insurers or the need for cost containment regarding acute inpatient hospital costs. Within this framework, Rhode Island has achieved some measurable success with increasing investments in primary care (*see Figure 5*). Besides reaching the benchmark of 10.7 percent PC spending, approximately 70 percent of practices are in a PCMH model of care and Rhode Island has seen an increase in the number of physicians providing primary care. The development of a sustainable workforce with the tools for practice transformation are other key components for delivery of quality primary care.

In 2017, Oregon passed Senate Bill 934, which established a PC spending benchmark of 12 percent by 2023. This was a continuation of work that started in 2016 with SB 231, which established the Primary Care Payment Reform Collaborative to advise the Oregon Health Authority on the implementation of the Primary Care Transformation Initiative. The Collaborative includes 46 stakeholder members who present recommendations to use value-based payment methods to increase investment in primary care, without increasing costs to consumers or to the total cost of health care, as well as consider innovative payment models which may include investments in social determinants of health and integration of primary care behavioral and physical health care.[8]

PC Spend Definitions by Organizations and Select States

✓ Included in definition

Categories	OECD	Milbank Definition 1- PCP-C	Oregon	Rhode Island	Robert Graham Center Narrow	Robert Graham Center Broad
Preventive Health Services	✓		✓	✓		
Family Medicine	✓	✓	✓	✓	✓	✓
General Practice	✓	✓	✓	✓	✓	✓
Internal Medicine	✓	✓	✓	✓	✓	✓
Pediatrics	✓	✓	✓	✓	✓	✓
Geriatrics	✓	✓	✓	✓	✓	✓
Obstetrics and Gynecology	✓	✓	✓			✓
Nurse Practitioners/Physician Assistants	✓	✓	✓			✓
Behavioral Health Services			✓			✓
Homeopathy/Naturopathy			✓			
Home-Based Care Services	✓					
Outpatient Rehabilitation	✓					

OECD = Organisation for Economic Co-operation and Development.

Figure 4. PC Spend Definitions by Organizations and Select States

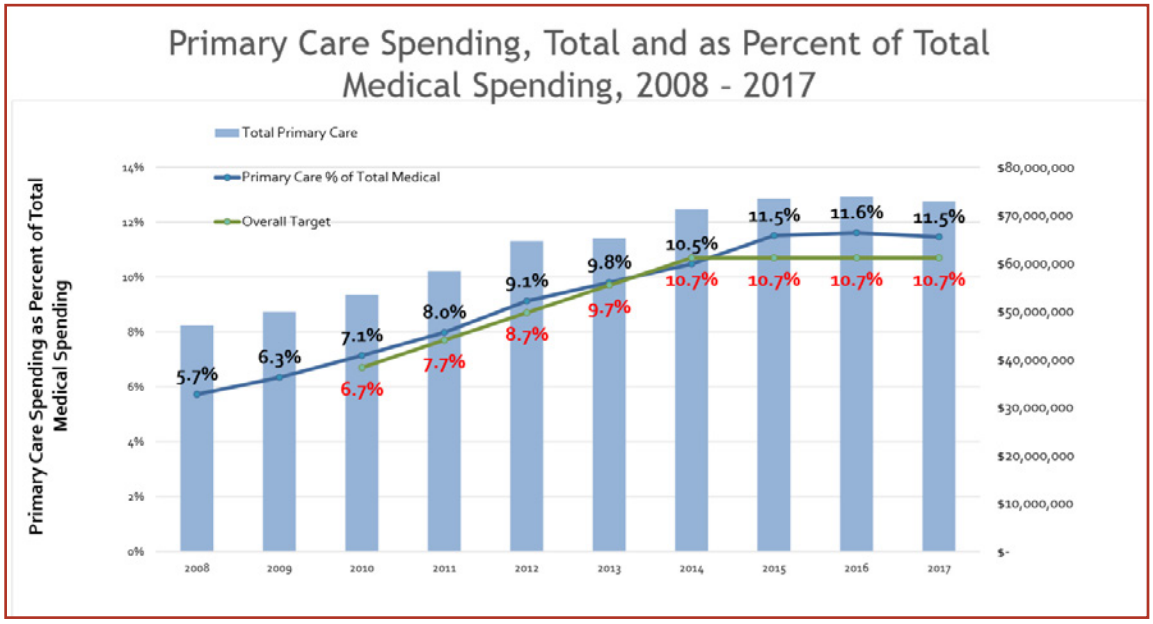


Figure 5. Rhode Island Primary Care Spending, Primary Care Collaborative Report, January, 2019. Delaware Primary Care Collaborative

In 2019, Colorado, Maine, Vermont, Washington and West Virginia all enacted legislation that focused on primary care investment.[7] Maine, Vermont, Washington and West Virginia have similar mandates to collect and analyze data on PC spending and calculate the percentage of total medical spending on primary care. West Virginia also established the Primary Care Support Program, which is directed at community-based primary care services. Vermont's legislation additionally requires the Green Mountain Board to determine how much spending should be allocated to primary care in the state and certain insurers to submit plans, which may reach the recommended level of PC spending. Colorado created a multi-stakeholder primary care payment reform collaborative and directed the insurance commissioner to establish affordability standards with targeted investments in primary care by insurers. Hawaii and Missouri have introduced legislation with similar mandates (*see Figure 6*).

HI	HB 1444 (2019) would establish the Primary Care Payment Reform Collaborative task force to examine issues related to primary care spending and data collection in Hawaii and to develop recommendations to the legislature.
MO	HB 879 (2019) is the Primary Care Transparency Act, which would establish a primary care payment reform collaborative for Missouri.

Figure 6. Hawaii and Missouri Primary Care Legislation[7]

A recurring theme is the need to determine what is the current level of PC spending and how far or near it is to the level necessary to sustain primary care as a "the cornerstone of a sustainable health care system."

In an effort to establish standardization for a determination of PC spending, the Patient Centered Primary Care Collaborative, in conjunction with the Milbank Memorial Fund and the Robert Graham Center, compared various definitions of primary care spending based on provider-type in their comprehensive overview, Investing in Primary Care: A State Level Analysis (*see again Figure 4*).[7]

There is general agreement among the various organizations listed in the chart and with the two first states who had enacted primary care legislation, Rhode Island and Oregon, that the core primary care specialties include internal medicine, family medicine, general practice, pediatrics and geriatrics. The authors define this core group as "PC-narrow." Some other definitions of primary care also include obstetrics and gynecology, behavioral medicine, as well as nurse practitioners and physician assistants, which the authors grouped as "PC-Broad." Interestingly, the Centers for Medicare and Medicaid Services (CMS) uses the "PC-narrow" definition of primary care, but includes hospice and palliative medicine and excludes pediatrics.

After determining the definitions, the authors analyzed data from the 2011-2016 Medical Expenditure Panel Survey (MEPS) from 29 states. The data were based on office-based and outpatient expenditures for each specific provider-based definition in each state and across all payer types. While there was wide variation among the 29 states, across both PC-narrow (3.5 – 7.6%) and PC-Broad (8.2 – 14%), the national average calculated was 5.6% and 10.2% respectively.

As noted previously, this is far below the global average for PC spending of 14 percent. Although the comparison cannot be considered direct, given that the OECD included broader categories than what the authors used, it is does provide meaningful analysis of current data for PC spending in the U.S. Such data are crucial for states to develop meaningful processes for the sustainability of primary care.

DELAWARE

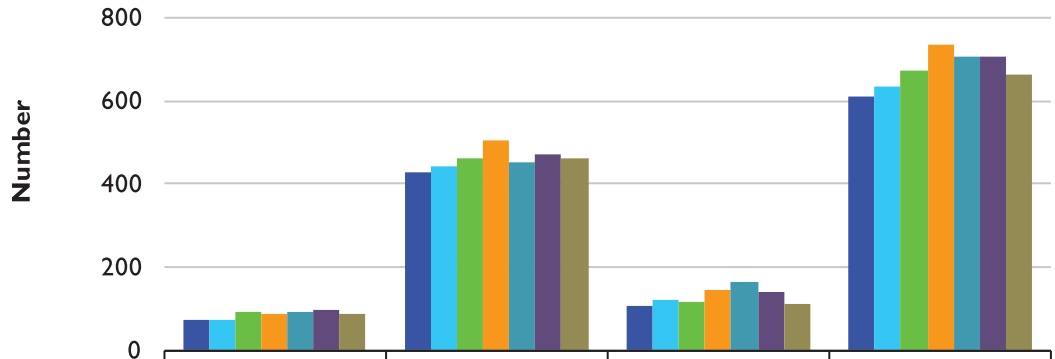
In Delaware, there has been a significant decrease in the availability of primary care providers in the state, which has resulted in a crisis of access for patients. The initial impetus for action came from anecdotal reports of primary care physicians leaving practice, primarily through retirement or changing their practice to "concierge." Concierge practices have a retainer-based or direct care payment model, in which the patients directly pay the practice a fee and receive greater access to the physician. While this model offers practices less administrative burden, with more financial stability and greater patient and physician satisfaction, it may decrease overall general access as there are fewer patients cared for within each practice. The recent Primary Care Physicians Survey 2018[8] provided data research from 2013-2018, which supported the overall perception that there has been a decline in the total number of practicing primary care physicians. Statistically, there has been an approximate eight percent decline in primary care physicians, which was defined as internal medicine, general practice, family practice, pediatrics and obstetrics/gynecology (*see Figure 7*).

This trend is even more alarming when taken into consideration that on average, only 40 percent of all primary care physicians throughout the state are under 50, indicating a lack of growth in the physician workforce (*see Figure 8*).

The combination of a decrease in the total number of practicing physicians as well as a decrease in the number of patients seen by practicing physicians in practice models, such as a concierge practice, has resulted in the primary care access crisis.

SB 227, which was passed in 2018, attempted to address this crisis through immediate payment reform to sustain current practices and provide long-term recommendations that would "strengthen the primary care system in Delaware." Many practices indicated that the current level of reimbursement for primary care services was inadequate to cover the costs of the practices and, therefore, was driving physicians to the concierge model or to leave practice completely.[10]

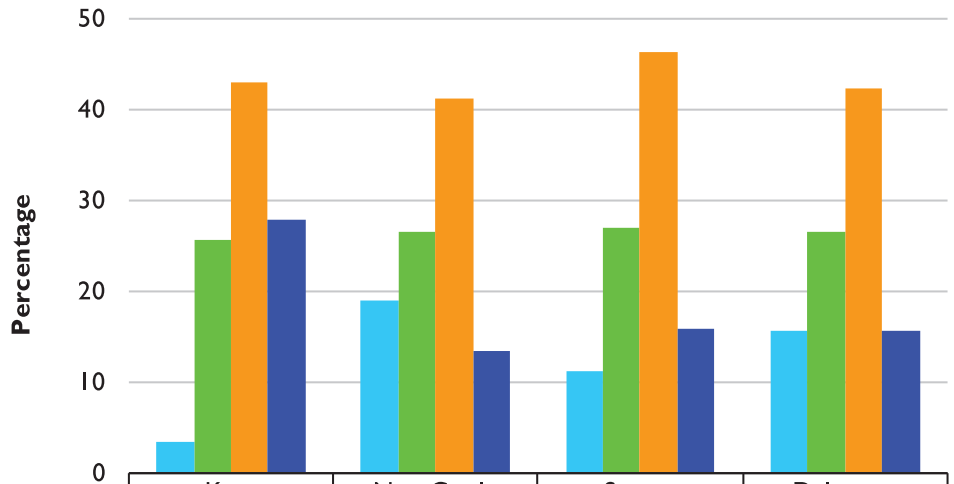
To stabilize the current market, the first legislative step taken was to mandate an increase in reimbursement from non-Medicare insurers to the level of Medicare. Interestingly, as the first study noted, the level of PC spending within fee-for-service Medicare is still well below what occurs in other countries. SB227 defined primary care for Delaware with the "PC-narrow" definition: family practice, internal medicine, pediatrics and geriatrics. Additionally, as with other states, it created a Primary Care Collaborative, which was tasked with collaborating with the Delaware Health Care Commission (DHCC) on the recommendations and whether a level of 12 percent PC spending was appropriate. This legislation also included the use of the Health Care Claims Database for the data analysis and describing how expanding investments in PC spending supported the State's effort in decreasing health care costs through the benchmarking process. The PC Collaborative then convened a series of meetings with stakeholders for a more deliberative discussion about the current state of primary care in Delaware; which initiatives have been started to support primary care by providers and insurers, as well as what a higher percentage of PC spending would include and through what mechanisms; and what could be learned from other states, such as Rhode Island and Connecticut. A report submitted to DHCC in January 2019 supported the concept of



	Kent	New Castle	Sussex	Delaware
1998	72	429	109	610
2001	75	442	119	636
2006	93	463	115	671
2008	89	504	143	736
2011	92	452	163	707
2013	99	470	138	707
2018	89	461	112	662

Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Primary Care & Specialist Physicians Survey 2018

Figure 7. Full-Time Equivalent Primary Care Physicians by County and Year, Delaware, 1998-20188



	Kent	New Castle	Sussex	Delaware
Under 40	3.5	18.9	11.1	15.5
40-49	25.6	26.6	26.9	26.5
50-64	43.0	41.2	46.3	42.3
65 and above	27.9	13.3	15.7	15.7

Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Primary Care & Specialist Physicians Survey 2018

Figure 8. Age of Primary Care Physicians by County, Delaware, 2018[8]

increasing PC spending to 12 percent within the benchmarking process and not just by increasing payments through the fee-for-service payment model, but by greater participation in value-based payment models, as well as investing in initiatives that may increase workforce and integrate women's health and behavioral health with a primary care practice.

After the report, there has been another series of round-table meetings by the Collaborative with stakeholders, followed by a second bill passed in 2019. SB 116 expanded the Primary Care Collaborative from three to 17 members, and formally to include stakeholders from insurers, health care systems and providers, both physician and advanced nurse practitioners. It also created under the Department of Insurance, the Office of Value-Based Health Care Delivery, which will make recommendations for affordability standards; collect data regarding current investments in primary care; calculate the annual PC spending within the total health care spending; as well as make recommendations regarding appropriate levels of reimbursement for primary care.[11]

The process, which has evolved in the past 18 months in Delaware, is reflective of how other states are developing policy concerning primary care. Common concepts include the inclusion of stakeholders in a collaborative, iterative process; the collection and use of data to define the metrics of PC spending and to determine a more optimal level of PC spending necessary to promote and sustain primary care; and the use of the legislation to identify areas of investment and to create infrastructure. Some states, such as Rhode Island, proactively realized the importance of a healthy primary care system for their overall health care delivery and developed policy and regulations to address deficiencies, whether in payment or workforce. Other states, such as Delaware, have been driven to develop legislation and policy in response to a critical loss of access and increasing overall health care costs, also by addressing deficiencies in payment and workforce. Efforts to increase primary care workforce are hampered by the fact that primary care specialties are not competitive in regards to hours and salary, when compared to other specialties, and most graduating medical students have an overwhelming amount of debt accumulated during the educational process. Delaware is attempting to address this problem of student debt with a state-sponsored student loan repayment program, which would assist primary care providers by paying a certain percentage of their debt in return for practicing in Delaware at qualified locations. This collaborative effort among insurers, health care systems, providers and the Delaware Health Care Commission offers one tool to reverse the decline in practicing providers and improve access for primary care with an expanding (not shrinking) workforce.

NEXT STEPS

Health care stakeholders and policymakers in the U.S. have begun to recognize the importance of primary care as a foundation for the delivery of quality and cost-efficient health care. Bending the cost curve while improving health outcomes can be key benefits from having strong, sustainable primary care. As more states, including Delaware, progress toward this goal, there is the need for accurate and meaningful data to assess current levels of PC spending and to recommend the changes in payment and infrastructure that are necessary to achieve a higher level of investment. The challenge of using data and developing metrics to measure "value" has added importance to establishing a benchmark definition of primary care spending. The creation of primary care collaboratives through legislation has been the pathway most states have taken to building the infrastructure for the collection, analysis and monitoring of payment data and establishing the definition and levels of primary care spending.

Alignment of payers and providers on such definitions and what level of primary care spending is substantial enough for a "sustainable health system" is both challenging and progressive. Besides increasing primary care spending through payment reform, states such as Rhode Island and Oregon have also prioritized practice transformation with an emphasis on patient-centered medical homes and provider participation in accountable care organizations. This use of innovative models of payment and health care delivery models create other opportunities to enhance primary care. As the impetus increases to move primary care practices away from fee-for-service toward value-based payment models, there needs to be greater incentive for practices to engage in practice transformation and investment in allocation of resources for practices to be successful. An example of non-payment resources include supporting a robust health information technology for optimal data collection and analysis - both at the practice and system level - as well as introducing telehealth in appropriate clinical settings to increase access and improve care coordination. Additionally, stimulating workforce growth and sustainability should not be just a collateral benefit of a robust primary care, but include addressing factors that inhibit primary care workforce expansion, such as alleviating the level of educational debt by medical students.

This high-level overview of the current state of primary care support within the delivery of health care demonstrates that more states are developing policies to prioritize primary care. It is becoming clear that there is both a need for stronger investment in primary care and that there are significant benefits of such investments, with improved health outcomes and lower costs. The states that have successfully achieved a greater level of PC spend, such as Rhode Island and Oregon, have established primary care delivery models, focused on patient-centered care, as well as mandated minimal levels of PC spending and investment through state organizations, such as the Oregon Health Authority and the Office of the Health Care Insurance Commissioner. Rhode Island also has demonstrated that payment reform and consideration of cost-containment measures, with all stakeholders, including payers, providers and health care systems, does not need to result in a higher level of total health care spending, even with a higher level of PC spend.

For Delaware, all these efforts are achievable. While the Primary Care Collaborative engages multiple stakeholders and the Office of Value-Based Health Care Delivery will provide data analysis of PC spending in conjunction with the analysis of total health care spending by the benchmarking process, they are only first steps at establishing infrastructure. Oregon has a specific Patient Centered Primary Care Home program with alignment of payers and providers to establish the metrics and resources for practice transformation to patient-centered care, such as practice

infrastructure and health information technology. Delaware would greatly benefit from such alignment and scope of implementation, as this type of infrastructure would not only provide needed support to practices, but also resources that could enable practices to transition successfully to value-based payment models. Incorporating a 12 percent PC spend as recommended in the first PC Collaborative report does not need to drive up total health care costs, if they are in conjunction with practical and much-needed cost-containment measures in other areas of health care delivery, e.g, acute and inpatient care as well as long-term, end-of-life care.

As I look forward to the future health care system in Delaware and in the United States, I am optimistic that it will reflect primary care as the cornerstone of greater access and healthier outcomes with lower health care costs for all.

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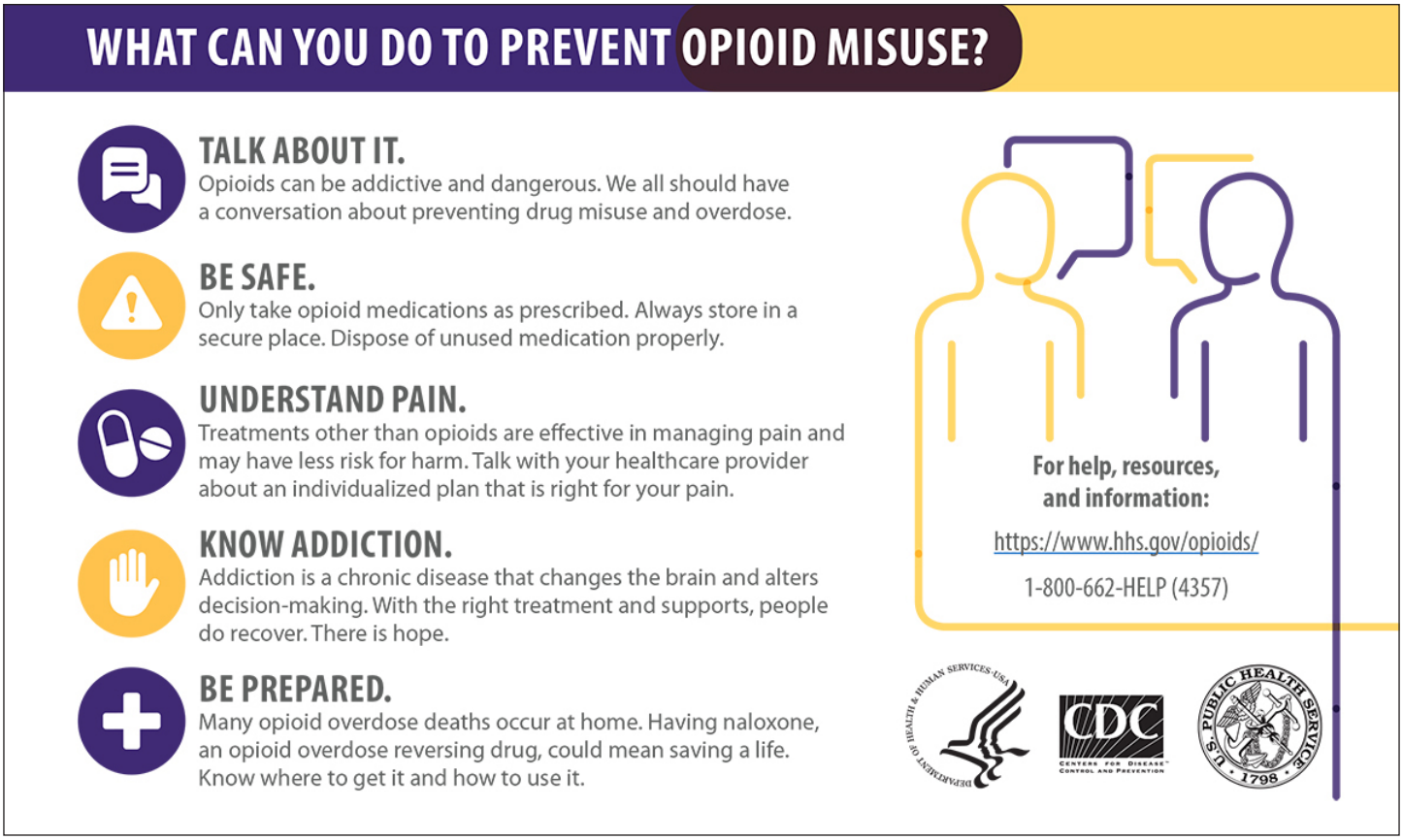

PROGRESS

HEALTH CARE BENCHMARKS

With the signing of Executive Order 25 by Governor John Carney in November 2018, Delaware became the first state to have health care spending and quality benchmarks

Spending

For 2019, the benchmark was set at 3.8%, with the first analysis of that target available in fall 2020

Quality

Data being collected on 8 benchmarks involving cardiovascular health, ED use and behavioral health

Analysis

During the 4th quarter of each year, the Health Care Commission will report on benchmark performance

Engage Community

In order for the benchmarks to be effective, the Department of Health and Social Services will engage providers and community partners in understanding the analysis of the spending and quality benchmarks and developing strategies to reach our goals.

Follow updates on the benchmarks at: dhss.delaware.gov/dhss/dhcc

The relationship between food deserts, farmers' markets, nutrition benefits, and health in Delaware census tracts; 2017

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ABSTRACT

Food desert residents struggle to maintain a well-balanced, nutritious diet, increasing their risk of obesity and diabetes. Farmers' markets are a community-level intervention, bringing healthy food to food deserts. This study explores the relationship between food deserts, farmers' market location, the prevalence of obesity and diabetes, and the availability of Nutrition Benefit Programs (NBPs) in Delaware. Data are from the 2017 USDA Food Access Research Atlas and the Farmers' Market Directory. Descriptive statistics and spatial visualization were used to explore census tract-level relationships. Twenty percent of Delaware census tracts are food deserts. Of these, 7.2% have a farmers' market within their boundary, compared to 5.7% of non-food desert tracts. Of these markets, 3.2% accept Farmers' Market Nutrition Program coupons, 9.6% accept WIC Fruit and Vegetable Checks, and 21.6% accept Supplemental Nutrition Assistance Program. Sussex County has the highest obesity and diabetes rates, and the least number of markets that accept NBPs. Fresh food remains inaccessible to low-income residents, which is associated with diet-related chronic diseases. To reduce food insecurity, farmers' markets could expand acceptance of NBPs. Additional farmers' markets could be established in food deserts to increase the availability of healthy food, reducing the risk of developing obesity and diabetes.

INTRODUCTION

Limited access to healthy foods makes it difficult for people who live in low-income communities to maintain a balanced and nutritious diet. These communities are frequently referred to as food deserts. The United States Department of Agriculture (USDA) defines food deserts as urban or rural locations lacking in ready access to fresh produce and other healthy foods due to an absence of stores that sell these foods.[1] Additionally, food desert residents may have limited resources, such as income, a vehicle, or access to public transportation to access healthy foods elsewhere.[1] The combination of lack of access to healthy food near their home and limited resources makes it difficult for food desert residents to obtain and consume healthy food.

The USDA's Economic Research Service established that 64.1 million U.S. residents live in food deserts, of which 5.1 million reside in rural food deserts.[2] Of this population, almost 29% (20.2 million) are low-income individuals. Within the state of Delaware, 228,000 residents, including 55,000 children, live in food deserts.[2]

The food environment impacts the health of residents who live in the region.[3-6] Food desert residents tend to purchase food from nearby, convenient locations, such as fast food restaurants, convenience stores, and gas stations. Food purchased from these places are often processed, packaged, and high in calories, fat, sugar, sodium, and preservatives. Additionally, price impacts the relationship between diet quality and the health status of low-income neighborhoods.[7] In food deserts, nutritious food often costs more due to the lack of local competition, leading to more reliance on less expensive, processed food.[8,9]

There is an association between access to food, food prices, and health outcomes.[10] Limited availability of nutritious foods contributes to unhealthy diets, which are associated with obesity, diabetes, and other diet-related diseases.[5,6,11-13]

According to the Centers for Disease Control and Prevention (CDC), obesity refers to a weight range that is greater than what is considered healthy for the height of the individual.[14] Obesity identifies ranges of weight that are shown to increase the likelihood of disease and other health problems. Obesity is a problem both nationally and in the state of Delaware. In Delaware, the prevalence of self-reported obesity in 2017 was 31.8% among adults,[15] which was lower than the percentage of U.S. adults who were obese (39.8%).[14] Though lower than the national average, the obesity rate in Delaware has increased in recent years. In 2012, 26.9% of Delaware adults were obese, which is an increase of 4.9% over 5 years.[14]

Obesity and becoming overweight can be prevented.[11] Physical activity and eating fruits and vegetables can protect against overweight and obesity, as well as various other chronic diseases. Consuming more fruits and vegetables also reduces the risk of cardiovascular disease and some cancers. Body weight and fat mass have been seen to decrease with increased consumption of fruits and vegetables.[16]

Food insecurity has been implicated in the development of a number of chronic diseases that include obesity and type-2 diabetes.[17] Food insecurity and decreased intake of fruits and vegetables often leads to higher obesity rates in low-income communities.[7] The presence of supermarkets within two miles of one's neighborhood is associated with a lower prevalence of obesity.[6,9] Proximity to a grocery store is also associated with higher fruit and vegetable intake and a better diet.[18] The relationship between BMI, neighborhood disadvantage, and distance to grocery stores has been previously examined.[19] Individuals who shopped in lower income neighborhoods had a higher BMI, suggesting a relationship between neighborhood socioeconomic status of grocery stores and BMI.[6]

Obesity is a risk factor for diabetes and heart disease and is more prevalent in food insecure individuals. Diabetes is a chronic disease that affects how the body converts food into energy.[20] Diabetes can be caused either by the bodies' inability to create sufficient insulin (Type-1 diabetes) or ineffective use of the insulin (Type-2 diabetes). This insulin disorder can lead to too much sugar being in the bloodstream. Type-2 diabetes is more common, and is a result of lifestyle factors, including diet.[20] Type-2 diabetes mellitus is a quickly growing chronic disease that affects approximately 22 million people in the United States.[21] According to the National Diabetes Statistics Report, 30.3 million (9.4%) of Americans have diabetes.[20] In 2014, 9.1% of the population in Delaware was diagnosed with diabetes, which has almost doubled since 1996 when 5.2% of Delawareans were diagnosed with diabetes.[22]

Individuals who are food insecure tend to be obese due to a high prevalence of low-cost energy-dense "convenience" foods available in impoverished areas. A study done involving 450 patients at a community center in Chelsea, MA found that patients who self-reported food insecurity had an average BMI increase of 0.15 per year. Cheap and easily accessible high calorie foods promote overconsumption, which over time leads to weight gain.[17] Such excess weight gain leads to a high risk of developing medical problems. Individuals with severe food insecurity are also more likely to have type 2 diabetes than those who are food secure.[23] This relationship remains even after adjusting for sociodemographic factors and physical activity level.

Farmers' markets may play an important role in bringing fresh foods to food deserts. One of the major problems of the lack of transportation to distance grocery stores and the cost of produce can be resolved by farmers markets ability to bring locally sourced, healthy, seasonal and fresh produce to community members. Over the past twenty years, farmers' markets increased with an annual growth rate of about 8.4% from 1994 to 2014.[24] This growth is due to an increased interest in fresh, local foods.[25] Farmers' markets can provide fresh fruits and vegetables to communities where they were previously lacking. Farmers' markets can enable low-income residents to purchase healthy foods in their local community.[13]

The USDA recommends farmers' markets as a community level intervention to address food accessibility in food deserts.[24] These markets can serve as a feasible intervention since they are less costly, require less space, and can be quicker to implement than building a new grocery store.[1] Farmers' markets can make healthy food available to food desert residents.[24,26] In rural and urban areas, they help to lower the cost of food. Farmers sell directly to their customers and provide low-income residents with greater access to affordable fresh fruits and vegetables.[26]

The Farmers' Market Promotion Program is a United States Department of Agriculture (USDA) program that supports the development, improvement, and expansion of farmers' markets.[27] Low-income communities are considered a priority area for improvement. To target low-income families who are nutritionally at risk, the USDA has designed federal Nutrition Benefit Programs (NBPs) for eligible recipients to buy healthy foods. NBPs include the Supplemental Nutrition Assistance Program (SNAP); the Farmers' Market Nutrition Program (FMNP), which is associated with the Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the Senior Farmers' Market Nutrition Program (SFMNP). In some instances, recipients may qualify for more than one Nutrition Benefit Program.[27]

SNAP is a federal nutrition program that offers assistance to eligible, low-income individuals and families. SNAP benefits can be used to buy healthy food at grocery stores, convenience stores, and some farmers' markets and co-op food programs. Eligibility to receive SNAP benefits depends on household size, monthly income, and basic household expenses.[28]

WIC provides supplemental foods, health care referrals, and nutrition education for low-income women who are pregnant, breastfeeding, or up to six months postpartum; for infants; and for children up to age five who are at nutritional risk.[27] WIC benefits are offered in the form of WIC Fruit and Vegetable Checks, which can be spent on fruits and vegetables at farmers' markets. Eligibility is based on household size and gross monthly income.

The FMNP is a federally funded program for WIC recipients and seniors (SFMNP) over the age of 65 who meet income eligibility guidelines. WIC and SFMNP participants receive checks, which can be redeemed at farmers' markets that have been approved by a state agency. The farmers or farmers' market managers then submit the checks to a bank or state agency to be reimbursed.[27]

Acceptance of payment from Nutrition Benefit Programs increases attendance at farmers' markets, sales, and vegetable intake. New York City's Health Bucks Program, established in 2005, uses coupons to encourage more EBT spending. Evaluation of this program shows that markets accepting EBT had a higher demand for vendor participation.[29] In another study, the authors attached a coupon to WIC benefits to be redeemed at farmers' markets. They found that 43% of the customers had never been to a farmers' market and that 73% planned to return, even without a coupon.[30] Participants who continued to return to the farmers' markets showed a long-term, 5% increase in vegetable consumption.[30]

This report explores the relationship between locations farmers' markets, participation in Nutrition Benefit Programs, and food desert status by census tracts in Delaware. The following were research questions assessed:

1) What is the relationship between location of farmers' markets and food desert census tracts within Delaware?
2) What proportion of farmers' markets in Delaware participate in Nutrition Benefit Programs?
3) What is the relationship between the first two questions and the prevalence of obesity and diabetes in Delaware.

By answering these questions, we add to the literature on food deserts and provide a more thorough understanding of the availability and effectiveness of Nutrition Benefit Programs in reducing food insecurity through farmers' markets.

METHODS

This report analyzes the relationship between USDA-designated food deserts, locations of farmers' markets, access to Nutrition Benefit Programs at farmers' markets, and obesity and diabetes prevalence in the state of Delaware. Data sources include the 2017 USDA Food Access Research Atlas and the 2017 USDA Farmers'

Market Directory.[31,32] The USDA Food Access Research compiles the following data:

- Census tract food desert designation across the US,
- Population data from the 2010 Census,
- Income data from the 2010 American Community Survey, and
- Food access data drawn from two 2010 lists of food stores selling all major categories of food.[32,33]

The linked datasets provide information to identify US residents who have low access to healthy food, live more than one mile from a grocery store in urban settings, live more than ten miles from a grocery store in rural settings, and are designated as low-income by the US Census Bureau.

