Reducing Health Care Costs:
Eliminating Excess Health Care Spending and Improving Quality and Value for Patients

Testimony to Senate Committee on
Health, Education, Labor and Pensions
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Chairman Alexander, Ranking Member Murray, and Members of the Committee, thank you for affording me the opportunity to speak with you today to share thoughts on how we collectively might make inroads in reducing unnecessary and wasteful spending within our nation's healthcare system. I applaud the Chairman and this Committee for embarking on hearings aimed at exploring the drivers of healthcare cost growth and potential remedies to curtail this growth - for everyone from patients to payers and provider systems.

My comments are informed by experiences leading the Vanderbilt University Medical Center (VUMC) as its President and CEO. VUMC, in its 4 campus hospitals, over 140 clinics, and its affiliated clinical network of over 5000 clinicians and 60+ hospitals stretching across 5 states, functions as the largest, provider-led, health resource to patients in the Southeastern portion of the U.S. Based in Nashville TN, we serve patients locally and nationwide through research, training, and of course

clinical care. In several disease areas, particularly those requiring high complexity care such as pediatric heart transplantation, or CAR T-cell therapy, a novel, effective, but incredibly expensive anti-cancer therapy, we play a unique role as the essential resource for people living in the mid-southern region of the US. This regional distinctiveness, and the similar role many other academic health centers play in their regions, will inform some of my comments today around allocation of resources for cost effectiveness. I am also informed by experiences leading large-scale initiatives at Vanderbilt involving the application of health information technology. For example, VUMC has taken a leading role in driving nationwide advances in the integration of health information technology with genomic medicine, culminating in the decision by the National Institutes of Health to locate the Data and Research Center for the All of Us Precision Medicine Initiative at our center.

Nearly all analyses have shown that amid myriad causes for the rising cost of healthcare, from accelerating technology to inflated pricing, by far the largest single issue is waste. Most sources, including Consumer's Union and PricewaterhouseCoopers, find that waste of all forms consumes about 1 out of every 3 healthcare dollars, or roughly $1 Trillion of the $3 Trillion the U.S. spends on healthcare. The waste has many causes. Certainly, the dizzying complexity of our healthcare payment system, with its administrative - or so-called "frictional" expenses - is being addressed in other sessions, and I will not attempt to address that issue today. The largest sources of waste are euphemistically termed "unnecessary services," and frankly, in most other industries would be less generously labeled "sloppiness." The root causes are predominantly system

failures in our ability to effectively communicate – not only in transmitting the key information about our patients and the care they are receiving, but also shortcomings in the decision support that clinicians need to provide care that is timely and cost-effective – within and across our healthcare systems. The examples are legendary and range from failure to share simple laboratory or radiological test information between doctors working across states, across town or even within the same institution, to utilizing drugs or tests that could be replaced with less expensive and equally effective alternatives, or in some cases, eliminated entirely, with no impact on patient outcomes.

I have focused my prepared testimony on highlighting examples that fall into two buckets: (1) strategies that reduce the variability, volume and cost of drug and diagnostic test ordering, leveraging health IT and clinical decision support protocols; and (2) patient-centered care models focused on the needs of our most complex patients, who consume a vastly disproportionate amount of healthcare resources. I will also briefly touch on the potential for us as a society to improve the dialogue around healthcare choices for individuals and families at the end of life.

Reducing Variability, Volume, and Cost of Drug and Diagnostic Ordering

We are all well aware of the challenges related to escalating drug costs. These issues transcend drug class – we've seen it for the generic drugs we've used for decades, such as epinephrine, as well as for the new cutting-edge therapies such as the biologics showing remarkable success in diseases ranging from cancer to common immune disorders such as inflammatory bowel disease. The FDA

approvals for new molecular entities and new biologic licenses have more than doubled over the past decade. As efforts to better target therapies to our individual molecular makeup progress, the cost challenge with new therapies has the potential to amplify. At VUMC, like the rest of the country, we've experienced remarkable increases in our cost to purchase the drugs we administer to patients in our facilities, growing by as much as 10% per year over the last decade.

