To: Dr. Leith States, Chief Medical Officer,
Office of the Assistant Secretary for Health,
Office of the Secretary,
Department of Health and Human
OASHcomments@hhs.gov
(202) 260-2873

From: Majd Alwan, Ph.D.
SVP of Technology & Business Strategy,
LeadingAge & Executive Director, LeadingAge Center for Aging Services Technologies (CAST)
MAlwan@LeadingAge.org
(202) 508-9463

RE: Response to Your RFI – Landscape Analysis to Leverage Novel Technologies for Chronic Disease Management for Aging Underserved Populations Services.

Dear Dr. States,

I am writing today first and foremost to thank you for issuing this important RFI to leverage Novel Technologies for Chronic Disease Management for Aging and Underserved Populations, including Veterans, Individuals with disabilities, people living in rural and underserved areas, low-income individuals, and minorities. The RFI is a step in the right direction and a positive sign that we, as a country and a society, are seeking new the kind of visionary thinking and approaches we need to improve care outcomes, equitable access to care, and quality of life of these populations, while addressing existing issues related to cost, shortage of clinicians, professional caregivers and resources, limited access, affordability,and the little attention paid to Social Determinants of Health (SDOH), social support services, and provider types who can play an important role under the right circumstances.

Such circumstances of course include access to, and the ability to leverage appropriate technologies, including innovative ones like Artificial Intelligence. As you noted in the background, the recent COVID-19 pandemic has shown us that technology is now a must-have for care delivery and must be better-leveraged moving forward. However, I want to take a moment to emphasize that, as we all know, technology is necessary but not sufficient; it is merely an enabler. To successfully leverage technology, we need appropriately trained providers/ professionals at different levels of care delivery and responsibilities, from chief consulting physicians and specialists, all the way to front line workers including home care and certified nursing assistants. Moreover, we also need to it to be incorporated into innovative care delivery systems with a) innovative payment models that incentivise all engaged providers, and use it under modern regulatory frameworks that encourage true collaboration, coordination, information/data sharing, and meaningful engagement of stakeholders involved in the delivery of care, track appropriate quality measures that leverage data from modern technologies, reward all parties for improvements and positive outcomes, and nudge responsible parties in the right direction, as opposed to penalizing them, when desired outcomes are not met.

With these overarching comments in mind, please see below responses to some of the specific questions posed in your RFI.

A. Barriers and Opportunities for Technology-Driven Solutions

1. What barriers (e.g., privacy concerns, other clinician and patient barriers) and opportunities are most relevant for bringing technology-driven solutions to aging populations in underserved areas?

The most important opportunities we see include using a broad array of health IT technologies that can help care providers, especially long-term and post acute (LTPAC) care and services providers, with delivering with more responsive, proactive, preventative, objective, and comprehensive/ holistic care that is longitudinal, person-centered, regardless of where the patient/resident/client receives such services and care. LTPAC care providers, which include nursing homes, assisted living, life plan communities (formerly known as continuing care retirement communities), home health, home care, hospice, senior housing, adult daycare, senior centers, meals on wheels and other support organizations collectively provide millions of older adults with housing, health, care, and support, including social support, services on a daily basis. Hence, as existing high-touch, high-trust, and high-volume interaction and engagement channels to the aging population, especially those underserved, already at risk of taxing the healthcare system, LTPAC providers can serve as natural extensions of traditional healthcare providers, including physicians, community clinics, and hospitals.

Technologies that can be used and leveraged by these providers, and Opportunities they offer, include:

Telehealth in general, including simple Virtual Visits, more sophisticated Synchronous Telemedicine, and Asynchronous Biometric Remote Patient Monitoring (RPM), and other Remote Monitoring Technologies: These technologies facilitate safe and timely access to healthcare services (through virtual check-ins for example), reducing unnecessary hospital transfers and/ or readmission (through staff-assisted synchronous telemedicine sessions with distant physicians for individuals experiencing acute episodes in nursing homes and assisted living, and improving the outcomes and reducing healthcare spending for both pre- and post-acute through biometric RPM and management of chronic conditions by telehealth/ home health nurse, therapists, and clinical social workers.