The USDA food desert locator is an online mapping tool that determines the location of food deserts around the U.S. This tool provides data on population characteristics of census tracts where residents have limited access to affordable and nutritious foods.[34] It was created by the USDA's Economic Research Service (ERS).

The United States Census Bureau (USCB) defines a census tract as a small, statistical subdivision of a county or equivalent entity that is updated by local participants prior to each decennial census.[35] Census tracts serve the purpose of providing a stable set of geographic units for presenting statistical data. The tracts generally have a population size between 1,200 and 8,000 people; the ideal size being about 4000. The spatial size of census varies depending on the density of the land. The census tracts are intended to be maintained over a long time so that statistical comparisons can be made from census to census.[35]

The USDA defines a food desert as a "low income" census tract where a significant number of residents have little access to a supermarket or large grocery store. "Low income" tracts are defined as those where at least 20 percent of residents earn income at or below the federal poverty levels for family size, or where median family income for the tract is at or below 80% of the adjacent area's median family income.[36] To qualify as a food desert, at least 500 people or 33% of a population must live more than one mile from a supermarket or large grocery store. According to these income and food access criteria, approximately 10% of the 65,000 census tracts in the United States meet the definition of a food desert.[36]

The USDA Farmers' Market Directory is a self-report registry of markets that provide agricultural products for sale in physical locations at registered times.[31] For each registered market, the USDA Farmers' Market Directory provides the address, days and hours of operation, products, and participation in Nutrition Benefit Programs for each registered farmers' market. Addresses of farmers' markets were geocoded in ArcGIS 10.3. Quantitative data were analyzed using descriptive statistics in IBM SPSS Statistics version 21.0. Access to food programs, including the Farmers' Market Nutrition Program (FMNP), WIC Fruit and Vegetable Checks (FVC), and Supplemental Nutrition Assistance Program (SNAP) were linked to farmers' markets. These point data were analyzed with the USDA Food Access Research Atlas tract data. Diabetes and obesity data were linked by FIPS codes and added as a map layer. Descriptive statistics and spatial visualization were used to analyze the relationship between locations of farmers' markets, participation in Nutrition Benefit Programs, and food desert status by census tract in Delaware.

RESULTS

Figure 1 shows locations of farmers' markets in relation to food desert census tracts within Delaware. In 2017, there were 39 registered farmers' markets in Delaware. Of the Delaware census tracts, 20% were classified as food deserts. Of these tracts, only 7.2% had a farmers' market within their boundary, compared to 5.7% of non-food desert tracts.

Farmers' markets are distributed throughout Delaware, but a cluster is found in the Wilmington metropolitan area in the northern part of the state. In southern Delaware, one or two farmers' markets are typically found in county seats. Few appear in Kent County as compared to New Castle or Sussex Counties.

The farmers' markets were coded based on the availability of Nutrition Benefit Programs at each market. Within Delaware, 24 markets (61.5%) did not participate in any NBPs, zero markets (0%) accepted FMNP, two (5.1%) accepted FVC, 15 (38.4%) accepted SNAP benefits, and two (5.1%) accepted more than one type of NBP. There was no clear apparent spatial pattern of markets by their Nutrition Benefit Program status.

See Figure 1. Nutrition Benefit Programs/Food Assistance Program Availability at Delaware Farmers' Market

Figure 2 displays Delaware diabetes rates by county with Nutrition Benefit Programs/Food Assistance Program Availability at Delaware Farmers' Markets. New Castle County has a diabetes rate of 9%. Kent County has a diabetes rate of 12.8%. Sussex County has a diabetes rate of 13.2%. Of the three counties, Sussex County has the highest number of farmers' markets that do not accept at least one FAP, along with the highest diabetes rate. Kent County has the second highest diabetes rate at 12.8%, as well as the least number of farmers' markets in Delaware. New Castle County has the lowest diabetes rate as well as the most farmers' markets. New Castle County also has the most farmers' markets that accept Nutrition Benefit Programs.

See Figure 2: Nutrition Benefit Programs/Food Assistance Program Availability at Delaware Farmers' Market and Delaware diabetes rate by county.

Figure 3 shows the Delaware obesity rate by county. New Castle County has an obesity rate of 29%. Kent County has an obesity rate of 32%. Sussex County has an obesity rate of 32.8%. The obesity rate variation is similar to that of diabetes prevalence for the three counties, with New Castle County having the lowest rate and Kent County and Sussex County being nearly interchangeable. Within each county, New Castle County has the most number of farmers' markets that accept NBPs, and Sussex County has the fewest number of farmers' markets that accept NBPs.

See Figure 3. Delaware Obesity rate by county.

DISCUSSION

Few farmers' markets in Delaware are located in food deserts or accept Nutrition Benefit Programs (NBPs). Fresh food remains inaccessible to many low-income residents in these areas. Lack of fresh, healthy food increases the resident's risk of developing overweight and obesity, as well as other diet-related chronic conditions.[5,6] Even among the markets located within food deserts, the likelihood of acceptance of NBPs was low, with less

than 30% of farmers' markets participating in NBPs. The lack of participation in NBPs acts as a barrier to low-income residents accessing the healthy, fresh foods being sold at the markets. Additionally, the counties with the highest obesity rate and diabetes rate had the lowest number of markets that participate nutrition benefits programs. Delaware residents who live in food deserts, who live in areas with higher prevalence of obesity and diabetes, and depend on NBPs have little access to produce being sold at farmers' markets due to the markets' lack of participation in NBPs.

This study has several strengths, including: 1) examination of a potentially essential community resource (farmers' markets) that could mitigate obesity and improve access to healthy food in Delaware; 2) the use of spatial methods to analyze the relationship of food deserts and farmers' markets, health and Nutrition Benefit Programs; and 3) the use of multiple datasets in a spatial framework to examine issues related to food access.

This study has limitations. The USDA Farmers' Market data were self-reported and cross-sectional. Since the data include only markets registered with the USDA, it may not be exhaustive. Since the data were cross-sectional and include only one year of data for one state, causation cannot be established. Future studies should extend over multiple years and several states to establish trends and to illustrate a more comprehensive picture of issues related food access.

Future research could include collecting information regarding the establishment of farmers' markets in food deserts. Interviewing farmers and community leaders to determine barriers to establishing of farmers' markets in food deserts would provide information for communities looking to alleviate issues related to access to healthy food. Additionally, understanding the barriers faced when establishing Nutrition Benefit Programs at farmers' markets located in food deserts could enable community leaders to develop policies to reduce such barriers. Awareness of access, socioeconomic status, and cultural factors, including race and ethnicity, also affect how people utilize transportation to obtain food.[9,37] Likewise, a lack of information regarding where to find affordable healthy foods can lead individuals in food deserts to continue purchasing processed foods from convenient locations.[38]

To reduce food insecurity in food deserts, more farmers' markets could accept SNAP, FMNP, and FVC. Promotion of available technologies such as EBT and support for their implementation would aid this process. Also, additional farmers' markets could be established in food deserts to increase availability of food. This can be accomplished through various avenues, including: 1) public investment in health promotion and prevention, as a means to lower long-term health costs by reducing rates of obesity and diabetes through promotion of healthier diets; 2) public-private partnerships between local government and community agencies to promote an increase in community gardening as a means to develop supplies for local farmers' markets; and 3) private entrepreneurial activity, potentially stimulated through tax incentives and farm subsidies, and also tapping into the desire of many entrepreneurs today to engage in activities that are both profitable and socially responsible. Development of additional farmers' markets in these areas would increase access to healthy food in food deserts, reducing the ecological risk of developing obesity and diet-related chronic diseases.

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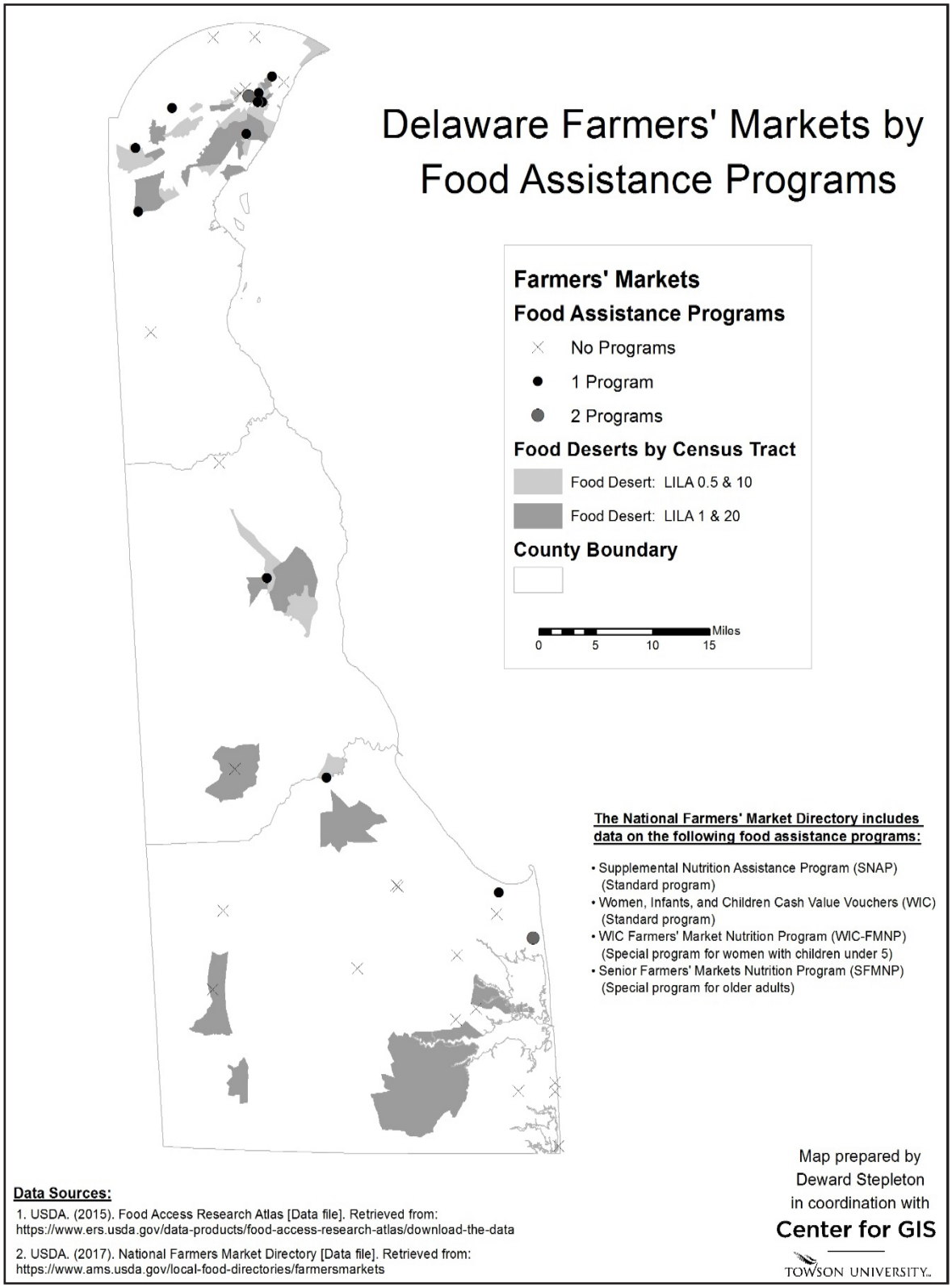
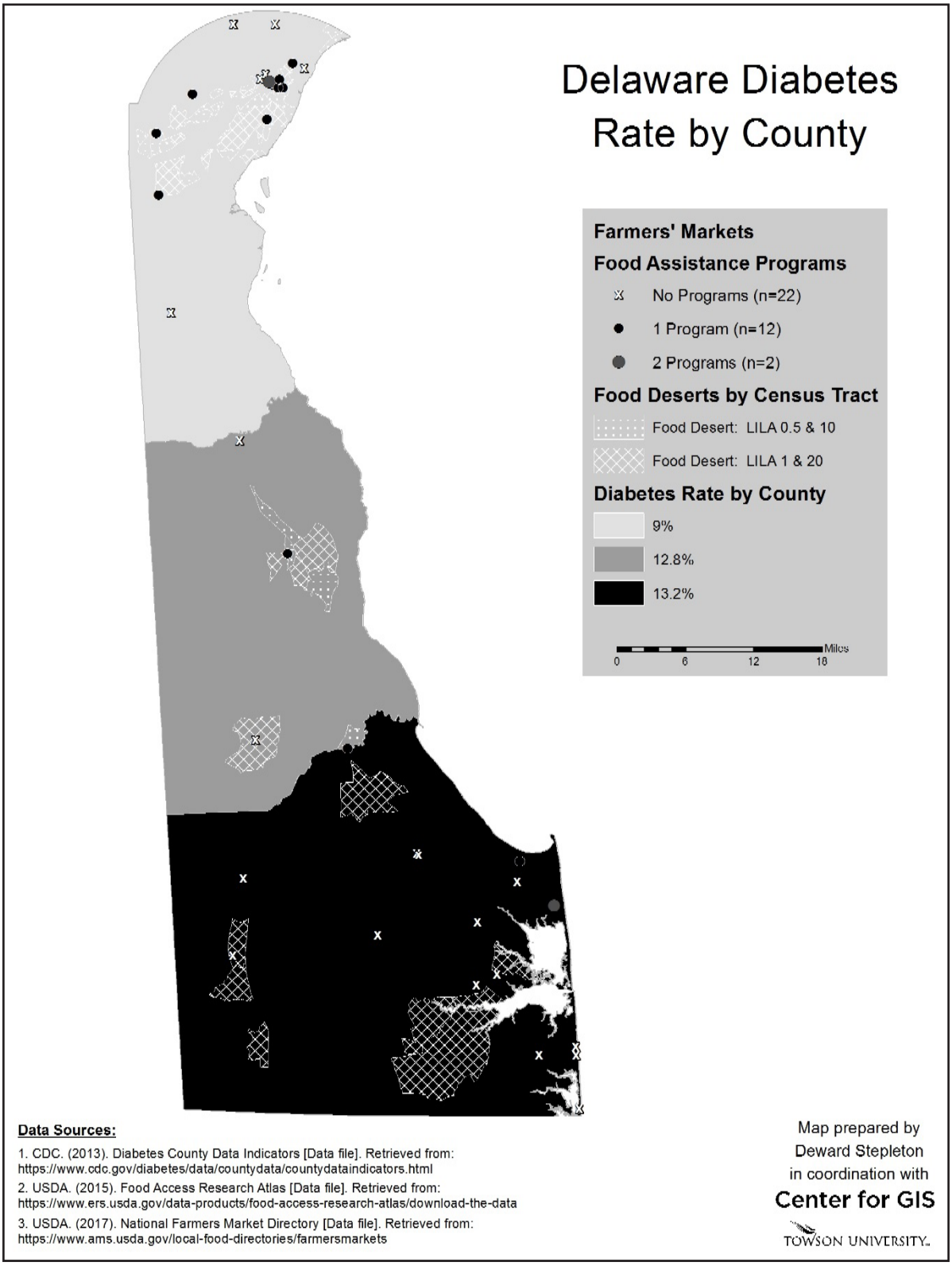


Figure 1. Nutrition Benefit Programs/Food Assistance Program Availability at Delaware Farmers' Market



See Figure 2: Nutrition Benefit Programs/Food Assistance Program Availability at Delaware Farmers' Market and Delaware diabetes rate by county.

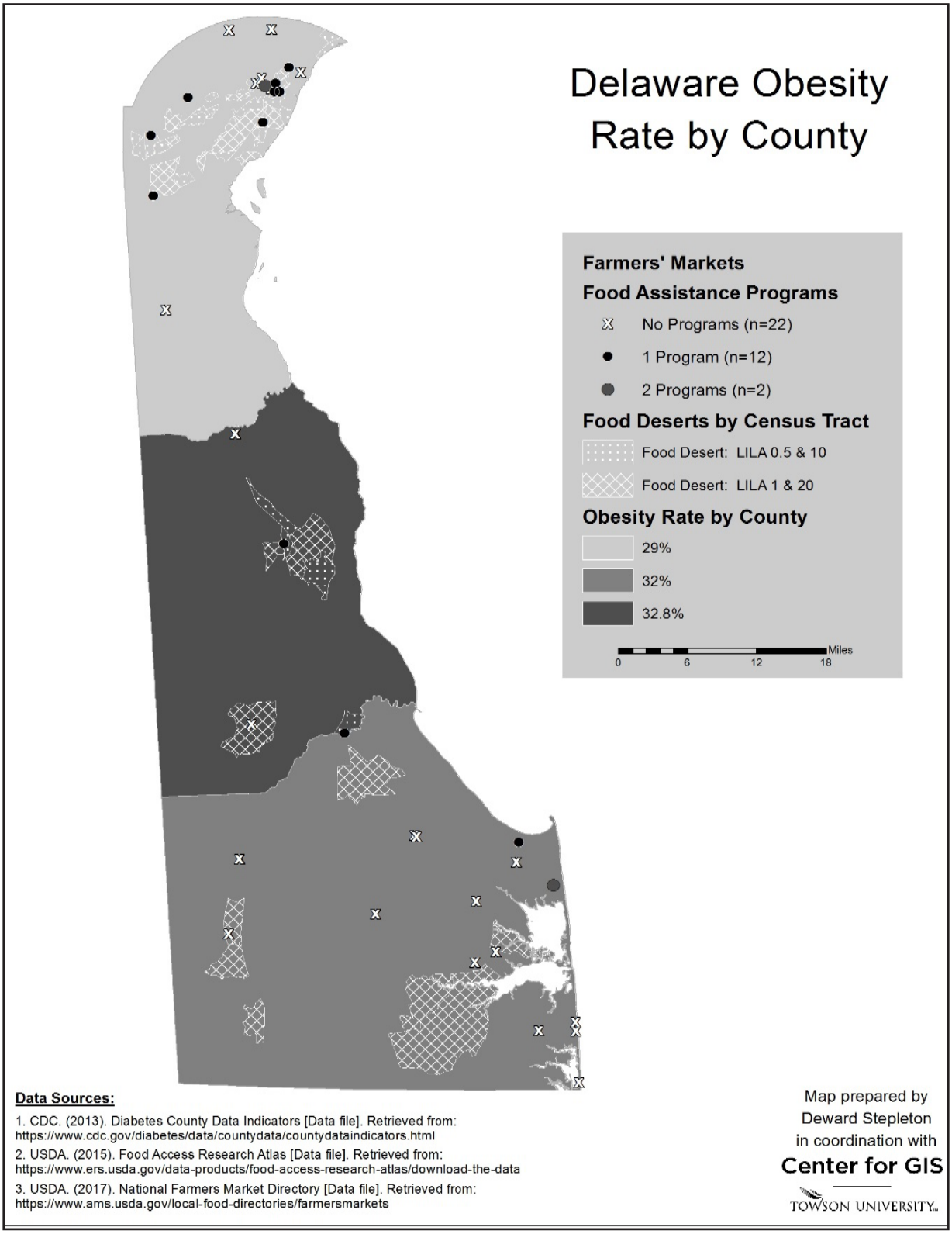


Figure 3. Delaware Obesity rate by county.

The DPH Bulletin

From the Delaware Division of Public Health ***December 2019***

Division of Public Health Director Dr. Karyl Rattay presented Delaware's infant mortality strategies on Capitol Hill on Nov. 7. From left to right: Dr. Rahul Gupta, March of Dimes, Dr. Rattay, Stacey Stewart, March of Dimes, Tiffany Spina, parent advocate, Dr. Zsakeba Hendricks, Centers for Disease Control and Prevention, and Dr. Andrew Bremer, National Institutes of Health. Photo submitted by Ellen Pliska of the Association of State and Territorial Health Officials.

DPH Director presents infant mortality strategies at congressional briefing

Delaware Department of Health and Social Services (DHSS), Division of Public Health (DPH) Director Dr. Karyl Rattay participated in a Nov. 7 congressional briefing on Capitol Hill regarding maternal and infant health. The briefing, "Making the Grade on Maternal and Child Health: 2019 March of Dimes Report Card" was for members of the U.S. Senate and U.S. House of Representatives. It was part of a panel discussion hosted by the March of Dimes (MoD).

Dr. Rattay discussed Delaware's efforts to address birth equity by addressing the social determinants of health; the Delaware Contraceptive Access Now initiative; and the importance of collaboration, partnerships, and sustained federal funding. The MoD and the Association of State and Territorial Health Officials invited her to participate.

Delaware received a "C" in the MoD's 2019 Prematurity Report Card, based in part on its preterm birth rate of 9.6 percent of live births, which is lower than the national rate of 10.2 percent; and a decrease from the state's own rate of 10.2 percent the year before. The MoD's preterm birth rate goal is 8.1 percent by 2020.

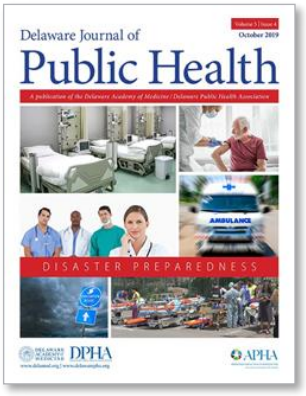
DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

Be prepared for winter emergencies

Although emergencies can occur in any season, colder temperatures remind us to be prepared for snow, ice, and extreme cold. DPH Office of Preparedness Director Timothy Cooper said that it is best to maintain a level of readiness at all times.

To begin, get a plan by visiting PrepareDE.org for communication plan templates. Next, make emergency supply kits for home and work, and a "go bag" for the car. For recommended supply lists, visit Ready.gov and PrepareDE.org or use the Federal Emergency Management Agency app.

All households, regardless of income, should stock an emergency supply kit with drinking water, non-perishable food, essential medications, and other items. It may be easier to make weekly purchases by using the Disaster Supplies calendar (http://delawarepreparedness.pbworks.com/w/file/126826340/Disaster%20Supplies%20Calendar.docx). Creating emergency supply kits for the office and the car is also recommended.



To stay informed during emergencies, register for the Delaware Emergency Notification System at PrepareDE.org. Become familiar with the state's and nation's preparedness resources.

Cooper and DPH Medical Director Dr. Rick Hong co-edited the *Delaware Journal of Public Health's* newly published Disaster Preparedness issue. DPH hopes Delawareans will read it and use its many recommendations and resources to enhance their level of preparedness. Click here to access the Journal.

Online health insurance course builds consumer knowledge and confidence

With open enrollment to the Health Insurance Marketplace running through Dec. 15 at www.HealthCare.gov, consumers may benefit from taking a free online course.

"Health Insurance 4 U," created by the University of Delaware's (UD) Cooperative Extension, features short videos that answer key health insurance questions, as well as links to more information and worksheets. Visit http://udel.edu/extension/insure/.

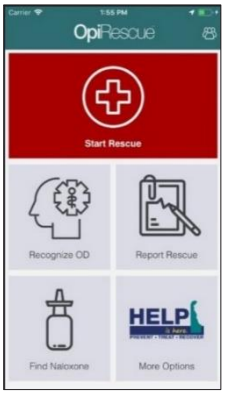
UD hopes the course will improve consumers' health insurance literacy, reduce confusion, and boost confidence, said Maria Pippidis, AFC, County Director and Extension Educator, Family and Consumer Sciences, UD Cooperative Extension.

The course is one example of how health professionals are trying to close health literacy gaps. Health literacy helps individuals "obtain, process, and understand basic health information and services needed to make informed health decisions," says Healthy People 2020.

Recently DPH, ChristianaCare, and UD's Partnership for Healthy Communities hosted a roundtable discussion on health literacy. DPH Associate Deputy Director Cassandra Codes-Johnson suggested to the attending hospital partners, Federally Qualified Health Center partners, and health literacy advocates that they consider health literacy from the lens of addressing health equity issues within health care. She encouraged them to pursue opportunities with high impact partners – higher education institutions, hospitals, and schools – to influence system level changes.

Providers expressed the need for more training to engage patients at the bedside and to imbed health information translation education into health providers' higher education curriculums. The group noted the need for the public to learn basic health literacy skills early and to teach prevention at elementary and middle schools.

To learn more about health literacy, visit https://www.cdc.gov/healthliteracy/training/page572.html.



Know how to respond to overdoses

During the holidays, those who are depressed and/or in their first year of substance use recovery are most vulnerable to overdoses. Informed friends and families can help prevent and respond to overdoses.

Attend festivities without alcohol or drug temptations, bring a friend who does not use drugs or alcohol, and select non-alcoholic drinks and healthy snacks. Download the OpiRescue Delaware app for free. The app shows where to get the life-saving medication Naloxone and provides instructions on how to administer it in the event of an overdose.

Learn the signs of addiction, the symptoms of an overdose, and how to connect to prevention, treatment, and recovery resources from the Help is Here DE website, www.helpisherede.com. The 24/7 Crisis Hotline phone numbers are:

- in New Castle County: 1-800-652-2929
- in Kent and Sussex counties: 1-800-345-6785.

In 2019, 246 suspected overdose deaths occurred in Delaware as of Nov. 20, according to the Division of Forensic Science.

Free Social Security presentations help workers plan their finances

The U.S. Social Security Administration (SSA) invites workers 18 and older who are at all stages of their careers (not just pre-retirees) to become familiar with their Social Security benefits early in their careers for financial security. Visit SSA's website, www.socialsecurity.gov. Its regional events calendar, https://www.ssa.gov/phila/community.htm, lists free public presentations.

Co-authors Erin K. Knight, PhD, MPH, Associate Director, Center for Community Research & Service, University of Delaware; and Cassandra Codes-Johnson, MPA, Associate Deputy Director, DPH, presented *The Health Equity Guide for Public Health Practitioners and Partners, Second Edition* at the American Public Health Association's Annual Meeting and Expo in November. They are seated first and second from left, respectively. Photo submitted by Cassandra Codes-Johnson.

The Unintended Consequences of Medicare Observation Status

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ABSTRACT

Background: Observation status is a classification for Medicare beneficiaries that are billed as outpatients for a hospitalization. This has implications for out-of-pocket expenses for patients as well as their access to post-acute care.

Methods: This is a review of 3 published studies performed by our research team to examine the potential unintended consequences of the current Medicare policies related to cost-sharing and post-acute care coverage for patients hospitalized under observation status. Our study questions were as follows: 1) Is there an unmet need for post-acute care among Medicare observation patients 2) Which patients are at highest risk for high out-of-pocket costs related to observation care 3) Is cost-sharing for observation care associated with health care –related financial strain and health care rationing?

Results: Our studies demonstrated that Medicare observation policy could be associated with a number of unintended consequences including decreased access to necessary post-acute nursing care, increased out-of-pocket costs, particularly for low -income patients, increased concerns related to the cost of care, and inadequate patient understanding of observation policies.

Conclusions: Patients and providers should be aware of the current policies surrounding observation care. Patients should be informed of their observation status and should have access to case managers and social workers to help them navigate and understand the implications of their observation hospital stay.

INTRODUCTION

Observation status is a classification for Medicare beneficiaries that are billed as outpatients for a hospitalization. With a few exceptions, since 2013, the Centers for Medicare and Medicaid Services have applied observation status to patients with an anticipated length of stay of less than 2 midnights in the hospital. In contrast, it is recommended that patients who are expected to require greater than 2 midnights of care in the hospital be admitted under inpatient status.

This has implications for out-of-pocket expenses for patients as well as their access to post-acute care. Whereas hospital inpatients are billed through Medicare Part A, patients hospitalized under observation status are billed through Medicare Part B. While Medicare Part A covers most of the care in the hospital as well as post-acute care in a skilled nursing facility after the hospital stay, Medicare Part B, requires a co-pay of 20% for all hospital and physician services and does not cover post-acute care after hospitalization (*see Table 1*). Prior work has demonstrated that out-of-pocket costs for observation care can be high[5] and anecdotally, the limited access to post-acute care afforded under Medicare Part B can lead to unsafe hospital discharge plans.

This paper is a review of three published studies that our research team conducted to examine the potential unintended consequences of the current Medicare policies related to cost-sharing and post-acute care coverage for patients hospitalized under observation status. Our study questions were as follows:

	INPATIENT	OBSERVATION
Anticipated Length of Stay	≥ 2 Midnights	< 2 Midnights
Post-Acute Care Coverage	20 day Skilled Nursing Facility	None
Out-of-Pocket Costs	• Part A Deductible $1,316 • 20% copay for physician services	• Part B Deductible $183 • 20% copay for physician services • Hospital charges for routine maintenance medications

Table 1. Differences in Coverage for Medicare Beneficiaries hospitalized under Inpatient vs. Observation Status

1. *Is there an unmet need for post-acute care among Medicare observation patients?*
2. *Which patients are at highest risk for high out-of-pocket costs related to observation care?*
3. *Is cost-sharing for observation care associated with health care –related financial strain and health care rationing?*

SUMMARY OF DATA

Question 1: Is there an unmet need for post-acute care among Medicare observation patients?

Because Medicare beneficiaries hospitalized under observation status are covered by Medicare Part B, they do not have coverage for care in a skilled nursing facility after the hospital

stay. Without insurance coverage, access to such care requires an average out-of-pocket payment of more than $10,000 per beneficiary for a typical stay.[6] Anecdotally, this high out-of-pocket cost has been a deterrent for observation patients who need post-acute rehabilitation services but cannot not afford it. Our research team generated data to validate this assumption.

We conducted an observational study using electronic health record data from ChristianaCare to determine whether there was an unmet need for post-acute skilled nursing care among Medicare observation patients and whether the need for such care was associated with adverse outcomes.[7] Data were obtained for all Medicare beneficiaries hospitalized under observation status in the year 2013. Out of 1,323 patients, we found that less than 1% (0.83%) of patients were discharged to post-acute rehabilitation. However, when we performed a chart review of the patient's physical therapy evaluations, we found that 4.4% were recommended for post-acute rehabilitation. The adjusted mean length of stay was longer for patients with a recommendation for rehabilitation compared to patients with no physical therapy needs (75.9 hours vs 46.8 hours, $p<0.001$) and 30-day hospital revisit rate was twice as high (52.9% (9/17) vs. 25.4% (30/118), $p=0.037$).

In conclusion, our study found that the need for post-acute skilled nursing facility services was 5-6-times higher than the actual utilization. Additionally we found that patients who needed such rehabilitation but were discharged home instead were more likely to have adverse outcomes. The full results of this study were published in the Journal of Hospital Medicine.[7]

Question 2: Which patients are at highest risk for high out-of-pocket costs related to observation care?

We next examined which patients might be at risk of increased cost-sharing and out-of-pocket costs related to observation status.[8] Since low-income Medicare beneficiaries are at increased risk for hospitalization[9,10,11] and burdened by high out-of-pocket costs,[12] we were concerned that such beneficiaries may also be at increased risk for high utilization and out-of-pocket costs related to observation care.

We conducted a retrospective, observational analysis of Medicare Part B claims and US Census Bureau data from 2013 to examine whether risk for high utilization and high out-of-pocket expense related to observation care was associated with the socioeconomic status of patients. To estimate socioeconomic status, beneficiaries were divided into quartiles representing census-derived poverty level, based on county of residence. The association between poverty quartile, high utilization of observation care, and high financial liability for observation care was evaluated. Of the 56,454,361 claims, there were 132,539 observation stays representing 67,641 unique Medicare beneficiaries. After multivariate adjustment, the risk of high utilization was higher for beneficiaries in the poor and poorest quartiles compared to those in the wealthiest quartile (AOR 1.21, 95% CI 1.13-1.31; AOR 1.24, 95% CI 1.16-1.33). The risk of high financial liability was higher in every poverty quartile compared to the wealthiest and was highest in the 3rd quartile which represented poor but not the poorest beneficiaries (AOR 1.17, 95% CI 1.10-1.24). Our findings suggest that low-income beneficiaries may pay a higher proportion of their income in out-of-pocket costs,[12,14] and a higher dollar amount related to observation care compared to wealthier beneficiaries, even after adjusting for number of observation visits. The full results of the study were published in the American Journal of Medicine.[8]

Question 3: Is cost-sharing for observation care associated with health care–related financial strain and health care rationing?