While the escalation in how much our drugs cost is remarkable, if we are honest with ourselves, we must also admit that in most healthcare systems, unlike most businesses, we do not systematically try to manage what tests we order, and which drugs we administer to patients in a manner that has the potential to optimize quality and cost. I am not suggesting that the drugs and tests doctors are generally ordering are wrong or bad for patients; however, there are often many alternatives in healthcare, and our system fails to systematically provide timely information to help clinicians make value-based choices that consider cost and quality. In even the simplest situation, such as a common infection, the offending organism may be sensitive to as many as five or even 10 antibiotics that will all have acceptable efficacy, yet the range of prices for those drugs could differ by a factor of 10 – or even 100, and the healthcare team often will have little or no information on those important details.

Moreover, the recommendations from studies being published showing that drug A is actually better than drug B in a given clinical scenario, and the factors impacting the cost of drugs A and B in the marketplace – both important to optimizing quality and cost – are changing weekly, and sometimes daily. This kind

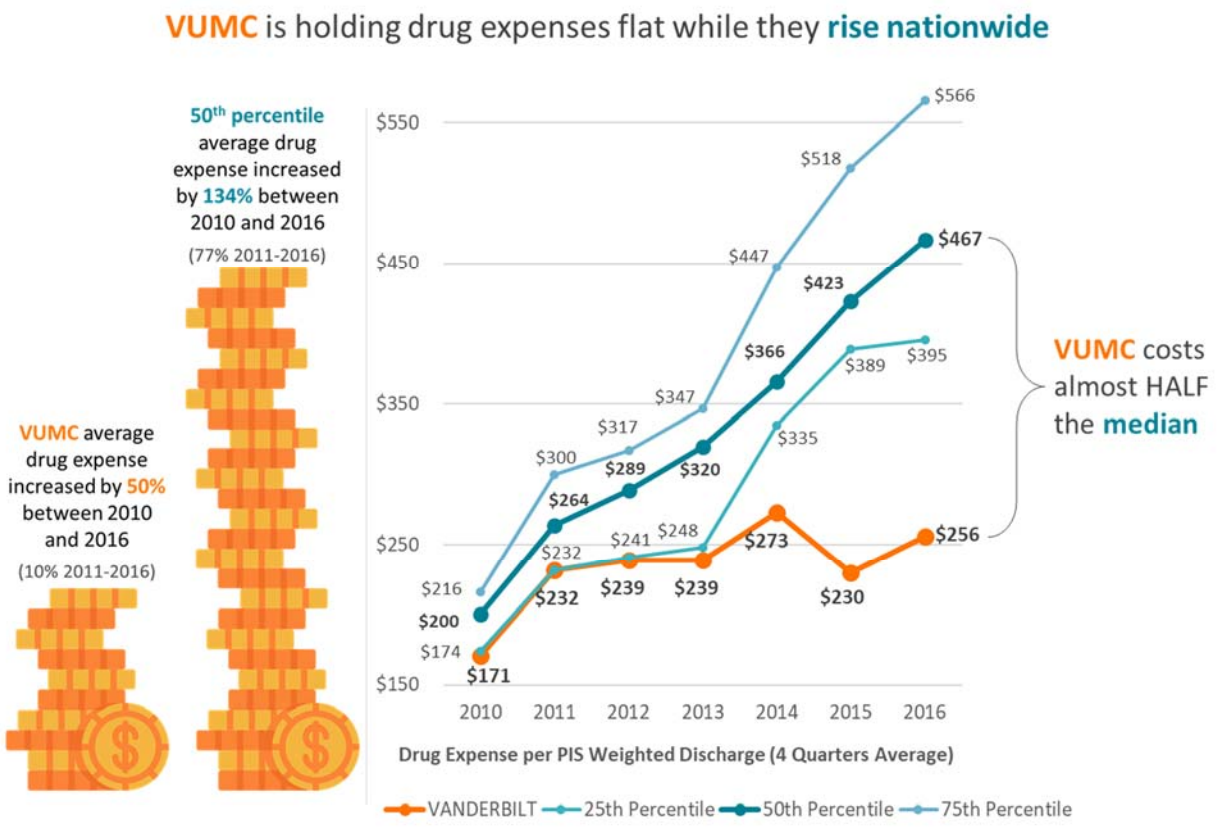
of information is not practical for our doctors to access as they care for patients, and even if it were, the evidence suggests that the number of facts that clinicians need to consider to make the best possible decision in every situation already is exceeding human cognitive capacity (William Stead, *Academic Medicine*, August 2010).