Medication Management Technologies: These technologies can improve Medication Adherence, which is especially important for individuals with chronic conditions especially for critical medications, and are a great companion for telehealth and biometric RPM.

Social Connectedness and Engagement Technologies: These technologies can increase engagement and access to supportive services, including those that impact social determinants of health (SDOH), and can reduce social isolation, depression, and healthcare spending. In addition, some of these technologies that have two-way video conferencing capabilities that are end-to-end encryption can be leveraged for telehealth-lite applications, like virtual visits, for generally healthy individuals that do not have chronic conditions that require RPM.

Health IT Technologies, which include Electronic Health Records (EHRs), Shared Care Planning and Coordination Tools, and Information Exchange Technologies: These technologies allow for more accurate documentation of care, exchange of important information, completeness of information and improved coordination of care across provider settings.

Data Analytics Tools: These technologies can help pull together data from multiple sources, for example EHRs, RPM, and Public Health Registries, to provide better insights to care providers and public health organizations through visualization, descriptive analytics, modelling, predictive, and prescriptive analytic capabilities.

AI Capabilities: AI capabilities can be embedded into any of the previous categories of technologies and would allow for predictive modelling, detection of anomalies/ abnormalities, and potentially decision-making/ decision support, including clinical decision support in various specific areas of applications including falls prevention, prevention of adverse drug events, to early detection of infections, and chronic care management and treatment decision. Other AI applications gaining popularity and integration into other technologies include intuitive voice interface to many of the above mentioned technology categories.

The Most Important Barriers to the Broader Adoption and Use at Scale include, but not limited to:

Antiquated legislative and regulatory barriers on eligibility for reimbursements and incentives:

- For example eligibility of a patient's home, or an urban nursing home, to be a telehealth originating site,
- Ineligibility to use audio only or asynchronous RPM outside of the health emergency authorization.
- Ineligibility of professionals employed by LTPAC providers who can help physicians use telehealth technologies, like telehealth/ home health nurses, therapists, etc. or their employers to use technologies like telehealth and bill for chronic care management and telehealth visits.
- Focusing incentives, including incentives for Health IT adoption, as well incentives from Alternative Payment models on the acute care sector, physicians and hospitals.

Lack of evidence of cost-effectiveness of some of these technologies: Most studies encountered attempting to evaluate the cost-effectiveness of these technologies and the innovative care delivery modalities they offer were conducted in small, short-term pilots and were conducted under existing reimbursement that were inappropriate for the care delivery, and did not have the right financial incentives for all care stakeholders involved. A clear exception is the Vetern's Administration's (VA) telehealth program, which is not replicable outside the VA!

Lack of demonstrations of innovative care delivery models that emphasize the important role that technology, and technology-enabled LTPAC providers can play: Most of CMMI's innovative and alternative payment models focused primarily on episodes of care and are mostly led by acute care, i.e., hospitals and physicians. Even when partnerships with LTPAC providers are critical, we see unintended consequences of discharging more acute patients earlier to LTPAC providers, pressure on taking care of patients who need a lot more care, usually at lower negotiated rates, with added pressure to reduce their of length of stay, and focus on reducing LTPAC's cost, while maximizing acute care's margins/ incentives, rather than the patient's outcome and satisfaction.

Added Cost of the Technology, IT/ Communications Infrastructure, and Connectivity Costs: Especially in light of the fact that there is virtually no revenue stream tied to these technologies, the services, or the quality they enable, directly (like direct Health IT adoption incentives), or indirectly like meaningful payment modifiers tied to quality in LTPAC!

For more on such barriers, please see the Barriers Chapter of ASPE's Aging Services Technology Study: Report to Congress.

2. What federal policies currently limit the capacity to deploy and scale technology-driven solutions for aging populations?

Please see above.

3. What new federal policies could facilitate the success of technology-driven solutions for aging populations?

Massively increased flexibilities, particularly in the Medicare program, to utilize technology to deliver all types of care became an essential lifeline for our health care system during a time of unparalleled challenges and strains. If there is any "silver lining" to the coronavirus pandemic, it has been an increase in the use of technology to deliver appropriate and timely care to keep people safe, healthy, and well-connected.