We next examined whether cost-sharing and out-of-pockets expenses for observation care could be associated with financial strain and health care rationing among Medicare beneficiaries.[15] Prior studies have demonstrated that health care related financial strain is common, particularly among low to middle-income Medicare beneficiaries and that higher copays and cost-sharing have led to rationing of a wide range of health services, particularly among low-income beneficiaries.[13,16,17] It was unclear whether cost-sharing related to observation care could impact behavior towards observation care in a similar way. To investigate this, we administered a 23-item survey to 144 Medicare beneficiaries receiving observation care at ChristianaCare to obtain data related to patient comprehension of Medicare observation policies, health services rationing, and the potential impact of observation cost-sharing on future medical-decision making. Our results demonstrated that less than 10% (8.8%) of surveyed beneficiaries understood the cost-sharing implications of Medicare observation status and that if hospitalized again under observation status, close to 1/3rd would request that their work-up be performed as an outpatient. Low-income beneficiaries were more likely to request outpatient completion of their workup (56.3% vs 43.8%), and more likely to consider leaving against medical advice if hospitalized under observation status again (100% vs 0%), though these trends were not statistically significant ($p=0.30$).[8] The full results of the study were published in BMC Health Services Research.[15]

From an ethical and legal standpoint, Medicare beneficiaries are required to be made aware of the cost-sharing responsibilities of observation status.[18] However, it is equally important that patients understand the information that they are provided. Our study implies that there are opportunities to improve patient comprehension of Medicare observation policies. It also raises concerns about how the potential cost burden of observation care may impact medical-decision making among Medicare beneficiaries. As observation hospitalizations continue to rise, it will be important to proactively identify and support beneficiaries at risk for significant health care cost burden.

DISCUSSION

Our work has demonstrated that Medicare observation policy could be associated with a number of unintended consequences including decreased access to necessary post-acute nursing care, increased out-of-pocket costs, particularly for low -income

patients, and increased concerns related to the cost of care that could potentially impact patient willingness to receive observation care in the future, all in the context of inadequate patient understanding of observation policies.

There have been a number of policy and advocacy efforts over the past few years to address issues related to post-acute care access and out-of-pocket costs, but thus far, no major policy changes have been made. For example, the Medicare Payment Advisory Commission (MEDPAC) has recommended that among patients who transition from observation status to inpatient status, time spent under observation status count towards their eligibility for post-acute care.[19] However, these recommendations have not been accepted.[20] Regarding out-of-pocket costs, there have been recommendations to limit out-of-pocket spending for Medicare beneficiaries from the legislature[21] and the Office of the Inspector General[1] however, no policy changes have been made to date.

In the interim, it is important that patients and providers be aware of the current policies surrounding observation care. By law, Medicare beneficiaries must be informed of their observation status within the first 36 hours of admission.[18] In addition, patients should be provided educational materials from resources such as The Center for Medicare and Medicaid (medicare.gov) or The Center for Medicare Advocacy (www.medicareadvocacy.org) and have access to case managers and social workers who can help them navigate and understand the implications of their observation hospital stay.

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Top global health research stories of 2019 from Fogarty and NIH

As the year comes to an end, we at the U.S. National Institutes of Health (NIH) are reflecting on the accomplishments of the global health research community.

Readers and editors of the Fogarty International Center's Global Health Matters newsletter identified these stories as our top picks for 2019.

1. The new African Postdoctoral Training Initiative (APTI) is **bringing African fellows to train at NIH** in collaboration with the African Academy of Sciences and the Bill and Melinda Gates Foundation

2. A Fogarty-led project aims to **advance emergency care research in low- and middle-income countries (LMICs)**

3. Fogarty pledges to **support geographic, gender, economic and cultural diversity in research** to strengthen global health science

4. With broad backing from a dozen partners across NIH, Fogarty programs **spur noncommunicable diseases research and build research capacity**

5. Institutions in LMICs must **strengthen mentorship training** according to a publication inspired by a Fogarty-supported workshop

6. Fogarty grantees are helping to **boost biomedical engineering expertise in Africa** by publishing an open-access book containing contributions from authors across the continent

7. Global Environmental and Occupational Health hubs are developing a **critical mass of scientists in LMICs who understand how the environment triggers disease**

8. **Global health in a changing world** was addressed by Dr. Jeremy Farrar of Wellcome Trust during the annual David E. Barmes lecture at NIH

9. **Scientists urge cross-cutting research and interventions to reduce stigma** in an article series organized by Fogarty

10. A legal scholar and a landscape architect demonstrate how Fogarty's **Global Health Fellows and Scholars** program is expanding its range of disciplines to provide collaborative, mentored research training opportunities for more early-career investigators

11. A new program supported by Fogarty and NIH partners will award **$17 million to train HIV scientists and reduce stigma** in developing countries

12. A Fogarty Fellow leverages her experience to secure NIH funding and continue her **research on chronic kidney disease in India**

Fogarty International Center

Moving Delaware Medicaid to Value: Leveraging Contracts as Policy Tools

Stephen Groff; *Director, Division of Medicaid and Medical Assistance (DMMA), Delaware Department of Health and Social Services (DHSS)*
Steven Costantino; *Director, Health Care Reform, Office of the Secretary, DHSS*
Elizabeth J. Brown, M.D., M.S.H.P.; *Medical Director, DMMA*

The definition of value seems straightforward: Isn't it just quality divided by the cost? That deceptively simple equation hides a complex concept that has been widely debated in health policy. How do we measure quality? Who decides when the quality is high enough? Whose costs are counted? Can we even figure out what anything in health care costs, anyway?

Although there is a range of opinions on what constitutes value, most people agree that our current fee-for-service payment system is not designed to optimize it. Traditional payment methods treat health care services like widgets. We count the things done in an office or hospital and pay for each one. Under strict fee-for-service, providers who see the most patients and provide the most billable services end up ahead financially, without much regard for quality or outcomes. This system does not incentivize prevention, a core component of public health.

The United States spends about twice as much per person on health care than other wealthy countries, on average.[1] Despite that, our system does not provide consistently high quality care. For example, we are less likely to be able to get a same-day visit than in other comparable countries,[2] and only 8 percent of adults have received all recommended clinical preventive services.[3] Overall, our health outcomes are worse than other high-income countries, as evidenced by higher disease burden and mortality rates.

Delaware is not an exception. In 2018, Delaware ranked 31st amongst the states in health[4] despite spending nearly 30 percent of the state budget on public health care costs. To address the mismatch between health care spending and outcomes, in 2017 the Department of Health and Social Services (DHSS) launched a multipronged approach to transition from a volume-based payment system to one that rewards efficient, high quality care. Of the strategies described in *Delaware's Road to Value*[5] the statewide benchmarks for spending and quality received the most public attention. However, incorporating value-based thresholds into the contracts with the Medicaid managed care organizations (MCOs) was another important element.

Medicaid is the medical assistance program that provides insurance coverage to low-income individuals and families, and people with disabilities. In Delaware, that coverage is provided through one of two MCOs that the State selected through a competitive bid process: Highmark Health Options or AmeriHealth Caritas. After someone is determined to meet Medicaid eligibility criteria, they have the option to enroll in either MCO, or are auto-enrolled if they do not make a selection. The Division of Medicaid and Medical Assistance (DMMA) service requirements, coverage parameters, and care expectations are formalized through contracts with the MCOs. DMMA develops those contracts based on federal requirements, as well as DMMA's priorities.

Beginning in the 2018 contracts, DMMA included value-based purchasing (VBP) as a key component in the MCO contracts. The VBP approach is dual pronged: quality performance measures (QPMs) and VBP provider contracting. DMMA set quality measure benchmarks for seven key performance measures. The contracts also establish targets for the proportions of the MCO's total spending that are part of VBP agreements with providers. In both cases, financial penalties are applied if MCOs do not meet the agreed upon targets. The explicit connection of monetary consequences to contracting and quality goals is an innovation for DMMA.

QUALITY PERFORMANCE MEASURES

Performance measurement has long been an integral component of the relationship between DMMA and the MCOs. The MCOs are required to report on commonly used measure sets including the Centers for Medicare and Medicaid Services (CMS) Adult and Child Core measure set[6] and HEDIS measures.[7] Setting benchmarks and tying potential financial penalties for not meeting those benchmarks takes this a step further to ensure that we are fully incentivizing high quality care.

The seven QPMs include a mixture of structure, process, and outcome measures covering a range of chronic disease management, preventive care, and acute care (*see Table 1*). They were selected based on a combination of measurability, impact, historical performance, and populations affected. All except one of the QPMs are measured based on HEDIS specifications. For those measures, the minimum performance standard is set at the HEDIS 50th percentile of Medicaid plans nationally, except for the timeliness of prenatal care, where the standard is the HEDIS 66.67th percentile. For the hospital readmissions QPM, which is based on Delaware-specific specifications, 2018 was the baseline year; satisfactory performance will be any improvement over the 2018 baseline.

Because 2018 was the first official year of the QPMs and the reporting process was still being refined, it was considered the baseline year with no potential financial penalties. The MCOs did report estimated quarterly results and are fully engaged in the process. In future years, the financial penalty is a maximum of 1 percent of total payment, with QPMs weighted differently in 2019 and 2020. The details of how the 2021 and 2022 potential penalty will be calculated will be described in future contracts.

CHALLENGES

There are inherent limitations in any quality measurement system. In order to keep the burden of reporting reasonable, we chose a small number of measures. That means that many well established, validated, clinically important measures could not be included. Hard to measure aspects of quality, such as patient

Name Brief Description	Type	Benchmark	2019 Weighting	2020 Weighting	Notes
Comprehensive Diabetes Care Patients ages 18-75 with diabetes with Hgb A1c <8%	HEDIS Hybrid	50th percentile	1/5	1/7	
Medication Management for People with Asthma Patients ages 5-11 and 12-18 who were identified as having persistent asthma and were dispensed appropriate asthma-control medications that they remained on for at least 75% of their treatment period.	HEDIS Administrative	50th percentile	1/5	1/7	
Cervical Cancer Screening Women age 21–64 who had cervical cytology performed every 3 years OR Women age 30–64 who had cervical cytology/human papillomavirus (HPV) co-testing performed every 5 years.	HEDIS Hybrid	50th percentile	N/A	1/7	Allows 3 year lookback
Breast Cancer Screening Women ages 50–74 who had at least one mammogram to screen for breast cancer in the past two years	HEDIS Administrative	50th percentile	N/A	1/7	Allows 2 year lookback
Adult Body Mass Index Assessment Patients age 18–74 years of age who had an outpatient visit and whose body mass index (BMI) was documented	HEDIS Hybrid	50th percentile	1/5	1/7	
Timeliness of Prenatal Care Deliveries that received a prenatal care visit as a member of the organization in the first trimester, on the enrollment start date or within 42 days of enrollment in the organization	HEDIS Hybrid	66.67th percentile	1/5	1/7	
Hospital Readmission Rate–30 day Non-elective readmission within 30 days of discharge from index inpatient admission	DE-specified Administrative	2018 baseline	1/5	1/7	

Table 1: Quality Performance Metrics. Benchmarks are percentiles of Medicaid managed care plans nationally. Weighting is fraction of potential maximum 1% penalty.

satisfaction, could not be included. It also limited the number of population-specific measures.

Timing has been one of the major challenges. Most of the measures are based on claims data, which always have a lag time. For those measures that include both claims and chart review, that chart review can further delay accurate reporting. HEDIS Medicaid percentiles provide a valid, reliable source of benchmarking data, but final HEDIS results are generally not available until approximately 10 months after the end of the measurement year. If a financial penalty is ever assessed, it will be temporally distant from the performance year.

VALUE-BASED PURCHASING

The second prong of DMMA's VBP approach requires the MCOs to have their own value-based arrangements with providers. Incentivizing providers to deliver high quality and efficient care requires shifting financial risk from payers to providers while measuring quality and outcomes. Along with increasing financial risk generally comes increasing flexibility for providers. Rather than being only reimbursed for services provided exactly as described under the fee-for-service framework, providers who are paid for outcomes can use innovative, non-traditional approaches to caring for patients. That could mean providing team-based care, care at home or outside the traditional office setting, telehealth or other new technologies, and proactive care coordination, to name just a few.

Making that shift generally requires an incremental approach, as providers need to develop data infrastructure, skills in population health management, and new modes of care delivery. At the same time, payers need to learn how to best share information and collaborate with providers. One of the most widely used frameworks that illustrates the steps from fee-for-service to more population-based payments is the Healthcare Learning and Action Network (LAN) framework[8] (*see Figure 1*). Although the MCO contracts do not explicitly refer to the LAN framework, it can be a useful graphical representation of the types of arrangements along the alternative payment model continuum.

The first steps generally include ways in which providers can receive payments above and beyond what they could get in fee-for-service, such as care coordination fees that are not tied to quality or outcomes, to pay-for-performance bonus payments, to shared-savings arrangements with "upside risk," or the potential for increased payment only. More advanced payment models put providers at true financial risk, including potential losses for poor performance, so-called "downside risk." Advanced payment models range from "bundles" or a single payment surrounding an episode of care such as a surgery, to shared savings with upside and downside risk, to full capitation. In these more advanced arrangements, the increasing level of financial risk creates stronger provider incentives to maximize prevention and provide high quality care in the right place at the right time.

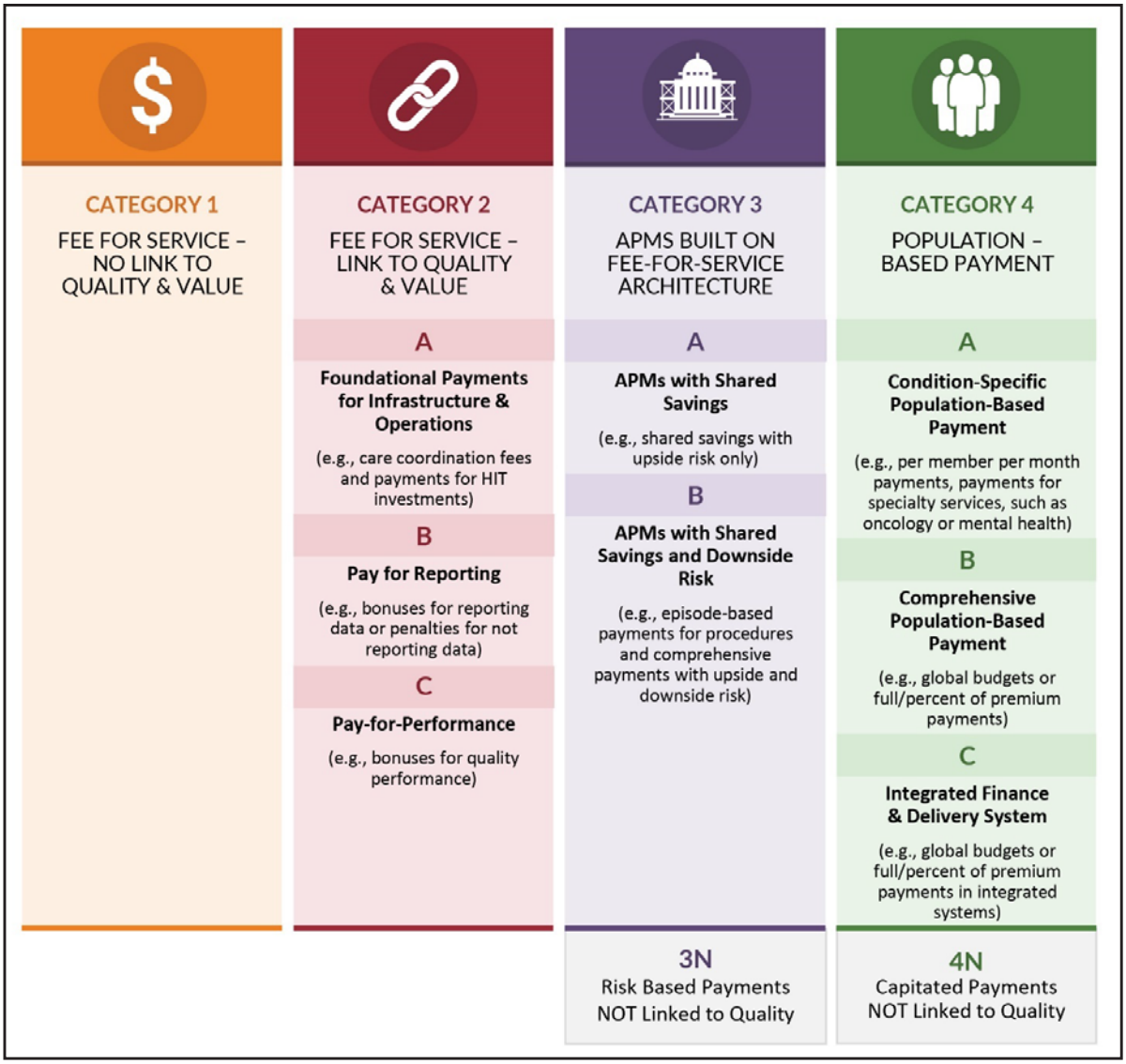

Figure 1. Updated APM Framework[8]

Shifting to risk means that often a common language is important. Of particular importance to the Department is potential confusion regarding the difference between "value" and "risk." These two terms often are used interchangeably, but are significantly different in the MCO contracts. In an April 2018 issue brief from the American Hospital Association (AHA),[9] the AHA noted that value is a term that means different things to different people:

> *"For some, value is simply finding the right mix of health care services that meet their needs. Some only want the best there is to offer, regardless of price or convenience. For others, value means friction-free, convenient access to health care services. Yet others focus solely on price, typically the price of front-end premiums, to determine whether the health care services offered will match their budgets … it's a concept of relative worth."*

The AHA concluded that value is the relationship between outcomes and patient experience to cost.

To balance encouraging behavior change with the time needed to implement new systems and processes, DMMA's MCO contracts expect that increasing percentages of provider contracts will be in VBP arrangements over time. The MCO-to-provider arrangements are measured as the percentage of all medical and service payments to providers that are under alternative payment arrangements. To ensure that we are encouraging value, those payment arrangements must include more advanced payment models over time, with true shared financial risk as the program matures. We want to move toward Category 4 alternative payment models to promote the transition of our health care system to be more dominated by innovative, value-based alternative payment arrangements.

Because AmeriHealth Caritas was new to the market beginning in 2018, their thresholds were set lower for 2018 and 2019 than the thresholds for Highmark Health Options (*see Figure 2*). By 2022, both plans are expected to have at least 60 percent of their spending in VBP arrangements, and at least 75 percent of that must be in advanced payment models. If the plans fail to meet the thresholds, they could be subject to a penalty of up to one percent of the payment they receive from DMMA. In the first year of reporting, both plans met the threshold, so no penalties will be assessed for 2018.

CHALLENGES

Even though the contract specifications described the types of arrangements that would be considered acceptable, it was impossible to anticipate all of the details of potential arrangements. Over the reporting year, DMMA and the MCOs needed to discuss the details of the arrangements and do some interpretation of whether they truly met DMMA's expectations. The contract also requires that the arrangements be in place, but does not assess the outcomes of the VBP contracts. The MCOs are ultimately responsible for interpreting the success of their VBP arrangements and modifying them if they are not encouraging the high quality, efficient care they are designed to produce.

In summary, including a VBP program in the contracts that DMMA has with our MCOs is an important step toward a Medicaid program that rewards value over volume. It has reshaped the relationship between the State as a payer and the entities that we contract with to ultimately deliver services. In 2018, we demonstrated that such a program was possible and learned important lessons in how to implement it. As we enter future contract years with more ambitious thresholds, we look forward to continually assessing our progress toward a system that provides the best value to our Medicaid population and our state.

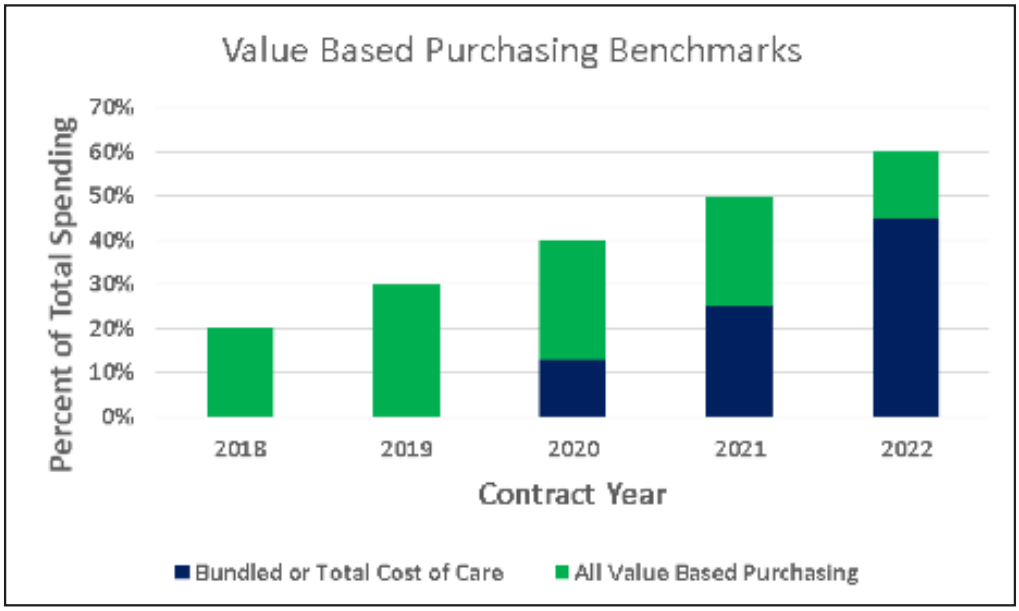

Figure 2. Value Based Purchasing Benchmarks

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Understanding the Success behind Maryland's Model

Madeline Jackson-Fowl
Willem Daniel

While state governments are increasingly engaged in developing new ways to control health care spending and deliver more valuable care to their citizens, the State of Maryland began pioneering its approach years ago. With its innovative All-Payer system, the state has committed to improving hospital financing with an eye towards stability and equity. From this foundation, the state has systematically worked to encourage system transformation through formative model agreements with the federal government. Maryland's experience illustrates the opportunities available to states when system financing, quality improvement, and valuable-based care are prioritized equally.

LANDSCAPE OF HOSPITAL FINANCING IN MARYLAND

The State of Maryland's history of policy innovation dates back to the creation of a hospital rate regulation system in the late 1970s. From its inception, Maryland's regulatory approach had three main objectives for hospitals and the health system. The first was to ensure costs between both public and private payers were equitable and hospitals with different payer mixes had the same financial security. Second, the system needed to establish a growth rate for hospital costs that ensured sustainable spending. Lastly, Maryland sought to secure the financial viability of its acute care and specialty hospitals.

Over the history of the state's regulatory system, the second objective of ensuring sustainable cost growth has occasionally been at odds with the third objective of ensuring that hospital finances remain viable. Simply constraining hospital costs or cutting the prices of services means that hospitals and providers feel a financial strain that diminishes their ability to prioritize comprehensive patient care.

Utilizing its rate-setting authority, Maryland previously balanced objectives two and three by paying hospitals using a hybrid cost-based approach and traditional fee-for-service system. The system paid hospitals on the basis of a variable cost factor (VCF), meaning that when a hospital's volume grew, its revenue would only grow by the amount of the variable costs of that volume. Fixed costs would be financed through a negotiation between regulators and hospitals. Variable cost factor financing was intended to ensure that hospital revenues were sustainable, while limiting the incentive for hospitals to increase volumes and costs, i.e. balance objectives two and three.

For a while, Maryland balanced competing objectives, though it was not immune to national trends of a growing, aging, and sicker population along with rapidly rising costs of care. However, identifying the true variable costs for a unit of volume is an inexact science. The state adjusted the VCF – sometimes raising it and other times lowering it – with the intention of ensuring that hospital revenues were sustainable, while limiting the incentive for hospitals to increase volumes and costs. But by 2010, hospitals were experiencing higher total operating costs and lower marginal payment rates, resulting in diminished margins. The system ultimately put strain on both hospital finances and the state's goal of keeping hospital cost growth at a reasonable level. Simultaneously, national attention and reform was focusing on improving the value of health care and constraining cost growth. The strain of balancing the system's original objectives, coupled with the opportunity offered by national reform efforts, incentivized Maryland to revamp its policies.

THE MARYLAND ALL-PAYER MODEL AND GLOBAL BUDGET REVENUES

Through an agreement with the Centers for Medicare and Medicaid Services (CMS), Maryland established a Global Budget Revenue (GBR) system, known as Maryland's All-Payer Model, in order to balance both hospital cost containment and financial stability. The GBR is a prospective guaranteed revenue amount, based on annual population growth and inflation. The state sets the annual inflation factor in order to ensure that cost growth remains sustainable for payers. While overall revenues decline, the GBR allows hospitals to retain revenues by reducing utilization. By restructuring the link between hospital profits and volume, hospitals have an incentive to reduce unnecessary utilization with assurance that their financial security will be maintained.

The 2014 Maryland All-Payer Model agreement contained a number of tests and guardrails established to define the state's success, including:

- Cap all-payer hospital revenue growth at 3.58 percent annually.
- Achieve $330 million in cumulative savings to Medicare over five years.
- Maintain lower overall growth in total Medicare costs (parts A and B).
- Reduce potentially preventable complications by 30 percent.
- Bring Maryland Medicare readmissions to under the national rate.
- Move 80 percent of hospital revenue to a population-based reimbursement agreement by the fifth year.

By implementing GBRs, the State realigned the hospital payment system so that it could once again focus on its initial three objectives: payer equity, financial stability, and constraining the growth of hospital costs. However, the GBR eliminates the tension between financial stability for hospitals and constraining the growth of hospitals costs by allowing hospitals to reduce unnecessary utilization.

RESULTS OF THE ALL-PAYER MODEL[1]

By all metrics of the All-Payer Model tests, Maryland met or exceeded expectations. Overall, the state was able to constrain the growth of all-payer hospital expenditures to an average of 1.9 percent annual growth. Additionally, the flexibility afforded to the state and incentives to transform care produced innovative programs and tools for hospitals and policymakers.

Savings to Medicare

Maryland's Model saved money for the federal government by constraining the rate of growth of both hospital and Medicare Parts A and B services (total costs of care) more than the nation. In hospital expenditures, the state saved Medicare $1.4 billion over five years with an expenditure growth rate 8.74 percent

below the nation since 2013. In total cost of care, including all non-hospital costs, savings reached $869 million over five years with a growth rate 2.74 percent below the nation. Savings achieved in both hospital and total cost to Medicare indicate that constraining cost growth for hospitals did not result in a shift to alternative, unregulated settings.

Reductions in Avoidable Hospital Utilization

Maryland achieved system savings under GBR through a systematic effort to reduce unnecessary utilization in hospitals and improve programs that incent hospitals to invest in care management. Compared to the nation, Maryland accrues savings if lower acuity care is provided in less-intensive settings, with more focus on prevention and management. In comparison to a statistically matched control group, the state has seen inpatient admissions decline significantly.[2]

Hospital Financial Performance

In any other state, a substantial reduction in payments to hospitals likely would have resulted in financial hardship for those hospitals. However, under the GBR system, hospitals revenues are fixed regardless of their volume. As hospitals reduce unnecessary utilization, they retain the revenue from the avoided utilization to support their underlying margin, even while their overall revenues decrease. With this benefit, hospitals can more predictably contract, invest and plan for future performance in a manner detached from volume growth. Over the course of the model, the state has seen per capita savings of approximately three percent of total revenues and an average marginal growth of 1-2 percent. Thus, the GBR has created a win-win scenario for both payers and hospitals, aligning objectives two and three.

Improvements in Quality of Hospital Care

Savings of the hospital system and implementing a GBR approach were achieved without degradation in the quality of care. In fact, Maryland hospitals saw improved quality through Maryland's All-Payer approach, with the progression of national quality programs like the Hospital Readmissions Reduction Program and Hospital Acquired Conditions Program. The strength of these quality incentives may in fact be stronger in Maryland because these programs provide incentives on total hospital revenues, not just Medicare revenues. Through these programs the system reduced potentially preventable conditions (PPCs), such as sepsis and hospital acquired pneumonia, by 51 percent. Additionally, the Medicare readmission rate reduced at a rate more rapidly than the nation, surpassing the nation in the final year of the model.

Opportunities for Innovation and Care Transformation

Maryland's system also created space for providers and policymakers to collaborate on tools and programs to further transform the provision of health care. The rate setting system allows for collective investment in infrastructure, such as the State's Health Information Exchange (HIE). This important resource has helped to connect all acute-care hospitals in the state and enable data analytics to further progress transformation and improve the coordination of care statewide. From this investment, the state has been able to further implement public health improvements such as a Prescription Drug Monitoring Program (PDMP) population health reporting, and a vehicle for better data to drive research.

The state also has the flexibility to build alignment programs between physicians and hospitals through the Maryland Care Redesign Program (CRP). The state can create ACO-like and bundles-like programs that allow hospitals to gain share with physicians in exchange for partnership on care transformation activities. With this new capability, the state has begun to expand value-based incentives across the spectrum of care and beyond hospital walls. As hospital's become more sophisticated in reducing unnecessary and avoidable utilization, policies such as CRP begin to focus Maryland on what is next, systematically improving the management of disease and population health statewide.

PROGRESSION TO THE TOTAL COST OF CARE MODEL

Maryland's success under the All-Payer Model has created a chassis from which the state can build. The original objectives of the rate system, to create equity among payers, ensure hospital financial viability, and control the growth of costs, are currently being met. The state now has the opportunity to address the upstream socio-economic drivers of health care utilization. Starting January 1, 2019, the state embarked on a larger Total Cost of Care Model (TCOC Model) to not only control the growth of hospital costs, but also to focus on total costs of care and bending the growth of costs across the entire continuum of health care.

The TCOC Model will not be without its challenges for the state. Regulatory rate-setting authority has not changed to include other providers beyond hospitals, though now the state is responsible for the total costs of care. Hospitals will need to change their focus fundamentally from operating as acute-inpatient care providers to a structure more analogous to managed care. The traditional scope of care for hospitals is now expanded; however, as hospitals are the largest single component to total health spending, the responsibility should follow suit. The state will remain a strong partner to the hospital and health system in this transition by developing new payment methodologies and programs that ensure payments are connected to valuable care across all health care providers.

Lastly, as Maryland focuses its system on bending the health care cost curve, it will need to look further upstream to impact health spending in the most sustainable way, a healthy population. The state is setting a series of population health improvement goals that will focus the system on population improvements in key areas that ultimately lower spending. Tools and methodologies are important components to Maryland's success, but what started as only a hospital financing structure cannot continue without systematic integration of public health policies and expertise. In the coming years, Maryland will invest in the relationship between the public health community and the health system in a manner that prioritizes health and sustainable provider finances for long-term improvements. While not a simple effort, the state is confident that a history of innovation and collective goals across industries to improve the cost and quality of health care will once again produce success.

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SIX DELAWARE COMMUNITY-BASED ORGANIZATIONS RECEIVE MINI-GRANTS TO REDUCE INFANT AND MATERNAL MORTALITY

DOVER (Dec. 10, 2019) —
To reduce disparate birth outcomes and save the lives of both infants and their mothers, the Division of Public Health (DPH) and the Delaware Healthy Mother and Infant Consortium (DHMIC) awarded mini-grants to six community organizations. The local grant recipients were announced today during the DHMIC's quarterly meeting in Dover.

The state's first mini-grants to reduce infant and maternal mortality aim to narrow the wide variance in birth outcomes between black women and white women by building state and local capacity and testing small-scale innovative strategies. The awards are evidence-based, as DPH's Healthy Women Healthy Babies program identified communities, or "zones," whose residents are at high risk for poor birth outcomes. Grant recipients will provide targeted services within the zones to women of childbearing age (15-44 years), children, and their families. Awardees will support community-led place-based initiatives and shift the impact of social determinants of health that are tied to the root causes of infant mortality: poverty, racism, health access, food insecurity, housing, and having a good job and a good education, all of which affect mothers and children.

"Members of the DHMIC are delighted to see resources being spent in the communities where women with disparate birth outcomes reside," said Susan Noyes, DHMIC Co-Chair. "With our shift in priorities to address the social determinants of health, we believe we are on the right track in Delaware to improve birth outcomes."

"Infant mortality is a leading health indicator to measure how healthy Delaware is," said Lieutenant Governor Bethany Hall-Long. "By investing resources in communities to ensure women receive necessary supports before, during and after their pregnancy, we not only promote and protect the health of mothers and babies, but also ensure a stronger, healthier Delaware."

More than twice as many black infants in Delaware die before their first birthday than white infants, according to DPH Vital Statistics data. For the period 2014-2018, Delaware's black infant mortality rate is 12.2 deaths per 1,000 live births and the white infant mortality rate is 4.5 deaths per 1,000 live births. In 2017, the U.S. black infant mortality rate was 10.97 per 1,000 live births and the white infant mortality rate was 4.67 per 1,000 live births.

"While we have seen a 22% reduction in our infant mortality rates from 2000-2018, babies born to black women are still 2.7 times more likely to die than babies born to white women," said DPH Director Dr. Karyl Rattay. "Using data, we identified geographic areas in Delaware with high infant mortality rates and are focusing our attention to offering needed services in these defined ZIP codes to address this unconscionable disparity."