My point is that we are not providing the best options to our clinicians in a *systematic and useful* way, as they order literally thousands of tests and drugs each year. As such, we are allowing one of the most expensive features of healthcare practice to proceed at the discretion of many thousands of qualified individual experts, without any reasonable systemic feedback or other methods that could allow us to manage what we know is tremendous variability. While nearly all hospitals have a "drug formulary committee" that determines which drugs can be accessed by clinicians for patients admitted to the facility, few such committees have the resources necessary to determine in real time what the most cost-effective choices are in a wide range of specific clinical settings, and even fewer have the ability to provide that information in a useful way to clinicians. Only very large comprehensive health systems, typically the major academic medical centers and teaching hospitals, employ the large cohorts of specialist physicians capable of making these determinations in a manner that approaches "real time." Further, most health systems in the U.S. do not employ their clinicians and are therefore far less able to influence their care decisions. Some of the institutions making the most visible progress in this arena, such as VUMC, Mayo, The Cleveland Clinic, and Geisinger do employ most of the clinicians working in their hospitals, but this remains the exception. As such, health systems

struggle to effectively engage clinicians, particularly those they do not employ, in ways that are conducive to alignment and consistency in clinical practice.

At VUMC, implementation of clinical decision support systems to guide physicians when choosing certain tests or drugs has been a two decade-long organizational management journey. Our efforts to develop one of the first state-of-the-art health information technology systems capable of effecting this kind of clinical decision support at the bedside dates to the late 1990s, and was a necessary innovation to allow us to project evidence-based recommendations to many hundreds of clinicians in daily practice. However, technology alone has by no means been sufficient to changing practice. Over the years, we have engaged our clinicians extensively, asking them to help us formulate "best practice" for patient orders discipline-by-discipline, guided by an active and dynamic clinician-led pharmacy and therapeutics committee. Importantly, we make it a practice to allow our clinicians to override the "recommended option" from electronic decision support, based on their view of the clinical situation. We find this approach greatly improves adoption by our clinicians for reasons that are intuitive. The vast majority of the waste in drug and test ordering is not conscious variability – in other words, clinicians are often not driven by scientific evidence to use drug A over drug B, but instead make these choices from habit or earlier training. As such, the majority of the variability we see in drug and test ordering, like many facets of healthcare, is unconscious and unsupported by evidence. Our goal with electronic clinical decision support is to eliminate *unconscious* variability, leaving conscious decisions to specify care to the clinician's discretion.

Does it work? We could provide a number of examples, but perhaps the most compelling data is our trend at VUMC for the drug expenditures we can most readily control from a process perspective, those related to inpatients admitted to our adult and children's hospitals. Since 2010, inpatient drug expense per weighted discharge (accounting for the severity of illness) has more than doubled across teaching hospitals performing the nation's most complex care, not surprising given the trends already discussed in drug costs (see Figure). Over the same period, at VUMC we've managed to hold costs far below this level – at well below half of the median national trend. Our cost increase from 2010 - 2016 was 50%, versus a median of 134% - saving VUMC approximately $30-35 Million per year compared to the median teaching hospital.