The ability to use telehealth during this public health emergency (PHE) was vitally important to protect staff and patients' health, but also to expand the reach of overextended health care personnel. Waivers in Medicare rules that allow for the home to be an originating site of care, expanded the types of technology that can be used for telehealth visits (e.g., Facetime and even audio-only in some cases),

and the expanding the types of providers that can bill for telehealth services are all massive changes from the pre-pandemic state of play.

The question now is how to capitalize on the progress made during the pandemic, which in many ways has served as the "demo" of telehealth that many have asked for in the past. Concerns for the future include how to make sure that telehealth is incorporated into practice in an equitable, cost-effective (for both the government and providers), and accessible way – but what is clear is that we need to continue moving forward.

In addition to making permanent many of the pandemic flexibilities, aging services providers need to adequately pay their appropriate trained staff, like therapists and nurse, who can either deliver interventions including therapy via telehealth (both synchronous virtual visits as well as asynchronous remote patient monitoring (RPM)) under a physician-approved care plan, or can assist a remote physician during a synchronous telemedicine visit. Moreover, they need support to maintain and upgrade technology. Hence, they need adequate reimbursement from all payer sources to sustain and maintain the investments they already made in delivering care via telehealth.

Broadband investment, especially in rural and underserved areas, is critical to making sure telehealth is an accessible service nationwide – including in affordable senior housing communities, many of which lack connectivity and where federal investment in wireless internet capability is imperative. Continued investment in broader health IT to support information management and the secure exchange of health information are also critically important and need to be inclusive of aging services providers. Finally, those providers who treat patients in their own home – like home health and hospice as well as PACE -- which have not been able to take full advantage of the affordable internet connectivity like their other healthcare peers in rural areas, or telehealth in the past, or even the expanded telehealth flexibilities, need to be included.

Some of the Specific Policies that could help include:

- **Keep key pandemic flexibilities:** Make key pandemic-related telehealth provisions a permanent part of the Medicare program: permanently removing the geographic restrictions on telehealth; allowing the home to be an originating site of care beyond the public health emergency; and permanent expansion of the providers who can furnish telehealth services in both the physical and mental health arenas.
- **Allowable technology:** Continue the flexibility in the type of modality allowable for video-audio connections (e.g. allowing the use of FaceTime or other smartphone technology) to utilize all tools available, including audio-only, to deliver telehealth services as appropriate.
- **Reimbursement for home health telehealth visits:** Support efforts that allow virtual visits to be reimbursed by Medicare with appropriate guardrails and visit equivalency between in-person and virtual visits.
- **Hospice face to face recertification:** Allow the hospice face to face recertification to take place via telehealth on a permanent basis.
- **Allow Home Health Nurses, Therapists, and other appropriately licensed professionals to use telehealth and their employers/ agencies to bill for such services beyond the pandemic:** Remote patient and medication adherence monitoring improve chronic care management, reduce hospitalizations, hospital stay, and readmissions, and consequently cost. Chronic care management reimbursement codes currently exist for physicians, PAs, and NPs, but are woefully underutilized. We will advocate for the creation of claims codes or modifiers that will appropriate staff at home health agencies to perform, and for agencies to bill for, a variety of appropriate chronic care management and therapy interventions approved by a physician's plan of care using telehealth, including remote patient and medication adherence monitoring technologies.
- **Meaningful Use:** Aging services providers were not included in previous funding efforts that supported health care providers' transition to electronic health records (EHR) systems that contain the medical and treatment histories of patients. We will continue to advocate for funding and payment incentives, including incentives tied to quality, to assist aging services providers in

accessing EHR technology that is interoperable with that of their physician and hospital partners and peers, and encourage the bi-directional exchange of information.

- **Make demonstrations inclusive of telehealth and LTPAC providers:** New and current CMMI demonstrations should include waivers to allow for the broad utilization of telehealth and technology to continue to build the evidence base for what role technology and telehealth will continue to play in healthcare delivery. These demonstrations should recognize the important role LTPAC providers, the depth and breadth of services they can provide, especially those that can be delivered more efficiently and cost-effectively through, or enabled by, technology. Ensure that LTPAC providers, and not just acute care, are appropriately incentivised and rewarded!