Racial disparities in birth outcomes extend to mothers. In the U.S., black women die from pregnancy-related complications three to four times as often as white women, according to the U.S. Centers for Disease Control and Prevention's Division of Reproductive Health. In Delaware, severe maternal morbidity rose by 37 percent between 2010 and 2014, according to the Delaware Child Death Review Commission's Maternal Mortality Review Report, which reviewed cases from 2011 to 2017. Risk factors for pregnancy-related complications include obesity, pre-eclampsia, high blood pressure, and substance use disorder, all of which are on the rise among Delaware women of reproductive age.

"I know firsthand of the challenges that women of color face during pregnancy, having endured complications during both my pregnancies. We must address the social determinants that affect maternal health outcomes, which is why it was critical that the community itself was part of the selection process for these grants," said Rep. Melissa Minor-Brown, D-New Castle South, who distributed the award certificates to grantees at the meeting. "We have high expectations for this work to promote systems changes for Delawareans to achieve optimum health and well-being across the course of their lives."

On December 10 in Dover, six Delaware community organizations received the state's first mini-grants to reduce infant and maternal mortality, and to narrow the wide variance in birth outcomes between black women and white women. The Delaware Department of Health and Social Services, Division of Public Health (DPH) and the Delaware Healthy Mother and Infant Consortium (DHMIC) awarded the grants, totaling $327,925 for a one-year period, to build state and local capacity and to test small-scale innovative strategies. Speakers were (front row) Susan Noyes, DHMIC Co-Chair, at far left; Lieutenant Governor Bethany Hall-Long, second from left; State Representative Melissa Minor-Brown, second from right; and DPH Director Dr. Karyl Rattay, at far right.

Grant funds totaling $327,925 were awarded to the community organizations for a one-year period. DPH and DHMIC will review the projects annually and have the option of renewing them for up to four additional years. Available funds were equitably distributed, based on the estimated number of women of reproductive age (ages 15-44) living in each Healthy Women Healthy Babies Zone, which were identified as "high need" based on several data points/indicators, including: percent of teen births; mother's high school education; percent of births to black mothers; percent using cigarettes during pregnancy; percent of families on Medicaid; percent of women with no prenatal care; percent of mothers with pre-pregnancy diabetes; percent of mothers with gestational diabetes; percent of mothers with pre-pregnancy hypertension; percent of mothers with gestational hypertension; percent of mothers with previous preterm birth; percent of mothers who were obese; percent of mothers with a preterm birth; percent of mothers with a low birth weight baby; and percent of mothers with neonatal deaths (<28 days).

The Delaware-based awardees are:

Delaware Adolescent Program Inc. (DAPI)
DAPI will serve teen mothers and their partners who live in high-risk zones throughout the state. DAPI will provide ongoing mentoring services and supports for social and emotional well-being, and support in navigating the health and social services system, including maternal and child health care services, housing programs, financial management, and economic empowerment. DAPI will also encourage college and career readiness based on each individual's self-identified goals, identify and address adverse childhood experiences, and offer stress reduction and maternal health courses and co-parenting workshops. DAPI will provide services at each of its service sites, located in each county, as well as directly in the community and in collaboration with a variety of community-based partners.

Reach Riverside Development Corporation (REACH)
Multi-generational maternal and child health program
At its Kingswood Community Center located in the Riverside community in Northeast Wilmington, REACH will serve women of childbearing age and their families, targeting women who live in ZIP codes 19801 and 19802. To reduce toxic stress to women of childbearing age, REACH will create a multi-generational maternal and child health program with three components. First, a peer-to-peer program will provide mindful and empathetic services pre-, during, and post-pregnancy. The program will focus on stress and adverse childhood experiences training; examine the role of adverse experiences from a multi-generational lens; and address strategies to prevent transference of these experiences through the generation to children in particular. REACH plans to train at least 40 women during the period of the grant. Second, the organization will provide care management with referral and resource services, as well as case management via a community family and support service liaison. The liaison's focus will be financial empowerment, self-sufficiency, and housing. Third, REACH will provide workshops to increase fatherhood/partner engagement, using strategies for inclusion and parenting dynamics that support mothers and their children.

Rose Hill Community Center
Women's Wellness Program
The Rose Hill Community Center's Women's Wellness Program will offer women of childbearing age in the 19720 and 19801 ZIP codes the opportunity to take fitness, nutrition, and self-improvement classes at no cost. Fitness classes will include yoga, Zumba, and cardio kickboxing. One-on-one appointments with an on-site nurse will be available. Self-improvement classes will discuss ways to handle stress, positive self-image, combatting negative attitudes, conflict management, effective communication,

parenting 101, couponing, social media, professionalism, discipline versus punishment, financial literacy, community resources, stress management, and goal setting. Free childcare will be available during classes. Participants will have access to an on-site mental health consultant who is a National Certified Counselor and Licensed Professional Counselor of Mental Health. Fitness activities and other services will be tailored to pregnant women and other participants with specific needs through meetings with a nurse and Women's Wellness Program staff.

Delaware Coalition Against Domestic Violence (DCADV)
Community Health Worker Collaborative Project
DCADV will continue providing support and expand integration of its services with health services in New Castle County through its Community Health Worker Collaborative Project, which seeks to integrate domestic violence and health services to improve the health and safety of victims and survivors. The program will serve black and Hispanic/Latina women who are pregnant, parenting a child under the age of 5 years old, and/or of reproductive age, who are living in Wilmington, Claymont, Newark, and New Castle (ZIP Codes 19703, 19809, 19802, 19801, 19805, 19804, 19702 and 19720). The program will manage and expand service delivery to the HWHB target population; administer flexible Health Access Funds to support the safety and health of the participants; and train health care providers on best practices for domestic violence assessment and response, interviews, focus groups and/or surveys for individuals at the two New Castle County domestic violence shelters. It will work with direct service providers in the maternal and child health care and victim services fields to learn challenges and explore possible solutions.
The Delaware Multicultural and Civic Organization (DEMCO, Inc.)
DEMCO will provide academic and life skills supports and job training education to young women of childbearing age, including those who are pregnant and parenting, who are living in Dover ZIP codes 19901 and 19904. Each woman served will be matched with a mentor to provide social and emotional support. The program will progress through a series of educational workshops to develop hard and soft skills to better prepare them for gainful employment and a career in the IT field. The program also includes support for fathers/partners, including effective fathers/partner parenting lessons, and an opportunity to engage in job shadowing and internship placement.

Hispanic American Association of Delaware
Mamas felices hijos felices (Happy Mothers, Happy Children)
The Hispanic American Association of Delaware will provide pregnancy and postpartum support in Spanish to women ages 15-44 who live in ZIP code 19720 in New Castle County. A support group called Mamas felices, hijos felices (Happy Mothers, Happy Children) will be located at Garfield Park, which is within walking distance for a high number of Latino families. Mamas felices, hijos felices will create wellness, resilience, hope, and connection for women adjusting to parenthood and experiencing pregnancy and postpartum emotional ups and downs. The support group will also address racism and language barriers by providing bilingual services. It will hire a dedicated community liaison to offer referrals to insurance and other needed services; reduce cultural mental health stigma in the Latino population; and provide support to families with recent migration and acculturative stress. The organization will also create a family network event to involve the whole family (especially fathers) and to connect the community to pregnancy and postpartum mental health resources.

For more information, visit www.DEThrives.com.

About the Delaware Healthy Mother and Infant Consortium
In 2005, the Delaware Infant Mortality Task Force's final report put forth a three-year plan with 20 recommendations to reduce the high infant mortality rate in Delaware. The plan called for the creation of the Delaware Healthy Mother and Infant Consortium (DHMIC) to help ensure that stated directives were put into place. The directives include coordinating efforts to address disparities related to the health of infants and women of childbearing age; and facilitating collaborative partnerships among public health agencies, hospitals, health care practitioners, and all other interested agencies and organizations to carry out recommended infant mortality improvement strategies.

Delaware's Department of Health and Social Services is committed to improving the quality of the lives of Delaware's citizens by promoting health and well-being, fostering self-sufficiency, and protecting vulnerable populations. DPH, a division of DHSS, urges Delawareans to make healthier choices with the 5-2-1 Almost None campaign: eat 5 or more fruits and vegetables each day, have no more than 2 hours of recreational screen time each day (includes TV, computer, gaming), get 1 or more hours of physical activity each day, drink almost no sugary beverages.

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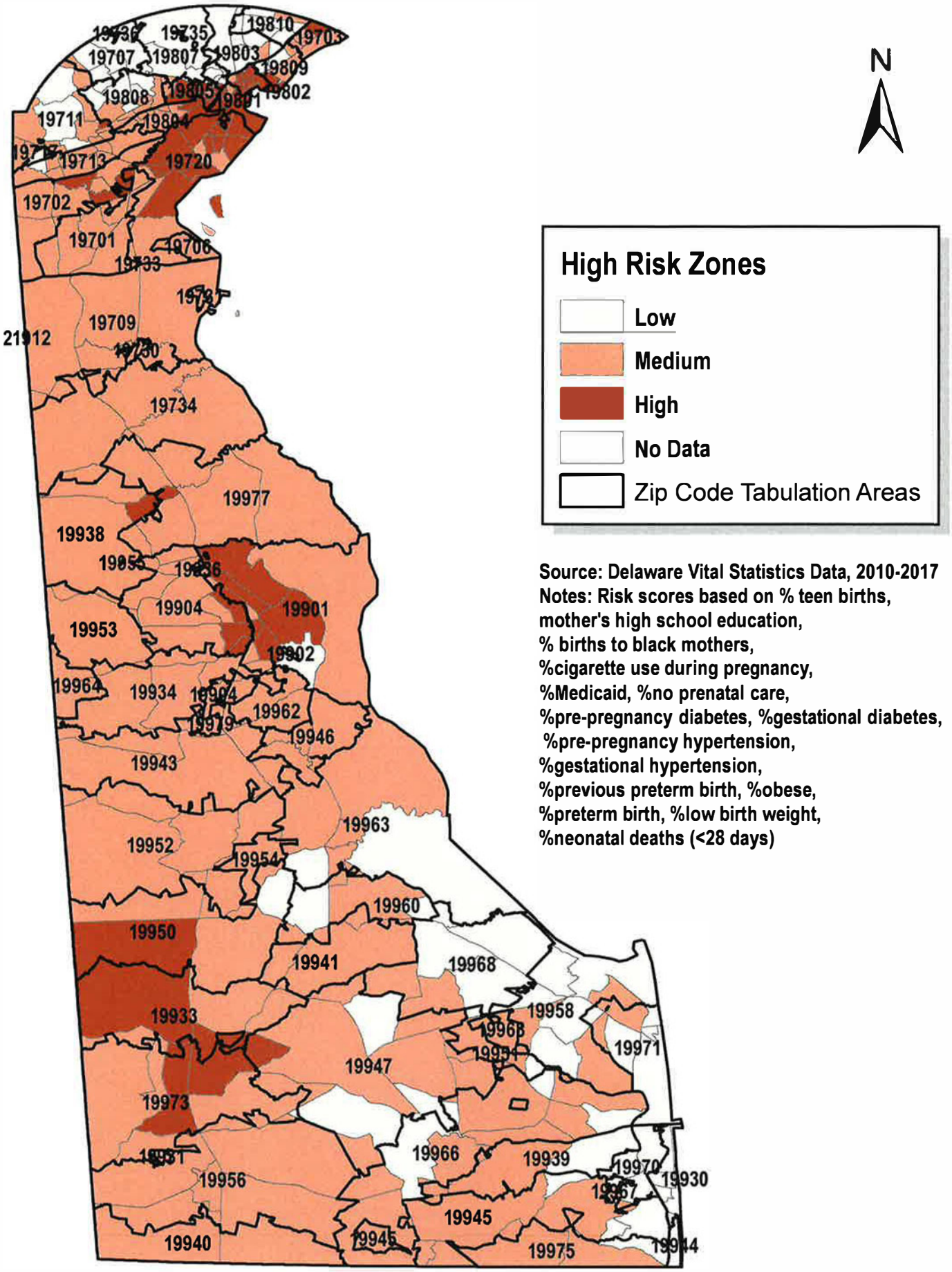
High Risk Healthy Women Healthy Babies Zone, Delaware, 2010-2017



Source: Delaware Vital Statistics Data, 2010-2017
Notes: Risk scores based on % teen births, mother's high school education, % births to black mothers, %cigarette use during pregnancy, %Medicaid, %no prenatal care, %pre-pregnancy diabetes, %gestational diabetes, %pre-pregnancy hypertension, %gestational hypertension, %previous preterm birth, %obese, %preterm birth, %low birth weight, %neonatal deaths (<28 days)

Primary Care Spending in Delaware: Qualitative Features for Innovation

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Decades of international and domestic research highlight the importance of primary care-oriented health care delivery systems in achieving the Institute for Healthcare Improvement's Triple Aim.[1] Primary care-oriented systems are associated with improved patient-reported health scores, in addition to lower mortality rates attributed to heart disease and cancer, the two leading causes of death in the United States. Primary care also provides health screening services known to increase life expectancy without increasing costs to the health care system as a whole.[2-5]

A recent report published by the Patient-Centered Primary Care Collaborative, in conjunction with the Robert Graham Center for Policy Studies in Family Medicine and Primary Care, found a national average of five to seven percent of total health care costs spent on primary care, compared to an average of 14 percent invested by other Organization for Economic Co-operation and Development (OECD) countries. Findings also illustrated an association between increased proportional primary care spending and decreased emergency department visits, total hospitalizations, and avoidable hospitalizations.[6]

Because of these findings, some states are adopting policies to shift health care spending toward primary care as a strategy to improve overall health outcomes and reduce costs. In 2018, Delaware became the third state to enact policies calling for increasing primary care spending. Until last year, only Rhode Island and Oregon had policies to shift overall spending toward primary care services. Most often, legislators and stakeholders promoting increased primary care spending expressed desires to improve community health outcomes.

Rhode Island, Oregon and Delaware shared several unifying themes. Chiefly, the health and political landscape of Delaware, a relatively small state with a progressive vision for health care delivery, allowed for primary care spending discussions to flourish.

A SMALL STATE WITH A LARGE CATALYST FOR CHANGE

Preceding the passage of *Senate Bill 227* in 2018, Delaware leaders acknowledged that the total health care spending in the state was the fourth-highest in the country, yet the state continued to be near the bottom for state health statistics (31st in overall health, 44th in childhood immunization rates).[7-9] Awareness of exorbitant state spending in relation to state health outcomes motivated leaders to take action. The Center for Medicare & Medicaid Innovation awarded Delaware a grant leading to the development of Delaware's State Health Care Innovation Plan. Discussions generated from these state initiatives laid the groundwork to further primary care spending discussions, notably the establishment of health care spending and quality benchmarks to encourage practice transformation and advance primary care.[10]

Delaware engaged in discussions about improving overall state health years ahead of any proposed legislation. Prior dialogue established the framework for stakeholders to develop innovative strategies. Enacted policies built upon previous discussions aimed at maximizing health care delivery.

STAKEHOLDER CULTURE OF COLLABORATION

Like Rhode Island and Oregon, Delaware stood (and currently stands) at the forefront of primary care spending discussions, in part, due to its strong culture of collaboration. In addition to community health-oriented state leaders, strong legislative champions were necessary to align state spending goals with long-term public health goals. These champions of primary care inspired statewide engagement during the legislative process, as well as after passage of SB 227 in the form of the Primary Care Reform Collaborative. Creation of a collaborative forum allows stakeholders throughout the state – from primary care physicians to hospital systems – to design health care spending in a way that addresses the dynamic needs of Delaware communities.

In a state with numerous practice types, hospital systems, and health care payers, it is critical to afford various stakeholders a seat at the table during policy discussions. Delaware, with a population of fewer than one million residents, uniquely has the ability to gather important players throughout the state in one location to achieve one aim.

ACHIEVING HEALTH THROUGH DATA

As the Primary Care Reform Collaborative continues to discuss primary care spending in Delaware, stakeholders have underscored the importance of data-driven strategies to improve health care delivery without increasing the total cost of care. It is difficult to establish spending benchmarks without the ability to consistently measure spending. Even the three aforementioned states have different definitions of what should be included in primary care spending, varying based on the types of providers, services, and settings that are considered "primary care."[6] Delaware – through the Primary Care Reform Collaborative – has allowed stakeholders to help determine the mechanism of monitoring and evaluating information. These mechanisms strategically guide health care investment to minimize the total cost of care. Most importantly, stakeholders have stressed that increasing primary care spending should not merely be used to increase the fee-for-service rate. Rather, funds should shift reimbursement models toward value-based payment.[11]

DELAWARE AS A MODEL FOR OTHER STATES

Not all states have strong legislative champions for primary care, nor do they have a strong culture of collaboration to advance state-level primary care initiatives. Certainly, not all states have the infrastructure to develop evidence-based strategies for health care improvement. Delaware is an exception and, at present, is one of the few states attempting to shift how health care dollars are spent.

As of 2019, Delaware is one of eight states to pass legislation that enhances primary care spending. In the last year, five of these states (Colorado, Maine, Vermont, Washington and West Virginia) passed legislation to embark on a process already completed in Delaware: establish a spending benchmark; establishing data collection and reporting requirements to measure the percentage of primary care health care spending in relation to total health care expenditures; and establishing a multi-stakeholder forum. These five states will be looking to Delaware, in addition to Rhode Island and Oregon, as models of how to advance primary care spend policies successfully.

To date, Delaware's Primary Care Reform Collaborative continues to meet, and will ultimately shape the state's experience – and in turn the future experiences of other states – in advancing health care quality and outcomes while minimizing the total cost of care.

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Measuring and Increasing Investment in Primary Care: Delaware Marches On

Christopher F. Koller

The passage of Senate Bill 116 by the Delaware legislature this year continues the state's efforts to build a strong, primary care-based delivery system. Building on SB 227 passed in 2018, it expands membership in and gives further direction to the state's Primary Care Collaborative, establishes an Office of Value-Based Health Care Delivery in the Department of Insurance and sets priorities for the Office. Among those first activities for this newly created Office will be measuring primary care spending rates and establishing targets for future investments in primary care by insurers.

Measuring primary care spending rates has proven to be an effective means for focusing public attention on primary care and the need for a primary care-based delivery system. Delaware is not the first state to approach primary care investment systematically, and it has the opportunity to learn from other early-innovating states.

WHY FOCUS ON PRIMARY CARE SPENDING RATES?

Other articles in this issue make the case well for why primary care is so important to a high-performing delivery system. And what we spend money on is what we truly value. So it follows that the primary care spending rate – or the portion of total health care spending by an accountable entity (an insurer, a health care system or an entire state) that goes to primary care – is a reasonable measure of the relative priority that entity places on primary care. As a measure, the primary care spending rate has the advantages[1] of being easily understood by a variety of people and easy to calculate.

Unfortunately, the news from that measure is pretty disheartening. Although comparisons are challenging, it appears the U.S. spends 5 to 7 cents of its health care dollar on primary care (*see Figure 1*) compared to an average in other developed countries of twice that.[1] Many health services researchers think that the fact the U.S. spends 75 percent more per person on health care than these nations is in part due to this underinvestment.

That low national average, however, masks wide variation in primary care spending rates across states. A study this year by the Patient Centered Primary Care Collaborative found primary care spending levels for commercial insurance in 29 states varied from a low of 3.5 percent in Connecticut to a high of 7.6 percent in Minnesota.[2] That difference makes a difference. The same study showed that states with lower primary care spending rates had higher numbers of people with at least one inpatient admission in a year (*see Figure 2*).

What about Delaware? Although it was not in the PCPCC study, in another analysis[3] of primary care spending rates for Medicare patients, Delaware's 3.5 percent figure was below the national average of 3.8. This lends particular justification to Delaware's legislative focus on primary care as a key priority for the state's health care delivery system.

Alarmed by the low primary care spending rates in the U.S., states are starting to take action. Five states in addition to Delaware have passed laws to measure current primary care spending rates and convene public discussions about the issue. Two of these states have gone further and actually required commercial insurers to increase their primary care spending rates. Rhode Island

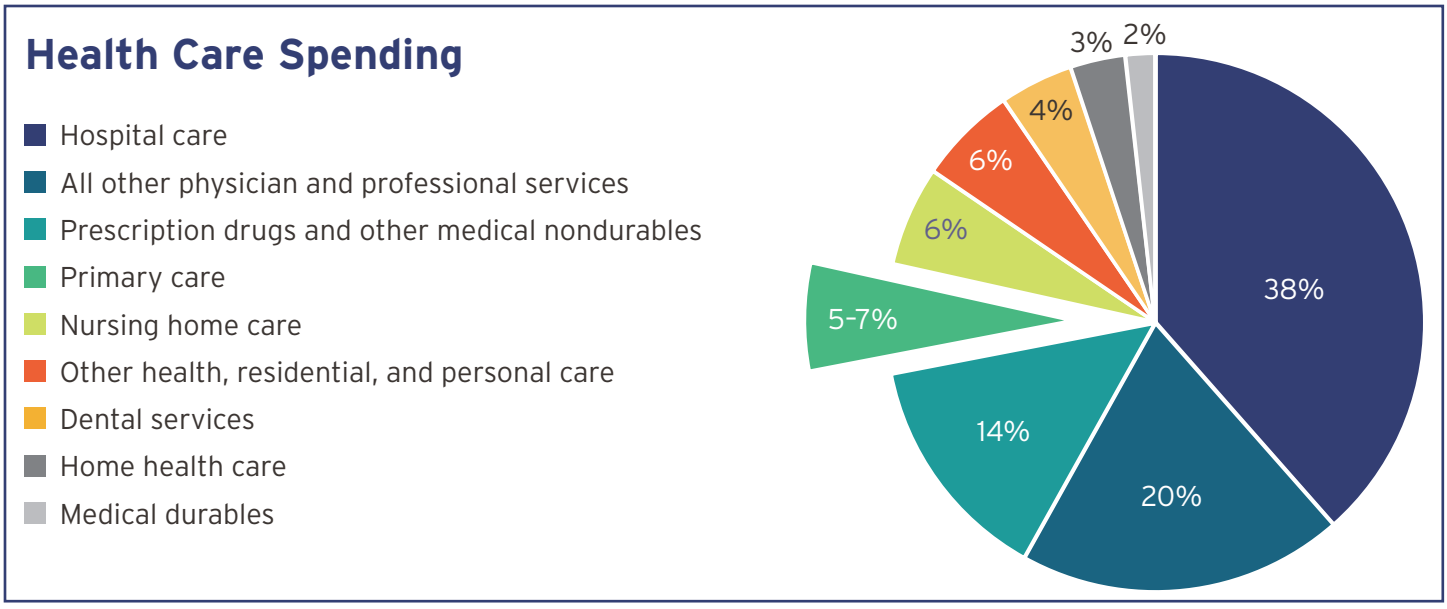

Figure 1. US Health Care Spending[2]

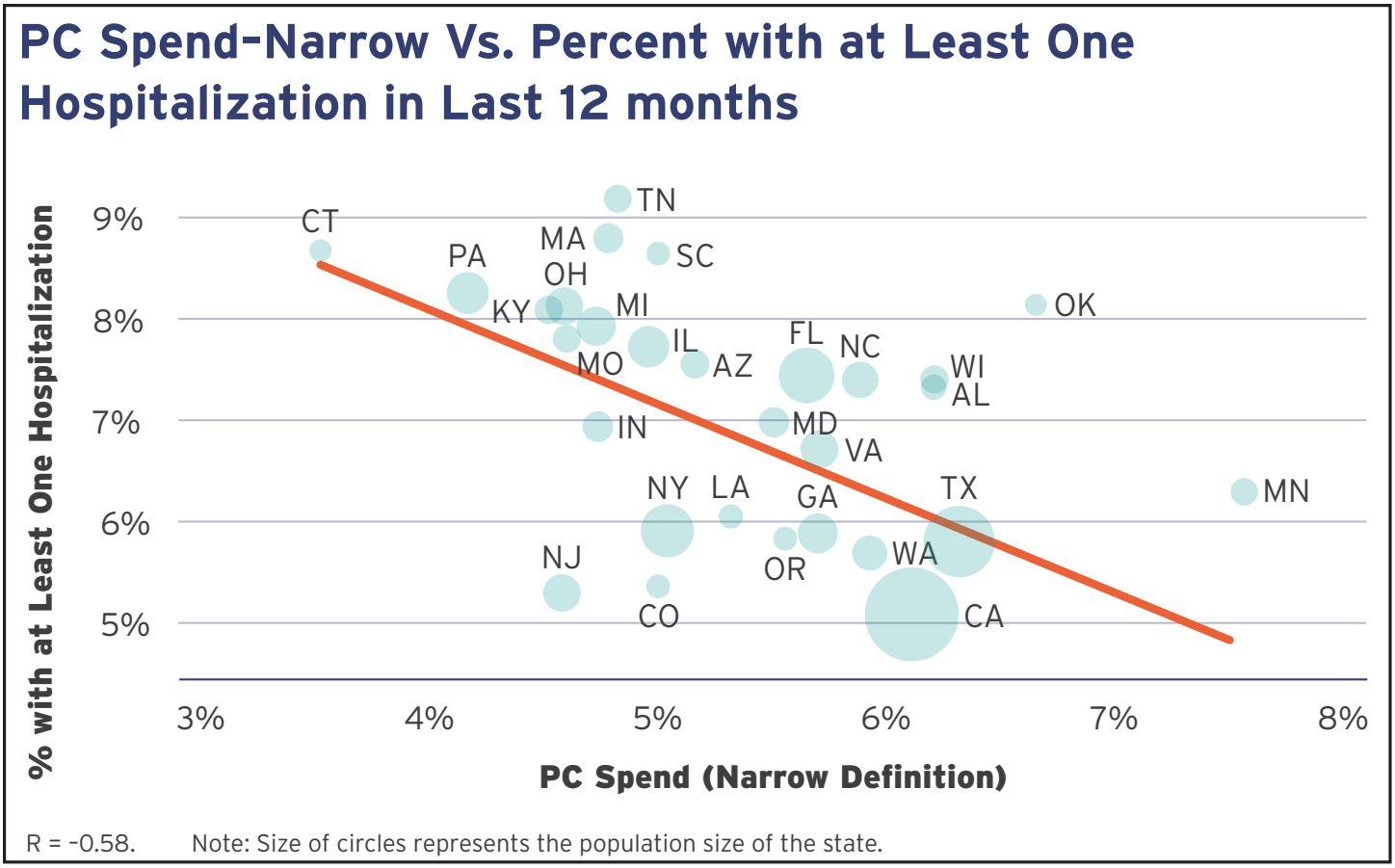

Figure 2. PC spend-narrow vs. percent with at least one hospitalization in the last 12 months

started the process in 2007 and insurers there are now required by regulation to spend at least 10.7 percent of their premium on primary care. Using a broader definition of primary care than Rhode Island, Oregon requires its Medicaid coordinated care organizations, Public Employees' Benefit Board and the Oregon Educators Benefit Board, to spend at least 12 percent of total medical expenditures on primary care by January 1, 2023. It also requires its insurance regulator to establish requirements for carriers to submit plans for increasing spending on primary care as a percentage of total medical expenditures if the carrier is spending less than 12 percent of total medical expenditures.

WHAT CAN BE LEARNED FROM OTHER STATES?

As Delaware digs into its primary care spending rate initiative, what are some of the findings from states that have gone before it? The following lessons are drawn from work done with the states as well as the author's own experience as Health Insurance Commissioner in Rhode Island, from 2005 to 2013.

1. **Use a standard definition of primary care**
   While the aspirational goal is not just any primary care, but strong and high-performing services, the intent of the effort is to measure how much is spent on primary care in general. Research has been done to specify broad and narrow definitions of primary care. It appears consistency is more important than accuracy – the different definitions have little effect on the size of the spend.
2. **Plan the resources to work collaboratively with insurers**
   Measuring primary care is a new effort. Whichever state agency is tasked with it will need the skills to work collaboratively with insurers to develop specifications for primary care, solicit data from them, and compare and refine the measures and process over time. This will take new resources as well, particularly for an ongoing Office, as envisioned by SB 116. The resources pale in comparison to the billions of dollars spent on health care in Delaware alone.
3. **Discuss the results publicly**
   The findings from the measurement effort should be subject to public discussion in an entity like Delaware's Primary Care Collaborative. The goal is not to place blame, but to increase understanding among a broad group of stakeholders of what the figures are, how they vary and why the variations exists. The reasons for low primary care spending rates in the U.S. are complex and only partially in control of any entity that is being measured. Rhode Island and Oregon have shown that states, however, do have the tools to address those reasons.

4. **Take employer affordability concerns seriously**
   Employers will likely express concerns with any discussion of current and desired primary care spending rates that premiums will simply increase – and any improvements in cost or quality will be far off or never occur. These are legitimate. The systemic argument is that our next health care dollar is better spent in primary care than in any other health care service. To address purchaser concerns, Rhode Island has used insurer rate review – and Oregon is using its purchasing power – to force increases in primary care spending to come from within the health care system.

5. **Manage expectations**
   Leaders and the public can suffer from impatience and faddishness when it comes to health policy initiatives; we bounce from idea to idea. Increased primary care spending will not cure all that upsets people about health care in the U.S. Instead, it should be seen as necessary but not sufficient – part of an ongoing, long-term effort. Universal insurance, more spending on social services, lower administrative costs and global budgets have all been shown to be components of superior health performance in other countries, and primary care advocates would do well not to oversell the effects of increased primary care spending rates.

Systemic problems demand systemic solutions. Delaware has embarked on the hard work of acting on the evidence for what it takes to have a high-value health care system – one that offers to everybody the chance for long and fulfilling lives. This will not happen without a strong and high-performing primary care system. This means understanding how much is actually being spent on primary care and building the political will to increase it, for the benefit of all Delaware's residents.

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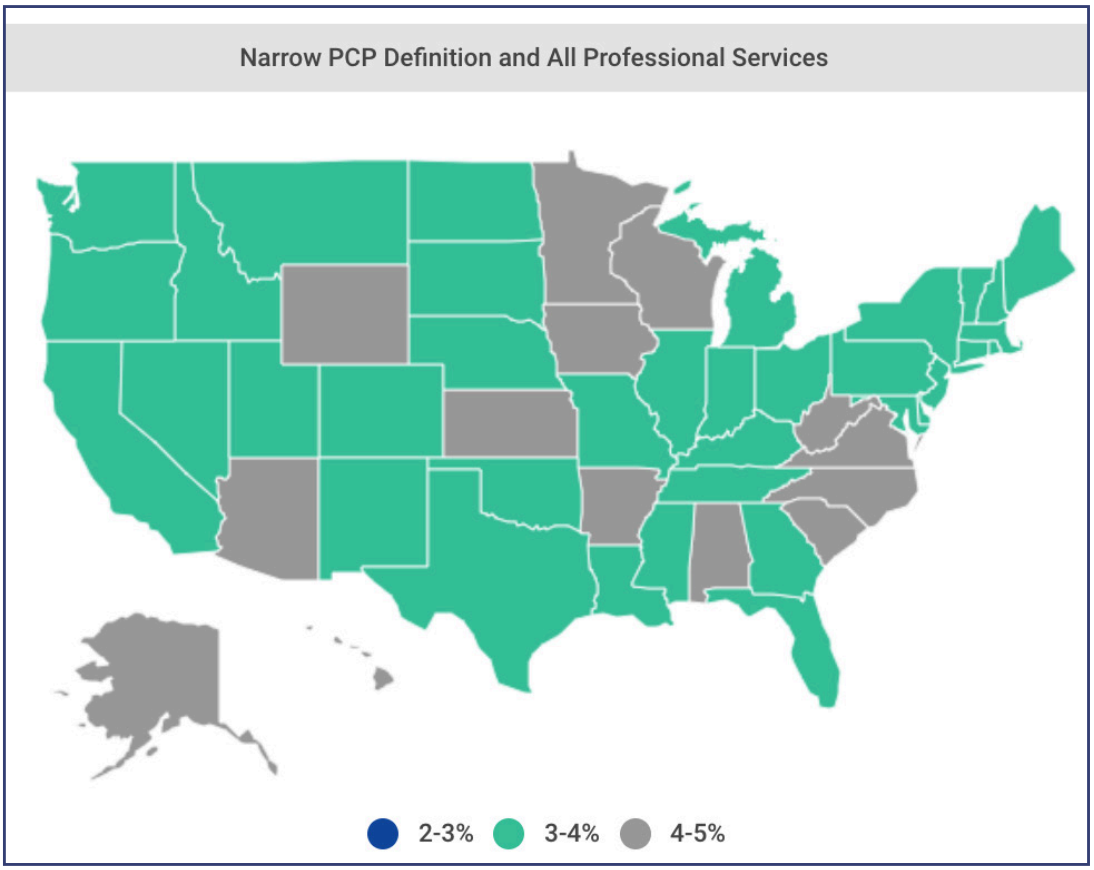

Figure 3. Professional Services in the US[4]

Community Health Worker Training

Delaware Health and Social Services, Division of Public Health (DPH) is pleased to announce a 80-hour core competency training for community health worker (CHW). The Institute for Public Health Innovation (IPHI) will be conducting the comprehensive training that covers the following competencies:

- ◊ Human Rights, Equity and Perspective Transformation
- ◊ Communication
- ◊ Public Health Knowledge
- ◊ Introduction to the CHW Role
- ◊ Data Collection and Medical Records
- ◊ Teaching, Capacity Building Skills, and Clinical Practice
- ◊ CHW Legal and Ethical Issues
- ◊ Health Education and Prevention
- ◊ Outreach and Advocacy
- ◊ Resource Identification and Organization
- ◊ Disease Management including Chronic Disease, HIV, Mental Health, Substance Misuse and Behavior change.