Given the success of this approach to drug ordering, we've begun to expand the practice to manage variability and expense in diagnostic test ordering. In fact, we've renamed our "Pharmacy and Therapeutics Committee," the standard in nearly every hospital in the country, to the "Pharmacy, Therapeutics, and Diagnostics Committee," and have included key experts in laboratory medicine from our Pathology Department in the program. In one example, genetic testing, we have eliminated approximately $1 million in costs annually by altering orders for tests that could be streamlined, reduced, or eliminated by requiring either on-line or verbal expert consultation prior to completing the test order. While an even greater departure from standard practice than decision-supported drug ordering, the potential for cost savings with diagnostic testing, especially when including imaging, is vast and very likely exceeds the potential with drug ordering. A study by PricewaterhouseCoopers almost a decade ago (2009) estimated waste due to unnecessary testing approached $210 Billion per year.

To dramatically reduce this kind of waste, we need health systems and the clinicians working inside these systems to be aligned. As we work to solve technical challenges with implementing higher quality clinical decision support, and to overcome the equally challenging technical barriers to interoperability between vendor-supplied systems between medical centers, there remain regulatory and legal barriers to achieving fundamental alignment. At present, under the anti-kickback and Stark laws, health systems are largely prohibited from creating financial incentives that would cause physicians, particularly ones they do not employ, to order drugs or tests differently, even if those incentives are in the public's best interest. These laws and related regulations were established to

prevent abuse, and protect the public treasury from paying for unnecessary care. However, they were not designed for the current era, where hospitals and clinicians must increasingly develop and use systems of care. Financial incentives that support more defined networks of clinicians who agree to deploy the best and most cost-effective clinical practices will support the effectiveness of our developing systems of care. Without modernization, these legal constraints will be an impediment to achieving clinical alignment that can avoid ineffective or unnecessary care.

Improved Management and Care Coordination of High Utilizers of Healthcare

Waste related to overconsumption of healthcare is widely disproportionate – studies estimate that approximately 5% of individuals account for roughly half of U.S. health care spending. While the models just described that reduce variability in diagnostic test or drug ordering are effective approaches to address overutilization in most patients, distinctive strategies are required for patients who are exceptionally high utilizers of healthcare resources.

The causes of exceptionally high utilization inform distinctive approaches. Over-utilization of healthcare services due to behavioral or mental health conditions, or due to social and economic circumstances such as homelessness, are situations we could discuss in the Q&A period, as they do respond to focused programs tailored to these patient populations. However, the largest group of patients consuming an exceptional number of costly resources have complex, and often chronic medical conditions.