4. What are the ways in which technology-driven solutions are manifested (e.g., software platforms, wearables, robotics, etc.) and how is the integrity of data collected ensured (e.g., fidelity, and accuracy of data)?

The technology solutions can have different embodiments, implementations and manifestation. Some of these are better suited to different populations based on competencies, comfort, compliance/ adherence, care setting, and cost, to name a few. Studies should look at the most valid, efficacious, efficient, and cost-effective embodiment/ implementation for different populations and care settings. We should continue to invest in user-centered, field validation and evaluation research studies of developed technologies that lack such evidence. Such research should engage all stakeholders including the patient/resident/client, clinicians, professional caregivers, and management of care providers.

5. How will training data sets be established and implemented to drive effective technology solutions that improve chronic disease outcomes for aging populations in rural areas?

Training data can come from urban patients to accelerate training and development of effective AI-augmented solutions. However, such training should be reviewed, tweaked and validated by expert clinicians. Such systems should be introduced as decision support, rather than decision-making systems to the most qualified clinicians available in rural areas.

6. How will AI solutions be validated? What metrics will be used to evaluate the effectiveness of AI/machine learning algorithms?

Please see the response to the question above.

7. How will healthcare team and patient trust in technology solutions be addressed? How will legal and ethical issues be addressed for technology solutions designed for improving chronic disease outcomes?

This can be achieved on the care team side by a two pronged approach. First, transparently explaining how the system makes inferences and arrives at decisions, learns, and evolves. Second by keeping expert clinicians in the loop and as the final arbiters.

On the patient side, this can be accomplished by introducing the solutions through the most engaged and most trusted professional or clinician on the care team, having clear layman's explanation of what the technology can and cannot do, who has access to what data and for which purpose/use, and giving them options to control, consent to and/or opt out of certain aspects.

B. Key Indicators & Data Sources of Technology-Driven Chronic Disease Management

3. What selected health conditions should be addressed as priority conditions to assess technology-driven capacity to influence access, timeliness, and quality of healthcare treatment and preventive services to aging populations living in rural areas?

The top 5 chronic conditions (please see the Chronic Disease Management Chapter of ASPE's Aging Services Technology Study: Report to Congress.

C. Examples of Health Promotion using Technology-Driven Solutions

1. Describe novel technology-driven approaches (e.g., AI) that may prevent the onset, progression, or escalation of chronic disease states in patients who have decreased frequency of health system interaction during the COVID-19 pandemic, such as aging Americans living in rural areas.

2. Outline programs leveraging novel technology-driven approaches that may prevent increases in morbidity and mortality due to deferred care for acute medical conditions (e.g., exacerbation of heart failure, decompensated lower respiratory tract disease).

3. What is the established evidence or evaluation supporting proposed benefits, and the evaluation of potential harms of AI-driven solutions such as increased racial bias?

There are many examples, in addition to the above-mentioned Chronic Disease Management Chapter, please see the Benefits of Telehealth Section of the LeadingAge CAST's Telehealth White Paper, collection of Telehealth Case Studies, and this AHRQ-funded study.

D. Public-Private Partnerships

1. Provide ideas of the form and function of a public-private partnership model to leverage the adoption of technology-driven solutions to improve outcomes for at-risk populations such as aging Americans living in rural areas.

A partnership between CMS/ CMMI, Aging Services Providers, 3rd party academic evaluators could potentially partner on demonstration of new payment models that encourage the use of telehealth and other technologies to benefit aging Americans in different living and geographic settings. Please see the examples proposed in our letter submitted in response to the Congressional Telehealth Caucus Request for Information on Comprehensive Telehealth Legislation Recommendations.

2. What organizations, groups, and/or, associations should HHS engage as part of such a collaborative effort?

LeadingAge, its Center for Aging Services Technologies (CAST), its LTSS Center for Applied Research at the University of Boston, and many of our aging services provider members would be happy to partner on and facilitate this collaborative effort.

I hope these responses help, and please feel free to reach out if you have any questions, or would like any additional information.

Sincerely,

Majd Alwan, B.Eng, MS, Ph.D.
SVP of Technology & Business Strategy, LeadingAge &
Executive Director, LeadingAge Center for Aging Services Technologies (CAST)
MAlwan@LeadingAge.org
(202) 508-9463