Who Should Attend?

Current Community Health Workers, Community Health Ambassadors, Community Health Advocates, Peer Support Specialists who work in community or clinical settings such as community-based service providers, social services, physician offices, clinics, hospitals, public health agencies.

Do I need to attend the whole training?

Yes. Those who register must be available for the entire 80 hours.

Who do I contact for more Information?

abueno@healthmanagement.com

TRAINING A: Sussex focused

Week 1: January 27 – 31 Adams State Service Center, Georgetown — Register Here

Week 2: March 30 – April 3 Edgehill Training Center, Dover, DE — Register Here

TRAINING B: New Castle Focused

Week 1: February 17 – 21 Hudson State Service Center, Newark, DE — Register Here

Week 2: April 27 – May 1 Edgehill Training Center, Dover, DE — Register Here

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

BHC Behavioral Health Consortium

Align and Invest for Impact with Our Communities

Karyl T. Rattay, M.D., M.S.; *Director, Division of Public Health, Delaware Department of Health and Social Services*
Rita Landgraf; *Director, University of Delaware Partnership for Healthy Communities; Faculty, University of Delaware College of Health Sciences*
Stuart Comstock-Gay; *President and CEO, Delaware Community Foundation*

A black baby born in Delaware is nearly three times more likely to die in the first year of life compared to a white baby born in our state. An individual who lives in a predominantly black community in certain areas of Wilmington has an average life expectancy of 16 years less than someone who lives in nearby Greenville. These and other similar facts are heartbreaking, unjust, avoidable, and unacceptable.

Delaware is not a healthy state. The 2018 American's Health Rankings® by the United Health Foundation placed Delaware 31st among states, and in the bottom third of states for overdose deaths, infant mortality, cancer deaths, diabetes, physical activity, smoking, and cardiovascular death. Moreover, a plethora of health inequities tied to racial inequality exist in our state. For instance, infant mortality, an important indicator of community health, impacts Delaware's black women at a rate that is approximately 2.7 times higher than that of white women in our state. Life expectancy is three years lower for black Delawareans. Forty-six percent of Delawareans living with HIV/AIDS are black, despite the fact that blacks account for 21 percent of the state's population. The homicide rate for black men increased 116 percent between 2012 and 2016, a rate that is seven times higher than for white men.

Race matters. Geography matters, too. Key health outcomes and indicators like infant mortality, life expectancy, educational attainment, and child poverty vary across our Delaware communities. Where a person lives impacts the quality and affordability of their housing, their access to healthy foods, whether they'll obtain a decent, quality education and a livable wage, the likelihood that they'll be a crime victim, the probability of being diagnosed with one or more serious physical or mental health conditions, and their longevity. Poverty, unemployment, homelessness, recidivism, discrimination, language disparities, and violence rates all differ across our communities and are all associated with higher rates of chronic disease, disability and mortality.

More and more, we understand that a variety of social determinants are critical factors for health. Every person should have an equal opportunity to be healthy, regardless of their race and home address. To achieve optimal health, individuals and families need safe housing, livable wages, access to quality education, access to healthy foods, opportunities to be physically active, and safer neighborhoods. It has become clear that addressing health inequities by intentionally focusing on these social determinants of health in our disparate communities is critical.

A variety of community efforts have been in play, but too often we work in silos across the social determinants of health rather than working with communities to strategically align efforts. There are many important initiatives underway throughout our state and opportunities that can help address the social determinants of health. These efforts must be aligned in meaningful ways to maximize resources and leverage efforts to improve outcomes. Lack of sustainable funding has been the biggest barrier to long-term progress. Grants and projects – even the best ones – come and go, sometimes with unintended consequences such as communities not trusting those who want to assist and lack of impact due to short-term investments. Sustained investments, infrastructure and technical support is sorely needed.

Healthy Communities Delaware (HCD) is a collaborative place-based approach to address social determinants of health and make a significant and sustainable impact on health by working in new ways with communities, organizations and other funders. The motto of Healthy Communities of Delaware is "Alignment, Investment, Impact." HCD aims to assist communities with the greatest need for addressing health equity. This statewide initiative leverages resources from a variety of investors, including those in the banking, community development and health system arena. HCD supports and builds upon a variety of existing community-based planning initiatives, councils, and coalitions. HCD offers an infrastructure that encourages, enables and supports community capacity building and provides technical assistance for alignment, implementation, measurement and investment to address the most important social determinants of health as determined by the communities.

HCD, an outgrowth of the State Innovation Model (SIM) grant work, is a consortium of public, non-profit, and private organizations aiming to improve the health and well-being of our low-wealth communities. Created in 2018, HCD consists of a diverse 35-member Leadership Council, a Management Group, which is the administrative entity that manages the day-to-day operations of HCD, and a Community Investment Council (CIC). The Management Group is led by the Division of Public Health, the University of Delaware, and the Delaware Community Foundation. Investors represent state and local government; hospital systems; universities; major foundations; charity organizations; major banks; corporations; housing and community development financial institutions that deliver responsible, affordable lending to low-income and other disadvantaged groups.

The HCD Leadership Council has adopted the following Guiding Principles from Build Healthy Places:[1]

- Collaborate with the Community
- Embed Equity
- Mobilize Across Sectors
- Increase Prosperity to Improve Health
- Commit Over the Long Term

We have heard loud and clear that to be successful, the communities must be in the driver's seat. Communities need to be empowered and supported to lead the changes in order to truly make a meaningful difference. Communities will develop comprehensive portfolios involving multifaceted efforts and multiple investors. We know that communities are in different places regarding their ability to lead and support these efforts, HCD will work with them in building their capacity to plan, execute and measure their efforts.

To empower community members with knowledge about the health of their communities, the Division of Public Health recently launched the My Healthy Community data portal.[2] Users can find neighborhood-focused data at the smallest geographical area available, and explore factors about the chronic disease, healthy lifestyles, maternal and child health, substance abuse and mental health, community safety, health-related environmental factors, health services utilization, infectious disease and community characteristics. Community leaders have let us know that when they are equipped with more health-related information, they are better able to take action to improve the determinants of health most relevant to them.

Delaware's spending on medical care continues to rise and this number is expected to double by 2025. By taking a place-based approach to invest in the social determinants of health, HCD expects to reduce health care costs and strengthen communities. "Alignment, Investment, Impact" isn't just a tagline; it is a paradigm shift and is what is needed to move the needle on our poor health outcomes and unacceptable health disparities. We are thrilled to be working together, and with a variety of key partners across multiple sectors within our state and, most importantly, in our communities. Please join us in changing the paradigm.

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Does Being "First" Matter?

THOUGHTS ON RANKING, HEALTH AND PUBLIC POLICY

Robert J. Laskowski, M.D., M.B.A.

The emotional resonance of "being first" lies in personal identification with whatever "first" you celebrate. As sports fans, we talk of "our" team with pride when it finishes first. When I became CEO of Christiana Care, Delaware's largest health system, I was proud that my health system was first in terms of size in my state. As an employee, I personally resonated with the history of my new organization's past success. Delawareans are proud of their status as "the First State." Other "firsts" abound in Delaware that foster local pride and identity – e.g. the DuPont Company's inventions, its commitment to safety, and internationally respected business-friendly court system. This pride by association is not a uniquely Delawarean trait, but true across communities as they celebrate their identity and uniqueness. To echo a Delaware state marketing slogan, it feels "good to be first."

Delaware may be "the First State," but in terms of health it is far from first. The most recent rankings published by the United Health Foundation list Delaware as 31st among all states.[1] The United Health Foundation has produced America's Health Rankings® for 25 years. The index uses national data sources and derives "rankings" based on comparisons of the state-to-state variances on a list of measured determinants. Somewhat sobering is the fact that in 2003, my first year as CEO at Christiana, Delaware ranked 36. At my retirement in 2014, Delaware's rank remained remarkably stable at 35. Thoroughly average. Not the type of result likely to puff up one's chest with pride.

Aside from pride, what difference do health rankings like those published in America's Health Rankings® make? Clearly, they do generate energy. As one of a great many examples, the Boston Globe newspaper recently reported the pride-filled headline "Massachusetts Is the Second-Healthiest State in America, Report Says."[2] On a more somber tone, a Louisiana radio station noted "Louisiana ranked #50 in national health rankings."[3] The accompanying print article noted that Louisiana had distinguished itself by being ranked in last place 16 previous times. As an explanation, the article cited Louisiana's persistent problem with childhood poverty. Since the news media frequently highlights health rankings, it is reasonable to presume the media at least perceives there is some resonance with the public's interests and concerns. How much these headlines engage the public is another question.

What is clear is that public health rankings do not seem on their own to motivate the public to action – at least in the area of personal choice of physicians or health care facilities. Eric Schneider and T. Lieberman in 2001 wrote, "The U.S. experience of the past decade suggests that sophisticated quality measures and reporting systems that disclose information on quality have improved the process and outcomes of care in limited ways in some settings, but these efforts have not led to the "consumer choice" market envisaged."[4] After discussing a number of potential reasons for the lack of evidence of an effect on quality disclosure on the public, the authors concluded, "Even under the best conditions when information is highly salient, it is not clear that consumers use it. In Pennsylvania, a state with a public disclosure programme that lists hospital specific and surgeon specific risk adjusted mortality rates, cardiac surgery patients who had recently undergone coronary artery bypass graft surgery did not obtain or use the information."

So, it appears that even if the public in general might be interested in health rankings as a headline, and perhaps take some pride if "their" doctor, "their" hospital or "their" state is highly ranked, their interest leads to no behavior change.

However, health rankings do matter to some, and these are often people in positions of authority. I speak from personal experience that while the cardiac surgery rankings in Pennsylvania noted by Schneider et al made no apparent difference to the public, they did make a great deal of difference to the Board of Directors of the Pennsylvania health system that employed me. Less than a top rank for our cardiac program resulted in a long and somewhat defensive conversation with my Board. Hospital Boards of Directors in general very much like their organizations to be "first."[5]

Health rankings are complex and are built on a number of assumptions. The choice of measures, their validity and reliability, time lags in measurement, the relative weights given to a measure in developing a summary index, and delays in the effects of interventions combine to create complexity. This complexity is rich in opportunity for critics.[6] Rankings are often challenged on the basis of their assumptions, applicability to a specific population and even political orientation.

America's Health Rankings® uses a model that assumes health behaviors, community and environment, clinical care and public policy interact to effect specific health outcomes. The system gives higher weights to health behaviors, and community and environment than to the other domains. The final rankings are statistical comparisons of all the "health input domains," plus select measured "health outcomes."[7] Another prominent health ranking project is the "County Health Ranking and Roadmaps" project developed by the University of Wisconsin Institute for Population Health and the Robert Wood Johnson Foundation.[8] This effort

looks at health at the county level for most counties in the United States. It employs a somewhat different approach in its comparisons than America's Health Rankings. The Commonwealth Fund also published a state-by-state comparison of health system performance in 2018.[9] Additionally, the Centers for Disease Control and Prevention has published a list of "public health gateway resources," which permit comparisons among states.[10] One has many approaches and rankings with which to make comparisons.

It has been 25 years since McGinnis and Foege pointed out that over 50 percent of mortality could be attributed to causes directly related to behavior and environmental risks – most modifiable.[11] Behavioral and environmental causes (or enablers) of disease have come to be called "social determinants of health." Programs to identify and modify the "social determinants of health" are now key components of most population health efforts. With the recognition of the importance of the social determinants of health, health systems have begun to look past their walls and outside the bounds of the traditional medical model of care. Large health systems like Kaiser Permanente acknowledge their role as economic and social "anchors" of their communities.[12] They have begun to use their economic and social position in their communities in a broader attempt to improve their communities' health. Similarly, the Robert Wood Johnson Foundation has focused its efforts on facilitating a "culture of health" within communities.[13] It now is universally agreed that the health of a community depends on much more than good health care.

Despite this focus on the broader issues that influence health, the health benefits of these efforts so far have remained elusive and difficult to demonstrate. An interactive animation map spanning from 1990 to the present on the Americas Health Rankings website reveals that the relative rankings of the vast majority of individual states have varied very little over the past 25 years. Rather, most have remained within their initial quintile during this period.[14] Complex causality may be making it difficult for states to "move up" or "down." Braverman and Gottlieb in a 2014 paper, "Social Determinants of Health: It's time to consider the causes of the causes," review the difficulty in rigorously determining causality in health.[15] Succinctly stated, the effect of social determinants on health and interventions that can change them are so complicated by multiple sources of potential interaction that causal links are very difficult to discern.

Does a less state-focused, more global picture of the United States give us a better indicator of social progress on health? For example, are we healthier today in the United States as a society than we were 30 years ago? The data reveals we are living longer (or were until recent declines in life expectancy).[16] And, are we less sick? Disappointingly, it is hard to tell and it seems to depend on where you live.[17]

Where does this all lead us – policy makers, clinicians and individual members of the public? Oliver[18] points out that rankings can matter. He notes rankings have several audiences – the community of experts, policy makers and the public. Rankings serve different functions for each of these groups. For the community of experts, the details underlying rankings can reveal important research questions to be explored. Comparisons can lead to testable hypotheses of causal relationships and enable analyses that can identify the likelihood a particular public health approach may be effective in a given community. For policy makers, comparisons can help determine evidence-based priorities for action. If a community ranks high in certain healthy behaviors, it might be a better use of resources to work on areas that appear more problematic. Using the energy in civic pride, rankings can engage politicians, public officials and administrators who direct public resources, to act.

Rankings can be useful to the public in more complex and less direct ways. For each of us, what appears to matter most are our own personal experiences and the experiences of those of people who we know, or with whom we identify. Motivation to change is highly personal. Numbers can matter, but only if they are our own numbers. Stories in general have a much greater impact.

Rankings can be used to inspire stories – like the Louisiana radio station linking the state's poor rankings to poverty in children. Most people will empathize with an image of a poor child. This empathy can inspire action.

Rankings are summaries. As such they lack detail, and it is the focus on detail that enables effective action. Two Delaware examples illustrate the power of focus. Delaware has been plagued for decades with a high rate of low birth weight births (most due to prematurity). Despite major advances in pre- and perinatal care, far too many babies are born before they are ready – often with severe consequences. Delaware has had many efforts to reduce prematurity during this time. Unfortunately, the rate of low birth weight births has actually increased during the period between 2003 and 2018, from 8.6% to 8.9%.[19] I conclude that these programmatic efforts, as well intentioned as they are, have not worked. The causes of Delaware's high rates of prematurity require more research rather than continuing the efforts of the past.

Cancer is a different story. Cancer in Delaware has long been a major concern of Delaware citizens. And, like reducing prematurity, reducing cancer has been a major state priority. Delaware established new advanced cancer treatment programs and extensive cancer prevention efforts. The latter were often targeted to Delawareans who suffered disproportionately from cancer as a group. The data from national comparison reveals that cancer death rates in Delaware have declined significantly from 2003 to 2018,

217.1 to 200 cancer deaths per 100,000 people.[20] And while Delaware's rate is still a bit higher than the national average, the rate of decline in Delaware cancer deaths is almost twice that of the country as a whole. In cancer death rankings, Delaware has improved from the lowest quintile to next lowest in less than 10 years. Additionally, the disparity in cancer deaths among Delaware's diverse populations has largely been eliminated with major declines in the death rate among African Americans in particular. The current cancer death reduction strategy appears to be working.

Despite their limitations and imperfections, health rankings can be helpful, but only to the extent that they inspire action. Rankings can capture attention and generate energy. If that attention is focused on learning about the specific issues that form the rankings, important discoveries that lead to action can result. The first step to change is to have a desire to do something different – often something very different than one has been doing. By their very nature, health rankings challenge the status quo. Having the courage to "look in the mirror" of health rankings is a good place to start.

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Wellness and Prevention Digest

- The Campaign for Action has developed a **Health Equity Toolkit** which provides resources that nurses, Action Coalitions, and their partners, need to help their communities by tacking the social determinants of health. The toolkit is based off of the ADPIE (Assessment, Diagnosis, Planning, Implementation, Evaluation) nursing process.
- A **new study** published in JAMA Internal Medicine highlighted the significant burden that food insecurity poses to Medicare beneficiaries, as food insecurity was associated with low income, co-morbid chronic conditions, depression, or anxiety.
- CDC is seeking **public comments** to identify topics of public health importance that will form the basis of Community Preventive Services Task Force (CPSTF) evidence-based recommendations. CDC will use this information to support the CPSTF in its selection of priority topics to guide its work over the next five years. The deadline to submit comments is January 23rd.
- The Suicide Prevention Resource Center is offering the free online course **Locating and Understanding Data for Suicide Prevention**. The course explores a variety of commonly used data sources for information on suicide deaths and attempts, suicidal ideation, and related factors—as well as new frontiers in suicide surveillance, such as interactive dashboards and real-time data collection.
- The Council of State and Territorial Epidemiologists has announced a **funding opportunity** for neonatal abstinence syndrome (NAS) surveillance. This funding opportunity will provide a mechanism for state, local, tribal, and territorial public health organizations or agencies with public health authority to conduct population health surveillance using the CSTE NAS Standardized Case Definition (Tier 1) while leveraging existing surveillance infrastructure. The deadline to apply is January 21st.
- The USDA has issued a **final rule on Supplemental Nutrition Assistance Program** (SNAP) Requirements for Able-Bodied Adults Without Dependents. According to the USDA, up to 688,000 people could lose SNAP benefits under the rule, which is set to take effect April 1, 2020 unless Congress or the Courts step in. The rule will tighten the criteria for states applying for waivers for certain employment requirements. Currently, there are two other proposed SNAP rule changes not yet finalized, one focused on Broad-Based Categorical Eligibility and one on Standard Usage Allowances. If these two rules are also finalized, it's estimated that the combined impact of the three rules would cut 3.7 million from SNAP.
- Please join Trust for America's Health (TFAH) for a **webinar on January 29th** as public health leaders discuss the national obesity crisis, its health impacts, and how advocates are working at the national, and local levels to address this on-going epidemic. This webinar explores findings of TFAH's 2019 State of Obesity report.

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A Stroke Reduction Health Plan for Older Adults in Rural Sussex County, Delaware

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ABSTRACT

Stroke is a leading cause of death and disability among adults age 65 and over in the United States. Modifiable risk factors for stroke include: obesity, poor nutrition, and lack of exercise. Sussex County, Delaware has the highest stroke rate among older adults in the state. Twenty-five percent of the population in Sussex County are 65 and over and about 70% of adults are overweight or obese. Consistent with the social ecological framework, the Stroke Population Risk Tool may be used at the individual level to identify those at an increased risk for stroke and to create individualized stroke specific education. At the community level, local nutrition, fitness, and senior services may be utilized - with older adults at the highest risk profile participating in a 12 week stroke education program focused on risk reduction behaviors, nutrition and exercise classes. At the policy level, the Walkability Assessment Tool may be utilized to encourage local municipalities to identify areas of the county which lack safe spaces to be physically active and to develop a plan to create a more exercise conducive environment. Taken together, the proposal discusses an implementable plan that may, in the long-term, effectively reduce the stroke rates of older adults in Sussex County and allow for the early identification of those at the greatest risk for stroke.

INTRODUCTION

Cerebrovascular accidents (CVA) are the fifth leading cause of death in the U.S., associated with long-term disability and over $34 billion in health care costs.[1] Though an estimated 80% of strokes are preventable, about 800,000 new or recurring strokes occur every year.[2] Deaths from stroke were declining, but the rate of decline has slowed in recent years with an uptick in deaths in 2013. This may be due to increases in life expectancy, obesity, reduced health care access, as well as an unhealthy diet, and physical inactivity.[2]

Over 25% of the population in Sussex County, Delaware is over the age of 65.[3] Delaware is an attractive location for retiring baby boomers and other older adults with low overall tax rates, a central location and tourist attractions such as beaches.[4] By 2040 there is a projected increase of more than 50% in the 65 and older population.[5] Among the oldest old (age of 85 and over), population growth is expected to double to more than 18,000 individuals by 2040[5]. The risk of stroke increases exponentially with age; stroke prevalence is about 5.7% in 60-79 year olds and 14-15.5% among adults age 80 and over.[6]

In addition to age, other primary risk factors for stroke are diabetes, hypertension and hyperlipidemia.[7] Compared to their older adult counterparts in other areas of the state, Sussex County has the largest population of obese and overweight adults with elevated rates of diabetes (28.2%), hyperlipidemia (64.8%), and hypertension (64.2%).[8] Older adults in Sussex County also have lower physical activity rates (with fewer than half of residents reporting regular exercise) and poorer nutrition (26.5% consume recommended daily servings of fruits and vegetables).[8] This may be due, in part, to fewer opportunities for exercise, an increase in fast food restaurants across the county, and a decrease in grocery stores supplying fresh fruits and vegetables.[8]

Access to quality health care may also be a barrier for some older adults in the county. About 20% of communities in the US are rural, but fewer than 10% of physicians practice in rural areas.[9] As a designated Health Professional Shortage Area (HPSA), Sussex County has over 3,500 people per primary care provider (PCP). Of those, 67.5% accept new Medicare patients which equates to an average 17 day wait time for an established patient and a 45 day wait time for a new patient.[4] Some older adults also have limited access to reliable transportation. Rural populations must travel greater distances to reach healthcare facilities, particularly specialists, and there is often inadequate public transportation.[9] In a community health survey of the three hospital systems in Sussex County, lack of reliable transportation was repeatedly highlighted as a considerable barrier to healthcare.[4] Access to quality healthcare is associated with access to clinical preventative screenings and services and overall improved mortality.[10] Thus, reduced access to care puts patients at an increased risk for stroke.

Given these individual, community and policy-level factors influencing stroke risk and access to quality health care among older adults in Sussex County, this paper utilizes a social ecological framework to begin to develop a tailored health plan for Sussex County, Delaware. Consistent with current work emphasizing the need for increased collaboration between public health policy and community level resources to combat the multilevel factors contributing to chronic disease, this paper provides recommendations for multi-level interventions which may be used to effectively reduce the risk for stroke in the local community.[11]

HEALTH PLAN

Using the ecological perspective as a framework, the primary outcome of this health plan is to decrease stroke prevalence from 5.5% to less than the national average of 4% within 5 years.[8] As outlined in Table 1, this will require that we target seniors at the highest risk for stroke and establish a successful health plan that

	Individual Level	Community Level	Policy Level
Outcome	Identify individuals at highest risk for stroke. Institute individualized, patient focused stroke risk reduction health plan. Refer individuals at risk of stroke to appropriate community resources.	Establish a 12-week stroke risk reduction workshop. Improved nutrition by improving access to healthy foods among seniors Improved physical fitness among seniors	Determine environmental factors impeding access to physical activity and nutritious foods Improve the utilization of public areas for walking and exercise
Performance Measure	Number of individuals screened for stroke using SPoRT. Number of individuals participating in stroke risk reduction health plan. Number of individuals referred to community-based activities.	Number of individuals participating in 12-week stroke risk reduction workshop. Number of individuals participating in community-based nutrition programs. Number of individuals participating in physical fitness classes.	Number of Sussex municipalities using the Walkability Assessment Tool.
Strategy/ Tactics	Use of SPoRT to identify individuals at risk for stroke. Develop individualized stroke risk reduction health plan. based on SPoRT score. Provide individuals with a list of community resources available.	Initiate a 12 week education workshop comprised of stroke education on risk factors and behavioral risk reduction strategies, nutrition* and exercise** interventions Continued follow up with health coaches after the 12-week workshop to encourage continued compliance with health plan Referrals to community transportation services to ensure access to doctor's appointments, nutritious meals, and exercise opportunities	Utilization of the Walkability Assessment Tool

Note. SPoRT= Stroke Population Risk Tool

** Nutrition interventions include: (a) establish a community-based senior nutrition program, (b) weekly nutrition classes focused on a low sodium, low cholesterol, well balanced diet; simple meal preparation; healthy food samples; and where to obtain fresh ingredients, (c) referrals to meal delivery services (Meals on Wheels, local grocery delivery services, mobile grocery stores).*

*** Exercise interventions include: (a) 20-50-minute choreographed exercise sessions three time a week, (b) referrals to community fitness centers and exercise programs offered at local senior centers.*

Table 1. Stroke Reduction Plan for Sussex County

integrates individual, community, and policy-level factors and promotes healthy behaviors by the use of a 12-week stroke risk prevention program, improved nutrition, and increased physical activity.

OUTCOMES

The individual level outcomes are to: 1) identify individuals at an increased risk of stroke using the Stroke Population Risk Tool (SPoRT), 2) institute individualized, patient-focused stroke risk health plans, and 3) refer at risk individuals to the appropriate community resources. The community level outcomes are to: 1) establish a 12-week stroke risk reduction workshop, 2) improve nutrition by improving access to healthy foods among seniors, and 3) improve physical fitness among seniors. The policy-level outcomes are to: 1) determine environmental factors impeding access to physical activity and nutritious foods and 2) improve the utilization of public areas for walking and exercise.

PERFORMANCE MEASURE

The Stroke Population Risk Tool (SPoRT) is a valid and reliable measure of stroke risk in this population (C-stat of 0.85 with a 0.83-0.86 95% CI for men and 0.87 with a 0.85-0.88 95% CI for women).[12] This on-line questionnaire can be completed in-person or over the phone with a health care worker every two years or during a community-based health screening such as those used for hypertension screenings.[12,13] The SPoRT uses age, sex, BMI, and self-reported health behaviors (smoking, alcohol, fruit and vegetables, leisure physical activity, stress), sociodemographic factors (country, education level), and disease and immobility factors (history of diabetes, heart disease, previous stroke, hypertension, dementia, cancer, activity limitations) to calculate a maximum score.[12] The SPoRT behavior score ranges between 0-9 for men and 0-11 for women. Each point increase in score is associated with a 12% increase in stroke risk for men and a 14% increase in stroke risk for women.[12]

As individual-level health behaviors are difficult to change, referrals to community-based programs should be well-documented and formal follow-up plans should be implemented to ensure adherence. Additional calls from a health care professional are recommended if the older adult does not use the community programs as recommended with a discussion of barriers (e.g., transportation) to program use. Community-level measures are to be collected monthly by quantifying the number of individuals participating in 12-week stroke risk reduction workshops, community-based nutrition programs, and in physical fitness classes with analyses on attrition, partial completion, and interviews with older adults in the program for quality improvement. At the policy level, measures will consist of the number of Sussex county municipalities using the Walkability Assessment Tool.

STRATEGY/TACTICS

Individual Level

After identifying at-risk older adults, providers/health coaches/trained healthcare workers will work one-on-one with patients to encourage healthcare autonomy and foster compliance with the stroke risk reduction health plan.[14] This plan will directly address the patient's SPoRT score as well as direct the patient to applicable community resources in order to encourage healthy behaviors. Greater patient buy-in will be encouraged through evidence-based practice behavioral modification strategies such as goal setting, the establishment of a social network in support of the new healthier behaviors, self-reward and positive self-talk, as well as structured problem solving to help prevent relapse into less healthy behaviors.[15] A recent study found that the most influential health education approaches are tailored to the individual patient rather than generic behavioral materials created for the general population. Not only are such individualized approaches more relevant to the patients, but they can also be tailored to their level of health literacy.[16]

Community Level

At the community level, individualized education and a supportive social network are enhanced through educational programs geared toward the elderly living at home. Programs are modeled after Jeon and Jeong's[17] stroke primary prevention program which consisted of 12 consecutive weeks of stroke education on risk factors and behavioral risk reduction strategies, weekly nutrition classes, and exercise classes three times a week. The first six weeks will focus on managing stroke risk factors such as elevated BMI, hypertension, dyslipidemia, etc., thus providing a strong foundation for the second six weeks which focuses on health risk behavior reduction such as stress and obesity management. Jeon and Jeong's stroke primary prevention program significantly reduced blood pressure, blood sugar, lipid levels, depression score, and BMI among the rural older adult participants.[17] Following completion of this 12 week program, health care coaches will continue to follow these patients and encourage utilization of community wide nutrition and fitness programs. An important barrier for many older adults in rural areas is lack of transportation. Without access to a vehicle or public transportation older adults will be unable to participate in community programs and are at risk for social isolation and dependence.[18] This will be ameliorated through referrals to organizations providing reduced rate transportation to local shopping, community centers and events, pharmacies and other medical facilities for seniors.[19-22]

Public policy level

On a policy level, the University of Delaware's Walkability Assessment Tool, which is a three-step process engaging local stakeholders in active workshopping and auditing, will be used to aide local governments in the assessment of the strengths and weaknesses of their county's degree of walkability.[23] Walking is one of the easiest and cheapest ways for residents to become physically active. Thus, by increasing walkability through infrastructure enhancement, municipalities are not only lowering road maintenance costs, reducing traffic, and improving air quality, but they are increasing the level of fitness achieved by their residents and in turn contribute to stroke risk reduction.[23]

POSSIBLE FUNDING OPPORTUNITIES

This proposed program in Sussex County could be funded with grants through the National Institutes for Health (e.g. Personalized Strategies to Manage Symptoms of Chronic Illness, Self-Management for Health in Chronic Conditions, or Population Health Interventions: Integrating Individual and Group Level Evidence), as well as through partnership with community resources such as senior centers, Sussex County Health Coalition, and the Diabetes and Heart Disease Prevention and Control Program. Partnership with local organizations would strengthen the health plan by providing patients with a multitude of supportive and health promoting services as well as several locations and knowledgeable staff to assist with the 12 week education program.

CONCLUSION

High rates of stroke deaths in Sussex County, DE suggest there are unmet needs spanning the individual, community, and policy levels, particularly among rural-dwelling older adults with restricted health care access, comorbid health conditions, and poor health behaviors associated with CVA's. As a result, this health plan focuses on healthy nutrition and increased physical activity due to the growing population of obese and overweight older adults in Sussex County as well as the significant impact obesity, poor nutrition, and lack of exercise play in the development and progression of cardiovascular disease and stroke.[2,8] Ultimately the success of this health plan will be determined by the performance indicator of a deceased stroke rate among seniors in Sussex County to below the U.S. average.[8]

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High Hospital Prices and Margins in Delaware Call for Action

Aditi P. Sen and Ge Bai
Johns Hopkins University

High prices for hospital services lead to many people foregoing or delaying necessary health care. There remains substantial variation in hospital service prices, with some regions having much higher prices despite the fact that higher prices are not associated with better quality. For individuals with health insurance through their employer, prices are set as a function of negotiations between their insurer and local providers. Thus, high prices are often found in markets where hospitals wield significant market power and can use this leverage to charge higher rates to private insurers. In contrast, prices in public insurance – Medicare and Medicaid – are set administratively to reflect the resources needed to provide specific services in specific markets (e.g., these prices are adjusted for higher wages in some areas).

For individuals with health insurance through their employer, prices are set as a function of negotiations between their insurer and local providers. Thus, high prices are often found in markets where hospitals wield significant market power and can use this leverage to charge higher rates to private insurers. In contrast, prices in public insurance – Medicare and Medicaid – are set administratively to reflect the resources needed to provide specific services in specific markets (e.g., these prices are adjusted for higher wages in some areas).

Rising prices in employee health plans threaten the affordability of health care, may hold down wages and, in the case of state employees, may have adverse consequences for the financial health of the state. Lowering prices would facilitate access to health care services by Delaware consumers, though there is understandable concern about the effect that any decrease in prices paid by private insurers could have on hospitals in the state. In this commentary, we present evidence on how hospital prices paid by private insurers in Delaware compare to Delaware's neighboring states and to Medicare and on the State's hospitals' financial status.

We used data from the MarketScan Commercial Claims database,[1] which includes private-sector health data from approximately 350 payers across the country, to measure commercial health care prices for a set of common inpatient procedures and for an inpatient "basket" of services (representing the 15 highest-volume inpatient procedures, which account for 46 percent of total admissions and 37 percent of total spending). We compared these prices to prices for the same services in Medicare using a 20 percent sample of Medicare claims. We also compared prices to prices in neighboring states (*see Table 1*).