Medical Homes for Medically Complex Children

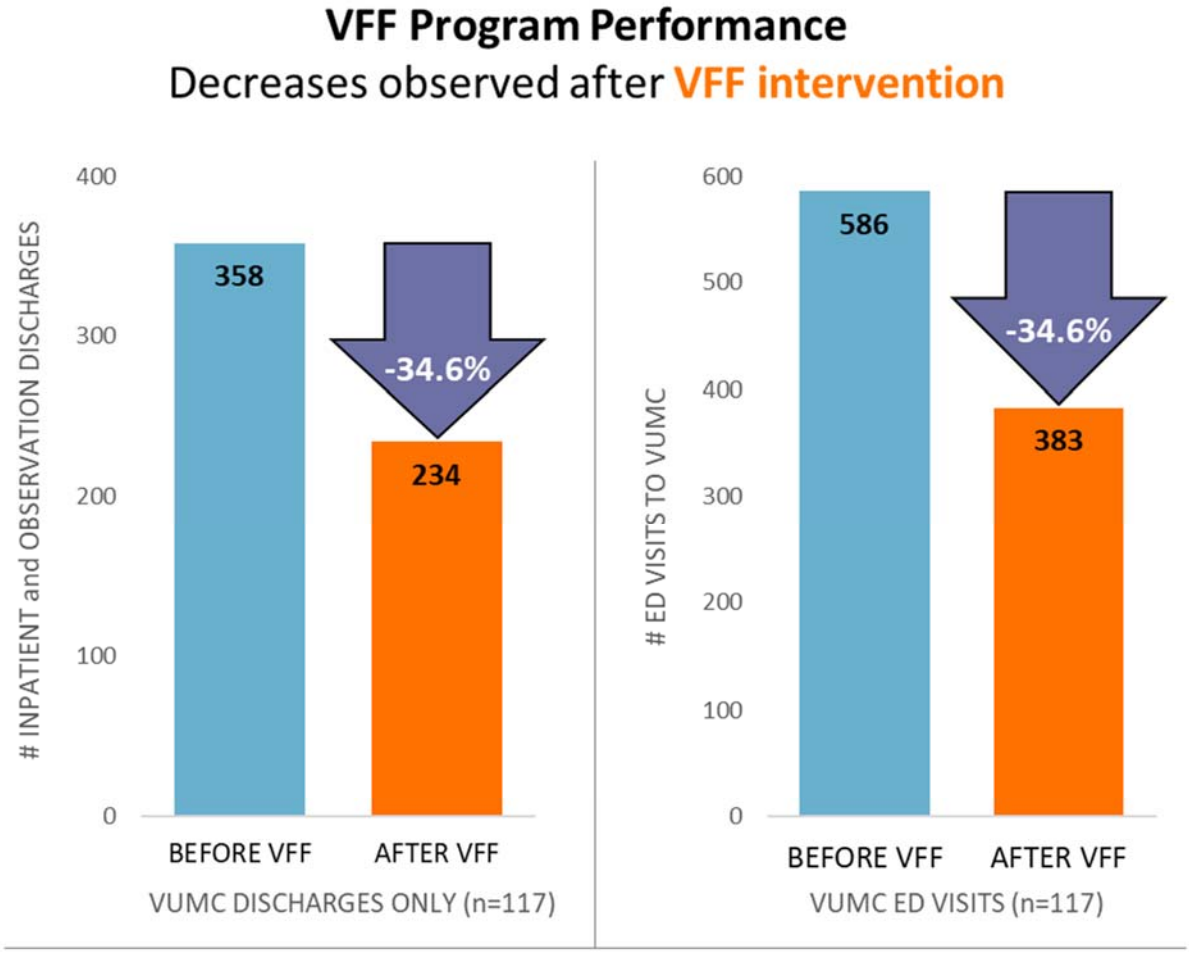
Children with medically complex, chronic conditions that affect multiple organ systems are invariably expensive patients to treat and require the care of numerous subspecialists. As a result, care is often highly fragmented, as individual clinicians, including primary care physicians, struggle to provide the holistic care these children require. This leads not only to low quality outcomes, but increased utilization of acute services. About 1% of pediatric patients are considered medically complex, but they account for as much as one third of total child healthcare spending, one fourth of all hospital inpatient days and >40% of all pediatric hospital deaths.

At the Monroe Carell Jr. Children's Hospital at Vanderbilt, we have developed a medical home model dedicated to these patients and their families, ensuring they have a "quarterback" to help them navigate through the health care system and coordinate care across different clinicians and subspecialties. The impact of this approach has been extraordinary. After two years, patients followed in the medical home saw an 89% reduction in inpatient hospital days, a 75% reduction in early readmissions and a 63% reduction in ED visits. For perspective, a nationwide reduction in inpatient hospital days of only 10% would free-up $2.9 Billion in cost to Medicaid programs, according to an analysis published in Health Affairs in December of 2014. Program aspects include ensuring continuity of care, coordination of care, shared decision making with parents, and follow up care by team members between visits to the hospital. Similar models are being deployed at other children's hospitals around the nation. However, the implementation cost for these programs is substantial, a challenge to scaling these models to their

full potential without support from payers. Federal legislation, the ACE Kids Act, has been introduced to address some of the challenges health systems face with obtaining reimbursement across state lines for these children with complex, chronic conditions. Given the magnitude of the cost-savings associated with these programs, it would also seem prudent to consider payment models through Medicaid appropriately tailored to the unique needs of this patient population, including support for care coordination.