We found that the mean payment for the inpatient basket for a patient with private insurance in Delaware was $9,068 in 2017, compared to $3,765 for a Medicare beneficiary in the state. As an example of the price for a specific, common procedure, the mean private price of a major joint replacement (hip or knee) was $35,616 compared to $14,448 in Medicare. Our main inpatient basket, described above, includes childbirth/deliveries, which may result in small sample sizes in our Medicare data since Medicare does not pay for many births. Thus, we also calculate the price of an alternative inpatient "basket," which does not include deliveries. The private and Medicare prices for this basket are lower, $5,891 and $2,629 respectively, however the ratio of private-to-Medicare prices is similar. The overall take-away is that Delaware private plans currently pay over double what Medicare pays in Delaware for selected hospital services. The ratio of private-to-Medicare prices in Delaware is also higher than the ratios of private-to-Medicare prices in Delaware's neighboring states of Pennsylvania and Maryland.

One could argue that the Medicare program pays too little, however national data suggest that most efficient hospitals would not be unprofitable if hospitals were paid Medicare rates.[2] Hospitals generally spend available resources; thus, when private insurers pay higher prices, hospital costs usually increase.[3] Using the 2017 Medicare Cost Report[4], we examined the overall margins and operating margins of short-term general hospitals in Delaware. Overall margin is defined as the total net income from all resources divided by net patient revenue. Operating margin is defined as the patient net income divided by net patient revenue. We found that among the six Delaware hospitals, overall margins ranged between 3.1 percent and 15.2 percent, with a median of 11.4 percent; operating margins ranged between -5.1 percent and 8.7 percent with a median of 3.1 percent (*see Table 2*). We also examined all 4,517 short-term general hospitals in the nation. Their median overall margin and operating margin were 3.6 percent and -2.6 percent, respectively. In comparison, Delaware hospitals' median overall margin and operating margin were both substantially higher than the national median.

As of 2017, 53 percent of Delawareans received health insurance through their employer. Delaware private plans currently pay

	DE Private Price ($)	DE Medicare Price ($)	Ratio of DE Private: Medicare Price	PA Private Price ($)	Ratio of PA Private: Medicare Price	MD Private Price ($)	Ratio of MD Private: Medicare Price
Inpatient Basket with deliveries	9,067.95	3,764.56	2.41	7,778.03	1.91	7,124.76	1.35
Inpatient Basket without deliveries	5,891.10	2,629.41	2.24	4,944.29	1.90	4,329.12	1.30
Hip/Knee Replacement	35,616.20	14,448.37	2.47	27,793.94	1.98	25,689.16	1.32

Table 1. Average Private Prices in Delaware relative to Medicare and Neighboring States, 2017[1]

Hospital name	City	Number of beds	Overall margin	Operating margin
Beebe Medical Center	Lewes	193	9.8%	8.7%
ChristianaCare	Wilmington	1061	14.5%	-5.1%
Kent General Hospital	Dover	281	15.2%	5.0%
Milford Memorial Hospital	Milford	124	13.0%	3.6%
Nanticoke Memorial Hospital	Seaford	94	8.3%	2.7%
St. Francis Hospital Wilmington	Wilmington	180	3.1%	-0.3%
National average (4,517 hospitals)	-		3.6% (median)	-2.6% (median)

Table 2. Hospital Margins in Delaware, 2017[4]

approximately twice what Medicare pays for selected hospital services and hospitals in the state are, on average, doing better than hospitals nationally. Higher prices for hospital services that are borne by employers are passed on to employers and employees in the form of higher premiums and deductibles. In turn, higher cost-sharing may lead to forgone employer profit and employee take-home pay. Opportunities exist for the state to address this issue and balance access, cost, and quality of the Delaware hospital market.

To immediately reduce the burden of high prices on Delaware employees, policymakers may consider enacting protections against surprise billing. "Surprise billing" occurs when an individual seeks care at a facility that is in their insurer's network, but receives a bill from an out-of-network physician who is practicing at that facility. Their insurer may cover part of the bill, but then the patient may receive a bill for the difference between the physician's charge and the insurer's payment. There is broad agreement that consumers should be protected from these potentially substantial bills, prompting federal and state policymakers to take action. Delaware has partial protections against surprise bills in place, however these protections could be made more comprehensive.[5]

"Surprise" bills make up a small amount of health care spending. Delaware could take further action by implementing broader, but still targeted, price regulation. For example, the state could reduce rates paid for services used by state employees by 20 percent every year so that the gap between their prices and Medicare rates is closed over five years. Reducing rates for state employees would improve access to care for employees and reduce state spending on health care. Those savings could then be directed into higher wages or other priority areas for the state. Several states, including California and Montana, have enacted legislation tying rates paid for state employees' health care directly to Medicare rates. For example, Montana pays 234 percent of Medicare rates for services provided to state employees. The state reports that this policy has been a success, saving the state $15.6 million this year without adverse effects on hospitals.[6] California has taken a narrower approach, setting rates for state employees for a select set of procedures (and expanding this set over time).

The state may also consider removing regulatory barriers such as "Certificate of Need" laws, which require health care facilities to appeal to a state board before expanding, building, or acquiring a new service. Evidence has shown that these laws have not had the intended effects of controlling costs or improving quality.[7] Instead, they have allowed existing hospitals to keep competitors out of the state, thereby reducing competition – and leading to higher prices. To date, 15 states have repealed their Certificate of Need laws, however Delaware's remain in place.

Other states have undertaken a range of actions with the goal of lowering private sector health care prices, including targeted price regulation, promoting competition in provider markets, and investing in alternative payment models (e.g., global budgets for rural hospitals).[8] Our data shows that Delawareans who receive insurance through their employer currently pay more than twice as much for hospital services than Medicare pays. At the same time, Delaware hospitals generally have higher profits than the national average. Lowering health care prices would help Delaware residents access services and reduce the financial burden on the state and employees without threatening the financial viability of the state's hospitals.

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Reflection - The APHA Annual Meeting and Expo - "Creating the Healthiest Nation: For Science. For Action. For Health" was held from November 2 – 6th in Philadelphia.

Timothy E. Gibbs, M.P.H.

There is a certain energy that happens for me when the annual conference of the American Public Health Association occurs. Some of that energy is the excitement of being with 13,000+ like-minded individuals who care about public health as I do. Another part is the "get down to work" energy which comes from being a member of the Council of Affiliates and Governing Council. For me, the annual meeting experience is as much deliberating policies and sitting in legislative sessions as it is visiting the exhibition halls and attending educational lectures and various receptions.

Governing Council in Session

This year, there was an even greater energy that came with being a host committee organization and having the meeting close enough to commute to and return home each day. On Sunday evening, at the headquarters of the Public Health Management Corporation, adjacent to Philadelphia's iconic City Hall, the Academy/DPHA co-hosted a special reception with public health associations from Pennsylvania, New Jersey, and Maryland.

Opening Session with Georges Benjamin

While there is always the collegial energy of sharing the experience with colleagues from Delaware, and especially hearing them present, this year, I was fortunate to attend many presentations by our Delaware colleagues. In total, 47 individuals from Delaware presented, including Delaware Department of Health and Social Services Cabinet Secretary **Kara Odom Walker, M.D., M.P.H., M.S.H.S.**; and Division of Public Health Director **Karyl Rattay, M.D., M.S**.

Host Reception Welcome by Dr. Benjamin

Host Reception

Host Reception Gathering

Omar Khan in Panel Discussion

"Advancing Public Health Science across the Clinical Sciences" – Omar A. Khan, M.D., M.H.S.

This presentation discussed the essential role played by medical schools, health systems and state actors and the critical functions of strong local public health affiliates in bringing them together.

"Understanding the Implementation of the Revised Nutrition Standards in the USDA's Child and Adult Care Food Program among Child Care Providers in Delaware" – Laura Lessard, Ph.D., M.P.H.

Laura Lessard Presentation

While significant changes were made to improve the nutritional quality of meals served in child care settings under the USDA's Child and Adult Care Food Program (CACFP) beginning in October 2017, little is known about the barriers to implementation faced by child care providers. Understanding these barriers and exploring potential solutions is essential to ongoing support of these efforts.

"Addressing the Impact of School-based Health Centers" – Khaleel Hussaini, Ph.D.

School-based Health Centers (SBHCs) provide students access to health services, and are located within schools or at off-site locations. SBHCs benefit students' physical, psychosocial, and emotional needs. The study aimed to assess the impact of SBHCs in Delaware using linked data between both the SBHC program and Medicaid claims from 2014-2016 for 13-18 year olds.

"Addressing community health through university-community partnerships: Evaluation challenges and early lessons learned" – Allison Karpyn, Ph.D.

Institutions of higher education have been criticized for being insular, exclusive communities disconnected from the problems of the "real" world, detached from the needs of the local communities in which they reside. At the same time, universities can lead collective action across sectors, supporting new forms of community engagement and partnerships required to achieve health equity.

When the meeting was over and all was said and done, I took away an energy of renewal, and hopeful conviction that the work we do can - and does - make a difference.

Alison Karpyn Presentation

AN APHA EXPERIENCE

Matt McNeill

Philadelphia is the city of brotherly love, a city full of life and culture and the perfect place for the American Public Health Association (APHA) Annual Meeting and Expo. People packed into the Pennsylvania Convention Center as the winds whipped outside, and meeting rooms full of people listened eagerly to the most recent findings on climate change's impact on health. For some, this is nothing new; another year gone by and another conference attended. For others like myself, this is our first experience of such an intellectual gathering. All of my expectations for this conference were exceeded; from the sheer volume of information to the very obscure studies, I realized the true breadth and depth of public health.

Going into the conference I was not sure exactly what to expect. I figured there would be plenty of time to sit around and chat with peers, discuss our current works and see if there were ways we could help one another improve our efforts, as well as listen to presenters share the work that they had done over the past several months to years. But then I saw the list of presentation options to choose from, and I was greatly overwhelmed. There were so many presenters that had interesting topics, from early childhood development and violence in Sub-Saharan African communities, to confronting disinformation about vaccines; and there was only so much time to go see them! With such limited time, I knew I would have to choose wisely in order to get the most out of my APHA experience. With that in mind, I surfed through the lecture choices on the APHA app and picked out what seemed like the most exciting talks to attend.

As a young person with many friends who use JUUL and similar products, by far the most relevant talk to my own life was on Wednesday: "Fighting Big Vape." The presenters spoke about the legal challenges that regulators are facing with controlling the spread of Electronic Nicotine Delivery Systems (ENDS) and the legal battles that are currently being fought with Big Vape corporations. They also briefly touched on some of the science behind what is actually in these products that Big Vape corporations aren't disclosing, and what the legal ramifications are of their use.

The big takeaways from this were that currently, vapes are not technically considered legal, however the illegal sale of ENDS is allowed to occur via a loophole in FDA regulations that vaping companies are exploiting. They will have until 2021 to comply with FDA regulations and submit product details before items start being removed from shelves. On the more biological side, the presenters did mention that the majority of the 1,888 hospitalizations and 37 fatalities due to vaping-related lung injuries have occurred from black-market THC containing products.

However, an independent study mentioned during the presentation tested the chemicals in several flavors of nicotine e-juice, and found that some of these products contained over 1,000 parts per billion (ppb) of chemicals like diacetyl. Diacetyl has a National Institute for Occupational Safety and Health (NIOSH) daily exposure limit of 25 ppb per 8 hours per day (for employees working in chemical manufacturing settings) due to the highly toxic and carcinogenic nature of the chemical. Chemicals such as diacetyl are also not being listed on product ingredient labels, which poses a serious risk to consumers who are not being given honest information about the products they are using.

A few other very interesting talks that I attended included a presentation on the impact of twitter robot accounts spreading misinformation and disinformation about vaccines, the impact of housing on our health (both where we live and our home ownership status), and how health rankings systems can be used as tools to improve population health. The overarching message from all of the presentations that I attended was the importance of community engagement and ownership, and long-term project funding.

If public health officials truly want to succeed in their efforts to improve the health of a community, they need to spend the time to develop a relationship with movers and shakers within the community that they are trying to help. Without buy in from key stakeholders in the community, no program will be as successful as it could be. By creating a more personal relationship with the affected individuals, a larger margin for success with the intervention is created.

The other important piece of project development required for a long-term project to be successful is funding. Often project funders will only give grants on a 1- to 5-year basis, which does not always allow enough time to see the desired change in the population. Without long-term funding, while the community being served may see some improvement over the course of the intervention, that improvement may fall short of expectations and program funding may be cut completely. This can lead to the community losing trust in any further engagement with new programs, on the basis that these programs will only be short-term interventions and will not necessarily provide long-term benefits to the population. From my perspective, community buy-in and long-term funding are the two greatest challenges that we face in public health.

Overall I had a very positive first APHA experience! I saw lots of excellent presentations on a variety of public health topics and learned a tremendous amount about what's going on in the field. From how the opioid epidemic has caused my generation to be the first in recent history to have a lower life expectancy than their parents, to the health issues that deserve our attention in the 2020 election, there was a plethora of exciting information around every corner at APHA 2019. I can't wait to see what APHA 2020 will have to offer!

FROM JOHN SNOW TO VACCINE HESITANCY

Katherine Smith, M.D., M.P.H.

Public health is not a "one and done" goal: it is always changing, and what worked at one time (John Snow – no, not the guy from Game of Thrones – changing the head of the water pump to stop a cholera outbreak) may not work later (it's a lot easier to sanitize water nowadays than it was in 1854). Events like the APHA Annual Meeting and Expo let public health professionals discuss what is working, and what might need a little finessing.

One of my favorite aspects of public health is that, not only is it everywhere, from immunizations to cleaning up after your dog; it also spans personal histories, socioeconomic statuses, and lived experiences. I was able to sit in on presentations, panel discussions, and lectures that ran the gambit from the opioid crisis to climate change. I interacted with people keen to change labor laws at a maternal and child health town hall. At the opening session, we heard from the Director of the Centers for Disease Control and Prevention telling us that addiction is "a chronic, relapsing medical condition, and not a moral failing." There were multiple discussions about Adverse Childhood Experiences (ACEs) and how they go on to affect people for the rest of their lives.

Public health spans everything – I always tell my student interns that "you give me a subject, I'll tell you how public health is a part of it." t is ever changing with new science and discoveries, new medicines and therapies, and changing thoughts and issues. In this era of climate change, vaccine hesitancy, and the addiction/opioid crisis, public health is more important than ever, and what we learn from the APHA Annual Meeting and Expo will help us be better able to navigate these issues, and whatever else may come.

Delaware Hospitals Make Significant Investments in Value

Wayne A. Smith
President and CEO, Delaware Healthcare Association

Health care affordability and the delivery of excellent care continue to be top of mind for many Americans, including our friends and neighbors in our state. Delaware's hospitals are in our communities, listening to these concerns and making significant changes to assure the delivery of the highest value health care.

Hospitals and health care systems provide value to patients and the community by investing in strategies that increase quality, improve outcomes and implement payment systems that incentivize health to reduce chronic disease and preventable illness. We are proud Delaware's investments in quality are being recognized for excellent results: U.S. News & World Report ranked Delaware #1 in the nation for Hospital Quality in 2019, based on hospital success in performing nine common procedures.[1] U.S. News and World Report uses market research approaches of physician surveys, hospital risk-adjusted mortality and patient experience surveys in its rankings.

Value in health care is a broad term. Defining value only as cost would be detrimental to the delivery of quality health care. For example, X-rays can be expensive, but if your provider suspects you have a broken bone, an X-ray is necessary to determine a correct course of treatment. You would not want a medical provider to abandon the X-ray simply to cut costs. No one wants the quality of treatment to suffer in pursuit of a lower medical bill. Addressing affordability while maintaining quality in health care go hand-in-hand, and this is the best way to define value.

The major components of Delaware hospitals' commitment to and investment in value include pursuing improved health in all of our communities, increasing access and delivering the right care in the right setting at the right time, and moving to alternative payment models, which promote the provision of high-value care (*see Figure 1*). That means, moving beyond paying for services and moving to paying for health outcomes.

COMMUNITY BENEFIT AND HEALTH

All of Delaware's hospitals (all of our general acute care and pediatric hospitals are nonprofit hospitals) provide tremendous value to the community on a daily basis through their community benefit work: providing uncompensated care, conducting Community Health Needs Assessments, and addressing Social Determinants of Health.

UNCOMPENSATED CARE

Here in Delaware, hospitals contributed more than $348.9 million statewide in community benefit spending in 2016, the most recent reporting year. More than half ($200.2 million) of this amount stems from the unpaid costs of patient care, including charity care. Delaware's nonprofit hospitals treat all patients who enter, regardless of their ability to pay. It is important to note the unique status of Delaware as one of the few states without a public general acute care hospital for the underserved. In the absence of a public hospital in our state, Delaware nonprofit hospitals serve as a much-needed safety net for a large portion of the population.

The remaining $148.6 million in community benefit provided by Delaware hospitals includes community health improvement services, such as preventative care and screenings, health profession education and other high-value innovative programs.

COMMUNITY HEALTH NEEDS ASSESSMENTS

To focus their community health improvement efforts, Delaware's hospitals undertake an evaluation process to identify the health needs of their communities. This Community Health Needs Assessment (CHNA) is conducted every three years and also includes an implementation plan containing strategies to help address these needs.

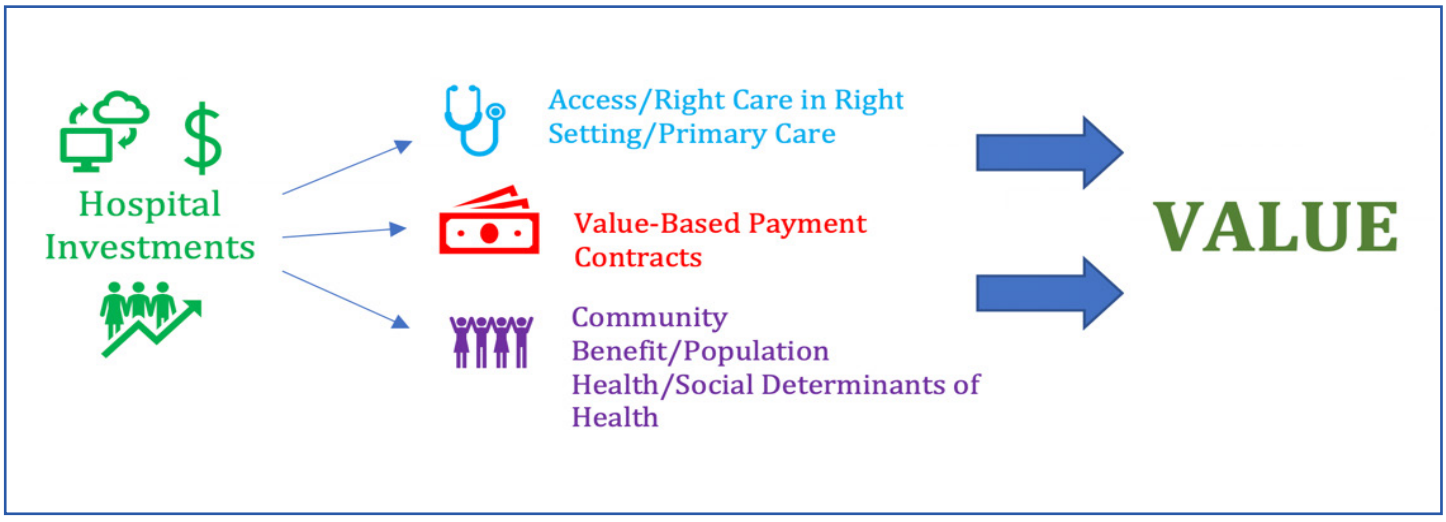

Figure 1. Delaware Hospitals' Investment in Value

While each hospital develops its own CHNA and priorities in its communities, there are often shared challenges across Delaware. In 2016, mental health and/or substance use rose as top concerns for many communities across the state and therefore were reflected as priorities in each hospital's CHNA. Since that time, numerous partnerships have been developed to provide wraparound services for those with various behavioral health needs.

SOCIAL DETERMINANTS OF HEALTH

Delaware's hospitals are currently working on completing their 2019/2020 CHNAs and a common priority has emerged: Social Determinants of Health (SDOH). Although medical care is very important, it only impacts about 20 percent of a population's overall health. The other 80 percent is attributed to environmental and socioeconomic factors, collectively known as SDOHs. An individual may get a medical check-up every year, but they will not see positive health outcomes unless, for example, they have the right foods to eat, clean water to drink, safe housing, and social support.

When working toward value in health care, simply addressing clinical medical care in a vacuum will not contribute to better outcomes. Reflecting this, reimbursement contracts are moving toward incentivizing value, and carry disincentives for worse outcomes and higher costs. As these new payment systems in effect align health systems to address non-medical factors that contribute to an individual's health, finding ways to look beyond hospital walls and address SDOHs that shape a community's health is critical. For this reason, our health systems have launched multiple initiatives to tackle SDOHs and deliver the right resources to address these needs.

Exciting and significant initiatives by our member health systems are underway. Saint Francis Healthcare and its parent organization, Trinity Health, announced in 2018 that they had invested $1 million to launch the Wilmington Healthy Neighborhood Fund with Cinnaire. This community-driven revitalization effort was established to address SDOHs, including safe and affordable housing, in Wilmington. ChristianaCare is also addressing SDOHs with a $1 million gift to REACH Riverside Development Corporation to support community health and youth development in Wilmington's Riverside community.

Over the last year, Nemours began a pilot program to implement a screening tool for SDOHs. This will help identify gaps in community services and also provide assistance to individuals who have immediate needs.

ChristianaCare is investing in a social care framework, including the launch of a community partnership fund to address the SDOHs and a coordinated care network platform to connect patients with these services. In partnership with community groups, ChristianaCare will launch Unite Us, an electronic social care referral system that connects health care providers and a network of community partners via a shared technology platform. "If a patient screens positive for food insecurity or transportation needs, the system sends a referral to the appropriate community organization for the necessary services. The provider refers the patient, the community partner reaches out to the patient to provide the services needed, and they have the ability to send a note back in the platform to let the provider know that the needed services were provided," said Erin Booker, Vice President of Community Health and Engagement at ChristianaCare. The ability for medical providers to make a timely referral for needed community services, and receive information back that assistance was indeed given, is critical to contributing to and tracking healthy outcomes.

Hospitals and health systems have the staff, equipment and experience to treat acute medical problems and manage chronic conditions. Understanding and treating broader social needs, ranging from food insecurity to providing a safe living environment, would be a major deviation from the day-to-day routines of most doctors and nurses. That is why the community partners are so important.

Delaware hospitals and health systems are pleased to work hand in hand through public-private partnerships with the State of Delaware and the Department of Health and Social Services (DHSS) through the Healthy Communities Delaware initiative. Healthy Communities Delaware (HCD) is a collective-impact initiative aimed to coordinate and amplify the investments in Delaware's communities to address SDOHs.

Accomplishing value requires considering a patient's entire well-being, beyond acute medical needs. Having eyes on patients for regular check-ups is essential to keeping tabs on the aspects of their lives that contribute to positive health outcomes. Delaware hospitals recognize that providing access to those check-in points is critical to population health and have worked to comprehensively address our access to care challenges in Delaware.

INCREASING ACCESS AND DELIVERING THE RIGHT CARE IN THE RIGHT SETTING AT THE RIGHT TIME

Access to health care is vital to creating a healthy community. The ability to see a clinician on a regular basis to prevent problems before they arise can help keep individuals healthier longer. In the value equation, where you get your health care is also important. A patient with a bad cold who sees their primary care doctor for treatment will incur much lower medical bills than a patient that visits a hospital's emergency department (ED) for the same illness.

As hospitals look to increase quality and health outcomes in their communities in a value-based payment environment, they are spending significant resources to deliver the right care in the right setting at the right time.

An important component of the "right setting" is access and use of primary care. A strong primary care system allows for more healthy individuals while also ensuring EDs are used for true emergencies. Similarly, hospital stays are less frequent through better avoidance and management of chronic conditions. Primary care is essential for keeping individuals out of the emergency room, as evidenced by Nanticoke Health Services' own health plan that has been successful at reducing

ED utilization by simply requiring employees see their primary care providers and get a physical annually. This allows for both prevention care and early identification and treatment of multiple chronic conditions that otherwise may result in costly and debilitating outcomes. All of these ripple effects contribute to the value brought by our Delaware health care systems by improving outcomes, reducing costs and supporting a high quality of life for the communities we serve.

Unfortunately, there is a primary care shortage across the nation. The Association of American Medical Colleges estimates that by 2030, there will be a shortfall of between 14,800 and 49,300 primary care physicians.[2] Delaware is also feeling the effects of the strain on primary care. A 2018 DHSS report on primary care indicated that the estimated number of full-time equivalent primary care physicians in Delaware decreased from 707 in 2013 to 662 physicians in 2018.[3] Given our demographics, this is movement in the wrong direction. Delaware is the seventh-oldest state in the nation[4] and is an attractive location for retirees. An aging population means demand will continue to increase beyond simple population growth.

Our Delaware Healthcare Association (DHA) members believe that a robust system of primary care is the linchpin of a high-value health care delivery system for the neighbors we serve. This is why Delaware hospitals currently invest significant resources – and in fact lose millions of dollars annually – to recruit, maintain and support primary care service providers that in many cases would not exist in certain geographic areas absent health system support. A 2019 DHA survey of its members found that the total financial loss incurred by four health care systems in maintaining and supporting primary care services in Delaware was $16.1 million in Fiscal Year (FY) 2018 alone. Delaware hospitals and health systems are investing to support primary care services and increase access in the state to improve quality and value. Despite significant financial losses incurred with these investments, our hospitals are committed to supporting a comprehensive system of primary care because we recognize this as the key to an overall high-value health care delivery system in our state.

Playing the long game is an important part of the road to value. Many Delaware hospitals are also investing in securing future primary care providers by creating and expanding Delaware-based residency programs in primary care specialties (programs such as internal medicine, family medicine and pediatrics).

ChristianaCare has more than 100 years of experience with postgraduate medical education (GME) and supports nearly 300 current resident and fellow slots, including 24 residents in family medicine and 36 residents in internal medicine. There is tremendous opportunity associated with having robust residency training programs. Continuing its focus on the future of primary care and medical practice in Delaware, ChristianaCare recently joined with a coalition of regional hospitals in bidding for 550 residency slots now available due to Hahnemann University Hospital in Philadelphia's bankruptcy, to support access to care in our region now and in the future.

Nemours/Alfred I. duPont Hospital for Children also has a strong existing residency program in pediatrics, and Saint Francis Healthcare has hosted residents in family medicine for 40 years. Bayhealth announced this spring that its new residency and medical education program will begin in 2021. Again, recognizing the tremendous need and resulting value to our surrounding communities, Bayhealth's residency programs will start with family medicine and internal medicine with general surgery and emergency medicine to follow in subsequent years.

Bayhealth is also partnering with area medical schools to host medical students for a portion of their Undergraduate Medical Education (UME) clinical rotations. Upon graduating medical school, these students may later apply for one of Bayhealth's residency programs. In addition, Beebe Healthcare has applied for and received a federal grant for seed money to start a residency program for internal medicine and family practice.

Medical practitioners tend to practice near where they received their medical education or serve their residency. Investing in residency programs that bring more medical providers to learn and stay in Delaware is critical to increasing the supply of primary care providers in our state. Increasing access to and the quality of primary care providers can be a critical tool in improving population health and is a crucial component in Delaware hospitals' commitment to value.

INVESTING IN ALTERNATIVE PAYMENT MODELS

Focusing on population health and increasing access to primary care are important tools in promoting value in health care. To truly arrive at value, however, payment reform must be implemented. Traditional fee-for-service payment models must transition to alternative, value-based payment models. The fee-for-service system can make health care more costly than it needs to be due to incentives inherent in that approach to reimbursement. The promise of tying reimbursement to Value rests in different models broadly called value-based contracts.

The key to addressing the economics of health care is to align payment and reimbursement with value. The long-established fee-for-service system incentivizes quantity over quality – more tests and more visits mean more billable items. Readjusting those incentives to emphasize quality and outcomes is central to value-based contracting. Such a system spreads risk between hospitals, providers, insurance companies/payers, individuals, and plan sponsors. Value-based contracts aim to make everyone in the system accountable in best supporting healthy behavior, population health and primary care.

Delaware's hospitals and health care systems are leading the way on payment reform and have committed to the goal of having 60 percent of patients under value-based contracts by 2021 (*see Figure 2*).[5] Over the past several years, Delaware hospitals, along with participants in Delaware's State Innovation Model (SIM) initiative, worked to transform our state's health care system by developing and implementing new delivery and payment models. These include Accountable Care Organizations (ACOs), bundled contracts, and other innovations. Establishing these new models has required significant investment from Delaware's hospitals, ranging from care coordination and care management expenditures to building or modernizing information technology (IT) and data tracking systems.

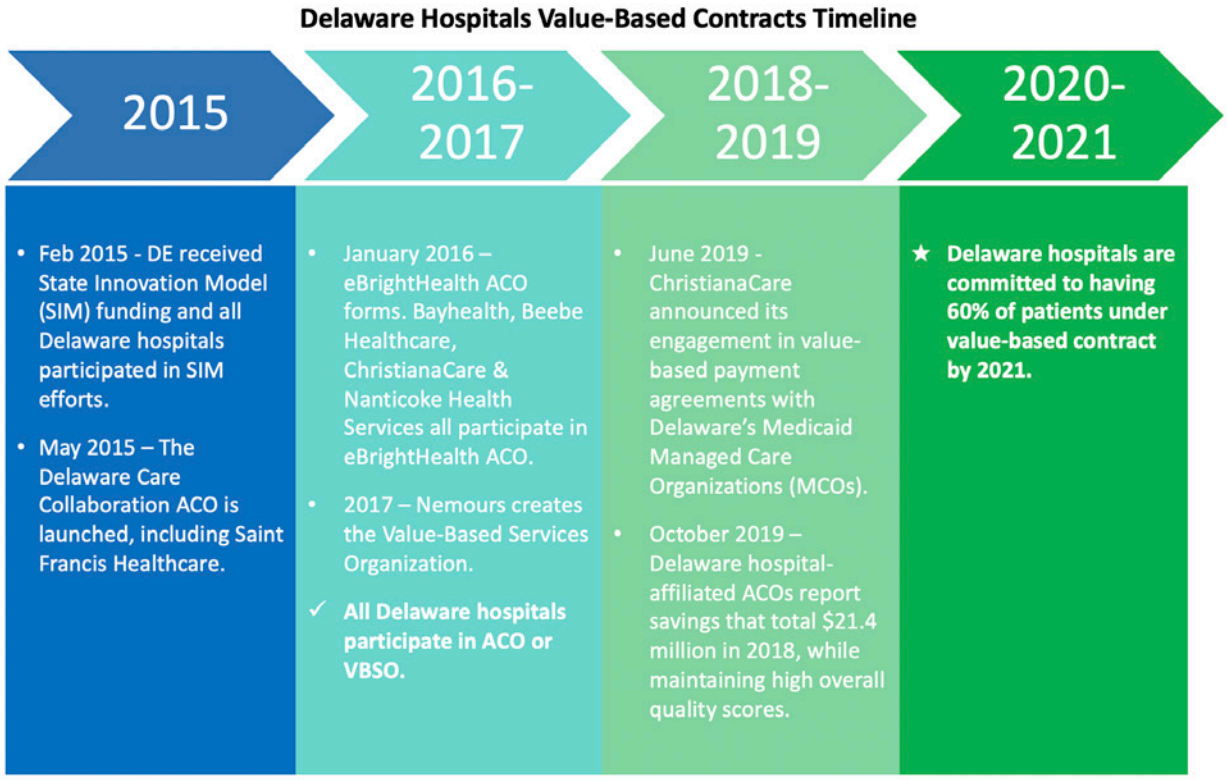

Figure 2. Delaware Hospitals' Value-Based Contracts Timeline

ACCOUNTABLE CARE ORGANIZATIONS

ACOs are nationally recognized as an important step in the move toward value-based payment models. Leading the way, all adult general acute care hospitals in Delaware have been Medicare ACO participants since 2016. Medicare ACOs are shared savings programs (also known as Medicare Shared Savings Programs/ MSSPs) where groups of doctors, hospitals and other medical providers come together to provide coordinated high-quality care to Medicare patients. If those providers successfully collaborate to reduce total costs of care, while meeting high quality outcome measures, they may share a small percentage of the savings produced.

Importantly, hospital-affiliated ACOs are providing real value. According to the American Hospital Association, ACOs are saving patients and Medicare millions of dollars – $174 million in net savings to Medicare in 2017 alone.[6] In Delaware, our hospital-affiliated ACOs – eBrightHealth ACO and Delaware Care Collaboration – have produced total savings of $21.4 million in 2018.

ACOs, like other alternative payment models, require significant investments in infrastructure, IT, staffing and training and cannot be built overnight. According to the American Hospital Association, single health care systems typically invest approximately $5 million to $12 million initially and $6.3 million to $14.1 million annually in time and resources to establish and maintain ACOs.[6]

Four of our Delaware hospitals participate in the eBrightHealth ACO: Bayhealth, Beebe Healthcare, ChristianaCare and Nanticoke Health Services. This statewide collaboration brings together over 1,200 primary care and specialty care clinicians and incentivizes the delivery of high-quality health care services across the continuum of care from hospital to home for approximately 50,000 Medicare beneficiaries.

To Tom Brown, Senior Vice President & President of the Nanticoke Physician Network, Nanticoke Health Services, eBrightHealth ACO is a game changer: "The change in environment that allowed and encouraged the hospital systems to come together under the eBrightHealth ACO to say that we are going to work together to do this – because we know that individually, we will work at cross-purposes or won't have scale – is an amazing thing." Scale is important, particularly for a small hospital because the investments needed to build the infrastructure to support ACO work is incredibly expensive. Collaborating with other hospitals across the state to leverage resources is what makes eBrightHealth ACO an excellent model for value-based care in Delaware.

Investments needed to have the infrastructure ready to transform into ACO includes IT systems, increasing and staffing care coordination teams, and assessing data and outcomes in order to manage value-based care. These investments cost millions of dollars.

For example, Bayhealth recently invested $42 million in an EPIC electronic health data system. The hospital system has been working to connect community providers to the EPIC electronic health record to enhance care coordination. With multiple providers looking at the same record, a specialist can see if a primary care provider already ordered a test, to avoid redundancies that increase costs. Streamlining electronic health records also allows for quality data to be shared to encourage and manage performance.

ChristianaCare's Carelink CareNow provides much of the care coordination for the eBrightHealth ACO. Carelink CareNow uses IT that integrates multiple sources of health data to identify patients who are at high risk and who have significant care needs. Once identified, clinicians and social workers can proactively reach out to connect individuals with the programs and care they need to stay healthy or manage chronic conditions. This includes getting patients in to see their primary care providers. Carelink CareNow not only represented a significant investment by ChristianaCare, but it also was recognized as being nationally innovative by winning the John M. Eisenberg Patient Safety and Quality Award in 2017.

Delaware health care systems provide training, education and regular touch points with primary care providers to equip them with the tools and skills to provide coordinated care under an ACO model in order to maximize value. For example, Bayhealth hired an ACO medical director to educate providers on their patient care outcomes. Each primary care office is visited at least once a month to assess outcomes, status and different approaches needed to meet goals. The medical director sits down with the primary care providers to identify those patients who are returning to the ED repeatedly and discuss strategies to meet their needs in a more cost-effective way. ChristianaCare primary care physicians are provided with a dedicated administrator to free up more of the provider's day for care coordination. They also have practice meetings on a regular basis to coordinate care with specialists and align treatment.

These tremendous investments have yielded positive results, with the eBrightHealth ACO receiving high scores in all quality domains. The ACO also saved Medicare approximately $1 million each year in 2016 and 2017. In 2018, eBrightHealth ACO reduced overall health care spending by $11.3 million, as compared to the CMS benchmark, for its 50,000 Medicare beneficiaries. The ACO also achieved an overall quality score – measuring patient experience, care coordination, patient safety, and more – of 88%. This is a truly effective picture of value-based care.

Saint Francis Healthcare in Wilmington, along with the Medical Society of Delaware, participates in the Delaware Care Collaboration. This ACO is a collaboration with 58 participating physicians and consists of 8,000-9,000 attributed beneficiaries. The ACO focus is on monitoring more than 31 different patient experiences, care coordination, preventative health and at-risk population related metrics as part of its Medicare Shared Savings Program (MSSP). This partnership aims to achieve high value by improving quality while lowering the total cost of health care delivery. Through the collaboration, physician partners have the tools needed to achieve better outcomes, provide better care and lower costs. These tools include comprehensive data analysis; a robust ambulatory care coordination program that includes a variety of health care professionals, such as nurse care managers, social workers, community health workers, behavioral health specialists, and health coaches; and access to a diverse, integrated health care delivery system.

The Delaware Care Collaboration ACO achieved $10.1 million in savings for Medicare in 2018 while maintaining a 98.64% overall quality score. Notably, the organization will receive nearly $4.9 million in shared savings under the MSSP as a result. These positive results are the product of hard work: "Delaware Care Collaboration's outstanding performance is the direct result of the engagement, collaboration and dedication of our participating providers, working in concert with clinical and care coordination professionals to ensure the Medicare beneficiaries we care for receive the right care at the right time in the right place," said Dan Sinnott, MBA, President and CEO of Saint Francis Healthcare.

BUNDLED PAYMENT MODEL

Bundled Payment programs, developed by Medicare for specific episodes of care, are an example of a value-based contract in which several Delaware hospitals participate. Organizations participating in the bundled payment arrangement must meet financial and performance accountability leading to more coordinated and better quality of care at a lower cost for Medicare.

Beebe Healthcare participates in bundled payment arrangements with Medicare for joint replacements and heart failure. Under the program, Beebe has invested in a team of care coordinators, IT infrastructure and staff to look at data for opportunities to lower utilization. As part of the program, Beebe also provides clinical support at skilled nursing facilities, ensuring a patient that had a joint replacement done at Beebe, for example, is receiving optimal care and is moving toward safe discharge. Beebe Healthcare has successfully reduced cost in the bundled payment program. Alex Sydnor, Vice President of External Affairs, and Chief Strategy Officer at Beebe Healthcare stated: "Over the first three years of the contract, Beebe has essentially cut direct cost in the program by $1.5 million. Since that money is shared, the actual savings is likely double that in term of the reduction of cost to Medicare."

Bayhealth also participates in a voluntary bundled payments program with Medicare involving emphysema, Chronic Obstructive Pulmonary Disease (COPD), congestive heart failure, myocardial infarction, and hip and femur fractures. Initial indications show that this program has saved Medicare a significant amount of money. To ensure quality, coordinated care, Bayhealth has created an improved infrastructure around when a patient leaves the hospital. Bayhealth's Senior Vice President, Chief Medical Officer, Gary Siegelman, MD, said that Bayhealth "added a department of clinical integration, which is specifically designed to help us coordinate care. Hospitals are traditionally focused only on the hospital care, but we were trying to change the model and make sure that there is a good transition of the patient when they leave." For example, Bayhealth has developed a scorecard for nursing homes across the state to measure factors ranging from length of stay to patient satisfaction. The scorecard is presented to patients, as well as nursing home facilities, as

a way to ensure accountable care once a patient leaves the hospital. Bayhealth also has added staff, including a post-acute administrator, and three care coordinators to ensure patients are receiving appropriate, quality care after they are discharged from the hospital.

Realizing the potential opportunity to positively impact the value of the care provided to its patients, Saint Francis Healthcare has been actively expanding participation in the bundled payment model and is estimating to quadruple its program size this year. The hospital has identified high touch care navigation subsequent to discharge as a key tactic to mitigate readmission risk and resulting in success of the program. A unique feature to this alternative model is that health systems are held accountable for care expenditures up to 90 days after their acute hospitalization. Ralph Gonzalez, MD, Saint Francis' Chief Medical Officer, supports this expanded, more longitudinal perspective of the care continuum and feels that "this component of the program represents further paradigm shift away from fragmented episodic health care and empowers hospitals to be active participants in their patients care well beyond their acute stay."

ADDITIONAL INNOVATIONS

At Nemours, the majority of contracts include some element of value-based contracting. This is not surprising since Nemours took major steps to build an infrastructure that prioritizes value-based care throughout the health system. The health system created a Value-Based Service Organization (VBSO) to house all of the elements that go into value-based care under its umbrella from IT, Medical Management and population health management to primary care. "Primary care is a foundational element of providing value-based care, it's the patient's medical home and where a lot of the management happens," said Chris Manning, Director, Delaware Valley Government Relations for Nemours. In addition, Nemours partnered with community pediatricians and family practitioners to develop Delaware Children's Health Network, the only pediatric Clinically Integrated Network in Delaware. Working together through Delaware Children's Health Network, providers in the network are committed to improving pediatric health care in the state. Like many other health systems, Nemours has made significant investments in its electronic health record, EPIC, as well as population health software, Healthy Planet. Through these systems, Nemours can look at patterns of utilization and develop strategies to help children that may not be meeting their care plan goals and redirect efforts to minimize the chance of a return trip to the ED or hospitalization. The VBSO is beneficial to Nemours in avoiding fragmentation and addressing all the elements of value-based care – outcomes, quality of care, access and quality of life – in a systemic and comprehensive way, including the management of a patient's medical, behavioral and social needs.

Earlier this year, ChristianaCare announced it has formed collaborative value-based contracts with Delaware's Medicaid managed care organizations (MCOs), AmeriHealth Caritas and Highmark Health Options. Under the agreement, ChristianaCare and each MCO will share accountability for the total cost of providing health care to Medicaid participants being cared for by ChristianaCare providers. This total-cost-of-care arrangement includes upside and downside risk: if the health outcomes for the population and cost reductions are not achieved, Christiana Care would receive less reimbursement than it would have in a traditional fee-for-service payment model. On the other hand, if health outcome targets are accomplished at costs that are lower than standard market value, then ChristianaCare and the MCO are both able to retain some of those savings. These contracts incentivize providers to deliver the right care in the right setting as well as to address non-medical needs, such as Social Determinants of Health that may be contributing to an individual's health outcomes.

This is an exciting time. Delaware hospitals have made the commitment to delivering high value health care to all Delawareans. Building the infrastructure needed to address health in the community beyond the hospital walls, delivering care in the right setting at the right time, and shifting to new alternative payment models require significant financial investments. Delaware hospitals and health systems have spent millions of dollars to build the infrastructure for a value-based system. We look forward to working with other providers, health insurers and our state partners as we move toward value-based payment models and strive to create an excellent environment for enabling every Delawarean to be as healthy as they can be.

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Nutrition Coaching by Registered Dietitians as an Effective Strategy to Reduce Adolescent Obesity

Mary Stephens

INTRODUCTION

In the past thirty years, the incidence of childhood and adolescent obesity has more than tripled.[1] Childhood obesity affects one in six children and adolescents in the United States, and has long lasting consequences on health.[1] This increasing trend in overweight and obesity is a public health concern because obesity can lead to significant medical consequences including diabetes, heart disease, stroke and hypertension.

Research suggests that several factors appear to be contributors to obesity. Meal skipping, meal frequency, inactivity and sugar sweetened beverage consumption have all been linked to weight gain.[2,3,4] In addition, children with high intake of low fiber snacks, sugars and candy were found to have a higher incidence of obesity and increased risk of higher adipose fat.[5, 6] Conversely, a diet high in fruits, vegetables and whole grains is associated with a lower body mass index (BMI).[5]

While literature exists on the causes of obesity, more work needs to be done to stop this alarming trend. Fourteen school-based health centers (SBHC) located in high schools across Delaware initiated a quality improvement project to evaluate the effectiveness of identifying and counseling overweight and obese students.

METHODS

An interdisciplinary team from the SBHC looked at current procedures to identify and treat overweight and obese adolescents in the SBHC. The SBHCs are physically located within each high school and staffed by a multidisciplinary team including a nurse practitioner (NP), licensed clinical social worker (LCSW), registered dietitian nutritionist (RDN), and a medical director (MD).

STUDY POPULATION

The project included students from 14 different high schools who were referred to the RDNs in the SBHCs during the 2012-2013 and 2013-2014 school years. Parents must enroll their students in the SBHC in order for them to receive services. Once a student becomes a member of the SBHC, he/she may self-refer for a variety of services including medical, mental health or nutrition. A student may also be referred to the SBHC by a parent, coach or school staff.

MEASURES

The American Academy of Pediatrics Expert Committee guidelines recommend that health care providers assess body mass index (BMI) by percentile annually as a key step in improving the incidence of overweight and obesity.[7] In the SBHC, the BMI and blood pressure of all students receiving medical care were routinely assessed. The BMI was plotted on the CDC growth charts specific for adolescents based on age and gender. A student was diagnosed as overweight if BMI fell at or above the 85th percentile but less than the 95th percentile, and obese when BMI was greater than or equal to the 95th percentile.

MOTIVATIONAL INTERVIEWING

All students identified as overweight or obese were offered an internal referral to the RDN for nutritional assessment and follow-up counseling using motivational interviewing (MI) techniques. Healthcare providers have identified the lack of patient motivation as a major barrier in the treatment of overweight children and adolescents.[7, 8] Use of MI in a health care setting has been identified as appropriate for the adolescent population because adolescents often perceive health care professionals as "health experts" and may listen to them more than their parents or other adults. This patient-centered style of counseling may also be developmentally appropriate for adolescents who are in a stage of their life when they need to feel a sense of control and they want to be treated as adults.[9] The RDNs at the SBHC were the providers who were most experienced in counseling adolescents about diets and lifestyle changes and well-suited to implement MI techniques. The RDNs used a basic MI approach with students including open-ended questions, affirmation, reflective listening and summary reflection (OARS). RDNs also report having more time to discuss these changes with patients compared to the other medical providers.[10]

ASSESSMENT TOOL

The initial visit with the RDN included an evaluation of BMI and a detailed dietary history and food frequency assessment as reported by the student. The RDN then recorded the student's weight and BMI and evaluated diet and exercise history on the nutritional progress assessment sheet (NPAS) (see *Figure 1*). This one page assessment sheet includes eight healthy behaviors that were selected by the RDNs based on identified risk factors for overweight and obesity in adolescents.[2,3,4,5,7]

This tool is unique because it rates eight targeted behaviors using the objective Likert scale. The Likert scale was utilized to quantitatively evaluate eating and exercise habits on a scale of one to three. After assessing the student's weight, diet, and exercise history, the RDN attempted to help the student see the

SCHOOL-BASED HEALTH CENTER NAME: _____

STUDENT ID: _____ AGE: _____ GENDER: _____

Reason for Referral: _____

Other Nutritional Concerns: HBP DM Other

Pertinent Family Health Risks: Overweight/Obese HBP DM Heart Disease

NUTRITIONAL PROGRESS

Eating Breakfast (per week)	0(Never)	1(Less than 3 days)	2(3-4 days)	3(5+ days)
Eating fruits (per day)	0(Less than 1 svg)	1(1 svg)	2(2 svg)	3(3+ svg)
Eating vegetables (per day)	0(Less than 1 svg)	1(1 svg)	2(2 svg)	3(3+ svg)
Consuming Dairy (per day) (Dairy Type)	0(Less than 1 svg) a(whole)	1(1 svg) b(2%)	2(2svg) c(1%)	3(3+ svg) d(skim)
Eating fast food (per week)	0(4+ meals)	1(3 meals)	2(1-2 meals)	3(never)
Drinking SSB (per day) (SSB=Sugar Sweetened Beverage)	0(3+)	1(2)	2(1)	3(never)
Physical activity (per week)	0(0-30 min)	1(31-90 min)	2(91-180 min)	3(181+ min)
Healthier food choices: (subjective scale/see comments)	0	1	2	3

DATE								
BMI								
WEIGHT								
HEALTHY HABITS								
Eating breakfast								
Eating fruits								
Eating vegetables								
Eating or drinking dairy								
Eating fast food meals								
Drinking SSBs								
Participating in physical activity								
Choosing healthier meals/snacks								

Date: _____ Comments: _____

Date: _____ Comments: _____

Date: _____ Comments: _____

Date: _____ Comments: _____

Date: _____ Comments: _____

Date: _____ Comments: _____

Date: _____ Comments: _____

Date: _____ Comments: _____

Figure 1: Nutritional Progress Assessment Sheet

bigger picture, and encouraged him or her to target changes suggested by the healthy lifestyle goals listed on the NPAS. During follow-up visits, the RDN utilized the NPAS as a tool to track a student's change in targeted behaviors and BMI, and to evaluate each healthy lifestyle goal on a scale from zero to three as defined on the tool. Goals were reassessed at each visit when the RDN clarified the details of the student's self-reported dietary adherence and physical activity and updated the evaluation. This assessment tool became a permanent part of the student's medical record so that other members of the SBHC team could readily review the student's progress.

Students were scheduled for follow up nutritional counseling every two to three weeks to reinforce behavioral changes and reevaluate goals. During follow-up visits, the RDN utilized the NPAS as a tool to track a student's change in targeted behaviors and BMI. The RDN clarified the details of the student's self-reported dietary adherence and physical activity and updated the evaluation. Motivational interviewing techniques were utilized to help the student overcome obstacles, improve compliance and achieve targeted goals (*see Figure 2*).

Students were scheduled during study halls, elective classes or after school. If a student failed to show up for an appointment, the administrative assistant or the RDN attempted to locate the student or rescheduled the student at a more convenient time.

STATISTICAL ANALYSIS

Data collected from this project was used to assess the impact of nutrition coaching on body weight, BMI and eight different targeted behaviors over the counseling period.

Frequencies of visits to the RDN were tabulated.

Mean initial and mean final BMI were calculated for all participants who had more than one visit to the RDN and analyzed for the group as a whole and by gender. A t-test was used to compare the two groups and SD, SEM, p-values and 95% confidence intervals were calculated.

A Pearson product moment correlation coefficient was computed to assess the relationship between the variables in the data collected by the RDN on the nutritional progress form in participating SBHCs and improvement in BMI.

RESULTS

In total, 1824 unique students were seen by an RDN for nutritional assessment and counseling during a total of 3934 encounters during the 2012-2013 and 2013-2014 school years. The average number of encounters per student was 2.16 with 66% of students visiting an RDN for two or more visits. The student population was 32% male and 68% female with an average age of 15.8 years. Several students reported family risk factors related to overweight including 43.2% with overweight parents; 15.6% with a family history of high blood pressure; and 9.3 % with a family history of diabetes mellitus.

Of the 1824 students seen by the dietitian, 61.6%, or 1123 students were considered overweight or obese. The average baseline BMI for overweight or obese students with more than one visit (N=743) was 35.24 (overweight) and 34.82 (obese) and the average final BMI was 33.43 (overweight) and 33.62 (obese) (p=0.0002, overweight and p=0.0005, obese). The change in BMI was greater for females compared to males. The males average baseline BMI was 35.44 and final BMI was 34.33 (p=0.0575). For females, average baseline BMI was 34.19 and final BMI was 32.91 (p=0.0027).

The average number of RDN visits for the overweight or obese students was 2.49 with 50.3% (n=374) of students having more than 2 visits. Females visited the RDN more frequently with 56% having more than 2 visits. In contrast, only 38% of males returned to see the RD for more than 2 visits. The total number of visits is positively correlated with an improvement in BMI. The number of visits also corresponds well with the representative need as defined by BMI.

The most important predictors of improvement in BMI among overweight and obese students in regression modeling were reduction in fast food consumption and increase in physical

Initial Visit:	
Discuss/determine dietary habits/history	Previous eating patterns, weight history, food preferences/intolerances
Determine starting Body Mass Index (BMI)	Measure height/weight, calculate BMI, determine if student is overweight or obese by CDC standards
Utilize Nutritional Progress Assessment Sheet (NPAS) to establish a baseline of health status	Document results of testing and history, create initial goals with student
All subsequent visits:	
Measure/Calculate BMI each visit	Measure height/weight, calculate BMI, discuss change from previous if any
Utilize Nutritional Progress Assessment Sheet (NPAS) to track habits/progress/etc.	Document healthy habits re: eating breakfast, fruits, vegetables, fast food, snacks, eating/drinking dairy, drinking sugar sweetened beverages, physical activity
Use 'motivational interviewing' techniques* to counsel student	Review progress or obstacles, reinforce positive efforts, reevaluate and revised goals as necessary
Review overall progress	Tie changes in dietary habits to change in health status

*Motivational Interview techniques include: (OARS) ***O***pen-ended questions, ***A***ffirmation, ***R***eflective listening, ***S***ummarizing towards establishing and achieving goals.

Figure 2: Registered Dietitian Nutritionist Counseling Procedures

activity. Although reduction in the consumption of sugar sweetened beverages alone does not significantly predict BMI change, it is significantly correlated with improvement in self-reported health habits across most of the lifestyle/behavioral measurements assessed in this study for both males and females.

DISCUSSION

The fourteen SBHCs included in this study were successful in targeting students at high risk for obesity and referring them to the RDNs. Nutritional coaching using MI by the RDNs in association with an assessment tool to track behavior change was successful in reducing BMI. This reduction in BMI correlated with the frequency of encounters with the RDN.

VISITS WITH THE RDN

Students were targeted to be seen by the RDN every two to four weeks, as their schedules allowed. Frequency of visits was important in order for the RDN to more accurately evaluate dietary recall and behavioral changes and promote compliance with identified goals. Since successful reduction in BMI and improvement in healthy lifestyle behaviors correlated with frequency of RDN visits, it is important to note that employment of the RDN utilized minimal resources. Health care practitioners have cited lack of reimbursement as a barrier to obesity treatment.[8, 9] The SBHCs employed four RDNs to work in the 14 different high schools. Due to financial constraints, the hours for RDNs were limited to 4 to 7 hours per week at each school which represents a very small percentage of the SBHC budget. This study demonstrates that the RDN can have an impact with minimal costs. In some states or locations of care, such visits may be billable.

USE OF NUTRITIONAL PROGRESS ASSESSMENT SHEET

Use of the nutritional progress assessment sheet as a tracking tool was helpful in engaging students in goal setting with the RDN. During each visit with the student, the RDN would review goals, reinforce success, address obstacles and coach students to make changes as needed. Assessment of behaviors using the Likert scale served as a mechanism to track student progress in terms of healthy behavioral changes instead of looking at changes in weight or BMI alone. Changes in eating and exercise habits were based on self-reported behaviors that were further assessed in an interview with the RDNs but could still be misrepresented by the adolescents. Future studies could utilize pedometers or digital apps to track diet and exercise behaviors in order to give a more accurate report.

A periodic review of the nutrition assessment tool was also helpful in tracking frequency of visits and identifying students who were lost to follow-up. The RDN sent special invitations to those students who did not keep their appointments. As 21% of referrals never returned for a second visit, efforts were made to reach out to these students.

STATISTICAL PREDICTORS OF IMPROVEMENT IN BMI

The most important predictors of improvement in BMI among overweight students in this quality improvement project were an increase in physical activity and reduction in fast food intake. Students who participated in gym classes or school sports reported an increase in physical activity and energy expenditure. Students who ate less calorically dense fast foods reported a decrease in energy consumption.[12]

Although consumption of sugar sweetened beverages alone was not predictive of BMI change in regression analysis, sugar sweetened beverage intake did correlate with improvement of other self-reported behaviors. It appears that decreased consumption of sweetened beverages may be a marker of other healthy choices that promote weight loss. A motivated student who recognizes the negative impact of sweet drinks on body weight may find it easier to control beverage choices than to increase the consumption of fruits, vegetables, breakfast or low fat milk.

GENDER DIFFERENCES

Although overall change in BMI was significant, the BMI change in males did not reach statistical significance. This may be due to less frequent visits with the RDN for males compared with females. Fifty-six percent of females had more than 2 visits with the RDN while only 38 percent of males followed up with the

RDN for more than 2 visits. This gender difference could also be explained by differences in body composition, growth and sexual maturation. Generally, adolescent females have a greater percent body fat compared to males who have more lean body mass. Females may be more motivated to decrease their body fat and thus decrease BMI. The adolescent males may be less motivated to lose weight because of their interest in gaining lean body mass. In future studies, this variance between males and females could be further assessed by estimation of body fat using bioelectrical impedance and/or waist circumference.

CONCLUSIONS

Identification of overweight and obese adolescents by routine assessment of BMI is important in addressing the obesity problem. Results of this study indicate that referring overweight students for counseling by a qualified RDN trained and experienced in nutrition coaching and MI techniques can reduce BMI and promote healthy lifestyle behaviors. Students who are encouraged to keep more frequent follow-up visits will increase their chances for success.

Utilizing a tool such as the NPAS to evaluate behavioral changes and not just changes in weight or BMI may be a better way to fully assess the impact of a nutrition and physical activity intervention. A student who fails to lose weight but initiates healthy food and activity behaviors may reduce his/her risk of future problems related to weight gain and obesity.

Studies should continue to evaluate different counseling approaches for helping adolescents increase their motivation to change.[13] Perhaps males would benefit from a different technique or combination of counseling styles than females. Looking at gender specific behaviors or differences in ethnicity or socioeconomic status may also help target future counseling strategies for behavioral change. Future studies could also focus on the long term effects of nutrition interventions that begin in the school setting and how they impact a student's future health and improve the home environment to benefit other family members.

The convenient location of SBHCs in the schools is ideal for identifying and counseling overweight and obese students. This SBHC with medical, mental health and nutrition providers was successful in achieving a statistically significant reduction in BMI. This success was attributed to increased referral of students for one on one counseling with an RDN experienced in MI and using an assessment tool to target specific behavioral changes. Successful changes in eating and exercise behaviors should decrease risk for future health problems.

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Rising Hypertension Rates: Help Your Patients

According to the Centers for Disease Control and Prevention (CDC), about one in three U.S. adults has high blood pressure (BP). That equates to approximately 75 million people. And of those, only about half (54%) have their high BP under control. Delaware is not exempt from increased rates of hypertension. According to America's Health Rankings' analysis of the CDC's Behavioral Risk Factor Surveillance System, **34.9% of residents age 18 and older** reported they had been told by a healthcare professional that they have hypertension.

What is being done to decrease hypertension rates in Delaware?

Quality Insights, a non-profit organization focused on using data and community solutions to improve healthcare quality in pursuit of better care, smarter spending and healthier people, is partnering with the Delaware Division of Public Health (DPH) on a statewide initiative, funded by the CDC, to prevent and control diabetes, heart disease, obesity and associated risk factors. **Over 100 Delaware physician practices** are engaged in this work and receive evidence-based education, tools and resources, onsite assistance with workflow modifications and a variety of quality improvement support at **NO COST to the practices**. If your practice is not currently involved in this project, **join us today**!

Empower Your Patients to Better Manage Their Blood Pressure

One area that Quality Insights focuses its efforts on is promoting the importance of Self-Management of Blood Pressure (SMBP). Educating and empowering patients to engage in SMBP is vital to keeping hypertension under control. In addition to home monitoring of BP, two keys to effective SMBP are **healthy living and medication adherence**.

Healthy Living: A Key Component to Hypertension Control

Living a healthy lifestyle, comprised of eating a nutrient-dense diet and the inclusion of regular physical activity, is an important focal point of BP treatment.

Lifestyle changes that have been shown to be effective include weight loss, healthy diet, reduced intake of dietary sodium, enhanced intake of dietary potassium, physical activity, and moderation in alcohol intake.

Below are American Heart Association (AHA) resources you can share with patients who are ready to engage in lifestyle improvement activities:

- DASH Eating Plan
- Sodium Reduction Education Sheet & Sodium Tracker Worksheet
- Check. Change. Control.® Program
- AHA Life's Simple 7
- Smoking Cessation Program

Patient Resources: Help Your Patients Make Lifestyle Changes to Better Manage Hypertension

- Lifestyle Change to Manage Hypertension: Quality Insights developed a handy patient resource that offers some guidelines and additional tools around how small lifestyle improvements, like diet, physical activity, and dietary sodium intake reduction, can make big impacts on BP control.
- **Health Tracking Smartphone Apps:** There many free health tracking apps that allow users to track diet, log exercise time, enter BP readings, and much more. Some apps are tied to retailer programs that reward people for actively tracking their health info and taking steps towards healthier lifestyles. One example is the Walgreen's Balance Rewards for Healthy Choices program that offers users the chance to earn points that can be used for Walgreens discounts and towards the purchase of a home BP monitoring device.

Medication Adherence: Make It a Priority

Medication adherence is critical to successful hypertension control for many patients. However, only 51% of Americans treated for hypertension follow their health care professional's advice when it comes to long-term medication therapy. As a clinician, you can empower patients to take their medications as prescribed. Effective two-way communication is critical; in fact, it doubles the odds of your patients taking their medications properly. Access the below resources to learn more about predictors of non-adherence and methods you can use to help your patients:

- Million Hearts® Provider Tip Sheet: Improving Medication Adherence Among Patients with Hypertension
- Medication Adherence Estimator® Tool: Quality Insights is currently providing this tool to patients through local pharmacies and provider offices in jump drive format. Contact your local Quality Insights Practice Transformation Specialist to receive yours today.
- Benefits Check Up®: Website assists patients in finding benefit programs that will offer financial assistance for medications, health care, food, utilities, and more.

Join Us: Quality Insights invites all Delaware physician practices to join us in this important initiative to decrease hypertension rates in Delaware. Please email Ashley Biscardi to sign up or visit our project website for more details.

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Quality Insights

Health Care Needs of Homeless Older Adults: Examining the Needs of a Senior Center Cohort

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ABSTRACT

Objectives: To assess the medical status and health care needs of Wilmington's largest accessible group of homeless elders located at St. Patrick's Center in order to identify areas for improvement of medical screening, preventive health care delivery, and disease management.

Methods: A cross sectional study was conducted between December 2016 and August 2018 at St. Patrick's center in Wilmington, DE. Utilizing a structured health needs assessment, 64 unique individuals aged 50 years and older were interviewed. Descriptive statistics were used to compare data from homeless older adults with data from non-homeless older adults.

Results: Of the 64 total subjects, 17 self-reported as homeless at the time of interviewing. High rates of depressive and cognitive impairment symptoms were self-reported in both homeless and non-homeless participants. When compared to the non-homeless group at St. Patrick's Center, the homeless cohort was less likely to have received a non-acute assessment (such as a routine physical exam/well check-up) or a routine dental cleaning/x-ray within the past year. Tobacco and alcohol use and were frequently self-reported by homeless and non-homeless respondents and were more frequent in the homeless group. The homeless individuals were more likely to have engaged in illicit drug use. Overall, more than 90% of the subjects had some form of health insurance coverage. The most frequently cited reasons for lack of healthcare were inability to afford co-payments/deductibles and lack of transportation.

Conclusions: To address the health care needs of this population, new programs to improve care should focus on facilitating access to services which address areas of deficiency. This group of older adults has benefited from a range of available services that reflect the work of a staff aware of their medical needs, as indicated by the high rate of insured individuals. Licit and illicit substance use assessment and treatment and dental screening remain areas of need for the homeless older adults interviewed in this study. The high rates of depression and cognitive impairment in both the homeless and non-homeless older adult groups suggest the need for further services in these areas as well. Access to care may be improved by addressing concerns regarding co-payments, deductibles, and transportation to care.

INTRODUCTION

Effective and affordable health care for those most in need requires that individuals with complex health issues have access to appropriate treatment resources. In the United States, more than 60% of the cost of health care is attributable to the sickest 5% of the population. Among the most medically compromised are the homeless elders, a growing population in the United States. On a single night in January 2017, over 550,000 people were experiencing homelessness in the US, of whom 23.1% were of age 51 or older.[1]

Access to care, of course, is not sufficient to assure good health in a population subject to the stresses of poverty and homelessness. Mortality and morbidity are directly linked to socioeconomic status, level of education, income level, social support systems, and race.[2] When compared to housed individuals, those without homes are more significantly impacted by these social determinants of health, which are associated with increased morbidity, mental illness, substance abuse, overall negative health behaviors and higher mortality.[3] The homeless population also experiences increased vulnerability due to unsafe living environments and lack of social support.[4] Access to health care is impeded by financial, geographic, provider, and other systemic barriers. In order to appropriately address the health care needs of homeless elders, it is important to assess the both care access and the larger domain of social determinants of health in this population.

Homeless individuals age more rapidly as a result of their exposure to the adverse effects of weather and their high rate of life-shortening chronic health problems including COPD, hypertension, obesity, diabetes, infections (including HIV), substance abuse, depression and other mental illnesses, and neurocognitive impairment. The prevalence of medical conditions characteristic of late life among homeless adults aged 50 and older is similar to that among adults aged 65 and older in the general population;[5,6] therefore, homeless individuals of age 50 and older are considered to be "older adults."[7] The health care they receive is sporadic and inadequate, based on urgency, and impeded by limited transportation, difficulty adhering to an appointment schedule, and distrust of medical providers. Homeless elders visit

the Emergency Department (ED) four times as frequently as the general population[8,9] and account for a large proportion of the ED use by our homeless population.[10] These frequent visits to the ED often result in inpatient admissions.[11]

In January 2018, the annual Housing and Urban Development (HUD) Point-in-Time Count estimated that 1,082 individuals, of whom 51 were 62 years old or older, were homeless in Delaware.[12] The number of seniors aged 62 and older experiencing homelessness on the Point-in-Time survey increased by over 40% from 2015 to 2018. This count includes sheltered and unsheltered homeless individuals but excludes a possibly larger number of individuals in transient or insecure housing arrangements such as those relying on others for temporary shelter. The number of individuals aged 50 through 61 was not reported.

To understand the basic health needs of this population, we interviewed a cohort of 64 elders aged 50 or older who visited St. Patrick's Center, an urban Senior Center in Wilmington, between December 2016 and August 2018. St. Patrick's Center is a hub for Delaware's older homeless population, providing daily programs, which include meal assistance, distribution of groceries, clothing, transportation, daytime protection from the elements and social work services to facilitate access to additional resources such as shelters. The objective of this study was to assess the medical status and health care needs of Wilmington's largest accessible group of homeless elders, located at this center which provides a variety of programs and services to 817 regular users, as part of a larger effort to address this population's health care needs. A structured interview explored the health needs of a convenience sample of homeless older adults with a focus on social determinants of health, chronic diseases, and barriers to accessing the health system. Statistical data analysis was used to identify the most frequent and highest priority needs of this group of homeless elders.