Adults with Chronic Disease

The Vanderbilt Familiar Faces (VFF) program is an analogous patient-centered medical home model for adults with chronic disease, piloted using a multidisciplinary team approach to provide intensive case management. A feature of care for adults with complex disease is the varied settings where patients interact with the healthcare system (versus the potential for a more controlled setting in a children's hospital). The VFF team identifies high utilizers with complex, chronic disease, and creates a holistic care plan that incorporates strategies for managing all touch points where these patients interact with our health system, from the Emergency Department (ED), to the many inpatient and outpatient venues these patient utilize, engaging them in each setting with targeted interventions. As such, extensive use of the electronic health record for both communication across settings, as well as establishing and adhering to an individual care-plan for each patient, is essential. In the first 6 months, hospital discharges and ED visits for this patient population dropped by nearly 35 percent. VUMC is now working with TN state officials to explore scaling this model in the Medicaid population.



Decreased number of touches to VUMC system by active VFF patients for the 6 months after VFF intervention compared to 6 months prior *(updated 05/09/2018)*

<u>Addressing End-of-Life Care</u>

Finally, I would be remiss if I did not recommend one additional topic deserving of our attention - the tremendous overutilization of healthcare resources at the end of life. Both clinicians and health systems unquestionably have an obligation to help effect positive change, and there are constructive ways we could support clinicians and hospitals on this journey in constructive ways without impacting patient rights.

In the U.S., more than 40 percent of patients who die from cancer are admitted to an ICU in the last six months of life (Bekelman et al., *JAMA*, 2016). A Kaiser Family Foundation analysis on end-of-life spending found that Medicare per capita spending in 2014 was nearly four times higher for those dying the same year, at $34,529 per patient, compared to survivors, at $9,121 per patient. In fact, more than 30 percent of Medicare spending goes toward the five percent of beneficiaries who die each year, and one-third of that cost - billions of dollars annually - occurs in the last month of life. It seems clear that this massive expense, among the highest of any developed country in the world, is a significant factor fueling health care cost growth. As of 2014, 80% of Americans who died were insured by Medicare, and "baby-boomer" aging will continue to expand the percentage of our population over age 65.

A 2017 report by the National Academy of Medicine found that while outcomes for patients in hospice consistently show better quality of life, not only for the person with serious illness but also for their family, there remain huge geographic variations in the use of and access to hospice care in the U.S. Moreover, a 2015 Kaiser Family Foundation survey found that 89 percent of adults say physicians and patients should discuss end-of-life issues, yet only 17 percent of survey respondents said they have had such a discussion with their healthcare provider. Consequently, 44.5 percent of Medicare beneficiaries see 10 or more different physicians during the last six months of life.

At VUMC, we are working across a number of fronts to support more compassionate and effective care for patients and their families at the end of life.

Among the most compelling and common-sense approaches is to educate all clinicians and patients, to ensure we systematically initiate the discussions necessary to understand and document end-of-life preferences from patients, early in the patient encounter. Pilot studies at our center indicate that earlier discussion of end-of-life issues in selected ambulatory settings, such as cancer clinics, can help redirect pre-terminal care from the hospital to less expensive care settings. Here again, the electronic medical record plays an essential role, not only as a vehicle to record this information, but in making it visible and easy for the clinician to interpret, to support the wishes of patients and family members at a time we all know can be extraordinarily difficult. As we consider the vast array of incentives CMS now provides to health systems related to the care of Medicare patients, we should consider including incentives to discuss and document patient preferences for end-of-life care as a straightforward means to vastly improve the quality and value of care for all Americans.