METHODS

Study design

This cross-sectional study used a structured health needs assessment interview to assess the health needs of a sample of 64 adults aged 50 and older recruited from the "guests" of St. Patrick's Center, a senior center frequented by many of Wilmington's homeless elders. Homelessness in this study was defined by the participating subjects' self-report and included individuals who were sheltered, unsheltered, or relying on transient housing arrangements.

This study was approved by the institutional review board of Christiana Care Health System. Participation in the study was voluntary and informed consent was obtained and documented for all research participants. No compensation (monetary or non-monetary) was provided to subjects for participation in the research.

Subjects

Between December 2016 and August 2018, 92 interviews were administered by residents and medical students trained for this purpose. The transient nature of the St. Patrick's Center population makes it difficult to determine the percentage of all individuals served by the center during this interval. No individuals were refused participation, but data from duplicate interviews or subjects less than 50 years old were removed before data analysis. These final data, therefore, reflect the assessments of 64 unique individuals aged 50 years and older.

Assessment administration

A customized health needs assessment adapted, in part, from the EASY-Care needs assessment for community-dwelling older people with a minimum age of 60[13] and the Camberwell Assessment of Need for the Elderly (CANE),[14] which included those 59 and older, was used to gather data. Homeless older adults at St. Patrick's Center were surveyed about various health needs, conditions, and social determinants affecting their health through a series of yes/no, multiple choice and open-ended questions. The interviewees' verbal responses were transcribed by the interviewers.

Sociodemographic Data

Subjects reported demographic information, including age, ethnicity, and gender. Highest level of education was categorized as college/graduate school, high school graduate, some high school, or K-8th grade. Employment status was categorized as full-time, part-time, retired, unemployed, or other. Subjects were also questioned as to whether they provided care to another individual or required a caretaker for themselves. Previous service in the military was reported. Subjects were also surveyed about current tobacco use, alcohol use, or illicit drug use, including the use of legal but non-prescribed medications such as opiates and narcotics.

Health and functional status

Subjects were asked whether a healthcare provider had ever informed them that they had any of the following health conditions: heart disease, high blood pressure, stroke, chest/lung disease, kidney/renal disease, liver disease, cancer, joint pain or back pain, diabetes, memory loss, obesity, depression and/or other mental health conditions, skin issues (leg ulcers/pressure sores), bowel/bladder incontinence, or dentition problems. They were also asked whether they had fallen within the past year.

Occurrence within the past year of the following health care maintenance services was noted: influenza vaccine, blood pressure check, blood sugar check, dental cleaning/x-ray, physical exam/well check up, vision/hearing screening, cholesterol screening, mammogram, pap smear, skin cancer screening, colorectal exam, prostate cancer screening, or bone density test.

Subjects were screened for depression by administration of the PHQ-2 and they were also asked whether they ever felt anxious, frightened or worried[15]. They were screened for cognitive impairment by administration of the Mini-Cog test[16].

Health Care Access

Subjects were asked whether or not they had health insurance coverage, and if so, what type of health insurance: Medicare, Medicaid, private insurance, or military insurance. They were asked to identify barriers to health care including cultural/religious beliefs, lack of ability to find doctors, lack of understanding of the need to visit a doctor, fear of discussing health conditions, lack of availability of doctors, language barriers,

lack of insurance or inability to pay for care, inability to pay co-payments or deductibles, or transportation issues. They were also asked whether they had trouble obtaining medications.

Utilization of Healthcare Services

The individuals in the study were asked where they would go for routine health care: physician's office, emergency room, urgent care clinic, other clinic, or no routine health care. They were also asked where they would go if they were sick: physician's office, emergency room, urgent care clinic, other clinic, or no health care utilization. In addition, the self-reported number of times they had utilized a physician's office or clinic, emergency room, and hospital for an overnight stay during the preceding year was recorded.

Homelessness, Food and Vulnerability

Participants were asked whether they were currently homeless and whether they had enough to eat every day. The number of meals eaten per day was categorized into the following groups: less than 1 meal, 1 to 3 meals, or find food throughout the day.

The issue of vulnerability was explored by asking subjects whether they felt safe inside places of shelter, felt safe outside, ever felt threatened or harassed, were victims of violence or witnessed violence in past year. They were also asked questions about close relationships, such as whether they have a close friend, relative, or partner, and whether they have support from someone.

Statistical Analysis

We evaluated the study subjects' characteristics and healthcare need prevalence using descriptive statistics, including number and frequency. Our primary dependent variables included health conditions, health care maintenance, access to healthcare services, and vulnerability. We assessed associations between homelessness and the dependent variables using Pearson chi-square tests and t-tests. We conducted analyses using IBM SPSS Statistics, Version 25.0 (IBM Corp., Armonk, NY).

RESULTS

Sociodemographics

Data from 64 unique visitors to St. Patrick's Center who were 50 years of age or older were analyzed. The fraction of St. Patrick's Center's total population that this represents is not known. A total of 17 of these individuals self-identified as homeless. The mean age of these homeless individuals was 58.6 years old, while the mean age of non-homeless individuals was 69.4 (*see Table 1*). The homeless group was predominantly male while the non-homeless group was predominantly female. Women comprised 29.4% of the homeless participants, compared to 60.5% of the non-homeless participants (p=0.045). African Americans comprised 64.7% of the homeless population and 76.2% of the non-homeless population. 58.8% of the homeless population was unemployed, compared to 25.6% of the non-homeless. Over half of the non-homeless population self-identified as retired, compared to none of the homeless population. Veterans comprised fewer than 20% of each group. Substance use among the homeless sample was significantly more common than in the non-homeless sample. Smoking was self-reported by 81.3% of homeless versus 30.2% of the non-homeless (p=0.001). Alcohol use was self-reported by 52.9% of the homeless versus 23.3% of non-homeless (p=0.035). Illicit drug use was self-reported by 43.8% of homeless versus 4.7% in non-homeless (p=0.001).

Table 1. Sociodemographic Information

	Non-Homeless (n=43)	Homeless (n=17)	Total (n=64)	P-value
Age (years), mean (SD)	69.4 ± 10.1	58.6 ± 4.7	66.4 ± 10.0	<0.0001
Female, no. (%)	26 (60.5)	5 (29.4)	32 (50.0)	0.045
Race, no. (%)				0.627
African-American	32 (76.2)	11 (64.7)	44 (68.8)	
White	7 (16.7)	5 (29.4)	14 (21.9)	
Other	3 (7.1)	1 (5.9)	4 (6.3)	
Highest Level of Education, no. (%)				0.808
College/graduate school	9 (20.9)	3 (17.6)	12 (18.8)	
High school/technical school	20 (46.5)	10 (58.8)	30 (46.9)	
Some high School	12 (27.9)	3 (17.6)	18 (28.1)	
K- 8th grade	2 (4.7)	1 (5.9)	3 (4.7)	
Employment Status, no. (%)				<0.001
Full time job	3 (7.0)	2 (11.8)	5 (7.8)	
Part time job	2 (4.7)	2 (11.8)	4 (6.3)	
Retired	22 (51.2)	0	24 (37.5)	
Unemployed	11 (25.6)	10 (58.8)	23 (35.9)	
Other	5 (11.6)	3 (17.6)	8 (12.5)	
Caretaker status, no. (%)				
Caretaker for other person, no. (%)	6 (14.0)	1 (5.9)	7 (10.9)	0.661
Have a caretaker	11 (25.6)	6 (35.3)	19 (29.7)	0.530
Veteran, no. (%)	8 (19.5)	3 (18.8)	11 (19.3)	1.000
Drug Use, no. (%)				
Current smoker	13 (30.2)	13 (81.3)	28 (43.8)	0.001
Alcohol use	10 (23.3)	9 (52.9)	20 (31.3)	0.035
Other drug use	2 (4.7)	7 (43.8)	9 (14.1)	0.001

Table 1. Sociodemographic Information

Health Conditions

High blood pressure was self-reported by 47.1% of these homeless subjects, compared to 72.1% of non-homeless (*see Table 2*), but not verified by blood pressure measurement. Diabetes mellitus was self-reported by 5.9% of the homeless versus 37.2% of the non-homeless group (p=0.024). Skin conditions, including leg ulcers and pressure sores, were reported by 11.8% of the homeless population while none were reported in the non-homeless (p=0.077). Regarding mental health, 52.9% of the homeless self-reported depression and/or other mental health conditions, compared to 27.9% of the non-homeless (p=0.08). PHQ-2 screening for depression was positive in about 20% of individuals overall, with no significant difference between homeless and non-homeless groups. Over 70% of the homeless individuals reported feeling anxious, frightened or worried, compared to 48.8% of those who were non-homeless (p=0.156). About 20% of all the interviewed subjects screened positive for cognitive impairment on a brief performance test, with no difference between groups.

Health care maintenance

The most frequently received health care maintenance services within the past year were blood pressure checks and blood sugar checks (*see Table 2*). A blood pressure check was received by 88.2% of homeless, compared to 97.7% of non-homeless (p=0.191). A blood sugar check was received by 64.7% of homeless, compared to 76.7% of non-homeless (p=0.352). 64.7% of homeless received a physical exam/well check up within the year versus 81.4% of non-homeless (p=0.190). None of the homeless population had received a dental cleaning/x-ray, compared to 30.2% of the non-homeless population (p=0.012).

Health Care Access

Over 90% of these subjects reported having health insurance coverage with no significant difference between the two groups (*see Table 3*). Over half of the subjects reported having Medicare and/or Medicaid. Only 12% of this cohort reported having private insurance.

When asked about reasons for limited access to health care, the most common responses were inability to afford co-payments/deductibles (18.8%) and lack of transportation (18.8%). Individuals reporting no insurance or inability to pay for care comprised less than 10% of the total sample. Over 20% of the homeless subjects stated they had trouble obtaining medications, compared to 11.9% of non-homeless (p=0.398).

	Non-Homeless (n=43)	Homeless (n=17)	Total (n=64)	P-value
Health Conditions, no. (%)				
Heart Disease	13 (30.2)	1 (5.9)	16 (25)	0.050
High Blood Pressure	31 (72.1)	8 (47.1)	41 (64.1)	0.080
Stroke	2 (4.7)	1 (5.9)	5 (7.8)	1.000
Chest/lung disease	6 (14)	6 (35.3)	12 (18.8)	0.081
Kidney/renal disease	4 (9.3)	0	5 (7.8)	0.570
Liver disease	1 (2.3)	2 (11.8)	4 (6.3)	0.191
Cancer	8 (18.6)	1 (5.9)	10 (15.6)	0.423
Joint pain or back pain	28 (65.1)	10 (58.8)	41 (64.1)	0.768
Diabetes	16 (37.2)	1 (5.9)	17 (26.6)	0.024
Memory	9 (20.9)	4 (23.5)	15 (23.4)	1.000
Obesity	11 (25.6)	0	12 (18.8)	0.025
Depression and/or other mental health	12 (27.9)	9 (52.9)	23 (35.9)	0.080
Skin (leg ulcers/pressure sores)	0	2 (11.8)	3 (4.7)	0.077
Bowel/bladder incontinence	6 (14.0)	2 (11.8)	9 (14.1)	1.000
Dentition	13 (30.2)	7 (41.2)	23 (35.9)	0.545
Fall within past year	12 (28.6)	5 (31.3)	19 (29.3)	1.000
Health Care Maintenance Within last year, no. (%)				
Flu shot	23 (53.5)	12 (70.6)	37 (57.8)	0.260
Blood pressure check	42 (97.7)	15 (88.2)	60 (93.8)	0.191
Blood sugar check	33 (76.7)	11 (64.7)	45 (70.3)	0.352
Dental cleaning/x-ray	13 (30.2)	0	14 (21.9)	0.012
Physical exam/well check up	35 (81.4)	11 (64.7)	49 (76.6)	0.190
Vision/Hearing screening	25 (58.1)	7 (41.2)	33 (51.6)	0.264
Cholesterol screening	29 (67.4)	8 (47.1)	38 (59.4)	0.238
Mammogram	14 (32.6)	1 (5.9)	15 (23.4)	0.046
Pap smear	7 (16.3)	1 (5.9)	8 (12.5)	0.420
Skin cancer Screening	6 (14.0)	2 (11.8)	8 (12.5)	1.000
Colorectal exam	15 (34.9)	2 (11.8)	17 (26.6)	0.112
Prostate cancer screening	7 (16.3)	1 (5.9)	8 (12.5)	0.420
Bone density test	8 (18.6)	1 (5.9)	9 (14.1)	0.423
Depression and Dementia Screening, no. (%)				
Positive depression screening (PHQ-2)	9 (21.4)	4 (23.5)	14 (22.2)	1.000
Felt anxious, frightened or worried	20 (48.8)	12 (70.6)	35 (54.7)	0.156
Positive dementia screening (Mini-Cog)	11 (26.8)	4 (23.5)	15 (23.4)	1.000

Table 2. Medical History, Health Care Maintenance, and Mental Health Screening

Health Care Utilization

When asked where they would go for routine health care, only 52.9% of the homeless subjects stated they would go to a physician's office, compared to 76.2% of non-homeless. Furthermore, 23.5% of the homeless subjects stated they receive no routine health care compared to 2.4% of non-homeless. When asked where they would go if sick, almost half of each group responded that they would use the emergency room. The physician's office was considered as an option for 29.4% of homeless and 36.5% of the non-homeless. The homeless population reported using the emergency room an average of 2.3 times during the past year, compared to 1.4 times reported by the non-homeless subjects (p=0.180). The homeless subjects reported an average of 1.73 overnights in the hospital in the past year, compared to 0.42 overnights in the non-homeless population (p=0.240).

Homelessness and vulnerability

About one quarter of the sample identified themselves as currently homeless (*see Table 4*). In terms of the ability access food resources, 82.4% of the homeless sample stated they were able to eat enough everyday, compared to 93% of the non-homeless (p=0.338). When asked about safety, 88.2% of the homeless subjects stated that they feel safe inside compared to 93% of non-homeless (p=0.616), and 81.3% of homeless stated that they feel safe outside, compared to 71.4% of non-homeless (p=0.522). About 37% of homeless reported that they had ever felt threatened or harassed, compared to 23.8% of the non-homeless (p=0.336). Over 40% of the homeless subjects reported having been a victim of violence or witnessing violence in the past year, compared to 21.4% of non=homeless (p=0.195). With regard to support systems, 64.7% of homeless reported having a close friend, relative, or partner, compared to 88.4% in the non-homeless (p=0.059). Overall, over 90% of all subjects reported having support from someone.

DISCUSSION

In our cohort of self-identified homeless older adults at the St. Patrick's Center, the average age was 58.6 years old. Similarly, the most prevalent group of elders in the national homeless population are adults between ages 51-61.1 Our homeless population was 29.4% female compared to 37.6% female in the national sheltered homeless population. Nationally,

	Non-Homeless (n=43)	Homeless (n=17)	Total (n=64)	P-value
Have Health insurance services, no. (%)	39 (92.9)	15 (88.2)	58 (90.6)	0.620
Type of Health insurance services, no. (%)				0.049
Medicare only	11 (33.3)	1 (7.7)	13 (20.3)	
Medicaid only	5 (15.2)	7 (53.8)	14 (21.9)	
Medicare and Medicaid	13 (39.4)	3 (23.1)	17 (26.6)	
Medicare and Private	1 (3.0)	0	1 (1.6)	
Private	2 (6.1)	2 (15.4)	4 (6.3)	
Military	1 (3.0)	0	1 (1.6)	
Where would go for routine health care, no. (%)				0.034
Physician's office	32 (76.2)	9 (52.9)	45 (70.3)	
Emergency room	5 (11.9)	1 (5.9)	6 (9.4)	
Urgent Care Clinic / other clinic	1 (2.4)	2 (11.8)	3 (4.7)	
No routine health care	1 (2.4)	4 (23.5)	5 (7.8)	
Other	3 (7.1)	1 (5.9)	4 (6.3)	
Where would go if sick, no. (%)				0.639
Physician's office	15 (36.6)	5 (29.4)	22 (34.4)	
Emergency room	21 (51.2)	9 (52.9)	31 (48.4)	
Urgent Care Clinic / other clinic	0	1 (5.9)	1 (1.6)	
Would not seek health care	2 (4.9)	1 (5.9)	4 (6.3)	
Other	3 (7.3)	1 (5.9)	4 (6.3)	
Average health care utilization in past year, mean ± SD				
Physician's office or clinic	4.63 ± 6.6	4.88 ± 8.9	4.88 ± 7.1	0.900
Emergency room	1.38 ± 1.8	2.31 ± 3.0	1.77 ± 2.3	0.180
Hospital overnight stay	0.42 ± 1.0	1.73 ± 4.1	0.90 ± 2.4	0.240
Reason for limited access to health care, no. (%)				
Cultural/religious beliefs	1 (2.3)	0	2 (3.1)	1.000
Don't know how to find doctors	1 (2.3)	0	1 (1.6)	1.000
Don't understand need to see a doctor	0	0	0	N/A
Fear (not ready to discuss health)	2 (4.7)	1 (5.9)	3 (4.7)	1.000
Lack of availability of doctors	3 (7.0)	2 (11.8)	5 (7.8)	0.616
Language barriers	1 (2.3)	0	2 (3.1)	1.000
No insurance/unable to pay for care	3 (7.0)	2 (11.8)	5 (7.8)	0.616
Unable to pay co-pays/deductibles	7 (16.3)	4 (23.5)	12 (18.8)	0.712
Transportation	8 (18.6)	3 (17.6)	12 (18.8)	1.000
Trouble getting medications, no. (%)	5 (11.9)	3 (21.4)	8 (12.5)	0.398

Table 3. Access and Utilization of Healthcare Services

African Americans comprised 43.0% of the sheltered homeless population, versus 64.7% in our cohort.

Overall, a large proportion of the older adult subjects in this study self-reported high blood pressure or joint pain or back pain. About a third of these subjects stated they were suffering from depression and/or other mental health conditions. The majority of subjects were able to receive some form of primary care health screening, including blood pressure and blood sugar checks.

Statistical analysis points to a few significant differences between the two groups. The homeless group was younger and predominantly male. There was more substance use recorded in the homeless population, including smoking, alcohol use, and illicit drug use. Dental issues were more common in the homeless subjects, and they were also less likely to have received routine dental care and x-rays.

The non-homeless cohort was more likely to report having heart disease, high blood pressure, and diabetes, differences that may reflect greater self-awareness as a result of more consistent access to primary care. Although the utility of the annual physical exam has been called into question by many experts recently[17] and has not been shown to improve outcomes in the general population, there may be value to the annual physical in the homeless population. It can help establish the patient-doctor relationship, especially in a population that tends to distrust the health care system as whole. These patients may find it easier to visit their primary care physician when ill if they feel welcomed by their health care providers, thus reducing hospital admission and emergency room visits.

Depression was common in both homeless and non-homeless older adults and the homeless individuals reported depression and other mental health conditions, including having felt anxious or frightened, more frequently than the non-homeless participants. These findings are consistent with a higher rate of vulnerability, including feeling threatened or being a victim of violence. The need for increased behavioral health services appeared significant in this group of older adults whether homeless or non-homeless.

Over 90% of the overall cohort reported having some form of health insurance, which seems to reflect the successful outreach of St. Patrick's Center's social work team; however, the homeless subjects were still much less likely to report receiving routine health care. Inability to pay co-pays/deductibles as well as transportation issues were the main reported barriers to receiving health care for both of the groups. If sick, almost half of both groups stated that they would go to the emergency room for care. The homeless cohort, however, had higher average visits to the emergency room and longer length of stays in the hospital overnight.

Transportation to and from health care providers in Delaware can be difficult due to lack of accessible public transportation in the state. Recently, there have been multiple case studies conducted by the American Hospital Association on innovative interventions that improve patient transportation.[18] For instance, Grace Cottage Family Health and Hospital in Vermont collaborated with a volunteer driver program and Denver Health Medical Center partnered with ride sharing company Lyft to provide patients with transportation services to healthcare appointments. Innovative approaches to transportation combined with new screening tools to identify patients with transportation needs could significantly improve the access to health care for the elderly homeless population.

Limitation of access to care on the basis of deductibles and co-payments is a problem that plagues our health care system and interferes with the care of the homeless and non-homeless older adults interviewed at St. Patrick's Center. Although such costs are very low for individuals whose primary or secondary insurer is Medicaid, those costs can be significantly higher for individuals with other forms of insurance.

The three major limitations of this study were the small sample size, the self-reported nature of these data, and the use of a convenience sample. Much of the information from the study subjects was from self-report only, including health conditions, health insurance, and health care utilization. The PHQ and Mini-Cog data were obtained directly by the interviewers. The inclusion of subjects by their presence in the center and willingness to participate in the study may limit generalizability of our findings. Furthermore, homelessness was self-defined by the subjects, who were asked whether they considered themselves homeless and for how long they had been homeless. There is also possible confounding of the comparison between the two groups due to the differences in average age and proportion of each gender. Statistical analysis controlling for these potential confounders was not performed due to small sample size.

CONCLUSION

Among this cohort of older adults who identified themselves as homeless and who visited St. Patrick's Center in Wilmington, DE, we observed a high prevalence of chronic and debilitating health conditions, such as high blood pressure and joint and

	Non-Homeless (n=43)	Homeless (n=17)	Total (n=64)	P-value
Able to eat enough every day	40 (93.0)	14 (82.4)	58 (90.6)	0.338
Meals/day, no. (%)				1.00
<1	1 (2.3)	0	1 (1.6)	
1 to 3	37 (86.0)	15 (88.2)	56 (87.5)	
Find food throughout the day	5 (11.6)	2 (11.8)	7 (10.9)	
Vulnerability, no. (%)				
Feel Safe inside	40 (93.0)	15 (88.2)	58 (90.6)	0.616
Feel Safe outside	30 (71.4)	13 (81.3)	46 (71.9)	0.522
Ever Feel threatened or harassed	10 (23.8)	6 (37.5)	17 (26.6)	0.336
Victim of violence or witnessed violence in past year	9 (21.4)	7 (41.2)	17 (26.6)	0.195
Have a close friend, relative, or partner	38 (88.4)	11 (64.7)	52 (81.3)	0.059
Have support from someone	40 (93.0)	17 (100)	60 (93.8)	0.551

Table 4. Meals and Vulnerability

back pain. Lack of health care insurance was infrequent in this cohort, with over 90% of the population having some form of insurance; however, inability to pay co-pays/deductibles as well as transportation issues imposed barriers to care access. Homeless and non-homeless subjects self-reported equal likelihood of visiting the emergency room use if sick, but the homeless subjects reported more frequent emergency room visits and longer hospital stays. To address the health care needs of this population, new programs to improve care in the homeless population should focus on routine primary health care substance use and behavioral health services, and dental care. Clinicians should work to facilitate transportation to outpatient primary care services and recognize the access barrier imposed by deductibles and copayments.

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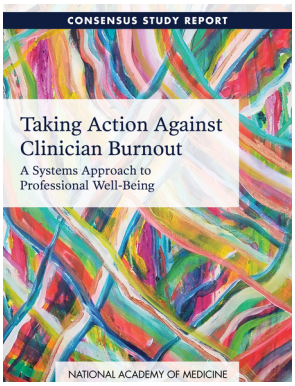
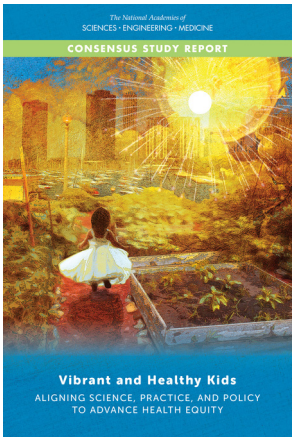
NAM Publications

Taking Action Against Clinician Burnout - A Systems Approach to Professional Well-Being



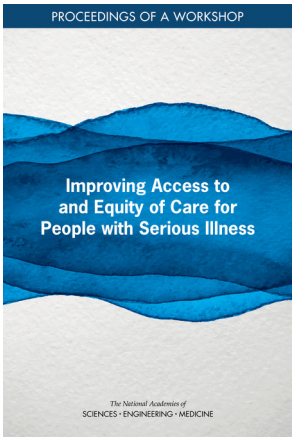
Patient-centered, high-quality health care relies on the well-being, health, and safety of health care clinicians. However, alarmingly high rates of clinician burnout in the United States are detrimental to the quality of care being provided, harmful to individuals in the workforce, and costly. It is important to take a systemic approach to address burnout that focuses on the structure, organization, and culture of health care.

Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being builds upon two groundbreaking reports from the past twenty years, To Err Is Human: Building a Safer Health System and Crossing the Quality Chasm: A New Health System for the 21st Century, which both called attention to the issues around patient safety and quality of care. This report explores the extent, consequences, and contributing factors of clinician burnout and provides a framework for a systems approach to clinician burnout and professional well-being, a research agenda to advance clinician well-being, and recommendations for the field. ***Download the Publication >>***



Children are the foundation of the United States, and supporting them is a key component of building a successful future. However, millions of children face health inequities that compromise their development, well-being, and long-term outcomes, despite substantial scientific evidence about how those adversities contribute to poor health. Advancements in neurobiological and socio-behavioral science show that critical biological systems develop in the prenatal through early childhood periods, and neurobiological development is extremely responsive to environmental influences during these stages. Consequently, social, economic, cultural, and environmental factors significantly affect a child's health ecosystem and ability to thrive throughout adulthood.

Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity builds upon and updates research from Communities in Action: Pathways to Health Equity (2017) and From Neurons to Neighborhoods: The Science of Early Childhood Development (2000). This report provides a brief overview of stressors that affect childhood development and health, a framework for applying current brain and development science to the real world, a roadmap for implementing tailored interventions, and recommendations about improving systems to better align with our understanding of the significant impact of health equity. ***Download the Publication >>***



The Centers for Disease Control and Prevention estimates that approximately 40 million people in the United States suffer from a serious illness that limits their daily activities. These illnesses include heart and lung disease, cancer, diabetes, and Alzheimer's disease and other forms of dementia. However, significant disparities exist across different communities in the quality and access to care for these illnesses. Factors such as race, ethnicity, gender, geography, socioeconomic status, or insurance status exacerbate these complex disparities. It is critical to reevaluate the current models of care delivery across diverse communities and vulnerable populations.

On April 4, 2019, The National Academies of Sciences, Engineering, and Medicine convened a workshop to investigate barriers, policy initiatives, and opportunities for improving access to and equity of care for people living with a serious illness. Discussions explored the current climate of health care and opportunities to improve access to care using organizational, community, patient and family, and clinician perspectives. This publication summarizes the discussions and presentations from the workshop. ***Download the Publication >>***

Delaware Journal of Public Health

Submission Guidelines

updated October 16, 2018

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Established in 2015, **The Delaware Journal of Public Health** is a bi-monthly, peer-reviewed electronic publication, created by the Delaware Academy of Medicine/Delaware Public Health Association. The publication acts as a repository of news for the medical, dental, and public health communities, and is comprised of upcoming event announcements, past conference synopses, local resources, peer-reviewed content ranging from manuscripts and research papers to opinion editorials and personal interest pieces, relating to the public health sector. Each issue is largely devoted to an overarching theme or current issue in public health.

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If you are interested in submitting an article to the Delaware Journal of Public Health, or have any additional inquiries regarding the publication, please contact *DJPH* Deputy Editor Elizabeth Healy at ehealy@delamed.org, or the Executive Director of **The Delaware Academy of Medicine and Delaware Public Health Association**, Timothy Gibbs, at tgibbs@delamed.org

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Submission Requirements

The DJPH accepts a wide variety of submission formats including brief essays, opinion editorials pieces, research articles and findings, analytic essays, news pieces, historical pieces, images, advertisements pertaining to relevant, upcoming public health events, and presentation reviews. If there is an additional type of submission not previously mentioned that you would like to submit, please contact a staff member.

Submissions should be completed under general APA guidelines for formatting and citations. Articles should be written in Microsoft Word format, in a clear, easily readable font with 1.5-inch to 2-inch spacing, and 1-inch margins. The suggested font is 12 point Times New Roman. Once completed, articles should be submitted via email to ehealy@delamed.org as an attachment. Graphics, images, info-graphics, tables, and charts, are welcome and encouraged to be included in articles. Please ensure that all pieces are in their final format, and all edits and track changes have been implemented prior to submission.

Submission Length

While there is no prescribed word length, full articles will generally be in the 2500-4000-word range, and editorials or brief reports will be in the 1500-2500-word range. If you have any questions regarding the length of a submission, or APA guidelines, please contact a staff member.

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Abstracts

Authors must submit a structured or unstructured abstract along with their article.

The word limit is ***200 words***, including headings. A title page should be submitted with this abstract as well.

Structured abstracts should employ 4-5 headings:

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Methods

Results

Conclusions

A fifth heading, Policy Implications, may be used if relevant to the article.

Trial Registration information is required for clinical trials and must be included in the final version abstract

All abstracts should provide the dates(s) and location(s) of the study is applicable.

Note: There is no Background heading.

Example of Information in Abstract

Objective: State the objective or study question starting with "To …" (e.g., "To determine whether…").

Methods: Provide the basic design, place, year(s), setting, and number of participants of the study. If applicable, include the name of the study, the duration of follow-up. Indicate exposure and outcomes.

Results: Include quantitative results.

Conclusions: Provide only conclusions of the study that are directly supported by the results, whether positive or negative.

Policy implications: Provide a statement of relevance indicating implications for health policy, avoiding speculation and overgeneralization.

Trial Registration: For clinical trials, the name of the trial registry, registration number, and URL of the registry must be included in the cover letter ONLY and in the manuscript only after it is officially accepted.

Relevant Abbreviations should be mentioned here and will not be counted in the word limit.

HEALTH POLICY – LEXICON

Body Mass Index (BMI)

A weight-to-height ratio, calculated by dividing one's weight in kilograms by the square of one's height in meters and used as an indicator of obesity, overweight, and underweight.

Diabetes

A disease in which the body's ability to produce or respond to the hormone insulin is impaired, resulting in abnormal metabolism of carbohydrates and elevated levels of glucose in the blood and urine.

Fee for Service

A payment model where services are unbundled and paid for separately. In health care, it gives an incentive for physicians to provide more treatments because payment is dependent on the quantity of care, rather than quality of care.

Food Desert

Urban or rural locations lacking in ready access to fresh produce and other healthy foods due to an absence of stores that sell these foods.

Health Professional Shortage Area (HPSA)

Health Professional Shortage Areas (HPSAs) are designations that indicate health care provider shortages in primary care, dental health, or mental health. These shortages may be based on geography, population, or facility.

Heart Disease

Conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke. Other heart conditions, such as those that affect the heart's muscle, valves or rhythm, also are considered forms of heart disease.

Hypertension

A long term condition in which the blood pressure in the arteries is elevated (over 140/90 mmHg).

Obesity

A weight range that is greater than what is considered healthy for the height of the individual (CDC). In teens, this can be determined by a BMI greater than or equal to the 95th percentile on CDC approved growth charts.

Overweight

In teens, this can be determined by a BMI at or above the 85th percentile but less than the 95th percentile on CDC approved growth charts.

Payer

Any entity that pays or administers the payment of health insurance claims or medical claims to providers.

Primary Care

Healthcare at a basic rather than specialized level for people making an initial approach to a doctor or nurse for treatment.

Primary Care Provider

A health care practitioner who sees people that have common medical problems. This person is most often a doctor, but may also be a physician assistant or a nurse practitioner

Recidivism

The tendency of a convicted criminal to re-offend.

Rural

A geographic area outside of towns and cities; typically have low population density and small settlements.

Sociodemographic Factors

A combination of social and demographic factors; e.g. age, race, ethnicity, language

Socioeconomic Status

Social status or class of an individual or group; often measured as a combination of education, income, and occupation. Examinations of SES often reveal inequities in access to resources.

Stroke

The sudden death of brain cells due to lack of oxygen, caused by blockage of blood flow or rupture of an artery to the brain. Symptoms include sudden loss of speech, weakness or paralysis of one side of the body.

Urban

Characteristic of a town or city.

Value-Based Payment Models

An alternate payment model using pay-for-performance measures to improve population health and decrease or contain associated costs. Under these models, providers are paid based on patient health outcomes.

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The Delaware Public Health Association was officially reborn at the 141st Annual Meeting of the American Public Health Association (AHPA) held in Boston, MA in November, 2013. At this meeting, affiliation of the DPHA was transferred to the Delaware Academy of Medicine officially on November 5, 2013 by action of the APHA Governing Council. The Delaware Academy of Medicine, who's mission statement is "to promote the well-being of our community through education and the promotion of public health," is honored to take on this responsibility in the First State.

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